REQUEST FOR COASTAL ZONE ACT PERMIT MAJOR MODIFICATION

State of Delaware
Department of Natural Resources and Environmental Control
Division of Climate, Coastal and Energy

FUJIFILM Imaging Colorants, Inc.
Project Maxwell – CZ-441M
October 20, 2022

Template v1.102020

REQUEST FOR COASTAL ZONE ACT PERMIT MAJOR MODIFICATION INSTRUCTIONS

1. This form is for major modifications of standard Coastal Zone Act and conversion permits. For sections within Parts 1-5 which are not applicable to your project, do not leave blank; present a clear statement of why the section is not applicable to your project. Permittees without conversion permits do not need to complete Part 6.

2. Because all permittees' projects are different, this word document template will provide flexibility for needed space to answer the questions. Please insert additional lines for text where needed. If appropriate, attach extra pages referencing the corresponding section.

3. Submit one electronic copy to CZA_Program@delaware.gov. If unable to submit electronically, send a hard copy, CD, or USB to:

   Coastal Zone Act Program
   Department of Natural Resources and Environmental Control
   Division of Climate, Coastal and Energy
   100 W Water Street, Suite 7B
   Dover, DE 19904

4. Be advised that a Request for Coastal Zone Act Permit Major Modification is a public document, which may be displayed at places including, but not limited to, DNREC offices and the DNREC website. If this application requires you to place confidential information or data in the application to make it administratively complete, note the Delaware Freedom of Information Act (29 Delaware Code, Chapter 100) and DNREC's Freedom of Information Act Regulations (8 DE Admin. Code 900), Section 6.0 Requests for Confidentiality, for the proper procedure in requesting confidentiality.

5. Be advised that following submission of this form, the Coastal Zone Act Program will provide confirmation that it is administratively complete. Once deemed administratively complete, the major modification request will be subject to a 20-business day public comment period. A public hearing may be scheduled at the discretion of the DNREC Secretary.

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PART 1. CERTIFICATION BY AP

Under the penalty of perjury pursuant to 11 Delaware Code
certify that all the information contained in this Request for Coasta
and any attachments is true and complete to the best of my belief.

I hereby acknowledge that all information in this application
subject to the Delaware Freedom of Information Act, except for inf
confidentiality request by the Secretary of the Department of Natur
Environmental Control.

Maureen Concordia
Print Name of Permittee

Maureen Concordia
Signature of Permittee

Facilities and EHS Manager
Title

10/20/2022
Date

PART 2. PERMITTEE INFORMATION AND SITE IDENTIFICATION

2.1 Identification of the permittee:

Company name: **FUJIFILM Imaging Colorants, Inc.**
Address: **233 Cherry Lane New Castle, DE 19720**
Telephone: **302.477.8000**
Fax: **None Available**

2.2 Primary contact:

Name: **Maureen Concordia**
Position: **Facilities and EHS Manager**
Telephone: **302.472.1257**
Email: **maureen.concordia@fujifilm.com**

2.3 Site of proposed modification (if different from above):

233 Cherry Lane, New Castle, DE – Building L47
New Castle County Tax Parcel No. 10-015.00-003

See Attached Site Location Sketch

2.4 Permit(s) currently held for this activity (note project number and type – standard or conversion):

Coastal Zone Act Permit CZ-441P standard – 233 Cherry Land, New Castle, Delaware 19720, Project Marconi (L44 Plant)

2.5 Authorized agent (if any):

Name: **M. Richard Beringer, P.E., LEED AP**
Address: **5400 Limestone Road, Wilmington, DE 19808**
Phone Number: **302.239.6634**
Fax: **302.239.8485**

If utilizing an authorized agent for this request, provide written authorization from client to confirm authorized agent.

Please refer to Attachment A.

2.6 Is the permittee claiming confidentiality in any section of the form?

Yes. The confidentiality granted under the original permit application is still applicable to the same information that is included in this permit modification.

If yes, see instructions on page 2.

PART 3. CURRENT PERMITTED ACTIVITY SUMMARY

3.1 Provide a brief summary describing the current permitted activity.

The L44 Plant, which is currently under construction, manufactures high-performance aqueous pigment dispersions. Proposed Plant U45 will utilize the same process to manufacture the same products. The unit operations include:

A. Dispersion of pigment into polymer using a low shear, low energy inline disperser;
B. Particle size reduction of the pigment using bead mills;
C. Stabilization of the particles with the addition of a crosslinking material;
D. Centrifugation of the cross-linked material to remove oversized particles;
E. Purification of the material using membrane technology to remove impurities; and,
F. Sterilization of the final product prior to pack-off.

The current aqueous dispersion range is comprised of approximately 20 products, a mixture of Black, Yellow, Magenta, and Cyan products with varying formulations for different customers.

The proposed project, Plant U45, will use the same processes using additional equipment to essentially double the capacity for producing the same products at the L44 Plant.

3.2 Briefly describe any environmental impacts resulting from the current activity.

Products are all aqueous based and no organic or mineral solvents are used in the processing or clean-down operations. Therefore, the environmental impact is minimal as no volatile organic compounds (VOCs), or Hazardous Air Pollutants (HAPs) are generated from processing operations. Although air emissions will increase slightly due to boiler operations, these units will have small heat input values. The boilers are fitted with low nitrogen oxide (NO_x) burner technology. The quantity of emissions emitted by the boilers are less than the regulatory thresholds for requiring permits and at the rate of the emission, are not considered a hazard to health.

To offset these minor emissions, FFIC is proposing to eliminate its propane fueled forktrucks and replace them with electric devices. FFIC is installing solar panel to generate electricity equivalent to the amount necessary to charge the new electric equipment, which will provide a regional benefit due to the offset of electricity generated by other means and supplied to the electric utility grid. In addition, FFIC has coordinated with the Delaware Division of Small Business to purchase an emission reduction credit (ERC) to offset air emissions associated with the operations of the Plant U45.

The environmental impacts of the project are minimal. The plant will be constructed within the historic Coastal Zone "footprint" of the Atlas Point site. The Plant U45 occupies an area of the site that previously had performed industrial operations. Therefore, the Plant U45 will not create new impacts such

as noise, heat, aesthetics, odor, or lighting over those that had been there previously.

The wastewater effluent from the existing FUJIFILM Imaging Colorants, Inc. (FFIC) facility will increase slightly due to the new flow from Plant U45. However, the increased flow will comply with the flow rate and permissible effluent limits permitted by New Castle County.

PART 4. MODIFICATION INFORMATION

4.1 Summarize the purpose of the proposed modification and impacts to the current processes.

FFIC, a wholly owned subsidiary of the FUJIFILM Corporation, produces a range of aqueous colorants used in the manufacturing of ink jet printer inks. To meet market requirements, the business has invested and continues to invest in its manufacturing plant located in New Castle, Delaware to increase manufacturing capacity for existing products, allow the introduction of new products, and to secure an asset base for long-term manufacturing. The New Castle, Delaware site is currently ISO 9001 and ISO 14001 certified. The ISO 9001 is a Quality Management System (QMS) which gives organizations a systematic approach for meeting customer objectives and providing consistent quality. The ISO 14001 is an Environmental Management System (EMS) which gives organizations a systematic approach for measuring and improving their environmental impact. Japan is interested in both improving and increasing production of the New Castle, Delaware operations, and both certifications will play a role in guiding the improvements.

FFIC supports development of a second 110 ton per year (TPY) plant to be constructed at its New Castle site in existing Building L47 as part of its corporate repurposing and investment in the New Castle facility. A new addition to the eastern side of Building L47 will be built as part of the project. The new plant, referred to herein as Plant U45, will be designed to produce high-performance aqueous pigment dispersions.

Construction will begin as soon as possible, with the unit planned to start validation manufacturing in April 2023. Plant U45 will be serviced by standard instrument air, hot water from two new boilers, and cooling water from a new chiller. Purified water will be supplied from a new purified water system. The water for the facility will be supplied by a public water system (Artesian Water Company).

The project is repurposing an existing building (L47) and the existing pavement within the FFIC facility and will not increase the "footprint" of the facility. Please refer to the Site Plan, Attachment B.

New construction will include an addition to Building L47 to house Plant U45 and a new building that will house the new boilers. The addition will be constructed on an existing impervious area. The manufacturing processes will be located within L47, including the new addition. The boiler house will be a pre-engineered metal building erected on an existing concrete slab, to the north of L47.

A new natural gas fired heating, ventilation, and air conditioning (HVAC) system will be installed to provide building environmental control for workers in Building L47.

4.2 Does the proposed modification constitute a manufacturing or heavy industry use?

Manufacturing

4.3 Would the proposed modification require a zoning change? If so, provide approval from the appropriate zoning authority as an attachment.

No, current zoning is Heavy Industry (HI). See Attachment C for New Castle County zoning certification.

4.4 Would the proposed modification be located entirely within the footprint of a nonconforming use site, as found in Appendix B of the *Regulations Governing Delaware's Coastal Zone* (7 DE. Admin. Code 101), herein referred to as "Regulations"? If not, would any portion of the proposed modification be located within an above-referenced footprint?

Yes

4.5 Does the proposed modification extend the current area of the permitted activity? If so, by what quantity?

No. The project is repurposing the existing Building L47 and pavement within the FFIC facility and will not increase the impervious ground surface coverage at the facility. The expansion of the currently permitted activity does not expand the Coastal Zone Act footprint of the facility.

4.6 Does the proposed modification expand the production capacity of the permitted activity? If so, by what quantity?

Yes. The modification doubles the production capacity of the permitted activity, increasing the production capacity by 110 tons per year (TPY).

4.7 Does the proposed modification result in the production of any new products? If so, explain.

No. The proposed modification will include manufacturing more of the same products that will be manufactured at Building L44.

4.8 Does the proposed modification result in new supporting facilities? If so, explain.

The new 2,500 KVA transformer will feed switchgear, motor control centers, and interfacing equipment installed in a new electric building adjacent to Building L47. The electrical building ventilation and space temperature control systems are electric and do not generate emissions to air or water.

The new boilers and ancillary equipment will be installed in an addition to Building L47. The addition is being constructed on an area of existing pavement.

Existing utility interconnections are sufficient to supply the natural gas and electricity required for operations.

Plant U45 will utilize LED energy efficiency fittings and all drives will be fitted with variable frequency/speed drives and high efficiency motors to reduce energy usage. Rooftop solar panels on the building addition will be used to generate sufficient power to charge the 2 electric forktrucks associated with Project Marconi and the 3 electric forktrucks associated with Project Maxwell (see Attachment D for calculations). The use of electric forktrucks that can be charged by solar panels eliminates emissions associated with the propane forktrucks. The use of higher efficiency equipment will reduce regional air emission resulting from the generation of electricity within the PJM grid.

4.9 Does the proposed modification require the installation of an additional pier or ship docking facility? If so, is the intended use for bulk product transfer? Explain.

No.

4.10 Does the proposed modification require the installation of the following new equipment or facilities? If so, explain each in detail.

Smokestacks:
Tanks:
Distillation or reaction columns:
Chemical processing equipment:
Scrubbing towers:
Pickling equipment:
Waste treatment lagoons:
Smelters:
Incinerators:
Other (list):

The following list identifies the machinery that will be used by this project:

[redacted]

- [redacted]

Refer to Attachment E, Process Diagram, which identifies all equipment necessary for the operation of the proposed plant.

4.11 List materials to be utilized by the proposed modification and how they would be transported to the site.

The following raw materials will be used as part of the Plant U45 operation. All materials will be delivered by truck and offloaded at the site warehouse by forklifts. The raw materials can arrive in totes, drums and bags. Materials denoted with an asterisk (*) are used on site for FFIC current operations. The materials without an asterisk are expected to be on site in the future for the proposed operations in both Plant U45 and L44 Plant.

- **Proxel GXL***
- **Denacol**
- **Magenta Pigment TRM 11**
- **Yellow Pigment Irgalite, Clariant, TRY13**
- **Cyan Pigment PB60**
- **Black Pigment**
- **Cyan J2V**
- **Red Pigment Irgazin**
- **Dipropylene Glycol***
- **EDTA Salt 10% Solution***
- **Boric Acid 3% Solution**
- **Sodium Hydroxide Solution (5-47%) ***
- **Potassium Chloride**
- **Hydrochloric acid solution (5%) ***

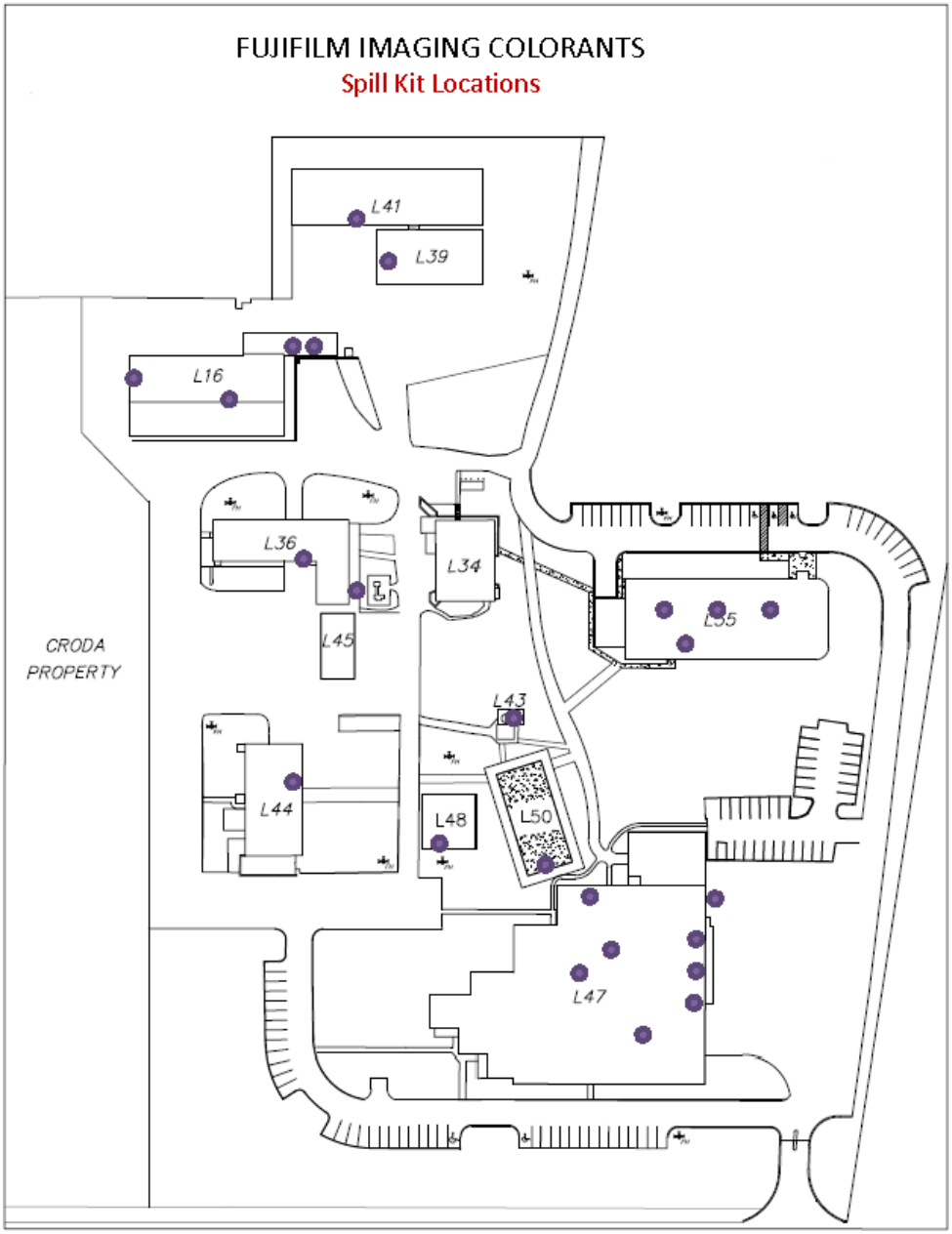
See Attachment F for Safety Data Sheets.

Raw materials will be delivered to the dock at L16. Materials are offloaded from this dock and are transported by forklift to warehouse locations nearby or to the relevant external storage slab (e.g., Hydrochloric acid solution (5%)). The external storage slab is within secondary containment and the HCl is kept in a weather resistant tote (see image of a tote below).

More hazardous raw materials for manufacturing are stored inside warehouses. Hazardous materials utilized in the laboratories are kept inside designated cabinets with secondary containment. All hazardous waste on site is kept in covered areas and on secondary containment.

Spills are avoided through providing proper training for employees on chemical handling and spill response, regular inspections of chemical containers and storage areas, safeguarding the transportation of chemical containers, and materials are stored in covered, indoor areas whenever possible.

There are several spill kits located across the site. There is at least one in each working area, and several available at all loading docks. See the locations marked on the figure below.



The loading/unloading dock is covered and protected from stormwater exposure. When the materials are required for production, the materials will be transported from the warehouse to Plant U45 by forklift.

FFIC will adhere to its existing material delivery, storage and transfer process that covers the control of raw materials. This process includes:

- **The receipt of goods inward, the process of delivery including the plant being alerted to a delivery.**
- **If necessary, the checking of certificates of analysis against specification.**
- **Physical quality checks on the delivery to confirm the delivery meets expectations.**

- **Weekly/monthly inventory review on other materials as appropriate.**
- **Monthly stock reconciliation.**

For new plant operations, the warehouse will monitor the inventory and delivery of materials to Plant U45.

FFIC performs an in-depth review of all materials to ensure proper storage. The storage locations of raw materials relative to each other is considered when providing storage space for new raw materials and may require the storage areas to be modified to accommodate changes. The purpose of the segregation is to prevent incompatible material interactions occurring in the event of loss of containment and reduce the impact in the event of a fire. The storage location of all materials is determined following reviews/discussions with appropriate FFIC Managers using information provided within the Safety Data Sheets which reference material characteristics and material handling/storage guidelines. Raw materials associated with Plant U45 operations are not flammable and pose no storage risk.

4.12 Provide a map of appropriate scale to clearly show the site. Mark important natural features, existing buildings, and existing processing equipment. Note attachment #.

See Attachment B, Site Plan

4.13 Provide a schematic to clearly show any changes to the site as a result of the proposed modification. Note attachment #.

See Attachment B, Site Plan

4.14 Has the applicant coordinated with any other sections of DNREC for this proposed modification? If so, state which section(s).

FFIC has updated its inventory of air emission sources at the request of Natural Resources and Environmental Control (DNREC) Division of Air Quality (DAQ) demonstrating that all emission sources, including those associated with Plant U45 are small and collectively do not change the regulatory status of the facility per the Title 7 DE Admin. Code Section 1100 Regulations. FFIC has stormwater discharge permits that are not affected by Plant U45. No other Department of permits are required for the project.

4.15 Does the proposed modification result in increased environmental impacts? Utilize the provided tables if applicable.

Air quality:
The two new boilers that are proposed for installation at Plant U45 will result in a change in existing emissions. The boilers are fueled by natural gas. An illustration of the combustion process can be found in Attachment G. The United States Energy Information Administration (EIA), describes the combustion of natural gas as follows in Natural Gas Explained, Natural Gas and the Environment, *Natural Gas is a Relatively Clean Burning Fossil Fuel*:

"Burning natural gas for energy results in fewer emissions of nearly all types of air pollutants and carbon dioxide (CO_2) than burning coal or petroleum products to produce an equal amount of energy. About 117 pounds of CO_2 are produced per million British thermal units (MMBtu) equivalent of natural gas compared with more than 200 pounds of CO_2 per MMBtu of coal and more than 160 pounds per MMBtu of distillate fuel oil. The clean burning properties of natural gas have contributed to increased natural gas use for electricity generation and as a transportation fuel for fleet vehicles in the United States."

According to the US EnergyStar program, the heat input rate of a household heating unit is less than 225,000 Btu per hour, or 0.225 million Btu (0.225 MMBtu) per hour. Each of the low-NO_x natural gas boilers being installed at Plant U45 are 4.6 MMBTU per hour. At the 0.225 MMBtu heat input, the use of one boiler at Plant U45 is equivalent to the heat input in approximately 20 large household furnaces. Assuming that the average household in the vicinity of Plant U45 has a furnace with a heat input rate of approximately 100,000 BTU per hour (0.1 MMBTU), the use of one boiler at Plant U45 is equivalent to the heat input rate of approximately 46 household furnaces.

Pollutant	Existing Emissions		Net Increase/ Decrease		New Total Emissions	
	Lbs per day	*Tons per year*	*Lbs per day*	*Tons per year*	*Lbs per day*	*Tons per year*
Criteria Pollutants						
Nitrogen Oxides (NO_x)	6.700	1.223	5.613	0.991	12.313	2.214
Volatile Organic Compounds (VOC)[1]	1.273	0.232	1.208	0.219	2.481	0.451
Carbon Monoxide (CO)	12.733	2.324	12.452	2.244	25.185	4.568
Particulate Matter (PM)[2]	1.760	0.321	1.669	0.302	3.429	0.623
Sulfur Dioxide (SO_2)	0.139	0.025	0.132	0.0238	0.271	0.0488
Lead (Pb)[3]	Not likely to be present					
Total Organic Compounds (TOC)[1]	1.273	0.233	1.208	0.219	2.481	0.452
Nitrous Oxide (N_2O)	0.172	0.0313	0.145	0.0258	0.317	0.0571
Carbon Dioxide CO_2	27,782	5,070	26,009	4,747	53,791	9,817

Notes:

1. ***Criteria VOC have been separated from the broader category of TOC.*** **TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.**

2. ***The CZA Major Modification Application for the Marconi Project (CZ Permit Application CZ441-P) identifies net increase in NO_x emissions as 0.963 tpy rather than 0.991 tpy of Project Maxwell. The Project Maxwell value includes the NO_x emissions from a new HVAC system in calculations.***

3. ***Other differences in numerical emission values are due to differences in rounding between the original CZA Major Modification Application for Project Marconi and this CZA Major Modification Application for Project Maxwell.***

4. ***PM Total is the sum of PM Condensable and PM Filterable. The PM Condensable includes emissions that are in gaseous form when emitted but condense to a solid or liquid form when cooled to a certain extent. Filterable PM is defined as the "particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train. Natural gas is a gaseous fuel and filterable PM emissions typically are low. However, particulate matter from natural gas combustion has been estimated to be less than 1 micrometer in size and has filterable and condensable fractions.***

5. ***Lead has been excluded in the above air emissions table. Although identified in the U.S. EPA AP-42 document as an emission resulting from natural gas-fired boilers, Verdantas has found no evidence that lead is a component of natural gas-fired boiler emissions upon review of other references, including the references cited in the U.S. EPA AP-42, Fifth Edition, Volume I Chapter 1: External Combustion Sources, Section 1.4 natural gas combustion and other U.S. EPA AP-42 sections for natural gas-fired equipment. The NIOSH Permissible Exposure Limit (PEL) for lead is no greater than 50 $\mu g/m^3$ over an 8-hour period.***

   The identification of lead as an emission of natural gas-fueled boilers in U.S. EPA AP-42 is not consistent with other U.S. EPA AP-42 resources that identify emissions associated with natural gas combustion. As described in U.S. EPA AP-42, Section 1.4, Natural Gas Combustion, natural gas "consists of a high percentage of methane (generally above 85 percent) and varying amounts of ethane, propane, butane, and inerts (typically nitrogen, carbon dioxide, and helium)." U.S. EPA AP-42, Section 1.4.3 established that the emission from natural gas-fired boilers and furnaces include "nitrogen oxides (NOx), carbon monoxide (CO), and carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), volatile organic compounds (VOCs), trace amounts of sulfur dioxide (SO_2), and particulate matter (PM)." The U.S. EPA Webfire identifies Industrial Boilers <10 MMBTU combusting natural gas and does not include lead emission factors.

Surface and groundwater quality: (see chart on page 17)

The Facility holds two (2) permits authorizing the discharge of storm water from its industrial operations. They are:

<u>Individual NPDES Permit Authorizing Stormwater Discharges:</u> State Permit Number WPCC 3032E/97, NPDES Permit Number DE 0051080, was issued with an effective date of October 1, 2020, and expiration date of September 30, 2025. The permit is issued to Croda, Inc. and FFIC. The permit authorizes the discharge of stormwater and treated groundwater through Outfall 005 to Magazine Ditch, a tributary to the Delaware River. In part, the permit covers the northwestern portion of the New Castle Site property and the adjoining portion of the Croda, Inc. property. The portion of the Croda, Inc. property that is covered by the NPDES permit referenced above is presently non-operational. Croda, Inc. discharges treated groundwater pumped from the on-site substance recovery Well #10 to Outfall 005 as required by the Atlas Point HSCA project. The NPDES permit authorizes the discharge of stormwater, noncontact cooling water and the treated groundwater through Outfall 005.

<u>General Industrial Stormwater Permit Authorizing Stormwater Discharges:</u> DNREC's Surface Water Discharges Section renewed FFIC's General Industrial Stormwater Permit on April 19, 2018, authorizing the discharge of stormwater to the Magazine Ditch, with ultimate discharge occurring in the Delaware River.

All operations are performed indoors, and material storage areas are located indoors to the maximum extent practical. Stormwater runoff will result from the surrounding parking lots and drives on the site. Roof drainage from existing buildings L47, L55, L41, L39 is collected and is direct to the recharge basin on the FFIC facility. The new extension to building L47, which is being built on currently impervious surface, will also be directed to the onsite recharge basin and beneficially increase the amount of stormwater infiltrated at the facility.

There will be no additional stormwater runoff from existing buildings and the L47 building extension housing Plant U45 as the extension is being built on existing paved exterior drives. No additional impervious area will be established. As described in 4.15 above, there will be a decrease in stormwater runoff as a result of the construction and a beneficial increase of stormwater infiltration.

There will be no new pollutants expected in the stormwater due to minimum exposure of materials and the fact that operations are performed indoors. The materials utilized onsite and handled will remain the same.

Stormwater runoff generated on landscape, paved surfaces and loading/unloading areas of the facility flows to a series of catch basins. These catch basins collect runoff from the site and convey it to two outfalls: one to Outfall 005 and one to the front (Southeast gate area) of the property referred to as Outfall 001. These two outfalls can be blocked to prevent pollutants from leaving the site. Should collected water show indications of sheens or other visible indications of possible chemical pollutants, the water will either be pumped through the sanitary sewer system or placed into storage containers until proper disposal occurs.

Stormwater falling on building rooves is collected separately from ground surface runoff and is directed to an onsite stormwater recharge basin. This roof drainage collection system reduces the amount of stormwater that otherwise would be generated at the facility, and it increases the amount of groundwater recharge.

No modifications are necessary to the stormwater drainage system other than tying the roof drains from the Building L47 extension into the existing Building L47 roof drainage system. The Facility will utilize the current stormwater infrastructure to properly convey stormwater.

Wastewater Discharge Quality:

Pollutant	Current Discharge Conc. ppm	New or Changed Discharge Conc. ppm	Current Discharge		Net Increase or Decrease		New Total Emissions		Current Permitted Emissions
			Lbs per day	*Tons per year*	*Lbs per day*	*Tons per year*	*Lbs per day*	*Tons per year*	*Lbs per day*
Ammonia	**6.6**	**9.6**	**0.9**	**0.16**	**0.55**	**0.1**	**1.45**	**0.26**	**600**
Biochemical Oxygen Demand, BOD	**608**	**877**	**69.07**	**12.46**	**50.87**	**9.14**	**119.9**	**21.6**	**3,000**
Total Suspended Solids, TSS	**200**	**274**	**42.47**	**7.75**	**16.73**	**3.05**	**59.2**	**10.8**	**1,250**
Arsenic (As)	**<0.03**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**0.225**
Cadmium (Cd)	**<0.005**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**0.175**
Cyanide (CN)	**<0.01**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**0.817**
Chromium (Cr)	**<0.015**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**0.125**
Copper (Cu)	**1.9**	**2.7**	**0.27**	**0.05**	**0.16**	**0.03**	**0.43**	**0.08**	**3.753**
Lead (Pb)	**<0.01**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**0.123**
Mercury (Hg)	**0.00**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**0.0008**
Molybdenum (Mo)	**<0.01**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**0.00**

Pollutant	Current Discharge Conc. ppm	New or Changed Discharge Conc. ppm	Current Discharge		Net Increase or Decrease		New Total Emissions		Current Permitted Emissions
			Lbs per day	*Tons per year*	*Lbs per day*	*Tons per year*	*Lbs per day*	*Tons per year*	*Lbs per day*
Nickel (Ni)	**0.05**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**2.502**
Selenium (Se)	**<0.05**	**Not expected***	**0.00**	**0.00**	**-**	**-**	**0**	**0**	**1.626**
Zinc (Zn)	**0.79**	**Not expected***	**0.25**	**0.05**	**-**	**-**	**0.25**	**0.05**	**8.732**

Sanitary wastewater is discharged to the local publicly owned treatment works (POTW). Plant U45 staff will use the existing bathroom facilities Building L47.

Wastewater generated from the processes in Plant U45, and associated utilities will be collected, then pumped through a new transfer line and conveyed to an effluent tank, identified as Building L43, where it will be pretreated and discharged to the New Castle County Sewer System as currently permitted under New Castle County's Pretreatment Program.

Other impacts:

Impact	Current	New	Net Change
Surface and groundwater withdrawals	See Section Above (Stormwater)	See Section Above (Stormwater)	None
Habitat loss	None	None	None
Impacts to flora and fauna	None	None	None
Impacts to threatened or endangered species	None	None	None
Solid and hazardous waste generation	See Note 1	See Note 1	None
Noise	No effect	No effect	None
Odors	No effect	No effect	None
Glare	No effect	No effect	None
Heat	No effect	No effect	None
Vibration	No effect	No effect	None
Radiation	No effect	No effect	None
Electromagnetic interference	No effect	No effect	None
Local aesthetic quality	No effect – See Note 2	No effect - See Note 2	None
Other – Wetlands habitat loss	No effect	No effect	None
Other – Site drainage, land erosion, and flood control	No effect	No effect	None
Other – Impacts on water quality and quantity	Slight increase in wastewater generation	See Section Above (Wastewater and Stormwater)	None

Notes:

1. Solid and hazardous waste generation:

   <u>Solid waste generation</u>

   Additional solid waste from construction debris and regular operations including packaging materials are expected but cannot be estimated at this time. All waste products are managed in accordance with FFIC's ISO 14001 standard operating procedures.

   The generation of solid wastes falls into two (2) categories, Non-Routine Wastes and Routine Wastes. Waste Technology Services (WTS) acts as FFIC's waste broker and selects disposal facilities based on expertise of handling waste types, cost and services provided. Environmental considerations are taken into account when selecting waste disposal routes and companies. Large portions of the total waste are mitigated through re-use and recycling initiatives (e.g., plastic drums, IBCs and steel drums). Waste from FFIC is sent to Waste to Energy Plants whenever possible.

   Examples of Non-Routine Wastes: laboratory samples (50 ml jars), unusable raw materials (out of spec, out of shelf life, etc.), out of specification intermediates or

final products. The EHS Manager retains records of all waste streams, documenting quantities, costs, and descriptions.

FFIC recycled the following materials in calendar year 2020:

- **9,900 lbs. of wood pallets**
- **176,400 lbs. of totes**
- **1,453 drums of various sizes**
- **1,012 lbs. of paper**

Large portions of the total waste are mitigated through re-use and recycle (e.g., plastic drums, IBCs and steel drums are recycled).

<u>Hazardous waste generation</u>

Operation of Plant U45 has the potential to generate out of specification materials or unusable raw materials (out of spec, out of shelf life, etc.). FFIC is a registered Small Quantity Hazardous Waste Generator, Generator ID Number DED984076265. FFIC at times, generates flammable hazardous materials (acetone and methanol) and corrosives waste materials such as sulfuric acid. Should hazardous waste be generated, the Facility will utilize Waste Technology Services (WTS) who acts as FFIC's waste broker and selects disposal facilities based on expertise of handling waste types, cost and services provided. Environmental considerations are taken into account when selecting waste disposal routes and companies. To FFIC's knowledge, there are no hazardous waste disposal facilities located in the defined Coastal Zone.

The quantity cannot be accurately estimated at this time, but cumulative hazardous waste generated onsite is not expected to exceed that of the Facility's Small Quantity Generator Status.

The waste will be disposed of at permitted hazardous waste treatment and disposal facilities (TSDF) outside the Delaware Coastal Zone.

FFIC employs licensed hazardous waste handlers for transport and disposal needs. Currently, FFIC utilizes Clean Harbors El Dorado, LLC. (US EPA ID Number ARD069748192) for disposal and Lancaster County Resource Recovery (US EPA ID Number PA0000103713). Freehold Cartage, Inc. (US EPA ID Number NJD054126164), transports waste to designated disposal locations.

Waste materials are collected in a specifically designated area until a load is generated for pickup. All waste storage complies with 7 DE Admin. Code 1302 *Regulations Governing Hazardous Waste* for storage and management purposes.

The retirement of two old boilers with two new boilers and an HVAC system as part of this CZA Permit Major Modification Application does not produce hazardous waste.

2. Local aesthetic quality:

Plant U45 will be inside Building L47 on the FFIC site. FFIC is in an industrial area on Cherry Lane in New Castle, DE. Building L47 is set back from Cherry Lane and

is adjacent to several other buildings on the FFIC site that are visible from Cherry Lane and I-295. The site is landscaped throughout and along the front fence. There are no known historic sites within one-half mile. Lukens Marsh is within one-half mile, but the project will have no impact on Lukens Marsh. The land between Cherry Lane and Building L47 is landscaped in a manner compatible with the neighborhood. Plant U45 will make use of an existing building in an existing manufacturing facility. No new landscaping is proposed. The project will be constructed on an existing industrial site zoned Heavy Industrial and will be compatible with neighboring land uses.

4.16 Does the proposed modification result in impacts to the following criteria?

Economy:

85-125 total workers will be hired throughout the project construction lifecycle. 35-50 workers will be hired in Delaware, preferably from qualified local residents. 11 full-time, permanent employees are projected for hire to directly support operation of the new plant.

The 11 full-time positions are intended for long-term employment and are not cyclical, seasonal, or expected to have variation. The positions throughout project construction are short-term positions. The impact of both short-term and long-term workers associated with the project on the economy and county and municipal comprehensive planning are described in the sections below.

The generation of jobs will lead to generation of income and taxes. 35-50 workers will be hired in Delaware, preferably from qualified local residents. Based on the estimated number of short-term and long-term positions generated by the project, the estimated amount of tax revenues that will accrue to state and local government include the following:

Manufacture for customer qualification in FY2023. The assumption is that qualification is completed, and product is available for commercial sale in Q4 FY2023 (January – March 2024).

in USD$	FY2023	FY2024	FY2025	FY2026	FY2027
State Personal Income Tax Projection	NA	NA	NA	NA	NA
State Corporate Income Tax Projection	358,030	574,648	681,256	681,256	681,256
County Tax Projection	32,603	32,603	32,603	32,603	32,603
School Tax Projection	93,083	93,083	93,083	93,083	93,083
Municipal Tax Projection	NA	NA	NA	NA	NA

Note: FFIC's Fiscal Year is April 1 – March 31.

The weekly payroll is estimated to be from $15,000 to $75,000, depending on the phase of construction. The percent distribution of annual wages and salaries (based on regular working hours) for employees attributable to the project are estimated as follows:

Wage/Salary	Percent of employees
<$10,000	0%
$10,000 – 14,999	0%
$15,000 – 24,999	0%
$25,000 – 34,999	0%
$35,000 – 49,999	0%
$50,000 – 64,999	15%
$65,000 – 74,999	60%
$75,000 – 99,999	20%
>$100,000	5%

County and municipal comprehensive planning:

FFIC will hire qualified local residents for new permanent employment opportunities from the State of Delaware for both short-term and long-term job generation. However, typically the FFIC employee population and recruiting area additionally includes the states of New Jersey, Maryland, and Pennsylvania. Employees with short-term positions.

The cost of construction supplies to be purchased in Delaware will be approximately $7,000,000 to $9,000,000. Services will include engineering, general construction, electrical, plumbing, HVAC upgrade, and electrical interconnections.

Construction will begin as soon as possible, with the unit planned to start validation manufacturing in April 2023. Details regarding the planned construction can be found in Section 4.1 above.
Neighboring land uses:

The distance between the closest year-round residence to Building L47 is approximately 940 feet. The proposed project will not do the following:

- **interfere with the public's use of existing public or private recreational facilities or resources,**
- **interfere with public access to tidal waters,**
- **utilize or interfere with agricultural areas, or**
- **interfere with a nearby existing business, commercial, or manufacturing use**

A Community Engagement Plan has been prepared by FujiFilm which demonstrates the variety of ways they have participated in public outreach associated with the people surrounding the site location (see Attachment H). Fujifilm's commitment to engaging with the community is consistent with their long-term business plan to invest in its New Castle manufacturing facility in harmony with its neighbors and having good environmental stewardship.

As part of their community engagement, Fujifilm participates in Wilmington Area Planning Council (WILMPACO) Route 9 Monitoring and Health Sub-committee meetings and is actively in communication with representative of the WILMAPCO Route 9 Monitoring group. Another aspect of Fujifilm's community engagement

plan is their long history and support of both the local community and Delaware. Such support is shown through participation in and sponsorship of various charitable organizations such as Sunshine Scramble Golf Tournament & Auction, National Breast Cancer Foundation and the Warrior Expedition for U.S. Veterans, Delaware Food Bank, the Annual Christina River Watershed Cleanup, DRBA Environmental World Day, and a community Resilience Day held by New Castle Prevention Coalition (NCPC), sponsorship of the Delaware Art Museum. Fujifilm is open to dialogue with community members toward improving their understanding of the Fujifilm business and operations at the New Castle, Delaware site location.

Recent efforts to support the neighborhoods surrounding the New Castle, Delaware site location include a potential solar lighting project for a nearby park, possible landscaping beautification which a business such as Fujifilm could support maintenance of, and various community events where businesses like Fujifilm could support.

4.17 Does the proposed modification result in increased safety concerns? If so, how are they proposed to be addressed?

No, the process that will be used in Plant U45 is the same as those used in Building L44 Plant.

PART 5. OFFSET

Would the proposed modification result in the need of a new offset proposal to more than offset new negative environmental impacts? If so, what is the permittee proposing? If not, provide justification.

Operation of Plant U45 is projected to increase air emissions as identified in Table 10.1 below:

Table 10.1 – New Air Emissions and Offset Requirement

Pollutant	New Emissions Tons/Year	Offset Requirement Tons/Year
Nitrogen Oxides (NO_X)[1]	0.991	1.090
Volatile Organic Compounds (VOC)	0.219	0.240
Carbon Monoxide (CO)	2.244	2.469
Particulate Matter (PM) Total[2]	0.302	0.332
Sulfur Dioxide (SO_2)	0.0238	0.0262
Total Organic Compounds (TOC)[3]	0.219	0.240
Nitrous Oxide (N_2O)	0.0258	0.0284
Total Emissions for Offset Requirements	4.0246	4.426

Notes:

1. **NO_x and CO tabulated above is based on the boiler design and manufacturer-provided emission factors.**
2. **PM Total is the sum of PM Condensable and PM Filterable.**
3. **TOC values provided herein exclude substances classified as VOC. TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.**
4. **Differences in numerical emission values are due to differences in rounding between the original CZA Major Modification Application for Project Marconi and this CZA Major Modification Application for Project Maxwell.**

Table 10.2 – New Air Emissions

Pollutant	Total Amount Net CO_2 Emissions Generated Tons/Year	(Total Amount Net CO_2 Emissions Generated) x (1.1 Multiplier) Tons/Year
Carbon Dioxide (CO_2)	4,747	5,221

Calculations of emissions and offsets associated with the modification to the previous permit are detailed in Attachment G. Calculations associated with CO2 emissions are detailed in Attachment I. For Coastal Zone Act permitting, air emissions generally are considered to produce negative environmental impacts, though in the case of this project, the regulations per 7 DE Admin. Code 1102 *Permits* do not require the applicant to obtain construction or operating permits from the State of Delaware for the boilers or the HVAC system. By inference, the emissions produced by the boilers and HVAC system are not capable of demonstrably having a negative impact on State of Delaware compliance with the health-based National Ambient Air Quality Standards. In response to the Coastal Zone Act consideration of the emissions, FFIC will offset its emission increase at 1.1 times the emission rate. The column in Table 10.1 labeled Offset Requirement reflects multiplying the emissions in the column labeled New Emissions by a 1.1 factor.

These emissions are the by-product of combustion. The input to the combustion process in the case of this project are pipeline quality (refined) natural gas, which is primarily composed methane, and air, which is chiefly composed of nitrogen (N_2) and oxygen (O_2). Chemically, methane is composed of four hydrogen atoms attached to one carbon atom (CH_4). The combustion of methane (oxidation) using air principally produces water vapor (H_2O), carbon dioxide (CO_2) and to a lesser degree carbon monoxide (CO) and nitrogen oxides (NO_x). Other byproducts are produced at trace levels and reflect incomplete oxidation reactions, which is the source of VOC, and trace concentrations of other substances in air or natural gas, such as mercaptans (sulfur compounds added to make natural gas leaks detectable).

As part of the project, Fujifilm plans to retire two boilers that produce the same type of emissions as the new boilers. The elimination of the two, older and less efficient boilers will provide a regional offset to the emissions of the new boilers.

FFIC also is proposing to eliminate the last of the combustion powered forklifts at the facility and to install photoelectric (solar) panels that are expected to generate approximately 36.24MWh per year of electrical power without producing air emissions to provide benefits for air quality regionally. See Attachment J for the Coastal Zone Environmental Impact Offset Matrix.

Nitrogen oxides, VOC and carbon monoxide have been identified as precursors to the formation of ozone. In the atmosphere, they can react with sunlight to release ozone (O_3). Ozone concentrations in the Philadelphia Metropolitan Area occasionally exceed the National Ambient Air Quality Standard (NAAQS). As a result, the Philadelphia Metropolitan Area is

considered "marginal" for compliance with the ozone NAAQS. The Philadelphia Metropolitan Area includes the portion of the Delaware Coastal Zone located in New Castle County where the project is located.

The NAAQS are health-based. Emission of ozone precursor substances can be viewed as potentially producing a negative environmental impact and offsets that address such substances should be a principal consideration of offset acceptance.

Carbon dioxide has been identified as a greenhouse gas. As a point of potential interest to the public, the combustion processes that produce the air emissions cited above will also process carbon dioxide. The rate of carbon dioxide production, based on PTE calculations for the boilers and heating season operation of the HVAC system, is estimated as 4,747 tons per year. See Attachment I, CO_2 Emissions Calculations.

FFIC has identified three propane powered forklifts to be removed from service, which will provide a regionally beneficial offset of emissions. The specific forklifts selected for retirement are identified in the Table G.6 Estimated Emissions Calculations for Propane Forklifts. Although run time logs are not maintained, FFIC has determined that each forklift typically operates 4 hours per day based on operator interviews and preventative maintenance schedules. FFIC's operations span over 3 shifts. For comparison, the typical industry standard for forklift operations varies from 4 to 8 hours per day.

CO emissions associated with the operation of the three identified propane forklifts were determined using emission factors identified by 40 CFR Part 60, Subpart JJJJ, for Stationary spark ignition internal combustion engines. CO emissions were calculated based on each propane forklift operating 4 hours per day, 359 days per year (to account for 6 holidays). By replacing the three forklifts with three electric powered forklifts, FFIC will offset its CO emissions by 1.2 tons per year (TPY).

Emission reductions will be provided through the installation of rooftop solar electric panels on the L47 building addition. These solar panels are estimated to generate 36.24MWh per year and this renewable energy will reduce electricity purchased from the PJM grid and the air emissions associated with the generation of that electricity. The solar panels will be capable of producing the equivalent amount of energy needed to operate the three proposed electric forktrucks.

The fuel for the new boilers is proposed to be natural gas and not electricity. At current grid emission levels, using electricity likely would be less efficient and more polluting. The two Parker boiler units that will be added to Plant U45 have a heat input rate of 4.6 MMBTU/hour. At a standard size of 65 inches by 39 inches (5.42 feet by 3.25 feet) per standard solar panel, each solar panel is estimated to produce approximately 230 Watts of power. If solar panels were used to provide power equivalent to that produced by the two new Parker boilers, approximately 23,446 solar panels would be necessary, occupying

412,742 square feet (9.5 acres). The area required for the solar panels is not feasible for this site.

Solar panels can only provide power for an average of 12 hours per day while the sun is above the horizon. The FFIC process will operate 24 hours per day. Nighttime electricity to provide hot water for the processes would need to come from the PJM grid. Attachment J includes a comparison of the natural gas-fueled boiler emissions for 24 hours per day to the emissions associated with the power grid for 12 hours per day based on the 2016 through 2020 CO_2, SO_2, and NO_x Emissions Rates report (April 2021, PJM). The emissions associated with the proposed natural gas-fueled boilers are less than the emissions associated with emissions associated with electric grid power for 12 hours per day. The emissions associated with the use of solar panels and electric grid energy would be greater than the planned use of the two natural gas-fueled boilers.

To clearly and demonstrably more than offset the negative impacts from the proposed project, FFIC will purchase one NO_x Emission Reduction Credit, equivalent to one ton of NO_x emission reduction from the Delaware Division of Small Business. The NO_x emissions associated with the project are more than offset by the retirement of the two boilers and three propane forklifts as well as the use of solar panels to power five electric forklifts. The NO_x Emission Reduction Credit is being purchased with the intent of meeting the required offset of emissions for total PM, SO_2, and TOC. A proportional amount of total PM, SO_2, and TOC is offset for the NO_x Emission Reduction Credit purchased. The NO_x Emission Reduction Credit more than offsets the combustion-related air emissions associated with the new boilers and HVAC system. The offsets were calculated using the same emission factors as the boilers.

Carbon dioxide is an unavoidable product of combustion. As such, while the boilers and HVAC system of this project will emit carbon dioxide, other former sources of combustion, like those retired to produce NO_x credits, also produced carbon dioxide. Thus, the purchase of one Emission Reduction Credit to offset NO_x emissions and the elimination of three combustion powered forklifts also represents an offset of carbon dioxide emissions. See Attachment I, CO_2 Emissions Calculations.

FFIC will trade-in its three forklifts and purchase three electric operated equipment as described. The three propane operated forklifts identified in the above table will be removed from the site prior to commencement of Plant U45 operations.

Solar panels will be installed during construction of Plant U45.

The environmental benefits are an improvement in air quality, particularly ozone concentrations, in the State of Delaware. The benefits will be achieved prior to the start of operations in Plant U45.

FFIC will purchase one Emission Reduction Credit in order to complete the offset.

FFIC will purchase one Emission Reduction Credit prior to commencement of Plant U45 operations.

One ERC will be purchased at over 1.1 times the emissions rate of the Project. The standard in use is to have an offset project that offsets emissions by 1.1 times for projects not requiring a Title V Major Air Source permit. The Facility will replace existing forklifts with electric operated units and install solar panels to provide demonstrable regional benefits.

The use of ERCs for offsetting air emissions is fully supported by regulations implementing the Clean Air Act. DNREC recognizes the efficacy of ERC as evidence in offset regulations.

PART 6. CONVERSION PERMIT PROVISIONS

6.1 Would the proposed modification result in any changes to the existing Environmental Stabilization and Remediation Plan? If so, provide the required documentation and information outlined under subsection 8.4.4 and successive subsections of the Regulations as an attachment.

Not Applicable

6.2 Would the proposed modification result in any changes to the existing Sea Level Rise and Coastal Storms Plan? If so, provide the required documentation and information outlined under subsection 8.4.2 and successive subsections of the Regulations as an attachment.

Not Applicable

6.3 What financial assurance instrument is the permittee proposing to utilize to satisfy the requirements under subsection 8.6.4.1 and successive subsections of the Regulations? Provide the required documentation and information as an attachment.

Not Applicable

ATTACHMENTS

Please find the required attachments plus additional attachments in the following locations:

Attachment A	**Agent Authorization**
Attachment B	**Site Plans and Map of Project Location**
Attachment C	**Local Zoning and Planning Approval**
Attachment D	**Electric Forklift Solar Power Supply Evaluation**
Attachment E	**Process Diagram**
Attachment F	**Safety Data Sheets**
Attachment G	**Estimated Emissions and Emissions Offset Calculations**
Attachment H	**Public Engagement Plan**
Attachment I	**CO_2 Emissions Calculations**
Attachment J	**Coastal Zone Environmental Impact Offset Matrix**
Attachment K	**Electric vs. Natural Gas Boiler Power Source Comparison**

ATTACHMENT A

AGENT AUTHORIZATION

November 29, 2021

To: Laura Mensh
Regulatory Programs Manager
Delaware Coastal Programs
100 W. Walnut Street, Suite 7B
Dover, Delaware 19904

Authority to Act as Agent

I appoint Duffield Associates, LLC to act as our agent on our behalf in the preparation of the Maxwell Coastal Zone Act Permit Application. I certify that the submitted documents properly describe FUJIFILM Imaging Colorants, Incorporated's (FFIC's) intent to construct a new plant that will manufacture pigment products.

As the authorized agent, M. Richard Beringer, P.E. has the FFIC's consent to represent the company, answer questions for the company, and provide information on FFIC's behalf.

Date: 12/1/21

Company Representative: Melissa Toledo — Melissa Toledo
Signature — Printed

Title: General Manager

On behalf of: Fujifilm Imaging Colorants, Inc.

ATTACHMENT B

SITE PLANS AND MAP OF PROJECT LOCATION

Fujifilm Imaging Colorants, Inc.
233 Cherry Lane New Castle, DE 19720
VA Home Loans New Castle DE - VA...
War Memorial Plaza
Cherry Ln
Riverview Dr
Stanley Ln
American Precision Home Improvements
Texas Cleaning Services
Uniqema Bl
Atlas Dr
Buck Ln
Race Proven Motorsports
Auto repair shop
BUCHI Corporation
Advance Office Installations
Furniture store
Luikens Dr
Felder USA
Video WallTronics, Inc
Fujifilm Imaging Colorants Inc
Probation
Probation & Parole
Croda Atlas Point
Croda
Google
Imagery ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021
United States
Terms
Send feedback
200 ft

PURPOSE NOTE:

THE PURPOSE OF THIS PLAN IS FOR THE CONSTRUCTION OF A BUILDING ADDITION AND ASSOCIATED IMPROVEMENTS FOR THE EXPANSION OF THE EXISTING SPECIALIST COLOURS BUILDING ON TAX PARCEL 10-015.00-003 (5,276 GSF). ADDITIONALLY, THIS PLAN ACCOUNTS AS THE RECORD PLAN FOR THE SQUARE FOOTAGE PREVIOUSLY APPROVED WITH BUILDING PERMITS 2021104805 (819 GSF) AND 202104809 (603 GSF) 6,698 TOTAL PROPOSED GSF.

COASTAL ZONE:

THIS SITE LIES ENTIRELY WITHIN DELAWARE'S COASTAL ZONE. ANY MANUFACTURING OR HEAVY INDUSTRIAL USE IS REGULATED BY THE COASTAL ZONE ACT AND SHALL REQUIRE A DECISION BY THE SECRETARY OF THE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL PRIOR TO COMMENCING OPERATION.

SUPERSEDES NOTE:

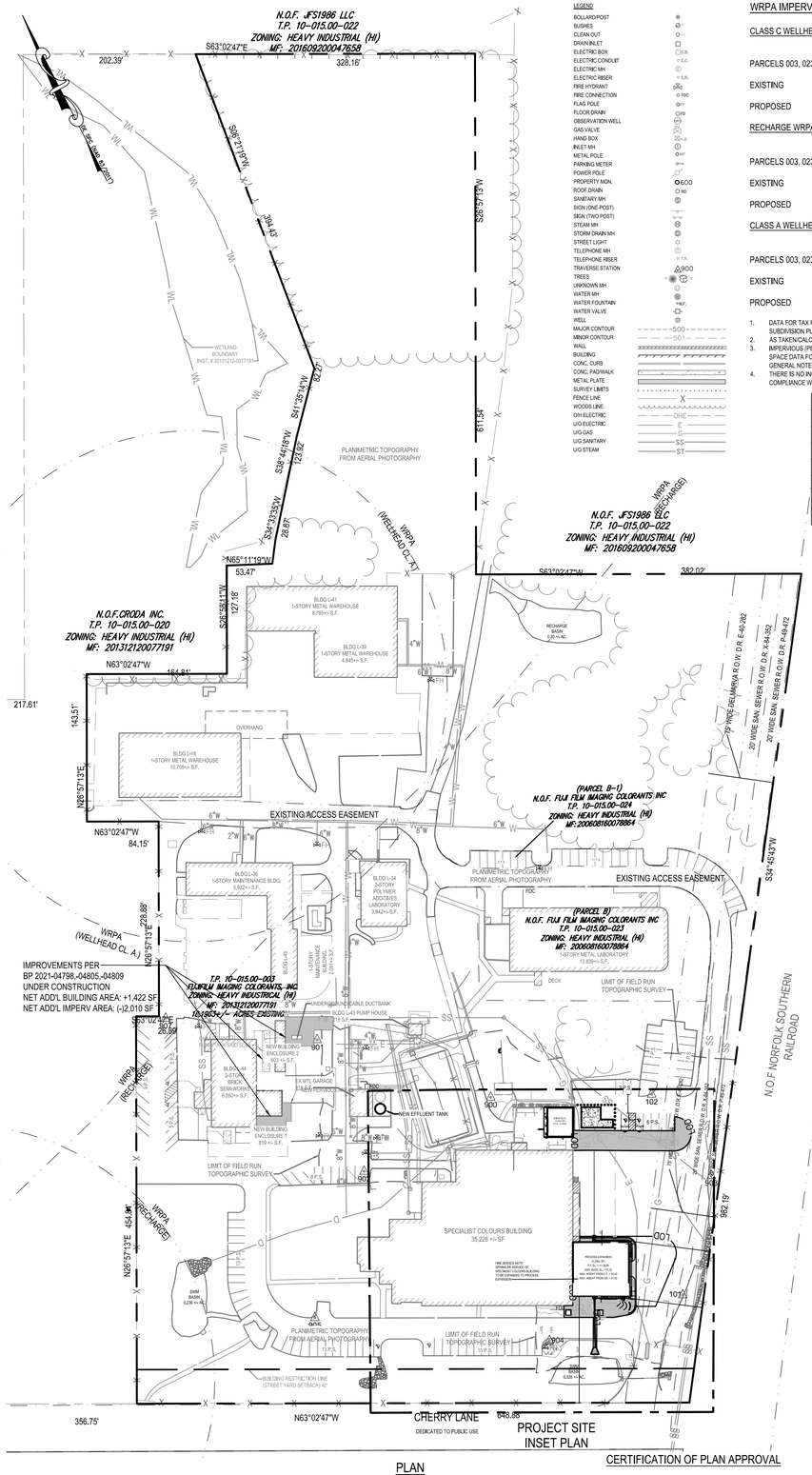
THIS PLAN SUPERSEDES, IN PART, THE RECORD RESUBDIVSION PLAN PREPARED FOR FUJIFILM IMAGING COLOANTS, INC. DATED OCTOBER 17, 2013 AND RECORDED ON DECEMBER 12, 2013 IN THE RECORDER OF DEEDS IN AN DFOR NEW CASTLE COUNTY STATE OF DELAWARE, INSTRUMENT NO. 20131212-0077191

DEED RESTRICTIONS:

THE FOLLOWING APPLICABLE RESTRICTIONS APPLY TO THE SUBJECT PARCEL
20' WIDE SANTIARY SEWER RIGHT OF WAY (D.R. P-49-272)
20' WIDE SANITARY SEWER RIGHT OF WAY (D.R. X-84-352)
75' WIDE DELMARVA RIGHT OF WAY (D.R. E-40-282)

GENERAL NOTES:

1. THE BOUNDARY INFORMATION FOR PARCEL 10-015-003 IS TAKEN FROM 'RECORD RESUBDIVISION PLAN FOR FUJIFILM IMAGING COLORANTS, INC.' PREPARED BY RAMESH C. BATTA ASSOCIATES, P.A. ON 11/25/13 AND RECORDED AT INSTRUMENT NUMBER 20131212-0077191.
2. THERE IS NO FLOODPLAIN LOCATED ON THIS PROPERTY PER FEMA FLOOD INSURANCE RATE MAP (FIRM) PANEL 158 OF 475 MAP NUMBER 10003C0158K, EFFECTIVE DATE FEBRUARY 4, 2015
3. PER THE REVISED WRPA MAPS, WHICH WENT INTO EFFECT MARCH 2017, THIS PROPERTY IS LOCATED ENTIRELY WITHIN A WELLHEAD CLASS C WRPA, PARTIALLY WITHIN A WELLHEAD NON-RANSIENT COMMUNITY WELLS WRPA, AND PARTIALLY WITHIN A RECHARGE WATER RESOURCE PROTECTION AREA, AS SHOWN ON THE PLAN.
4. THERE ARE NO WETLANDS BOUNDARY DEPICTED ON THIS PLAN FOR THE PROJECT PARCEL OF 10-015,00-003, WETLANDS REPORT PREPARED BY WBCM IN A REPORT DATED JULY, 2021,
5. THE STATE INVENTORY OF NATURAL AREAS HAS BEEN EXAMINED. THERE ARE NO CNA'S ON THIS SITE PER THE CRITICAL NATURAL AREAS MAP OF THE NEW CASTLE COUNTY COMPREHENSIVE DEVELOPMENT PLAN, DATED 2012.
6. THIS MINOR LAND DEVELOPMENT PLAN DOES NOT AFFECT THE WATER MANAGEMENT AGREEMENT OF JUNE 4, 2002 (INSTRUMENT NUMBER 20020607-0054903) AS REFERENCED ON THE MINOR LAND DEVELOPMENT PLAN OF AVECIA INC.. (INSTRUMENT NUMBER 20020617-0057711). PER INSTRUMENT NUMBER INSTRUMENT NO. 20131212-0077191: THE AREA WHICH BECAME A PART OF PARCEL 10-015.00-020 REMAINS AS OPEN SPACE AND CONTINUES TO BE UTILIZED FOR GROUNDWATER RECHARGE; THIS COVENANT SHALL NOT PROHIBIT THE OWNER OF TAX PARCEL 10-015.00-020 FROM UNDERTAKING THE ATLAS POINT ENVIRONMENTAL REMEDIATION, PROVIDED HOWEVER, THAT ANY SUCH REMEDIATION SHALL NOT IMPACT THE PERMEABILITY AND INFILTRATION POTENTIAL OF THE PROPERTY.
FUTURE LAND USE APPLICATIONS FOR TAX PARCEL 10-015.00-020 SHALL NOT BE PERMITTED TO UTILIZE THE 4.7124 ACRE AREA IN ANY SITE CAPACITY CALCULATIONS OF ARTICLE 5 OF THE UNIFIED DEVELOPMENT CODE.
7. WATER SERVICE TO THIS SITE IS PROVIDED BY ARTESIAN WATER COMPANY, AND IS SUBJECT TO THE APPROVAL OF THE DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL AND THE DIVISION OF PUBLIC HEALTH. NO ADDITIONAL WATER SERVICE CONNECTIONS ARE PROPOSED WITH THIS PLAN.
8. SANITARY SEWER IS SUBJECT TO THE APPROVAL OF THE DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL AND THE NEW CASTLE COUNTY DEPARTMENT OF SPECIAL SERVICES. NO ADDITIONAL SANITARY SEWER SERVICE IS PROPOSED WITHI THIS PLAN.
NO NEW SEWER CONNECTION (PROPOSED BUILDING ADDITION USES EXISTING BUILDING DISCHARGE), PROJECT WILL ADD UP TO 12 NEW EMPLOYEES FOR AN ADDITIONAL DOMESTIC DISCHARGE OF 150 GPD, PROJECT WILL ADD UP TO 43,200 GPD OF PROCESS WASTE. TOTAL DISCHARGE WILL REMAIN WITHIN ALLOTTED 200,000 GPD.
9. NO DEBRIS SHALL BE BURIED ON THIS SITE.
10. ALL FIRE LANES, FIRE HYDRANTS, STANDPIPES, AND FIRE DEPARTMENT CONNECTIONS WILL BE MARKED PROTECTED, AND MAINTAINED IN ACCORDANCE WITH THE DELAWARE STATE FIRE PREVENTION REGULATIONS.
11. THIS PLAN IS SUBJECT TO THE IMPACT FEE PROVIDSON OF CHAPTER 40, ARTICLE 14 OF THE NEW CASTLE COUNTY CODE, AS MAY BE AMENDED BY NEW CASTLE COUNTY COUNCIL.
AT $208 PER 1,000 SQ. FT. FOR A TOTAL IMPACT FEE OF $1,308.74.
12. DRAINAGE, EROSION AND SEDIMENT CONTROL, AND STORMWATER MANAGEMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS AND THE NEW CASTLE COUNTY DRAINAGE CODE.
13. BUILDINGS PROPOSED BY THIS PLAN ARE AS FOLLOWS:
   - 4,256 SF PROCESS BUILDING EXPANSION
   - 1,020 SF BOILER ROOM BUILDING
   - 603 SF BLDG PERMIT #202104809
   - 819 SF BLDG PERMIT #202104805
14. PARKING REQUIREMENTS:
PER NOTE 12, INSTRUMENT 20060816-007864 FOR PARCEL 10-015.00-003:
PARKING RATIONALE (PER MF 20020617-0057711):
REQUIREMENTS:
5 SPACES + 0.5 SPACES PER 1,000 SF OF GROSS FLOOR AREA
SPACES REQUIRED:
5 + (94,988 / 1,000) X 0.5 = 53 SPACES
TOTAL SPACES PROVIDED: 98
HANDICAPPED SPACES PROVIDED: 6
BIKE RACK SPACES PROVIDED: 7
15. PER NOTE 12, INSTRUMENT 20060816-007864 FOR PARCEL 10-015,00-003:
PARCEL B AND PARCEL B-1 WERE CREATED PURSUANT TO THE RECORD TITLE SUBDIVISION PLAN PREPARED FOR FUJIFILM IMAGING COLORANTS, INC. AND RECORDED AT INSTRUMENT NUMBER 20060816-007864, WHICH ALLOWS PORTION OF A MAJOR RECORD PLAN TO BE SUBDIVIDED INTO INDIVIDUAL LOTS WITHOUT CONFORMANCE WITH PROVISION OF THE UNIFIED DEVELOPMENT CODE. THUS CERTAIN IMPROVEMENTS TO PARCEL B OR PARCEL B-1 MAY IMPACT PARCEL A. THE OWNER(S) OF PARCELS B AND B-1 SHALL NOT MAKE ANY IMPROVEMENTS TO PARCELS B OR B-1 THAT MATERIALLY AND ADVERSELY BURDEN OR ENCUMBER PARCEL A WITHOUT THE EXPRESS WRITTEN CONSENT OF THE OWNER OF PARCEL A.
16. PER NOTE 16, OF INSTRUMENT NO. 20131212-0077191 FOR PARCEL 10-015.00-003 & 10-015.00-020:
BUILDINGS AND OTHER SITE IMPROVEMENTS SUCH AS PAVING, CONCRETE, FENCES AND UTILITIES IN THE VICINITY OF THE RESUBDIVISION BOUNDARY BY INSTRUMENT #20131212-0077191, AS WELL AS ALL FACILITIES INCLUDING OUT-BUILDINGS, UTILITIES, MONITORING WELLS, NPDES OUTFALL, AND FENCES ON THE PROPERTY WHICH BECAME A PART OF PARCEL 020, WERE FIELD SURVEYED BY RAMESH C. BATTA ASSOCIATES P.A. FOR PURPOSES OF THE RESUBDIVISION. OTHER SITE IMPROVEMENTS AND ALL BUILDING LABELS AND AREAS (S.F.) DEPICTED ON THE FUIFILM PROPERTY ARE TAKEN FROM THE RECORD TITLE SUBDIVISION PLAN FOR FUJIFILM IMAGING COLORANTS INC. INSTRUMENT NO. 20060816-007864, AND ON THE CRODA PROPERTY FROM THE RECORD RESUBDIVISION PLAN FOR UNIQEMA LABORATORY, MICROFILM NO. 14374.
THE LOTLINE CONFIGURATION CRATED BY INSTRUMENT NO. 20131212-0077191 DOES NOT CREATE ANY NONCONFORMING BUILDING OR PAVING SETBACK.
17. A LANDSCAPE PLAN PREPARED BY WBCM LAST DATED _____ OR AMENDED AND APPROVED IN WRITING BY THE DEPARTMENT OF LAND SE, IS HEREBY CONSIDERED A PART OF THE RECORD PLAN.
18. ANY AREA DESIGNATED FOR PROTECTION AS A NATURAL RESOURCE PURSUANT TO ARTICLE 10 OF THE NEW CASTLE COUNTY UNIFIED DEVELOPMENT CODE IS HEREBY PROTECTED BY A CONSERVATION EASEMENT THAT SHALL RUN IN PERPETUITY FOR THE BENEFIT OF NEW CASTLE COUNTY. ANY AREA ON THIS PLAN DELINEATED AS A CONSERVATION EASEMENT SHALL REMAIN IN ITS NATURAL STATE.
19. ALL IMPROVEMENTS REQUIRED BY THIS PLAN AND THE NEW CASTLE COUNTY CODE SHALL BE SUBJECT TO THE LAND DEVELOPMENT IMPROVEMENT AGREEMENT (LDIA), AND THE PERFORMANCE GUARANTEE INCORPORATED THEREIN. THE LDIA IS RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS IN AND FOR NEW CASTLE COUNTY ON _____AT INSTRUMENT NO. _____.
20. THE SITE CONDITIONS SHOWN HEREON ARE BASED ON A FIELD RUN TOPOGRAPHIC SURVEY,COMBINED WITH AN AERIAL SURVEY, PERFORMED BY WBCM IN APRIL 2021. THE PLAN SHOWS THE LIMITS OF BOTH SURVEYS.
21. COORDINATES AND DIRECTIONS SHOWN HEREON ARE REFERRED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM, NAD 83/2011 AS DETERMINED FROM REAL TIME KINEMATIC SURVEYING AS BROADCAST BY THE LEICA SMARTNET NETWORK.
22. ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). AS DETERMINED BY R.T.X. G.P.S. OBSERVATIONS AS BROADCAST BY THE LEICA SMARTNET NETWORK(GEOID18).
23. ADDITIONAL SPOT ELEVATIONS RESIDE IN THE ELECTRONIC VERSION OF THIS DRAWING BUT ARE NOT PLOTTED HEREON.
24. UTILITIES SHOWN ARE FROM A FIELD SURVEY OF VISIBLE UTILITY STRUCTURES BY WBCM AND UNDERGROUND UTILITIY DESIGNATION SURVEY BY AIDATA INC. PERFORMED IN APRIL 2021. CONTRACTOR IS REQUIRED BY LAW TO CALL MISS UTILITY PRIOR TO ANY EXCAVATION OR OTHER LAND DISTURBING ACTIVITY.
25. SITE IS LOCATED 2,200 FEET FROM THE INTERSECTION OF CHERRY LANE AND NEW CASTLE AVE.
26. PLAN CHECKED AGAINST WRPA MAPS ON 05/04/21 AND REFERENCE THE CURRENT MAPS WHICH WENT INTO EFFECT MARCH 2017



PLAN
SCALE: 1" = 80'

LEGEND:
BOLLARD/POST
BUSHES
CLEAN OUT
DRAIN INLET
ELECTRIC BOX
ELECTRIC CONDUIT
ELECTRIC MH
ELECTRIC RISER
FIRE HYDRANT
FIRE CONNECTION
FLAG POLE
FLOOR DRAIN
OBSERVATION WELL
GAS VALVE
HAND BOX
INLET MH
METAL POLE
PARKING METER
POWER POLE
PROPERTY MON.
ROOF DRAIN
SANITARY MH
SIGN (ONE-POST)
SIGN (TWO POST)
STEAM MH
STORM DRAIN MH
STREET LIGHT
TELEPHONE MH
TELEPHONE RISER
TRAVERSE STATION
TREES
UNKNOWN MH
WATER MH
WATER FOUNTAIN
WATER VALVE
WELL
MAJOR CONTOUR
MINOR CONTOUR
WALL
BUILDING
CONC. CURB
CONC. PADWALK
METAL PLATE
SURVEY LIMITS
FENCE LINE
WOODS LINE
O/H ELECTRIC
U/G ELECTRIC
U/G GAS
U/G SANITARY
U/G STEAM

WRPA IMPERVIOUS CALCULATIONS

CLASS C WELLHEAD WRPA IMPERVIOUS CALCULATIONS

	PARCEL AREA (ACRES)	IMPERVIOUS (ACRES)	IMPERVIOUS (PERCENT)(3)
PARCELS 003, 023, 024 (1)			
EXISTING	19.2502 AC.	7.96 AC.(2)	41.3%(2)
PROPOSED	19.2502 AC.	7.92 AC.(2)	41.1%

RECHARGE WRPA IMPERVIOUS CALCULATIONS

	WELLHEAD AREA (ACRES)	IMPERVIOUS (ACRES)	IMPERVIOUS (PERCENT)(3)
PARCELS 003, 023, 024(1)			
EXISTING	7.13 AC.	3.79 AC.(2)	53.1%(2)
PROPOSED	7.13 AC.	3.79 AC.(2)	53.1%

CLASS A WELLHEAD WRPA IMPERVIOUS CALCULATIONS

	WELLHEAD AREA (ACRES)	IMPERVIOUS (ACRES)	IMPERVIOUS (PERCENT)(3)
PARCELS 003, 023, 024(1)			
EXISTING	4.06 AC.	2.47 AC.(2)	60.8%
PROPOSED	4.06 AC.	2.47 AC.(2)	60.8%

1. DATA FOR TAX PARCELS 10-015.00-023 & 024 IS INCLUDED, AS THEY WERE CREATED BY TITLE SUBDIVISION PLAN FOR PARCEL 10-015.00-003.
2. AS TAKEN/CALCULATED FROM NOTE 11 ON INSTRUMENT NO. 20020817-0057711.
3. IMPERVIOUS (PERCENT) FOR TAX PARCEL 10-015.003 RETAINS THE RIGHT TO INCLUDE OPEN SPACE DATA FOR THE 4.7124 ACRES TRANSFERRED TO TAX PARCEL 10-015.00-020 - SEE GENERAL NOTE 6.
4. THERE IS NO INCREASE IN THE IMPERVIOUS COVERAGE AND THE SITE REMAINS IN COMPLIANCE WITH THE WRPA IMPERVIOUS COMPUTATIONS ON INST. #20131212-0077191.

TOTAL TRACT BREAKDOWN:		
TOTAL TRACT AREA:	18.1963	ACRES
BUILDING COVERAGE	1.96	ACRES
STREETS	0	ACRES
LOTS	1	UNITS
OPEN SPACE	6.14	ACRES
STORMWATER MANGAEMENT AREAS	0.864	ACRES
PAVING (NON-BUILDING IMPERV.)	5.56	ACRES

SITE DATA

TAX PARCEL NUMBER: 10-015.00-003
PROPERTY ADDRESS: 233 CHERRY LANE
NEW CASTLE DE 19720
SOURCES OF TITLE: DEED 20060103-0000119
DATUM: NAD 83
SITE AREA: 18.1963 +/- ACRES
CURRENT ZONING: HI (HEAVY INDUSTRIAL)
WATER SUPPLY: ARTESIAN WATER COMPANY
SANITARY SEWER: NEW CASTLE COUNTY
OWNER: AVECIA INKJET INC.
C/O FUJIFILM IMAGING COLORANTS, INC.
233 CHERRY LANE
NEW CASTLE DE 19720
APPLICANT: TOURGEE AND ASSOCIATES, INC.
600 RED BROOK ROAD BOULEVARD
SUITE 300
OWNINGS MILLS, MD 21117

AREA AND BULK REQUIREMENTS

HI (HEAVY INDUSTRIAL)

	REQUIRED
LOT AREA (MIN.)	5 AC
LOT WIDTH (MIN)	300 FT
STREET YARD (MIN.)	300 FT
SIDE YARD (MIN.)	0 FT
REAR YARD (MIN)	0 FT
PAVING STREET YARD (MIN):	40 FT
PAVING OTHER YARD (MIN):	10 FT
BUILDING HEIGHT (MAX.)	90 FT

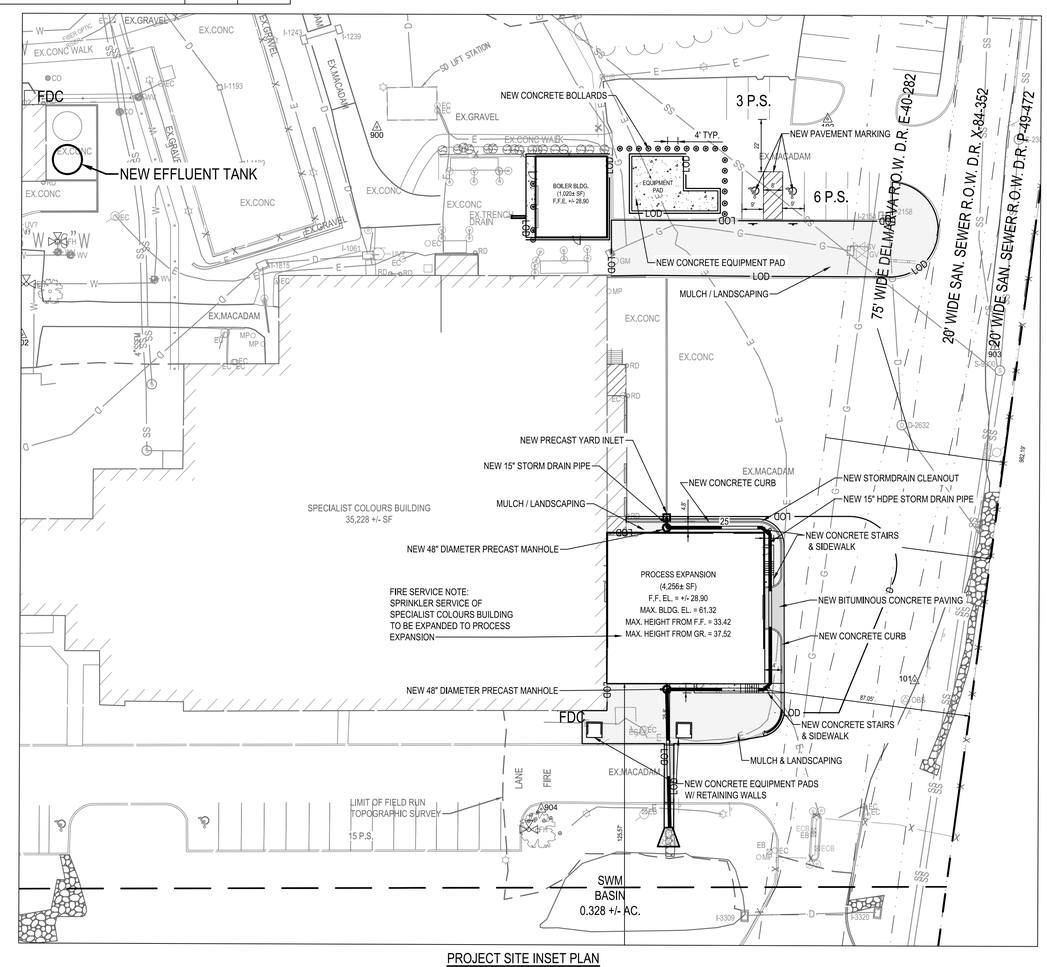
NO NONCONFORMING BUILDING OR PAVING SETBACK IS CREATED BY THIS MINOR SUBDIVISION

Total Building Gross Floor Area				
		GROSS FLOOR AREA (SF)	USE	NOTES
EXISTING				
1	EXISTING	99,673	INDUSTRIAL	INST. # 2013212-0077191
2	DEMOLISHED	(10,977)	INDUSTRIAL	DEMO PERMIT 201313480
	SUBTOTAL:	88,696		
PROPOSED				
3	UNDER CONSTR.	603	INDUSTRIAL	BLDG PERMIT #202104809
4	UNDER CONSTR.	819	INDUSTRIAL	BLDG PERMIT #202104805
5	PROPOSED	5,276	INDUSTRIAL	MINOR LD PLAN
	SUBTOTAL:	6,698		
	TOTAL:	95,394		

LOCATION PLAN
SCALE 1"=800'
NCC ADC (10TH EDITION)
PAGE 13

W.B.C.M. SURVEY TRAVERSE CONTROL LISTING

PT#	NORTHING	EASTING	ELEV.	DESCRIPTION
900	615,937.44	619,898.03	30.90	REBAR & CAP
901	616,090.36	619,747.15	35.68	REBAR & CAP
902	615,927.64	619,725.99	32.59	MAGNAIL
903	615,737.66	620,086.92	24.64	REBAR & CAP
904	615,651.47	619,829.26	24.36	REBAR & CAP
905	615,800.86	619,596.33	28.02	MAGNAIL
906	616,197.52	619,595.88	36.73	MAGNAIL
907	616,193.65	619,600.23	36.71	MAGNAIL



PROJECT SITE INSET PLAN
SCALE: 1" = 30'

CERTIFICATION OF PLAN APPROVAL

APPROVED _____ BY _____
DATE GENERAL MANAGER
FOR DEPARTMENT OF LAND USE OF NEW CASTLE COUNTY.

APPROVED _____ BY _____
DATE GENERAL MANAGER
FOR COUNTY COUNCIL OF NEW CASTLE COUNTY.

CERTIFICATION OF OWNERSHIP

I _____ Melissa J. Toledo
HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY WHICH IS SUBJECT OF THIS PLAN AND THAT THE LAND USE ACTION PROPOSED BY THIS PLAN IS MADE AT MY DIRECTION AND THAT I AUTHORIZE THIS PLAN TO BE RECORDED IN ACCORDANCE WITH THE REGULATIONS OF THE NEW CASTLE COUNTY UNIFIED DELOPEMENT CODE.

CERTIFICATION OF PLAN ACCURACY

I _____ Blaine W. Linkous
HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER WITH A BACKGROUND IN CIVIL ENGINEERING IN THE STATE OF DELAWARE AND THAT ALL OF THE INFORMATION ON THIS PLAN IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY ACCEPTED SURVEYING STANDARDS AND PRACTICES AND BY THE NEW CASTLE COUNTY UNIFIED DEVELOPENT CODE.

CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.

1"=30'-0" 30 0 15 30 60

CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.

1"=80'-0" 80 0 40 80 160

APPLICATION NUMBER: 2021-0366-S

NO.	DATE	REVISION	BY

WHITNEY BAILEY COX & MAGNANI, LLC
300 East Joppa Road, Suite 200
Towson, Maryland 21286
410.512.4500 www.wbcm.com
WBCM

RECORD PLAN

FUJIFILM PROJECT MAXWELL
233 CHERRY LANE, NEW CASTLE, DE 19720
TAX PARCEL NO. 10-015.00-003
NEW CASTLE HUNDRED, NEW CASTLE COUNTY, DELAWARE

DESIGNED:	J.W.
DRAWN:	M.L.H.
CHECKED:	B.W.L.
SCALE:	1"=80'
DATE:	JULY 2021
PROJECT:	2021.0031.00.0
DRAWING:	R01.01

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ATTACHMENT C

LOCAL ZONING AND PLANNING APPROVAL

Matthew S. Meyer
County Executive

Richard E. Hall, AICP
General Manager

DEPARTMENT OF LAND USE

October 19, 2022

In reply, refer to:
2022-0639-V
233 Cherry Lane

Maureen Concordia
FujiFilm Imaging Colorants, Inc.
233 Cherry Lane
New Castle, DE 19720

Dear Applicant:

The New Castle County Department of Land Use is in receipt of your request for a verification of zoning and use for tax parcel number 10-015.00-003, which is located at 233 Cherry Lane in New Castle, Delaware.

A review of the Official Zoning Map of New Castle County indicates the subject parcel is zoned **HI (Heavy Industrial)**, which **permits light industrial use; ink manufacturing,** pursuant to Table 40.03.110 and Section 40.33.270.D of the *New Castle County Code*. **This parcel is located in the Delaware Coastal Zone, and state law contains additional restrictions on uses allowable therein. This certification does not certify that the proposed use is in compliance with the Delaware Coastal Zone Act ("Act"), *7 Del. C. 7001 et seq* or the regulations and administrative codes adopted pursuant to the Act. Furthermore this zoning certification does not supersede any applicable state or federal law.**

No variances or open building or zoning code violations were found for the subject property in a search of the County tax parcel information system.

A Record Minor Land Development Plan for Fujifilm Project Maxwell, Inc. (instrument number 202202040015578) was recorded in the Office of the Recorder of the Deeds for New Castle County on February 4, 2022. The approval and recordation of this plan indicate compliance with the subdivision and zoning code regulations in effect at that time. An electronic (PDF) copy of this plan may be provided at the Department's discretion upon the applicant's written request. Any new construction or changes in use to that shown on the record plans will require compliance with current UDC regulations.

Please be advised that this letter only verifies whether the type of use that exists or is proposed on the site – to the extent you described it in your zoning verification application – is permitted, not permitted, or permitted under limited circumstances in the zoning district. **This letter is not a permit** and does not offer any guarantee that any other required plans, applications, certifications, or variances for your project will be approved.

If your project involves an expansion of the existing use, a change of use, alterations to the building or site, demolition, or new construction, one or more permits may be needed before you can initiate the use. The following is a summary of Department of Land Use permits, certificates, and plans that may be required for your project:

Any new use or change of use in an existing building may require:

1. **Limited Use Permit**. If the existing or proposed use is identified as a "limited use" on the first page of this letter you will need to apply for a Limited Use Permit. This application must be accompanied by a site plan, or other supporting documentation, demonstrating that the special standards for that use are met. Refer to Articles 3 and 31 of the Unified Development code for additional information.

2. **Certificate of Use**. To either institute a new use, or expand an existing use, in an existing building you

must obtain a Certificate of Use. The Department will determine whether the building meets the building code and parking requirements for such use. Refer to Chapter 6 of the New Castle County Code (Building Code) for additional information.

Any new construction, or alteration or expansion of existing buildings and features on the site may require:

1. **Major or Minor Land Development Plan**. If your project will subdivide land or add more than 1,000 square feet of gross floor area, you must submit a major or minor land development plan. The plan will be reviewed for compliance with the land development criteria outlined in the Unified Development Code. During review of the plan, the Department may hold public hearings and may identify other applications, plans, studies, or permits that need to be submitted before development can commence. Refer to Article 31 of the Unified Development Code for general requirements.
2. **Parking Plan.** If your project requires installation, expansion, or reconfiguration of a parking lot, you will need to submit a parking plan. Refer to Articles 3 and 31 of the Unified Development Code for general requirements.
3. **Building Permit / Demolition Permit / Sign Permit**. If your project will involve altering or enlarging a building (including mechanical systems), demolishing all or part of a building, or installing new signs, you must obtain permits for those activities. During the review of these applications, the Department may identify other applications, plans, studies, or permits that need to be submitted before development can commence. Before the new or improved building can be inhabited, a **Certificate of Occupancy** must be secured from the Department. Refer to Chapter 6, Article 3 of the New Castle County Code (Building Code) for additional information.

This summary of Department of Land Use permit applications is intended only for general informational purposes and is not intended to be inclusive of the comprehensive requirements contained in the New Castle County Code. Please be advised that some of the review processes described above may also require recommendations or decisions from County boards (Planning Board, Historic Review Board, Board of Adjustment, and Resource Protection Area Technical Advisory Committee) or outside agencies. New Castle County must abide by regulations imposed on it by a variety of State and Federal agencies. Accordingly, any of the County permits described above may be subject to additional review processes that address environmental concerns; resource protection; public health, safety, and welfare; and a variety of other issues. In some cases, landowners may need to address the requirements of those agencies independently.

Landowners contemplating a change of use, future development, or alterations to buildings and land are encouraged to engage the services of an engineer, land surveyor, and/or attorney for advice on any physical constraints that may limit development of the property, and guidance on what permits may be needed to commence a new use or development.

General questions regarding the plan review process; building, demolition, and sign permits; and Certificates of Use/Occupancy, can be answered by the Department at 395-5400. Copies of documents such as certificates of occupancy or code violations may be obtained, where applicable and available, by submitting an Information Request Form (FOIA). The form is available online at www.newcastlecounty.gov. Thank you for your attention to this matter.

Sincerely,

Klesa Achaibar
Planner I

D. **Light industry.** This category is designed to accommodate limited intensity levels of manufacturing and assembly activities, storage, warehousing, services, associated offices and similar uses. This includes the following uses:

Construction of buildings (NAICS 236)

Heavy and civil engineering construction (NAICS 237)

Special trade contractors (NAICS 238)

Food manufacturing (NAICS 311, except 3111, 3116, 3117)

Beverage and tobacco product manufacturing (NAICS 312, except 31212, 31213, 31214, 3122)

Textile mills, textile product mills and apparel manufacturing (NAICS 313, 314, 315)

Leather and allied product manufacturing (NAICS 316)

Wood product manufacturing (NAICS 321, except 3211, 321991)

Paper manufacturing (NAICS 322, except 3221)

Printing and related support services (NAICS 323)

Carbon black manufacturing (NAICS 325182)

Pharmaceutical and medicine manufacturing (NAICS 3254)

Soap cleaning compound and toilet preparation manufacturing (NAICS 3256)

Printing ink manufacturing (NAICS 32591)

Plastics and rubber product manufacturing (NAICS 326)

Nonmetallic mineral product manufacturing (NAICS 327, except 32731, 32732, and 3279)

Fabricated metal product manufacturing (NAICS 332, except 332993)

Machinery manufacturing (NAICS 333)

Computer and electronic product manufacturing (NAICS 334)

Electrical equipment, appliance and component manufacturing (NAICS 335)

Motor vehicle parts manufacturing (NAICS 3363)

Motorcycle, bicycle and parts manufacturing (NAICS 336991)

Furniture and related product manufacturing (NAICS 337)

Miscellaneous manufacturing (NAICS 339)

Wholesale trade (NAICS 42)

Nonstore retailers (NAICS 454, except 45431)

Trucking transportation (NAICS 484)

Transit and ground passenger transportation maintenance, service, storage facilities (NAICS 485, 487)

Support activities for transportation (NAICS 488)

Postal service, regional (NAICS 491)

Couriers and messengers, regional (NAICS 492)

Warehousing storage facilities (NAICS 493)

Information industries (NAICS 51)

Miniwarehousing and self-storage units (NAICS 53113)

Rental and leasing services (NAICS 532)

Architectural, engineering, and related services (NAICS 5413)

Scientific research and development services (NAICS 5417)

Services to buildings and dwellings (NAICS 5617)

Medical and diagnostic laboratories (NAICS 6215)

Marina and associated uses (NAICS 71393)

Special food services (NAICS 7223)

Automotive paint, body, interior repair and maintenance (NAICS 811121)

Commercial and industrial machinery and equipment repair (NAICS 8113)

Crematories (NAICS 812220)

Heavy industry, where the business is less than twenty thousand (20,000) square feet

Research and development facility, where the facility generally resembles an industrial or manufacturing facility or where such facility manufactures a finished product

(Amended September 22, 1998 by Ordinance 98-080; amended December 14, 1999 by Ordinance 99-075; amended March 12, 2002 by Ordinance 01-112; amended October 22, 2002 by Ordinance 02-075; amended September 26, 2006 by Ordinance 06-060)

ATTACHMENT D

ELECTRIC FORKLIFT SOLAR POWER SUPPLY EVALUATION

ATTACHMENT D - SOLAR POWER SUPPLY EVALUATION ON ELECTRIC FORK LIFT OPERATION

Fork Truck - Solar Power Calculations

Marconi	2	replacement electric forktrucks
Maxwell	3	replacement electric forktrucks
	5	total replacement electric forktrucks

Step 1: Determine Fork Truck Rate of Charge Needed.

Engine:	24.7	HP	or	18	kW
Battery Life:	560	minutes			
min	9.333	hours			
	840	minutes			
max	14	hours			
Assume:	2	chargers			
	4	hrs/day using Fork Truck on average			

Step 2: Determine rate of power output per Fork Truck.

18	kW	X	4	hrs/day	=	72	kWh/day Power Output per Fork Truck
9.333	hours battery life			=	charge battery every	2	days
4	hours operation/day						
72	kWh/day	X	5	=		360	kWh/day power output for all 5 Fork Trucks
72	kWh/day	X	4	=		288	kWh/day power output for 4 Fork Trucks

Step 3: Determine solar panel power output rate per day.

Solar Panel Power Output

66	panels					
25	kW system					
25	kW	X	12	hrs/day sunlight	=	300 kWh/day

Step 4: Assuming 2 chargers for batteries, determine if sufficient charge in solar panels to charge Fork Trucks.

300	kWh/day charge from solar panels
288	kWh/day power output for 4 Fork Trucks

Two Fork Trucks can be charged while three Fork Trucks are used each day.
Therefore, the solar panels provide sufficient power to charge the Fork Trucks.

ATTACHMENT E

PROCESS DIAGRAM

PROCESS INFORMATION IS CONFIDENTIAL AND REDACTED

ATTACHMENT F

SAFETY DATA SHEETS

SAFETY DATA SHEET

ACID POLYMER 10 IN DPG

Compilation date: 26/03/2007

Revision No: 1

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: ACID POLYMER 10 IN DPG

Product code: F0959

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of substance / mixture: Raw material, for industrial use only.

1.3. Details of the supplier of the safety data sheet

Company name: Witton Chemical Co Ltd
Southgate Avenue
Mildenhall
Suffolk
IP28 7AT
United Kingdom

Tel: 01638 716 001

Fax: 01638 717 658

Email: enquiries@witton.com

1.4. Emergency telephone number

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CHIP: Xi: R36/38

Most important adverse effects: Irritating to eyes and skin.

2.2. Label elements

Label elements under CHIP:

Hazard symbols: Irritant.

Risk phrases: R36/38: Irritating to eyes and skin.

Safety phrases: S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S60: This material and its container must be disposed of as hazardous waste.

2.3. Other hazards

PBT: This substance is not identified as a PBT substance.

[cont...]

Section 3: Composition/information on ingredients

3.2. Mixtures

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Wash out mouth with water. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Eye bathing equipment should be available on the premises.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent the escape of liquid.

[cont...]

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in cool, well ventilated area. Keep container tightly closed.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits: Not applicable.

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Self-contained breathing apparatus must be available in case of emergency.

Hand protection: Protective gloves.

Eye protection: Safety glasses. Ensure eye bath is to hand.

Skin protection: Protective clothing.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquid

Colour: Colourless

Odour: Barely perceptible odour

Evaporation rate: Negligible

Solubility in water: Miscible

Viscosity: Highly viscous

Boiling point/range°C: >100 **pH:** 8-9

[cont...]

9.2. Other information

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Relevant effects for mixture:

Effect	Route	Basis
Irritation	OPT DRM	Hazardous: calculated

Symptoms / routes of exposure

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity values: Not applicable.

12.2. Persistence and degradability

Persistence and degradability: Biodegradable.

[cont...]

12.3. Bioaccumulative potential

Bioaccumulative potential: No bioaccumulation potential.

12.4. Mobility in soil

Mobility: Readily absorbed into soil.

12.5. Results of PBT and vPvB assessment

PBT identification: This substance is not identified as a PBT substance.

12.6. Other adverse effects

Other adverse effects: Negligible ecotoxicity.

Section 13: Disposal considerations

13.1. Waste treatment methods

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

Transport class: This product is not classified for transport.

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and 3: R36/38: Irritating to eyes and skin.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

Hazard Data Sheet

HDS number **HS 7019**

(Not for unauthorised release outside of the company!)

COSHH Class **M**

Acid Polymer 45 (neutralised)

Version 6 **Date of issue:** 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	Acid Polymer 45 (neutralised)
Product Code	813298
Alternative names	AP 45 (neutralised)
SAP Name	MOC ACID POLYMER 45 DPG (MEOH DIST)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Intermediate
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

Signal Word
None

2.3. Other hazards

No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	61-70
co-polymer AP45 potassium salt	-	-	-	-	-	26-34
water	7732-18-5	231-791-2	Exempt	-	-	1-9
Methanol	67-56-1	200-659-6	01-2119433307-44-XXXX	603-001-00-X	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Flam. Liq. 2 (H225) STOT SE 1 (H370) Acute Tox. 3 (H331)	<0.99

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
Dipropylene glycol	25265-71-8	-
co-polymer AP45 potassium salt	-	-
water	7732-18-5	-
Methanol	67-56-1	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Dry chemical, CO_2, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
oxidising agents.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
co-polymer AP45 potassium salt -	-	-	-	-	-
water 7732-18-5	-	-	-	-	-
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm STEL: 333 mg/m³ TWA: 200 ppm TWA: 266 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ STEL: 1000 ppm STEL: 1300 mg/m³	S* TWA: 200 ppm TWA: 266 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Ceiling / Peak: 200 ppm Ceiling / Peak: 260 mg/m³ Skin TWA: 200 ppm TWA: 270 mg/m³

Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Dipropylene glycol 25265-71-8	-	-	-	-	-
co-polymer AP45 potassium salt -	-	-	-	-	-
water 7732-18-5	-	-	-	-	-
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm TWA: 200 ppm TWA: 260 mg/m³	Skin TWA: 133 mg/m³	TWA: 200 ppm TWA: 270 mg/m³ STEL: 250 ppm STEL: 330 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ Skin

Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
co-polymer AP45 potassium salt -	-	-	-	-	-
water 7732-18-5	-	-	-	-	-
Methanol 67-56-1	Skin STEL 800 ppm STEL 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	Skin STEL: 800 ppm STEL: 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	STEL: 300 mg/m³ TWA: 100 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Skin STEL: 125 ppm STEL: 162.5 mg/m³	TWA: 200 ppm TWA: 260 mg/m³ STEL: 600 ppm STEL: 780 mg/m³ Skin

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
co-polymer AP45 potassium salt -	-	-	-	-	-	-	-	-
water 7732-18-5	-	-	-	-	-	-	-	-
Methanol 67-56-1	-	260 mg/m³	40 mg/kg bw/day	260 mg/m³	-	260 mg/m³	40 mg/kg bw/day	260 mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
co-polymer AP45 potassium salt -	-	-	-	-	-	-	-	-
water 7732-18-5	-	-	-	-	-	-	-	-
Methanol 67-56-1	154 mg/l	-	15.4 mg/l	-	570.4 mg/kg dw	-	23.5 mg/kg wwt	100 mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C	Liquid		
Appearance	clear	**Odour**	No information available
Colour	light yellow	**Odour Threshold**	No information available

Property	Values	Note
pH	8 - 10	neat
Melting/freezing point		No information available
Boiling point / boiling range		No information available
Flash Point	> 65 °C	PMCC
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible with water	Highly soluble once polymer
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

oxidising agents.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. (based on components).
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	There is no data available for this product.
Skin contact	There is no data available for this product.
Sensitisation	Unlikely to cause skin sensitisation. (based on components).
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	>2,000.00 mg/kg
ATEmix (dermal)	>2,000.00 mg/kg
ATEmix (inhalation-vapour)	>200.00 mg/l

Unknown acute toxicity

<61 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<61 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<61 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
co-polymer AP45 potassium salt	-	-	-
water	>90 mL/kg (Rat)	-	-
Methanol	-	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
co-polymer AP45 potassium salt	-	-	-

water	-	-	-
Methanol	-	Pimephales promelas: 28200 mg/L at 96 h Pimephales promelas: 100 mg/L at 96 h	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow
Dipropylene glycol	-0.462
co-polymer AP45 potassium salt	-
water	-
Methanol	-0.77

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
Dipropylene glycol	-
co-polymer AP45 potassium salt	-
water	-
Methanol	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Dipropylene glycol	-	-	-
co-polymer AP45 potassium salt	-	-	-
water	-	-	-
Methanol	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Dipropylene glycol	-	-
co-polymer AP45 potassium salt	-	-
water	-	-
Methanol	x	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A chemical safety assessment is available for some or all of the components of this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H225 - Highly flammable liquid and vapour
H370 - Causes damage to organs if inhaled
H331 - Toxic if inhaled

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date	23-Jul-2020
Reason for revision	(M)SDS sections updated, 1.
Restrictions on use	This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

Hazard Data Sheet

(Not for unauthorised release outside of the company!)

HDS number **HS 7030**

COSHH Class **M**

Acid Polymer 45 (alkaline)

Version 5 **Date of issue:** 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name Acid Polymer 45 (alkaline)

Product Code Not available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Intermediate

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE

Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin Corrosion/Irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Signal Word
Warning

Hazard Statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves and eye/face protection
P337 + P313 - If eye irritation persists: Get medical advice/attention

2.3. Other hazards
No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
water	7732-18-5	231-791-2	Exempt	-	-	62-73
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	20-24
co-polymer AP45 potassium salt	-	-	-	-	-	7-12
Potassium hydroxide	1310-58-3	215-181-3	01-2119487136-33-XXXX	019-002-00-8	Acute Tox. 4 (H302) Skin Corr. 1A (H314) Met. Corr. 1 (H290)	0.5-1
Methanol	67-56-1	200-659-6	01-2119433307-44-XXXX	603-001-00-X	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Flam. Liq. 2 (H225) STOT SE 1 (H370) Acute Tox. 3 (H331)	<0.5

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
water	7732-18-5	-
Dipropylene glycol	25265-71-8	-
co-polymer AP45 potassium salt	-	-
Potassium hydroxide	1310-58-3	-
Methanol	67-56-1	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation	Move to fresh air. If symptoms persist, call a doctor.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Ingestion	Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms	Causes skin irritation. Causes serious eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Dry chemical, CO_2, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Avoid breathing vapours or mists.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
oxidising agents.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
water 7732-18-5	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
co-polymer AP45 potassium salt -	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	STEL: 2 mg/m³	STEL: 2 mg/m³	STEL: 2 mg/m³	-
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm STEL: 333 mg/m³ TWA: 200 ppm TWA: 266 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ STEL: 1000 ppm STEL: 1300 mg/m³	S* TWA: 200 ppm TWA: 266 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Ceiling / Peak: 200 ppm Ceiling / Peak: 260 mg/m³ Skin TWA: 200 ppm TWA: 270 mg/m³
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
water 7732-18-5	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-
co-polymer AP45 potassium salt -	-	-	-	-	-
Potassium hydroxide	-	Ceiling: 2 mg/m³	-	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³

1310-58-3					
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm TWA: 200 ppm TWA: 260 mg/m³	Skin TWA: 133 mg/m³	TWA: 200 ppm TWA: 270 mg/m³ STEL: 250 ppm STEL: 330 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ Skin
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
water 7732-18-5	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
co-polymer AP45 potassium salt -	-	-	-	-	-
Potassium hydroxide 1310-58-3	TWA: 2 mg/m³	TWA: 2 mg/m³	STEL: 1 mg/m³ TWA: 0.5 mg/m³	Ceiling: 2 mg/m³	STEL: 2 mg/m³
Methanol 67-56-1	Skin STEL 800 ppm STEL 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	Skin STEL: 800 ppm STEL: 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	STEL: 300 mg/m³ TWA: 100 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Skin STEL: 125 ppm STEL: 162.5 mg/m³	TWA: 200 ppm TWA: 260 mg/m³ STEL: 600 ppm STEL: 780 mg/m³ Skin

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
water 7732-18-5	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
co-polymer AP45 potassium salt -	-	-	-	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	1 mg/m³	-	-	-	-	-	-
Methanol 67-56-1	-	260 mg/m³	40 mg/kg bw/day	260 mg/m³	-	260 mg/m³	40 mg/kg bw/day	260 mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
water 7732-18-5	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
co-polymer AP45 potassium salt -	-	-	-	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	-	-	-	-	-	-	-
Methanol 67-56-1	154 mg/l	-	15.4 mg/l	-	570.4 mg/kg dw	-	23.5 mg/kg wwt	100 mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C	Liquid		
Appearance	Transparent	**Odour**	No information available
Colour	Colourless	**Odour Threshold**	No information available

Property	Values	Note
pH	~ 13.5	neat
Melting/freezing point		No information available
Boiling point / boiling range		No information available
Flash Point	> 65 °C	By analogy
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible with water	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

oxidising agents.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. (based on components).
Inhalation	Vapors may irritate throat and respiratory system.
Eye contact	Causes serious eye irritation.
Skin contact	Irritating to skin.
Sensitisation	Unlikely to cause skin sensitisation. (based on components).
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	>2500.00 mg/kg
ATEmix (dermal)	>2500.00 mg/kg

Unknown acute toxicity

<12.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

<80 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<80 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
water	>90 mL/kg (Rat)	-	-
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
co-polymer AP45 potassium salt	-	-	-
Potassium hydroxide	= 333 mg/kg (Rat)	-	-
Methanol	-	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
water	-	-	-
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
co-polymer AP45 potassium salt	-	-	-
Potassium hydroxide	-	-	-
Methanol	-	Pimephales promelas: 28200 mg/L at 96 h Pimephales promelas: 100 mg/L at 96 h	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow
water	-
Dipropylene glycol	-0.462
co-polymer AP45 potassium salt	-
Potassium hydroxide	0.83
Methanol	-0.77

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
water	-
Dipropylene glycol	-
co-polymer AP45 potassium salt	-
Potassium hydroxide	-
Methanol	-

12.6. Other adverse effects

Discharge to water will affect pH and harm aquatic organisms Neutralisation is normally necessary before waste water is discharged into water treatment plants

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
water	-	-	-
Dipropylene glycol	-	-	-
co-polymer AP45 potassium salt	-	-	-
Potassium hydroxide	-	-	-
Methanol	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Disposal should be in accordance with applicable regional, national and local laws and regulations. Do not empty into drains. Neutralisation is normally necessary before waste water is discharged into water treatment plants.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
water	-	-
Dipropylene glycol	-	-
co-polymer AP45 potassium salt	-	-
Potassium hydroxide	-	-
Methanol	x	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H225 - Highly flammable liquid and vapour
H370 - Causes damage to organs if inhaled
H331 - Toxic if inhaled

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Polymer Acid 46 neutralised

Version 7 Date of issue: 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name Polymer Acid 46 neutralised
Product Code 813195
813290
813507

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Raw material

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE
Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements
Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

Signal Word
None

2.3. Other hazards

No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	48-65
Methanol	67-56-1	200-659-6	01-2119433307-44-XXXX	603-001-00-X	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Flam. Liq. 2 (H225) STOT SE 1 (H370) Acute Tox. 3 (H331)	<0.99

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
Dipropylene glycol	25265-71-8	-
Methanol	67-56-1	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Dry chemical, CO_2, water spray or regular foam.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
oxidising agents.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm STEL: 333 mg/m³ TWA: 200 ppm TWA: 266 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ STEL: 1000 ppm STEL: 1300 mg/m³	S* TWA: 200 ppm TWA: 266 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Ceiling / Peak: 200 ppm Ceiling / Peak: 260 mg/m³ Skin TWA: 200 ppm TWA: 270 mg/m³
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Dipropylene glycol 25265-71-8	-	-	-	-	-
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm TWA: 200 ppm TWA: 260 mg/m³	Skin TWA: 133 mg/m³	TWA: 200 ppm TWA: 270 mg/m³ STEL: 250 ppm STEL: 330 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ Skin
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
Methanol 67-56-1	Skin STEL 800 ppm STEL 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	Skin STEL: 800 ppm STEL: 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	STEL: 300 mg/m³ TWA: 100 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Skin STEL: 125 ppm STEL: 162.5 mg/m³	TWA: 200 ppm TWA: 260 mg/m³ STEL: 600 ppm STEL: 780 mg/m³ Skin

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
Methanol	-	260 mg/m³	40 mg/kg	260 mg/m³	-	260 mg/m³	40 mg/kg	260 mg/m³

67-56-1			bw/day				bw/day	

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
Methanol 67-56-1	154 mg/l	-	15.4 mg/l	-	570.4 mg/kg dw	-	23.5 mg/kg wwt	100 mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C Viscous liquid
Appearance opaque
Colour yellow
Odour No information available
Odour Threshold No information available

Property	Values	Note
pH	~ 8	neat
Melting/freezing point		No information available
Boiling point / boiling range		No information available
Flash Point	> 100 °C	PMCC
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility		No information available
Solubility in other solvents	soluble in Dipropylene glycol	
Partition coefficient:		No information available

n-octanol/water		
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity	47000 cps at 25 °C	
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

oxidising agents.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. (based on components).
Inhalation	There is no data available for this product.
Eye contact	Unlikely to cause eye irritation. (based on components).

Skin contact Unlikely to cause skin irritation. (based on components).
Sensitisation There is no data available for this product.
Mutagenic Effects There is no data available for this product.
Aspiration hazard There is no data available for this product.

Chronic toxicity

Reproductive Toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Carcinogenic effects No information available.

Acute toxicity estimate

No information available

Unknown acute toxicity

<35 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<35 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<35 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
Methanol	-	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
Methanol	-	Pimephales promelas: 28200 mg/L at 96 h Pimephales promelas: 100 mg/L at 96 h	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow
Dipropylene glycol	-0.462
Methanol	-0.77

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
Dipropylene glycol	-
Methanol	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Dipropylene glycol	-	-	-
Methanol	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Dipropylene glycol - 25265-71-8	-	-
Methanol - 67-56-1	x	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H225 - Highly flammable liquid and vapour
H370 - Causes damage to organs if inhaled
H331 - Toxic if inhaled

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	Acid Polymer Version 213 (neutralised)
Product Code	813391
SAP Name	ACID POLYMER 213 25 KEG
Synonyms	AP213

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Raw material
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Signal Word
None

2.3. Other hazards

No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	53 – 58
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-	-	exempt - (polymer)	-	-	35 – 38
water	7732-18-5	231-791-2	Exempt	-	-	7 - 9
Methanol	67-56-1	200-659-6	01-2119433307-44-XXXX	603-001-00-X	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Flam. Liq. 2 (H225) STOT SE 1 (H370) Acute Tox. 3 (H331)	< 0.99
Methacrylic acid and Benzyl methacrylate	-	-	-	-	-	< 0.4

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
Dipropylene glycol	25265-71-8	-
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-	-
water	7732-18-5	-
Methanol	67-56-1	-
Methacrylic acid and Benzyl methacrylate	-	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Not classified as flammable. Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt) -	-	-	-	-	-
water 7732-18-5	-	-	-	-	-
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm STEL: 333 mg/m³ TWA: 200 ppm TWA: 266 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ STEL: 1000 ppm STEL: 1300 mg/m³	S* TWA: 200 ppm TWA: 266 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Ceiling / Peak: 200 ppm Ceiling / Peak: 260 mg/m³ Skin TWA: 200 ppm TWA: 270 mg/m³
Methacrylic acid and Benzyl methacrylate -	-	-	-	-	-

Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Dipropylene glycol 25265-71-8	-	-	-	-	-
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt) -	-	-	-	-	-
water 7732-18-5	-	-	-	-	-
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Skin	STEL: 250 ppm TWA: 200 ppm TWA: 260 mg/m³	Skin TWA: 133 mg/m³	TWA: 200 ppm TWA: 270 mg/m³ STEL: 250 ppm STEL: 330 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ Skin
Methacrylic acid and Benzyl methacrylate -	-	-	-	-	-

Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
Copolymer of benzyl methacrylate and	-	-	-	-	-

methacrylic acid (0.8 equiv neutralised as potassium salt) -					
water 7732-18-5	-	-	-	-	-
Methanol 67-56-1	Skin STEL 800 ppm STEL 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	Skin STEL: 800 ppm STEL: 1040 mg/m³ TWA: 200 ppm TWA: 260 mg/m³	STEL: 300 mg/m³ TWA: 100 mg/m³	TWA: 100 ppm TWA: 130 mg/m³ Skin STEL: 125 ppm STEL: 162.5 mg/m³	TWA: 200 ppm TWA: 260 mg/m³ STEL: 600 ppm STEL: 780 mg/m³ Skin
Methacrylic acid and Benzyl methacrylate -	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt) -	-	-	-	-	-	-	-	-
water 7732-18-5	-	-	-	-	-	-	-	-
Methanol 67-56-1	-	260 mg/m³	40 mg/kg bw/day	260 mg/m³	-	260 mg/m³	40 mg/kg bw/day	260 mg/m³
Methacrylic acid and Benzyl methacrylate -	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt) -	-	-	-	-	-	-	-	-
water 7732-18-5	-	-	-	-	-	-	-	-
Methanol 67-56-1	154 mg/l	-	15.4 mg/l	-	570.4 mg/kg dw	-	23.5 mg/kg wwt	100 mg/l
Methacrylic acid and Benzyl methacrylate -	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures	Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection	Wear eye/face protection.
Hand Protection	Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
Skin and body protection	Wear suitable protective clothing and gloves.
Respiratory protection	Ensure adequate ventilation.
General Hygiene Considerations	When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C	Viscous liquid		
Appearance	-	**Odour**	Slight
Colour	light yellow	**Odour Threshold**	No information available

Property	Values	Note
pH	9	
Melting/freezing point		No information available
Boiling point / boiling range		No information available
Flash Point	> 135 °C	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	soluble	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed.
Inhalation	Unlikely to be hazardous by inhalation.
Eye contact	Unlikely to cause eye irritation.
Skin contact	Unlikely to cause skin irritation.
Sensitisation	Unlikely to cause skin sensitisation.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	>2,500.00 mg/kg
ATEmix (dermal)	>2,500.00 mg/kg

Unknown acute toxicity

<40 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<40 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-	-	-
water	>90 mL/kg (Rat)	-	-
Methanol	-	-	-
Methacrylic acid and Benzyl methacrylate	-	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-	-	-
water	-	-	-
Methanol	-	Pimephales promelas: 28200 mg/L at 96 h Pimephales promelas: 100 mg/L at 96 h	-
Methacrylic acid and Benzyl methacrylate	-	-	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow
Dipropylene glycol	-0.462
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-
water	-
Methanol	-0.77
Methacrylic acid and Benzyl methacrylate	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
Dipropylene glycol	-
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-
water	-
Methanol	-
Methacrylic acid and Benzyl methacrylate	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Dipropylene glycol	-	-	-
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-	-	-
water	-	-	-
Methanol	-	-	-
Methacrylic acid and Benzyl methacrylate	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not re-use empty containers. Decontaminate empty drums before disposal. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Dipropylene glycol	-	-
Copolymer of benzyl methacrylate and methacrylic acid (0.8 equiv neutralised as potassium salt)	-	-
water	-	-
Methanol	x	-
Methacrylic acid and Benzyl methacrylate	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this substance

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H225 - Highly flammable liquid and vapour
H370 - Causes damage to organs if inhaled
H331 - Toxic if inhaled

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

ATTACHMENT E

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	Black J2V
Product Code	50470 200628
SAP Name	PRO-JET BLACK APD 3000 BLACK J2V

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Liquid colorant for use in Inkjet printing applications
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

Signal Word
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
water	7732-18-5	231-791-2	Exempt	-	-	75-90
Carbon Black	1333-86-4	215-609-9	01-2119384822-32-xxxx	-	-	5-15
Methacrylate polymer reacted with polyepoxide	1262996-21-3	-	-	-	-	<10
Potassium hydroxide	1310-58-3	215-181-3	01-2119487136-33-XXXX	019-002-00-8	Acute Tox. 4 (H302) Skin Corr. 1A (H314) Met. Corr. 1 (H290)	<1
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<1
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05
tetrasodium ethylene diamine tetraacetate	64-02-8	200-573-9	01-2119486762-27-XXXX	607-428-00-2	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Dam. 1 (H318) STOT RE2 (H373)	<1.0

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
water	7732-18-5	-
Carbon Black	1333-86-4	-
Methacrylate polymer reacted with polyepoxide	1262996-21-3	-
Potassium hydroxide	1310-58-3	-
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-
tetrasodium ethylene diamine tetraacetate	64-02-8	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
water 7732-18-5	-	-	-	-	-
Carbon Black 1333-86-4	-	STEL: 7 mg/m³ TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	Skin
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	STEL: 2 mg/m³	STEL: 2 mg/m³	STEL: 2 mg/m³	-
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
water 7732-18-5	-	-	-	-	-
Carbon Black 1333-86-4	-	TWA: 3 mg/m³	-	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3.5 mg/m³
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide	-	Ceiling: 2 mg/m³	-	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³

1310-58-3					
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-on e 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
water 7732-18-5	-	-	-	-	-
Carbon Black 1333-86-4	-	-	TWA: 4 mg/m³	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3 mg/m³ STEL: 15 mg/m³
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide 1310-58-3	TWA: 2 mg/m³	TWA: 2 mg/m³	STEL: 1 mg/m³ TWA: 0.5 mg/m³	Ceiling: 2 mg/m³	STEL: 2 mg/m³
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-on e 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
water 7732-18-5	-	-	-	-	-	-	-	-
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	1 mg/m³	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-	1.0 mg/m³	-	1.5 mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
water 7732-18-5	-	-	-	-	-	-	-	-
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Methacrylate polymer reacted	-	-	-	-	-	-	-	-

with polyepoxide 1262996-21-3								
Potassium hydroxide 1310-58-3	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	2.86 mg/l	-	0.286 mg/l	-	-	-	0.937 mg/l	55.94 mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C Liquid
Appearance Black Liquid
Colour black
Odour No information available
Odour Threshold No information available

Property	Values	Note
pH		No information available
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible	
Solubility in other solvents		No information available
Partition coefficient:		No information available

n-octanol/water		
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Carcinogenic effects No information available.

Acute toxicity estimate

ATEmix (oral) >2000 mg/kg
ATEmix (dermal) >2000 mg/kg

Unknown acute toxicity

<6 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<6 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<16 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
water	>90 mL/kg (Rat)	-	-
Carbon Black	> 8000 mg/kg (Rat)	> 3 g/kg (Rabbit)	-
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	= 333 mg/kg (Rat)	-	-
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-
tetrasodium ethylene diamine tetraacetate	= 1658 mg/kg (Rat)	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity By analogy to a related material this product is expected to be of low toxicity to aquatic life.

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
water	-	-	-
Carbon Black	EC50 (Scenedesmus subspicatus) >10000 mg/l 72h (OECD 201)	LC50 (Brachydanio rerio) >1000 mg/l 96h (OECD 203)	EC50 (Daphnia magna) >5600 mg/l 24h (OECD 202)
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	-	-	-
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l
tetrasodium ethylene diamine tetraacetate	-	>100 mg/L at 96 h	>500 mg/L at 24h

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow
water	-
Carbon Black	-

Methacrylate polymer reacted with polyepoxide	-
Potassium hydroxide	0.83
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3
tetrasodium ethylene diamine tetraacetate	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
water	-
Carbon Black	-
Methacrylate polymer reacted with polyepoxide	-
Potassium hydroxide	-
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-
tetrasodium ethylene diamine tetraacetate	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
water	-	-	-
Carbon Black	-	-	-
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	-	-	-
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-
tetrasodium ethylene diamine tetraacetate	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
water	-	-
Carbon Black	-	-
Methacrylate polymer reacted with polyepoxide	-	-
Potassium hydroxide	-	-
Dipropylene glycol	-	-
1,2-benzisothiazol-3(2H)-one	-	-
tetrasodium ethylene diamine tetraacetate	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H400 - Very toxic to aquatic life
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use

This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

PRO-JET is a trade mark of Fujifilm Imaging Colorants Limited and is registered in certain countries in the world.

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	Boric acid solution < 5 %
Product Code	200616 200634
SAP Name	BORIC ACID SOLUTION 4% INHOUSE-IBC BORIC ACID SOLUTION 3% INHOUSE-IBC

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Raw material
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

Signal Word
None

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
water	7732-18-5	231-791-2	Exempt	-	-	>95
Boric acid	10043-35-3	233-139-2	01-2119486683-25-xxxx	005-007-00-2	Repr. 1B (H360FD)	<5

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
water	7732-18-5	-
Boric acid	10043-35-3	This product contains a substance included on the candidate list according to article 59 (1, 10) of regulation EC No. 1907/2006 ('REACH') in a concentration >= 0.1% w/w.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
water 7732-18-5	-	-	-	-	-
Boric acid 10043-35-3	-	-	-	STEL: 6 mg/m³ TWA: 2 mg/m³	TWA: 10 mg/m³ Ceiling / Peak: 10 mg/m³ TWA: 0.5 mg/m³
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
water 7732-18-5	-	-	-	-	-
Boric acid 10043-35-3	-	STEL: 6 mg/m³ TWA: 2 mg/m³	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
water 7732-18-5	-	-	-	-	-
Boric acid 10043-35-3	-	STEL: 1.8 mg/m³ TWA: 1.8 mg/m³	-	-	TWA: 2 mg/m³ STEL: 6 mg/m³

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
water 7732-18-5	-	-	-	-	-	-	-	-
Boric acid 10043-35-3	-	-	-	-	-	-	392 mg/kg bw/d	8.3 mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
water 7732-18-5	-	-	-	-	-	-	-	-
Boric acid 10043-35-3	1.35mg/l	9.1mg/l	1.35mg/l	9.1mg/l	1.8mg/kg	1.8mg/kg	5.4mg/kg	1.75mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C	Liquid		
Appearance	aqueous solution	**Odour**	No information available
Colour	colourless	**Odour Threshold**	No information available

Property	Values	Note
pH		No information available
Melting/freezing point		No information available
Boiling point / boiling range		No information available
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible with water	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed.
Inhalation	Unlikely to be hazardous by inhalation.
Eye contact	Unlikely to cause eye irritation.
Skin contact	Unlikely to cause skin irritation.
Sensitisation	Unlikely to cause skin sensitisation.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	Product is or contains a chemical which is a known or suspected reproductive hazard.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	66,500.00 mg/kg
ATEmix (dermal)	50,050.00 mg/kg

Unknown acute toxicity

Not applicable.

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
water	>90 mL/kg (Rat)	-	-
Boric acid	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
water	-	-	-
Boric acid	229 mg/l (P. subcapitata) 72hr	456 mg/l (P. promelas) 96hr	760 mg/l (D.magna) 48hr

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow
water	-
Boric acid	-0.757

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
water	-
Boric acid	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
water	-	-	-
Boric acid	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
water	-	-
Boric acid	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A chemical safety assessment is available for some or all of the components of this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H360FD - May damage fertility. May damage the unborn child

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is

intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

Hazard Data Sheet

(Not for unauthorised release outside of the company!)

HDS number **HS 6967**

COSHH Class **H1**

Boric acid

Version 6

Date of issue: 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	Boric acid
EC No	233-139-2
REACH registration number	01-2119486683-XXXX
CAS Number	10043-35-3
Product Code	813201
SAP Name	BORIC ACID (GRANULAR GRADE)-25KG BAGS

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Raw material
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Reproductive toxicity	Category 1B - (H360FD)

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

EC Label 233-139-2

Contains Boric acid

Symbol(s)

None

Signal Word

None

Precautionary Statements - EU (§28, 1272/2008)
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

2.3. Other hazards
No information available

Additional information
Restricted to professional users

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Boric acid	10043-35-3	233-139-2	01-2119486683-25-xxxx	005-007-00-2	Repr. 1B (H360FD)	>90

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
Boric acid	10043-35-3	This product contains a substance included on the candidate list according to article 59 (1, 10) of regulation EC No. 1907/2006 ('REACH') in a concentration >= 0.1% w/w.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms May damage fertility or the unborn child. vomiting, dizziness, diarrhoea.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak
Avoid inhalation of dusts

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Clean up promptly by scoop or vacuum. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation. Use personal protective equipment as required. Avoid contact with skin and eyes. Avoid dust formation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep tightly closed in a dry and cool place. Store in original container.

Incompatible Materials
Strong oxidising agents. Acids. Metal salts. Alkali metals. Reducing agents.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Boric acid 10043-35-3	-	-	-	STEL: 6 mg/m³ TWA: 2 mg/m³	TWA: 10 mg/m³ Ceiling / Peak: 10 mg/m³ TWA: 0.5 mg/m³
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Boric acid 10043-35-3	-	STEL: 6 mg/m³ TWA: 2 mg/m³	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Boric acid 10043-35-3	-	STEL: 1.8 mg/m³ TWA: 1.8 mg/m³	-	-	TWA: 2 mg/m³ STEL: 6 mg/m³

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Boric acid 10043-35-3	-	-	-	-	-	-	392 mg/kg bw/d	8.3 mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Boric acid 10043-35-3	1.35mg/l	9.1mg/l	1.35mg/l	9.1mg/l	1.8mg/kg	1.8mg/kg	5.4mg/kg	1.75mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas. Substance specific waste air and water measures are described in suppliers exposure scenario.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection	Wear suitable protective clothing and gloves. Protective shoes or boots.
Respiratory protection	Wear suitable respiratory protective equipment if exposure to high levels of dust is likely. Ensure adequate ventilation.
Recommended Filter type:	Particle filter P2, P3
General Hygiene Considerations	When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C	Solid		
Appearance	granular	**Odour**	Odourless
Colour	white	**Odour Threshold**	No information available

Property	Values	Note
pH	3.7	(47g/L @ 20ºC)
Melting/freezing point	~ 171 °C	Decomposes
Boiling point / boiling range	~ 300 °C	
Flash Point	Does not flash	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure	~2.7hPa	@ 20 °C
Vapour density		No information available
Relative density	1.51 g/cm3	@ 20 °C
Water solubility	47 g/L	@ 20 °C
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water	-0.757	@ 25 °C log Pow
Autoignition temperature		No information available
Decomposition temperature	169ºC	
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	Not explosive	
Oxidising Properties	Not oxidizing	

Other information

Softening point	No information available
Molecular Weight	61.83 g/mol
VOC Content	No information available
Bulk Density	ca. 1100kg/m^3

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact none

Sensitivity to Static Discharge none

10.3. Possibility of hazardous reactions

Reacts with acetic anhydride. May react with alkali metals. Risk of explosion.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidising agents. Acids. Metal salts. Alkali metals. Reducing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. Boric oxide.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed.
Inhalation	Unlikely to be hazardous by inhalation.
Eye contact	May cause slight irritation.
Skin contact	May cause slight irritation.
Sensitisation	Did not cause sensitisation in laboratory animals.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	May damage fertility or the unborn child. Toxic to reproduction.
STOT - single exposure	Not classified.
STOT - repeated exposure	Not classified.
Carcinogenic effects	No information available.

Acute toxicity estimate

Not applicable

Unknown acute toxicity

Not applicable.

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Boric acid	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Boric acid	229 mg/l (P. subcapitata) 72hr	456 mg/l (P. promelas) 96hr	760 mg/l (D.magna) 48hr

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Not likely to bioaccumulate.

Chemical Name	log Pow
Boric acid	-0.757

12.4. Mobility in soil

Mobility in soil
Will likely be mobile in the environment due to its water solubility. Not expected to adsorb on soil.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
Boric acid	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Boric acid	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Boric acid	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H360FD - May damage fertility. May damage the unborn child

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
Ink Jet Yellow 4GC

Material number: 238736

Identification of the substance according to its REACH registration
tetramethyl 2,2'-[1,4-phenylenebis[imino(1-acetyl-2-oxoethane-1,2-diyl)azo]]bisterephthalate

REACH - Registration number according to article 20(3):	01-2119960152-45-0001
Chemical nature:	C.I. Pigment Yellow 155
CAS number :	68516-73-4
EC number :	271-176-6

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Industry sector :	Varnish industry Plastic processing industry. Printing Inks Industry
Type of use :	Colorant/organic pigment

1.3. Details of the supplier of the safety data sheet

Identification of the company
Clariant Plastics & Coatings (Deutschland) GmbH
65926 Frankfurt am Main
Telephone no. : +49 69 305 18000

Information about the substance/mixture
BU Pigments
Product Stewardship
e-mail: SDS.Europe@clariant.com

1.4. Emergency telephone number

00800-5121 5121 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Risk of dust explosion.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	:	C.I. Pigment Yellow 155
EC-No.	:	271-176-6

Hazardous components

Remarks	:	Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	:	Get medical advice/ attention if you feel unwell.
If inhaled	:	Move the victim to fresh air. If you feel unwell, seek medical advice (show the label where possible).
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water.
In case of eye contact	:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If swallowed	:	If swallowed, seek medical advice immediately and show this container or label.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	No symptoms known currently.
Risks	:	No hazards known at this time.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray jet Foam
Unsuitable extinguishing media	:	High volume water jet Carbon dioxide (CO2) Dry powder

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO) Carbon dioxide (CO2) Nitrogen oxides (NOx)

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Self-contained breathing apparatus
Further information	:	Evacuate endangered area, seal off area. Wear suitable protective equipment. Do not disperse powdered product in air.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Wear suitable protective equipment. Wear suitable protective clothing. Keep away sources of ignition. Keep away sources of ignition, stop running engines, no smoking. Take up in the dry state without forming dust. Consider Recycling

6.2 Environmental precautions

Environmental precautions	:	The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Avoid dust formation. Take measures to prevent the build up of electrostatic charge. Use mechanical handling equipment. Treat recovered material as described in the section "Disposal considerations".

6.4 Reference to other sections

Information regarding Safe handling, see chapter 7., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	When used and handled appropriately no special measures are needed Avoid dust formation.
Advice on protection against fire and explosion	:	Take precautionary measures against static discharges. Keep away from heat and sources of ignition. Dust can form an explosive mixture in air.
Hygiene measures	:	Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.
Dust explosion class	:	ST2 Capable of dust explosion

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep only in the original container. Keep container tightly closed.
Further information on storage conditions	:	Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.
Advice on common storage	:	No materials to be especially mentioned. Keep away from food and drink.

7.3 Specific end use(s)

Specific use(s)	:	No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Handle only in a place equipped with local exhaust (or other appropriate exhaust).

Personal protective equipment

Eye protection	:	Safety glasses
Hand protection		
Remarks	:	Nitrile rubber gloves. Minimum breakthrough time (glove): not determined Minimum thickness (glove): not determined Take

note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Skin and body protection	:	Wear suitable protective equipment.
Respiratory protection	:	in case of dust, use dust-mask. mask, comb.gas/particle filter
Protective measures	:	Wear suitable protective equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	powder
Colour	:	yellow
Odour	:	not specified
Odour Threshold	:	cannot be determined
pH	:	Not applicable
Melting point	:	Method: DSC GLP: no Decomposes before melting.
Boiling point	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	The product is not flammable. Method: 92/69/EC (L383) A.10 * flammability (solids) GLP: no
Burning rate	:	0 mm/s
Upper explosion limit	:	not tested.
Lower explosion limit	:	not tested.
Combustion number :		BZ5 Complete combustion with flames (20 °C) Method : VDI 2263, ESCIS, Vol. 1
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	not tested.

Density	:	1,4464 g/cm3 (23 °C) Method: DIN 51913 GLP: no
Bulk density	:	170 kg/m3 (22 °C) Method: ISO 60 GLP: no
Solubility(ies)		
Water solubility	:	cannot be determined Method: ETAD method
Solubility in other solvents	:	not tested. Solvent: Organic Solvents Description: Insoluble in most organic solvents.
Partition coefficient: n-octanol/water	:	cannot be determined
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	290 - 340 °C Heating rate : 3 K/min Method: DTA Exothermic reaction closed cup > 300 °C Heating rate : 3 K/min Method: DTA Open cup at 20 bar air pressure
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive Method: Expert judgement GLP: no Not explosive Method: Expert judgement
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. There are no chemical groups associated with oxidising properties present in the molecule. not oxidizing

9.2 Other information

Surface tension	:	Based on chemical structure, no surface activity is expected or can be predicted.

Sublimation point	:	Not applicable
Dust deflagration index (Kst)	:	282 m.b_/s
Dust explosion class	:	ST2 Capable of dust explosion
Metal corrosion rate	:	Not corrosive to metals
Minimum ignition energy	:	3 - 6 mJ Method: Mike 3 apparatus with inductive electrical resistance 6 - 13 mJ Method: Mike 3 apparatus without inductive electrical resistance
Particle size	:	4 µm Method: Laser diffraction with dispersion in dry air. Median value
Self-ignition	:	>= 300 °C Method: VDI 2263 (Grewer) >= 300 °C Method: VDI 2263 (Grewer) The sample was mixed 1:1 with diatomaceous earth.

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Potential dust explosion hazard. No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid	:	Avoid processing temperatures in polymers above 392 F (200 C). Avoid contact with oxidizing agents and acids. Strong oxidizing agents Keep away from heat. Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Materials to avoid : not known

10.6 Hazardous decomposition products

Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
When handled and stored appropriately, no dangerous decomposition products are known

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 423
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): > 1,7 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403
GLP: no
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: By analogy with a product of similar composition

Acute dermal toxicity : LD50 (Rat, male): > 5.000 mg/kg
Method: Other
GLP: no data available
Remarks: By analogy with a product of similar composition

Skin corrosion/irritation

Product:

Species: Rabbit
Exposure time: 24 h
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: no

Serious eye damage/eye irritation

Product:

Species: rabbit eye
Exposure time: 72 h
Method: OECD Test Guideline 405
Result: No eye irritation
GLP: yes

Respiratory or skin sensitisation

Product:

Test Type: Guinea pig maximization test
Exposure routes: Dermal
Species: Guinea pig
Method: OECD Test Guideline 406
Result: non-sensitizing
GLP: yes

Test Type: Mouse local lymphnode assay
Exposure routes: Dermal
Species: Mouse
Method: OECD Test Guideline 429
Result: non-sensitizing
GLP: yes
Remarks: By analogy with a product of similar composition

Germ cell mutagenicity

Product:

Genotoxicity in vitro	:	Test Type: Ames test Species: Salmonella typhimurium Concentration: 1 - 5000 µg/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes
	:	Test Type: Mouse lymphoma assay Species: Mouse cells Concentration: 0,25 - 20 µg/ml Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes
Germ cell mutagenicity-Assessment	:	It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

Carcinogenicity

Product:

Carcinogenicity - Assessment	:	No information available.

Reproductive toxicity

Product:

Effects on fertility	:	Test Type: One generation study Species: Rat

Sex: male and female
Dose: 100 - 300 - 1000 mg/kg
Exposure time: 41 d (m), 52 d (f)
Frequency of Treatment: daily
wistar
Application Route: oral (gavage)
Group: yes
NOAEL: 1.000 mg/kg,
F1: 1.000 mg/kg,
Method: OECD Test Guideline 422
GLP: yes

Effects on foetal development : Species: Rat, male and female
Application Route: oral (gavage)
Exposure time: 41 d (m), 52 d (f)
Dose: 100 - 300 - 1000 mg/kg
Group: yes
1.000 mg/kg
1.000 mg/kg
Number of exposures: daily
Method: OECD Test Guideline 422
GLP: yes

Reproductive toxicity - Assessment : No teratogenic effects to be expected.

No reproductive toxicity to be expected.

STOT - single exposure

Product:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Product:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Product:

Species: Rat, male and female
NOAEL: 1.000 mg/kg
Application Route: oral (gavage)
Exposure time: 41 d (m), 52 d (f)
Number of exposures: daily
Dose: 100 - 300 - 1000 mg/kg
Group: yes
Method: OECD Test Guideline 422
GLP: yes

Aspiration toxicity

Product:

No aspiration toxicity classification

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): > 100 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 203 GLP: yes Remarks: The details of the toxic effect relate to the nominal concentration. LC100 (Poecilia reticulata (guppy)): > 100 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 203 GLP: yes Remarks: The details of the toxic effect relate to the nominal concentration. NOEC (Poecilia reticulata (guppy)): 100 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 203 GLP: yes Remarks: The details of the toxic effect relate to the nominal concentration.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 202 GLP: yes Remarks: The details of the toxic effect relate to the nominal concentration. LC100 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 202

GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

NOEC (Daphnia magna (Water flea)): 100 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 202
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 201
GLP: yes
Remarks: By analogy with a product of similar composition
The details of the toxic effect relate to the nominal concentration.

NOEC (Desmodesmus subspicatus (Scenedesmus subspicatus)): 40 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 201
GLP: yes
Remarks: By analogy with a product of similar composition
The details of the toxic effect relate to the nominal concentration.

Toxicity to fish (Chronic toxicity) : Remarks: not required

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: not required

Toxicity to microorganisms : IC20 (activated sludge): > 100 mg/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 3 h
Test Type: aquatic
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: no
Remarks: By analogy with a product of similar composition

The details of the toxic effect relate to the nominal concentration.

: IC50 (activated sludge): > 100 mg/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 3 h
Test Type: aquatic
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: no
Remarks: By analogy with a product of similar composition
The details of the toxic effect relate to the nominal concentration.

Toxicity to soil dwelling organisms : Test Type: artificial soil
LC100: > 1.000 mg/kg
Exposure time: 14 d
End point: mortality
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207
GLP:yes
Remarks: By analogy with a product of similar composition

Test Type: artificial soil
NOEC: >= 1.000 mg/kg
Exposure time: 14 d
End point: mortality
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207
GLP:yes
Remarks: By analogy with a product of similar composition

Plant toxicity : Remarks: Not applicable

Sediment toxicity : Remarks: not tested.

12.2 Persistence and degradability

Product:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, domestic, non-adapted
Concentration: 30 mg/l
Result: Not readily biodegradable.
Biodegradation: 12 %
Related to: BOD in % of theoretical OD
Exposure time: 28 d
Method: OECD Test Guideline 302C
GLP: no
Remarks: By analogy with a product of similar composition

Physico-chemical removability : Remarks: Not readily biodegradable.

Stability in water : Remarks: Not applicable

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Due to the low logPow bioaccumulation is not expected

12.4 Mobility in soil

Product:

Distribution among environmental compartments : adsorption
Medium: Soil
Remarks: Not applicable

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Environmental fate and pathways : not available

Additional ecological information : The product should not be allowed to enter drains, water courses or the soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with the European Directives on waste and hazardous waste.

Contaminated packaging : This material and its container must be disposed of in a safe way.

SECTION 14: Transport information

Section 14.1. to 14.5.

ADR not restricted
ADN not restricted

RID	not restricted
IATA	not restricted
IMDG	not restricted

14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (International Bulk Chemicals Code)

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable
Other regulations	:	Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -

International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : Observe national and local legal requirements

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

REG_EU / EN

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	Cyan J2V
Product Code	50469 200626
SAP Name	PRO-JET CYAN APD 3000 CYAN J2V

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Liquid colorant for use in Inkjet printing applications
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

Signal Word
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
water	7732-18-5	231-791-2	Exempt	-	-	75-85
Copper phthalocyanine	147-14-8	205-685-1	01-2119458771-32-xxxx	-	-	5-20
Methacrylate polymer reacted with polyepoxide	1262996-21-3	-	-	-	-	<10
Potassium hydroxide	1310-58-3	215-181-3	01-2119487136-33-XXXX	019-002-00-8	Acute Tox. 4 (H302) Skin Corr. 1A (H314) Met. Corr. 1 (H290)	<1
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<1
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05
tetrasodium ethylene diamine tetraacetate	64-02-8	200-573-9	01-2119486762-27-XXXX	607-428-00-2	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Dam. 1 (H318) STOT RE2 (H373)	<1.0

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
water	7732-18-5	-
Copper phthalocyanine	147-14-8	-
Methacrylate polymer reacted with polyepoxide	1262996-21-3	-
Potassium hydroxide	1310-58-3	-
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-
tetrasodium ethylene diamine tetraacetate	64-02-8	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
water 7732-18-5	-	-	-	-	-
Copper phthalocyanine 147-14-8	-	-	-	TWA: 0.1 mg/m³	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	STEL: 2 mg/m³	STEL: 2 mg/m³	STEL: 2 mg/m³	-
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
water 7732-18-5	-	-	-	-	-
Copper phthalocyanine 147-14-8	-	-	-	-	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide	-	Ceiling: 2 mg/m³	-	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³

1310-58-3					
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-on e 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
water 7732-18-5	-	-	-	-	-
Copper phthalocyanine 147-14-8	-	-	-	-	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide 1310-58-3	TWA: 2 mg/m³	TWA: 2 mg/m³	STEL: 1 mg/m³ TWA: 0.5 mg/m³	Ceiling: 2 mg/m³	STEL: 2 mg/m³
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-on e 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
water 7732-18-5	-	-	-	-	-	-	-	-
Copper phthalocyanine 147-14-8	-	-	-	-	-	-	-	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	1 mg/m³	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-	1.0 mg/m³	-	1.5 mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
water 7732-18-5	-	-	-	-	-	-	-	-
Copper phthalocyanine 147-14-8	-	-	-	-	-	-	-	-

Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	2.86 mg/l	-	0.286 mg/l	-	-	-	0.937 mg/l	55.94 mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C Liquid
Appearance Aqueous solution of a polymer
Colour blue
Odour No information available
Odour Threshold No information available

Property	Values	Note
pH		No information available
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible	

Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Carcinogenic effects No information available.

Acute toxicity estimate

ATEmix (oral) >2000 mg/kg
ATEmix (dermal) >2000 mg/kg

Unknown acute toxicity

<20 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<20 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<20 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
water	>90 mL/kg (Rat)	-	-
Copper phthalocyanine	>5000 mg/kg	-	-
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	= 333 mg/kg (Rat)	-	-
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-
tetrasodium ethylene diamine tetraacetate	= 1658 mg/kg (Rat)	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity By analogy to a related material this product is expected to be of low toxicity to aquatic life.

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
water	-	-	-
Copper phthalocyanine	-	LC50 96hr >100 mg/l Danio rerio	LC50 48hr >500 mg/l Daphnia magna
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	-	-	-
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l
tetrasodium ethylene diamine tetraacetate	-	>100 mg/L at 96 h	>500 mg/L at 24h

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow

water	-
Copper phthalocyanine	6.6
Methacrylate polymer reacted with polyepoxide	-
Potassium hydroxide	0.83
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3
tetrasodium ethylene diamine tetraacetate	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
water	-
Copper phthalocyanine	-
Methacrylate polymer reacted with polyepoxide	-
Potassium hydroxide	-
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-
tetrasodium ethylene diamine tetraacetate	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
water	-	-	-
Copper phthalocyanine	-	-	-
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	-	-	-
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-
tetrasodium ethylene diamine tetraacetate	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
water	-	-
Copper phthalocyanine	-	-
Methacrylate polymer reacted with polyepoxide	-	-
Potassium hydroxide	-	-
Dipropylene glycol	-	-
1,2-benzisothiazol-3(2H)-one	-	-
tetrasodium ethylene diamine tetraacetate	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H400 - Very toxic to aquatic life
H314 - Causes severe skin burns and eye damage

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision	(M)SDS sections updated, 1.
Restrictions on use	This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

PRO-JET is a trade mark of Fujifilm Imaging Colorants Limited and is registered in certain countries in the world.

SAFETY DATA SHEET

Creation Date 12-May-2011 **Revision Date** 10-May-2016 **Revision Number** 4

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description: **Decon 90 Liquid**
Cat No. : **D/0025/15; D/0025/21; D/0025/31**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom
E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

Tel: 01509 231166
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Substances/mixtures corrosive to metal	Category 1

Health hazards

Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2

Environmental hazards
Based on available data, the classification criteria are not met

2.2. Label elements

Signal Word **Warning**

Hazard Statements
H290 - May be corrosive to metals
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary Statements
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention

2.3. Other hazards

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Potassium hydroxide	1310-58-3	215-181-3	0.5 - 2	Met. Corr. 1 (H290) Acute Tox. 4 (H302) Skin Corr. 1A (H314) Eye Dam. 1 (H318)
Anionic and non-ionic surface active agents, stabilising agents, non-phosphate detergent builders, and sequestering agents in water	NA		> 98	-

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Inhalation Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration. If symptoms arise, call a physician.

Protection of First-aiders Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
None under normal use conditions.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required.

6.2. Environmental precautions

No special environmental precautions required.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits
List source(s): **UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement. **IRE -** 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority.

Component	European Union	The United Kingdom	France	Belgium	Spain
Potassium hydroxide		WEL - 2 mg/m³ STEL	STEL / VLCT: 2 mg/m³.	STEL: 2mg/m³ VLE	STEL / VLA-EC: 2 mg/m³ (15 minutos).

Component	Italy	Germany	Portugal	The Netherlands	Finland
Potassium hydroxide			Ceiling: 2 mg/m³	MAC-C: 2 mg/m³	STEL: 2 mg/m³ 15 minuutteina Ceiling: 2 mg/m³

Component	Austria	Denmark	Switzerland	Poland	Norway
Potassium hydroxide	MAK-TMW: 2 mg/m³ 8 Stunden	Ceiling: 2 mg/m³	TWA: 2 mg/m³ 8 Stunden	STEL: 1 mg/m³ 15 minutach TWA: 0.5 mg/m³ 8 godzinach	Ceiling: 2 mg/m³

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Potassium hydroxide	TWA: 2.0 mg/m³	STEL-KGVI: 2 mg/m³ 15 minutama.	STEL: 2 mg/m³ 15 min		TWA: 1 mg/m³ 8 hodinách. Ceiling: 2 mg/m³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Potassium hydroxide	TWA: 2 mg/m³ 8 tundides.		STEL: 2 mg/m³ TWA: 2 mg/m³	STEL: 2 mg/m³ 15 percekben. CK TWA: 2 mg/m³ 8 órában. AK	STEL: 2 mg/m³

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Potassium hydroxide				LLV: 1 mg/m³ 8 timmar. inhalable dust CLV: 2 mg/m³	

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Derived No Effect Level (DNEL) No information available

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				
Inhalation				

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures
Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)
Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection Long sleeved clothing

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use In case of insufficient ventilation wear suitable respiratory equipment
Recommended Filter type: Particulates filter conforming to EN 143
Small scale/Laboratory use No personal respiratory protective equipment normally required
When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Milk-white Non-viscous liquid	
Physical State	Liquid	
Odor	Faint	
Odor Threshold	No data available	
pH	> 13	
Melting Point/Range	-3.8 °C	
Softening Point	No data available	
Boiling Point/Range	100.5 °C / 212.9 °F	
Flash Point	Not applicable	**Method -** No information available
Evaporation Rate	0.34 (BuAc=1)	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	Not applicable	
Vapor Pressure	17.1 mm Hg. @ 20 º C	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	No data available	
Bulk Density	Not applicable	Liquid
Water Solubility	Completely soluble	

Solubility in other solvents	No information available
Partition Coefficient (n-octanol/water)	
Component	**log Pow**
Potassium hydroxide	0.83
Autoignition Temperature	Not applicable
Decomposition Temperature	No data available
Viscosity	6.27 cp @ 20 °C (68 °F)
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	May react with metals and lead to the formation of flammable hydrogen gas.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Powdered metals. Aluminium. Zinc.

10.6. Hazardous decomposition products

None under normal use conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information Product does not present an acute toxicity hazard based on known or supplied information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium hydroxide	333 mg/kg (Rat)		

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory	No data available
Skin	No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; No data available

Symptoms / effects,both acute and delayed No information available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Potassium hydroxide	LC50: = 80 mg/L, 96h static (Gambusia affinis)			

12.2. Persistence and degradability Not applicable for mixtures

Persistence Soluble in water, Persistence is unlikely, based on information available.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Potassium hydroxide	0.83	No data available

12.4. Mobility in soil The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Other adverse effects

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations. Waste is classified as hazardous.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC) According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product was used. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized before discharge.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

ADR Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

IATA Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Potassium hydroxide	215-181-3	-		X	X	-	X	X	X	X	X

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Potassium hydroxide	WGK 1	

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.
Take note of Dir 94/33/EC on the protection of young people at work
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full Text of H-/EUH-Statements Referred to Under Section 3
H290 - May be corrosive to metals
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - Volatile Organic Compounds

Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

Creation Date	12-May-2011
Revision Date	10-May-2016
Revision Summary	Update to Format, SDS sections updated, 2, 3, 4, 6, 7, 8, 16.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

SAFETY DATA SHEET

FUJIFILM
FUJIFILM Imaging Colorants

according to Regulation (EC) No. 1907/2006

Denacol EX-321

Version 3 Date of issue: 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	Denacol EX-321
REACH registration number	01-2120078341-60-XXXX
CAS Number	30499-70-8 (refers to main component)
Product Code	813223 813540

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Raw material
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin Corrosion/Irritation	Category 1 Sub-category C - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitisation	Category 1B - (H317)
Germ Cell Mutagenicity	Category 2 - (H341)
Reproductive toxicity	Category 1B - (H360)
Chronic aquatic toxicity	Category 2 - (H411)

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Contains 1-(2,3-epoxypropoxy)-2,2-bis[(2,3-epoxypropoxy)methyl]butane

Signal Word
Danger

Hazard Statements
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P273 - Avoid release to the environment
P202 - Do not handle until all safety precautions have been read and understood

2.3. Other hazards
No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxy propoxy)methyl)-2-hydroxymethyl butane	-	-	01-2120078341 -60-XXXX	-	Skin Corr. 1C (H314) Skin Sens. 1B (H317) Eye Dam. 1 (H318)	>90

					Muta. 2 (H341)(oral) Repr. 1B (H360)(Oral)(Inhibited reproduction) Aquatic Chronic 2 (H411) Aquatic Acute 2 (H401)	

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane	-	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice Immediate medical attention is required.

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. If skin irritation or rash occurs: Get medical advice/attention.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms May cause an allergic skin reaction. Causes severe skin burns and eye damage. Evidence of reprotoxic effects in animals. Suspected of causing genetic defects.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Dry chemical, CO_2, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Avoid breathing vapours or mists
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid breathing vapours or mists.

General Hygiene Considerations
Do not eat, drink or smoke when using this product. Reprotoxicity is via oral route. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
Strong acids. Strong bases. oxidising agents.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane -	-	-	-	-	-
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane -	-	-	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane -	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane -	-	-	-	-	-	-	0.67mg/kg bw/d	1.17mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane -	3.7ug/L	37ug/L	370ng/L	-	19.9ug/kg (dry wt)	1.99ug/kg (dry wt)	1.81ug/kg (dry wt)	16.8mg/L

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Reprotoxicity is via oral route. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C Liquid
Appearance -
Colour light yellow
Odour No information available
Odour Threshold No information available

Property	Values	Note
pH		No information available
Melting/freezing point	~ -20 °C	
Boiling point / boiling range	~ 350 °C	
Flash Point	172 °C	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure	0.01Pa@25ºC	
Vapour density		No information available
Relative density	1.15 g/cm3	
Water solubility	~2.7 g/L	
Solubility in other solvents		

Partition coefficient: n-octanol/water	0.47	log Pow
Autoignition temperature	304 °C	
Decomposition temperature		No information available
Viscosity, kinematic	195 mm2/s	
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	Not explosive	
Oxidising Properties	Not oxidising	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids. Strong bases. oxidising agents.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion Whilst acute toxicity is low, oral exposure has been shown to result in reprotoxic effects in animals.

Inhalation May cause irritation of respiratory tract.
Eye contact Causes severe eye damage.
Skin contact Causes severe burns.
Sensitisation May cause sensitisation by skin contact.
Mutagenic Effects Contains a known or suspected mutagen.
Aspiration hazard There is no data available for this product.

Chronic toxicity

Reproductive Toxicity Experiments have shown reproductive toxicity effects on laboratory animals.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Carcinogenic effects No information available.

Acute toxicity estimate

ATEmix (oral) >2000 mg/kg
ATEmix (dermal) >2000 mg/kg

Unknown acute toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane	LD50 = 3398mg/kg bw/d	LD50 > 3170mg/kg bw/d	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects Toxic to aquatic life

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane	EC50(72hr)= 9mg/L (Pseudokirchneriella subcapitata)	LC50(96hr) = 75mg/L (carp)	EC50(48hr) = 3.7mg/L (D. magna)

12.2. Persistence and degradability

Inherently biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely. log Kow = 0.471.

Chemical Name	log Pow
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG .

Proper Shipping Name	Corrosive liquid, n.o.s
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
EmS-No	F-A, S-B
Marine pollutant	Marine Pollutant
Description	UN1760, Corrosive liquid, n.o.s (1-(2,3-epoxypropoxy)-2,2-bis[(2,3-epoxypropoxy)methyl]butane, 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane), 8, III

RID .

Proper Shipping Name	Corrosive liquid, n.o.s

Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Classification Code	C9
Description	UN1760, Corrosive liquid, n.o.s (1-(2,3-epoxypropoxy)-2,2-bis[(2,3-epoxypropoxy)methyl]butane, 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane), 8, III

ADR/RID .

Proper Shipping Name	Corrosive liquid, n.o.s
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Classification Code	C9
Description	UN1760, Corrosive liquid, n.o.s (1-(2,3-epoxypropoxy)-2,2-bis[(2,3-epoxypropoxy)methyl]butane, 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane), 8, III
Environmental hazard	Yes
ADR/RID-Labels	8

ICAO .

Proper Shipping Name	Corrosive liquid, n.o.s
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Description	UN1760, Corrosive liquid, n.o.s (1-(2,3-epoxypropoxy)-2,2-bis[(2,3-epoxypropoxy)methyl]butane, 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane), 8, III

IATA .

Proper Shipping Name	Corrosive liquid, n.o.s
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Description	UN1760, Corrosive liquid, n.o.s (1-(2,3-epoxypropoxy)-2,2-bis[(2,3-epoxypropoxy)methyl]butane, 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane), 8, III

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane - -	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this substance

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child
H401 - Toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

SAFETY DATA SHEET

FUJIFILM
FUJIFILM Imaging Colorants

according to Regulation (EC) No. 1907/2006

Denacol EX-521

Version 4 Date of issue: 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name Denacol EX-521
CAS Number 118549-88-5
Product Code 813202

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Raw material

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE
Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin Corrosion/Irritation	Category 1 Sub-category C - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitisation	Category 1B - (H317)
Germ Cell Mutagenicity	Category 2 - (H341)
Reproductive toxicity	Category 1B - (H360)
Chronic aquatic toxicity	Category 2 - (H411)

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Contains Polyglycerol polyglycidyl ether

Signal Word
Danger

Hazard Statements
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P202 - Do not handle until all safety precautions have been read and understood
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P273 - Avoid release to the environment

2.3. Other hazards
No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Polyglycerol polyglycidyl ether	118549-88-5	-	-	-	Muta. 2 (H341) Skin Corr. 1C (H314) Skin Sens. 1B (H317) Eye Dam. 1 (H318) Repr. 1B (H360) Aquatic Chronic 2	~100

					(H411) Aquatic Acute 2 (H401)	

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
Polyglycerol polyglycidyl ether	118549-88-5	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice Immediate medical attention is required.

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation or rash occurs: Get medical advice/attention.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms May cause an allergic skin reaction. Causes severe skin burns and eye damage. May damage fertility or the unborn child. Evidence of reprotoxic effects in animals. Reprotoxicity is via oral route. Suspected of causing genetic defects.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Dry chemical, CO_2, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Do not get in eyes, on skin, or on clothing
Avoid breathing vapours or mists
Use personal protective equipment.
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation. Prevent contact with skin, eyes and clothing. Avoid breathing vapours or mists.

General Hygiene Considerations
Do not eat, drink or smoke when using this product. Reprotoxicity is via oral route. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
Strong oxidising agents. Strong acids. Alkalis.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Polyglycerol polyglycidyl ether 118549-88-5	-	-	-	-	-
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**

Polyglycerol polyglycidyl ether 118549-88-5	-	-	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Polyglycerol polyglycidyl ether 118549-88-5	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Polyglycerol polyglycidyl ether 118549-88-5	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Polyglycerol polyglycidyl ether 118549-88-5	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Reprotoxicity is via oral route. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C	Liquid		
Appearance	clear	**Odour**	Odourless
Colour	yellow	**Odour Threshold**	No information available

Property	Values	Note
pH		No information available
Melting/freezing point		No information available
Boiling point / boiling range		No information available
Flash Point	240 °C	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density	1.25 g/cm3	@ 20 °C
Water solubility	Miscible with water	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	Not explosive	
Oxidising Properties	Not oxidising	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Hazardous Polymerisation
Polymerisation can occur. at high temperatures.

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidising agents. Strong acids. Alkalis.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion

Oral exposure has been shown to result in reprotoxic effects in animals. By analogy.

Inhalation By analogy. May cause irritation of respiratory tract.
Eye contact Causes severe eye damage. By analogy.
Skin contact Causes severe burns. By analogy.
Sensitisation May cause sensitisation by skin contact. By analogy.
Mutagenic Effects Suspected of causing genetic defects.
Aspiration hazard There is no data available for this product.

Chronic toxicity

Reproductive Toxicity Experiments have shown reproductive toxicity effects on laboratory animals. May damage fertility or the unborn child. By analogy.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Carcinogenic effects No information available.

Acute toxicity estimate

Not applicable

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Polyglycerol polyglycidyl ether	-	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects By analogy

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Polyglycerol polyglycidyl ether	-	-	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical Name	log Pow
Polyglycerol polyglycidyl ether	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
Polyglycerol polyglycidyl ether	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Polyglycerol polyglycidyl ether	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
EmS-No	F-A, S-B
Marine pollutant	Marine Pollutant
Description	UN1760, Corrosive liquid, n.o.s, (Polyglycerol polyglycidyl ether), 8, III

RID .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760

Packing Group	III
Classification Code	C9
Description	UN1760, Corrosive liquid, n.o.s (Polyglycerol polyglycidyl ether), 8, III

ADR/RID .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Classification Code	C9
Description	UN1760, Corrosive liquid, n.o.s (Polyglycerol polyglycidyl ether), 8, III
Environmental hazard	Yes
ADR/RID-Labels	8

ICAO .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Description	UN1760, Corrosive liquid, n.o.s (Polyglycerol polyglycidyl ether), 8, III

IATA .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Description	UN1760, Corrosive liquid, n.o.s (Polyglycerol polyglycidyl ether), 8, III

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Polyglycerol polyglycidyl ether - 118549-88-5	listed	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this substance

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child
H411 - Toxic to aquatic life with long lasting effects
H401 - Toxic to aquatic life

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

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SAFETY DATA SHEET

FUJIFILM
FUJIFILM Imaging Colorants

according to Regulation (EC) No. 1907/2006

Denacol EX-830

Version 3 Date of issue: 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name Denacol EX-830
CAS Number 39443-66-8
Product Code 812405

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Raw material

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE
Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Toxicity - Oral	Category 4 - (H302)
Skin Corrosion/Irritation	Category 1 Sub-category C - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitisation	Category 1B - (H317)
Germ Cell Mutagenicity	Category 2 - (H341)
Reproductive toxicity	Category 1B - (H360)
Chronic aquatic toxicity	Category 2 - (H411)

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Contains Polyethylene glycol diglycidyl ether

Signal Word
Danger

Hazard Statements
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P273 - Avoid release to the environment

2.3. Other hazards
No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Polyethylene glycol diglycidyl ether	39443-66-8	-	-	-	Acute tox. 4 (H302) Skin Corr. 1C (H314) Skin Sens. 1B (H317) Eye Dam. 1 (H318)	~100

					Repr. 1B (H360) Muta. 2 (H341) Aquatic Chronic 2 (H411) Aquatic Acute 2 (H401)	

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
Polyethylene glycol diglycidyl ether	39443-66-8	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice Immediate medical attention is required.

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation or rash occurs: Get medical advice/attention.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms May cause an allergic skin reaction. Causes severe skin burns and eye damage. May damage fertility or the unborn child. Evidence of reprotoxic effects in animals. Reprotoxicity is via oral route. Harmful if swallowed. Suspected of causing genetic defects.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Dry chemical, CO_2, water spray or alcohol-resistant foam.

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid breathing vapours or mists.

General Hygiene Considerations
Do not eat, drink or smoke when using this product. Reprotoxicity is via oral route. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
Strong oxidising agents. Strong acids. Alkalis.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Polyethylene glycol	-	-	-	-	-

diglycidyl ether 39443-66-8					
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Polyethylene glycol diglycidyl ether 39443-66-8	-	-	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Polyethylene glycol diglycidyl ether 39443-66-8	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Polyethylene glycol diglycidyl ether 39443-66-8	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Polyethylene glycol diglycidyl ether 39443-66-8	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Reprotoxicity is via oral route. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C Liquid

Appearance	-	**Odour**	Odourless
Colour	light yellow	**Odour Threshold**	No information available

Property	Values	Note
pH		No information available
Melting/freezing point		No information available
Boiling point / boiling range		No information available
Flash Point	~ 161 °C	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density	1.16 g/cm3	
Water solubility	Miscible with water	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water	log Pow 1.40	
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	Not explosive	
Oxidising Properties	Not oxidising	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Hazardous Polymerisation
Polymerisation can occur. at high temperatures.

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidising agents. Strong acids. Alkalis.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2).

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Harmful if swallowed. Oral exposure has been shown to result in reprotoxic effects in animals. By analogy.
Inhalation	May cause irritation of respiratory tract.
Eye contact	Causes severe eye damage. By analogy.
Skin contact	Causes severe burns. By analogy.
Sensitisation	May cause sensitisation by skin contact. By analogy.
Mutagenic Effects	Suspected of causing genetic defects.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	Experiments have shown reproductive toxicity effects on laboratory animals. May damage fertility or the unborn child. By analogy.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	2,000.00 mg/kg

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Polyethylene glycol diglycidyl ether	2000 mg/l (rat)	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects By analogy

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Polyethylene glycol diglycidyl ether	-	-	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical Name	log Pow
Polyethylene glycol diglycidyl ether	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
Polyethylene glycol diglycidyl ether	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Polyethylene glycol diglycidyl ether	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
EmS-No	F-A, S-B
Marine pollutant	Marine Pollutant
Description	UN1760, Corrosive liquid, n.o.s, (Polyethylene glycol diglycidyl ether), 8, III

RID .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Classification Code	C9
Description	UN1760, Corrosive liquid, n.o.s (Polyethylene glycol diglycidyl ether), 8, III

ADR/RID .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Classification Code	C9
Description	UN1760, Corrosive liquid, n.o.s (Polyethylene glycol diglycidyl ether), 8, III
Environmental hazard	Yes
ADR/RID-Labels	8

ICAO .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
Description	UN1760, Corrosive liquid, n.o.s (Polyethylene glycol diglycidyl ether), 8, III

IATA .

Proper Shipping Name	Corrosive liquid, n.o.s.
Hazard Class	8
UN/ID No	UN1760
Packing Group	III
ERG Code	8L
Description	UN1760, Corrosive liquid, n.o.s (Polyethylene glycol diglycidyl ether), 8, III

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Polyethylene glycol diglycidyl ether - 39443-66-8	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this substance

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child if inhaled
H411 - Toxic to aquatic life with long lasting effects
H401 - Toxic to aquatic life

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

SAFETY DATA SHEET
Dipropylene Glycol

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	Dipropylene Glycol
Product number	19158
Synonyms; trade names	Oxydipropanol propanol,Oxybis-DPG,Oxybispropanol
REACH registration number	01-2119456811-38-xxxx
CAS number	25265-71-8
EC number	246-770-3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Distribution of substance Formulation & (re)packing of substances and mixtures Use as a functional fluid Lubricants Manufacture of substance Use of substance as intermediate Use in metal working fluids / Rolling oils Other consumer uses Polymer Processing Uses in coatings Use of release agents or binders Use in cleaning agents Laboratories De-icing and anti-icing applications Water treatment applications
Uses advised against	This product is not recommended for any industrial, professional or consumer use other than the Identified Uses above

1.3. Details of the supplier of the safety data sheet

Supplier	Haltermann Carless UK Ltd Head Office - Cedar Court, Guildford Road, Fetcham, Leatherhead, Surrey KT22 9RX United Kingdom +44(0)1372 360000 +44(0)1372 380400
Contact person	MSDSTeam@h-c-s-group.com
Manufacturer	Haltermann Carless UK Ltd Head Office - Cedar Court, Guildford Road, Fetcham, Leatherhead, Surrey KT22 9RX United Kingdom +44(0)1372 360000 +44(0)1372 380400

1.4. Emergency telephone number

Emergency telephone	Please contact SHE Department on +44(0) 1255 502372
National emergency telephone number	NCEC (UK) National Chemical Emergency Centre +44 (0) 1235 239670

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards	Not Classified
Health hazards	Not Classified

Dipropylene Glycol

Environmental hazards	Not Classified

Classification (67/548/EEC or 1999/45/EC)	-

2.2. Label elements

EC number	246-770-3
Hazard statements	NC Not Classified

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	Dipropylene Glycol
REACH registration number	01-2119456811-38-xxxx
CAS number	25265-71-8
EC number	246-770-3

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on the side in the recovery position and ensure breathing can take place.
Inhalation	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	Exposure to high concentrations may cause dizziness, headache, dry / sore throat, coughing
Ingestion	Nausea, vomiting.
Skin contact	Prolonged skin contact may cause redness and irritation.
Eye contact	Prolonged contact may cause redness and/or tearing.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symtomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient

SECTION 5: Firefighting measures

5.1. Extinguishing media

Dipropylene Glycol

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon.

5.3. Advice for firefighters

Protective actions during firefighting Containers close to fire should be removed or cooled with water.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Protect drains by covering to avoid any spillage entering the drainage system.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with sand or other inert absorbent. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Flush contaminated area with plenty of water.

6.4. Reference to other sections

Reference to other sections For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Use earthed equipment Keep away from heat, sparks and open flame. Good personal hygiene procedures should be implemented. Container must be kept tightly closed when not in use.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Keep out of direct sunlight Store at ambient temperature Avoid contact with oxidising agents.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

DNEL

Industry - Dermal; Long term : 84 mg/kg/day
Industry - Inhalation; Long term : 238 mg/m³
Consumer - Dermal; Long term : 51 mg/kg/day
Consumer - Inhalation; Long term : 70 mg/m³
Consumer - Oral; Long term : 24 mg/kg/day

Dipropylene Glycol

PNEC	- Fresh water; 0.1 mg/l - Marine water; 0.01 mg/l - Sediment Freshwater; 0.238 mg/kg - Soil; 0.0253 mg/kg - STP; 1000 mg/l

8.2. Exposure controls

Protective equipment

Appropriate engineering controls	Provide adequate ventilation.
Eye/face protection	The following protection should be worn: Chemical splash goggles.
Hand protection	The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. It is recommended that gloves are made of the following material: Butyl rubber. It is recommended that gloves are made of the following material: Nitrile rubber.
Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination.
Hygiene measures	Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap and water if skin becomes contaminated. When using do not eat, drink or smoke. Do not smoke in work area.
Respiratory protection	No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Mild. Slight alcoholic.
pH	pH (concentrated solution): 7-8
Melting point	<-20°C
Initial boiling point and range	227 @98.36 hPa°C @
Flash point	130°C
Vapour pressure	0.0013 hPa @ °C
Vapour density	4.6
Relative density	1.02 @ 20°C
Solubility(ies)	Soluble in water.
Partition coefficient	: 0.462
Auto-ignition temperature	332°C
Viscosity	118 cSt @ 20°C

Dipropylene Glycol

Explosive properties	Not explosive

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability	The substance is hygroscopic and will absorb water by contact with the moisture in the air.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid	Avoid contact with strong oxidising agents. Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid	Strong oxidising agents. Water

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Other health effects	There is no evidence that the product can cause cancer.

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	5,000
Species	Rat
Notes (oral LD_{50})	Low acute toxicity by the oral route

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	5,010
Species	Rabbit
Notes (dermal LD_{50})	Low acute toxicity by the dermal route

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	2.34
Species	Rat
Notes (inhalation LC_{50})	Low acute toxicity by the inhalation route
ATE inhalation (vapours mg/l)	2.34

Skin corrosion/irritation

Extreme pH	Not irritating.

Dipropylene Glycol

Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

Skin sensitisation

Skin sensitisation Not sensitising.

Carcinogenicity

Carcinogenicity NOAEL 2330 , , Rat

Reproductive toxicity

Reproductive toxicity - fertility Fertility: - NOAEL 10100 mg/kg, , Mouse P

Reproductive toxicity - development Developmental toxicity: - NOAEL: 1200 mg/kg, , Rabbit

Specific target organ toxicity - single exposure

STOT - single exposure NOAEL 470 mg/kg, Oral, Rat

Target organs Liver

Skin contact Skin irritation should not occur when used as recommended. Not a skin sensitiser.

Eye contact No specific health hazards known.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity Not considered toxic to fish.

Acute toxicity - fish LC50, 96 hours, 96 hours: > 1000 mg/l, Oryzias latipes (Red killifish)

Acute toxicity - aquatic invertebrates EC_{50}, 48 hours, 48 hours: > 100 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC_{50}, 72 hours, 72 hours: > 100 mg/l,

12.2. Persistence and degradability

Persistence and degradability The product is readily biodegradable.

12.3. Bioaccumulative potential

Partition coefficient : 0.462

12.4. Mobility in soil

Adsorption/desorption coefficient Soil - : 0.78 @ °C

Henry's law constant 0.000907 Pa m3/mol @ 12°C

Surface tension 0.074 @ 22°C Units N/m

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects Not dangerous for the ozone layer

SECTION 13: Disposal considerations

Dipropylene Glycol

13.1. Waste treatment methods

Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Waste class	This material and container must be disposed of as a HAZARDOUS WASTE.

SECTION 14: Transport information

General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).
EU legislation	Dangerous Substances Directive 67/548/EEC. Regulation (EC) No 1272/2008 CLP Regulation (EC) No 1907/2006 REACH

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

Revision comments	New issue in new format
Issued by	HCS Group Technical Team
Revision date	11/06/2015
Revision	4
Supersedes date	28/02/2011
SDS number	20800
SDS status	Approved.
Risk phrases in full	NC Not classified.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	EDTA tetra sodium salt 39% aqueous solution
Product Code	813204
SAP Name	DISSOLVINE E39 (40%) - 250 KG DRUMS

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Raw material
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Serious eye damage/eye irritation	Category 2 - (H319)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)
Corrosive to metals	Category 1 - (H290)

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Contains tetrasodium ethylene diamine tetraacetate, Sodium hydroxide

Signal Word

Danger

Hazard Statements

H314 - Causes severe skin burns and eye damage
H373 - May cause damage to organs through prolonged or repeated exposure
H412 - Harmful to aquatic life with long lasting effects
H290 - May be corrosive to metals

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P280 - Wear eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P314 - Get medical advice/attention if you feel unwell
P406 - Store in corrosive resistant/ or container with a resistant inner liner

2.3. Other hazards
No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
water	7732-18-5	231-791-2	Exempt	-	-	40 - 60
tetrasodium ethylene diamine tetraacetate	64-02-8	200-573-9	01-2119486762-27-XXXX	607-428-00-2	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Dam. 1 (H318) STOT RE2 (H373)	<40
Sodium hydroxide	1310-73-2	215-185-5	01-2119457892-27-XXXX	011-002-00-6	Skin Corr. 1A (H314) Eye Dam. 1 (H318) Met. Corr. 1 (H290)	1 - <2

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
water	7732-18-5	-
tetrasodium ethylene diamine tetraacetate	64-02-8	-
Sodium hydroxide	1310-73-2	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. Get medical attention immediately if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Do not breathe vapours or spray mist. Ensure adequate ventilation. Avoid contact with skin and eyes.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place. Store in original container. Store in corrosive resistant/ or container with a resistant inner liner.

Incompatible Materials
oxidising agents. Acids. Aluminium. Nickel compounds. Zinc. Copper. Copper alloys.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
water 7732-18-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Sodium hydroxide 1310-73-2	-	STEL: 2 mg/m³	TWA: 2 mg/m³	STEL: 2 mg/m³	-
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
water 7732-18-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Sodium hydroxide 1310-73-2	-	Ceiling: 2 mg/m³	-	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
water 7732-18-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Sodium hydroxide 1310-73-2	STEL 4 mg/m³ TWA: 2 mg/m³	STEL: 2 mg/m³ TWA: 2 mg/m³	STEL: 1 mg/m³ TWA: 0.5 mg/m³	Ceiling: 2 mg/m³	STEL: 2 mg/m³

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal	Acute Effects Local	Acute Effects Systemic	Acute Effects Systemic	Chronic Effects Local	Chronic Effects Local	Chronic Effects	Chronic Effects Systemic

	(Worker)	Inhalation (Worker)	Dermal (Worker)	Inhalation (Worker)	Dermal (Worker)	Inhalation (Worker)	Systemic Dermal (Worker)	Inhalation (Worker)
water 7732-18-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-	1.0 mg/m³	-	1.5 mg/m³
Sodium hydroxide 1310-73-2	-	-	-	-	-	1.0 mg/m³	-	-

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
water 7732-18-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	2.86 mg/l	-	0.286 mg/l	-	-	-	0.937 mg/l	55.94 mg/l
Sodium hydroxide 1310-73-2	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Use with ventilation, local exhaust ventilation or breathing protection. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection In the case of dust or aerosol formation use respirator with an approved filter.

Recommended Filter type: Filter A / P2

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C Liquid
Appearance -
Colour light yellow
Odour Ammoniacal
Odour Threshold No information available

Property	Values	Note
pH	> 11.5	neat
Melting/freezing point		No information available
Boiling point / boiling range	105 - 110 °C	
Flash Point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density	1.15 - 1.38	
Water solubility	Miscible	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water	<0	
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic	13.80 - 16.50 mm2/s	@ 20 °C
Dynamic viscosity	19 mPa s at 20ºC	
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	Not oxidising	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

oxidising agents. Acids. Aluminium. Nickel compounds. Zinc. Copper. Copper alloys.

10.6. Hazardous decomposition products

Carbon oxides. Nitrogen oxides (NOx).

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
Inhalation	Harmful by inhalation. Inhalation of aerosols may cause irritation to mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.
Eye contact	Irritating to eyes.
Skin contact	No skin irritation. OECD 349.
Sensitisation	There is no data available for this product.
Mutagenic Effects	In vivo tests did not show mutagenic effects.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	If swallowed. May cause damage to organs through prolonged or repeated exposure.
Carcinogenic effects	No information available.

Acute toxicity estimate

mg/kg

ATEmix (inhalation-dust/mist) 3.75 mg/l

Unknown acute toxicity

1.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
water	>90 mL/kg (Rat)	-	-
tetrasodium ethylene diamine tetraacetate	= 1658 mg/kg (Rat)	-	-
Sodium hydroxide	= 325 mg/kg (Rat)	= 1350 mg/kg (Rabbit)	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
water	-	-	-
tetrasodium ethylene diamine tetraacetate	-	>100 mg/L at 96 h	>500 mg/L at 24h
Sodium hydroxide	-	= 45.4 mg/L (O. mykiss) 96h	= 76 mg/L (daphnia magna) 24h

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow

water	-
tetrasodium ethylene diamine tetraacetate	-
Sodium hydroxide	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
water	-
tetrasodium ethylene diamine tetraacetate	-
Sodium hydroxide	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
water	-	-	-
tetrasodium ethylene diamine tetraacetate	-	-	-
Sodium hydroxide	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG .

Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s
Hazard Class	8
UN/ID No	UN3267
Packing Group	III
EmS-No	F-A, S-B
Description	UN3267, Corrosive liquid, basic, organic, n.o.s (tetrasodium ethylene diamine tetraacetate, Sodium hydroxide), 8, III

RID .

Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s
Hazard Class	8
UN/ID No	UN3267
Packing Group	III
Classification Code	C7
Description	UN3267, Corrosive liquid, basic, organic, n.o.s (tetrasodium ethylene diamine tetraacetate, Sodium hydroxide), 8, III

ADR/RID .

Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s
Hazard Class	8
UN/ID No	UN3267
Packing Group	III
Classification Code	C7
Description	UN3267, Corrosive liquid, basic, organic, n.o.s (tetrasodium ethylene diamine

	tetraacetate, Sodium hydroxide), 8, III
ADR/RID-Labels	8

ICAO .

Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s
Hazard Class	8
UN/ID No	UN3267
Packing Group	III
Description	UN3267, Corrosive liquid, basic, organic, n.o.s (tetrasodium ethylene diamine tetraacetate, Sodium hydroxide), 8, III

IATA .

Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s
Hazard Class	8
UN/ID No	UN3267
Packing Group	III
ERG Code	8L
Description	UN3267, Corrosive liquid, basic, organic, n.o.s (tetrasodium ethylene diamine tetraacetate, Sodium hydroxide), 8, III

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
water	-	-
tetrasodium ethylene diamine tetraacetate	-	-
Sodium hydroxide	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A chemical safety assessment is available for some or all of the components of this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage
H290 - May be corrosive to metals
H302 - Harmful if swallowed
H332 - Harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
H319 - Causes serious eye irritation

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

MATERIAL SAFETY DATA SHEET

Date; 11-Mar-15

1. Identification of the Substance/Preparation and Company

Product Name: FUJI FAST RED 9800
Application: colouring component
Company: FUJI PIGMENT CO.,LTD.
23-2, 2-Chome, Obana, Kawanishi
Hyogo, Japan
Tel: +81 072-759-8501
Fax: +81 072-759-9008
Emergency contact: +81 072-759-8501

2. Composition/Information on Ingredients

Chemical class:
Quinacridone

	CAS No.	Component wt %
C.I.Pigment Red 122	980-26-7	95%
Rosin Acid Ca Salt	9007-13-0	5%

3. Hazards Idenification

General hazard: No particular hazards are known

GHS classifications: 1: Physical Hazards: Can not claaified
2: Health Hazards: Can not claaified
3: Environmental Hazards: Can not claaified

4: First-aid Measures

General General instructions are not necessary
Inhalation: move to fresh air. Seek medical action If you feel anwell or If exposure prolonged
Skin contact: Remove contaminated clothing. Wash affected skin with soap and prenty of water
Contact with eyes: Rinse immediately with plenty of water for at least 10 minutes and seek medical attention
Ingression: Clean mouth with water and seek medical attention

5: Fire-fighting Measure

Suitable extinguishing media: carbon dioxide, form, water sprey,dry powder
Unsuitable extinguishing media for safety reasons: water jet
Combustion product: Carbon oxides, CO,CO2, Nox, Sox
Special protective equipment: Wear a self-contained breasthing apparatus

6: Accidental Release Measure

Personal precaution: Avoid inhalation and ingestion, avoid contact skin,eyes and clothing.

Environmental precautions: Do not discharge into drains/surface waters/groundwater

Method for cleaning up or take up: Take up mechanically and collect in suitable container for disposal. Avoid dust raising.

7: Handling and Storage

Handling: Avoid dust formation and ignition sources. Ensure good local exhaust ventilation. Take precautionary measures against electrostatic discharges.

Protection against fire and explosion: Avoid dust formation.Dust clouds from finely particlated pigments may be hazardous (dust explosion)

Storage Requirements: Keep containers tightly closed in a dry ,cool place.

8: Exposure controls and Personal Protection

General protective measure: AS with any chemical, wash your hands breaks and after handling.

Respiratory protection: wear dust mask if dust is raised

Hand protection: Rubber,PVC,PE gloves are recommended

Eye protection: tightly fitting safety glasses

Body protection: Working clothes

9: Physical and Chemical Properties

Form:	Powder
Colour:	Red
Odor	odourless
Melting point:	Not tested
Boilling point:	Not Applicable
Flash point:	Not Applicable
Flammability:	Not tested
Explosion hazard:	Not tested
Ignition temperature:	Not tested
Self-ignition temperature:	Not tested
Fire-promoting properties	None
Vapour pressur:	Not Applicable
Density	1.5 g/cm3
Solubility in water:	Insoluble
Solubility in organic solvent:	Insoluble
n-Octanol/water partition coefficient (log pow):	Not tested
Visosity,dynamic:	Not applicable
Visosity,kinematic:	Not applicable

10: Stability and Reactivity

Thermal stability: No reaction and decomposition expected under normal storage condition. Product is not explosive when subjected to the effort of heat. No polymerization is occurred

Condition to avoid: Electrostatic charges,excessive heat and moisture

Materials to avoid: No special precausions other than good housekeeping of chemicals.

Hazardous decomposition products: CO,CO2,Nox,Sox

11: Toxicological information

Acute oral toxity: N/E

Acute dermal toxity: No data

Acute inhalation toxity: No data

Skin inhalation/corrosion: No data

Skin Sensitization : No data

Mutagenicity: No data

Carcinagenecity: No data

12: Ecological Information

Toxicity to fish: No data

Toxicity to aqueous invertebrates: No data

Toxcity aqueous plants: No data

Toxicity to microorganisms: No data

Biogegradation: No data

Mobility: none

13: Disposal Considerations

Waste from residue/unused products: Residual chemicals should be disposed by incineration or by other modes of disposal in compliance with local legulation

Contaminated packaging: Contaminated ,empty containers must be disposed of as chemical waste

14: Transport Information

Land transport(ADR): Not restricted

Land transport(RID): Not restricted

Sea transport(IMDG): Not restricted

Air transport(IATA): Not restricted

15: Regulatory Information

Regulation of the Europpean Union (Labelling) : Classification not required

16: Other Information

Revised Data: 01-Oct-09

Safety data sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier

Irgalite® Yellow D 1245 (old Irgalite® Yellow GS)

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: colouring component

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF plc
PO Box 4, Earl Road, Cheadle Hulme,
Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Label elements

According to Regulation (EC) No 1272/2008 [CLP]

The product does not require a hazard warning label in accordance with GHS criteria.

According to Directive 67/548/EEC or 1999/45/EC

EEC Directives

The product does not require a hazard warning label in accordance with EC Directives.

Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

No need for classification according to GHS criteria for this product.

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:
Not classified.

Burns or decomposes in the absence of air or oxygen.

Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

Other Hazards (GHS):
The product is under certain conditions capable of dust explosion.

Assessment PBT / vPvB:
According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fullfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria..

3. Composition/Information on Ingredients

Mixtures

Chemical nature

Preparation based on: arylamide
C.I. PIGMENT Yellow 74

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

No particular hazards known.

4. First-Aid Measures

Description of first aid measures

Remove contaminated clothing.

If inhaled:
If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
Wash thoroughly with soap and water.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth and then drink plenty of water.

Most important symptoms and effects, both acute and delayed
Symptoms: No significant reaction of the human body to the product known.

Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media
Suitable extinguishing media:
dry powder, foam

Unsuitable extinguishing media for safety reasons:
carbon dioxide

Additional information:
Avoid whirling up the material/product because of the danger of dust explosion.

Special hazards arising from the substance or mixture
harmful vapours
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Use personal protective clothing.

Environmental precautions
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up
For small amounts: Pick up with suitable appliance and dispose of.

For large amounts: Contain with dust binding material and dispose of.
Avoid raising dust.

Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

7. Handling and Storage

Precautions for safe handling

Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Protection against fire and explosion:
Avoid dust formation. Take precautionary measures against static discharges.

Dust explosion class: Dust explosion class 3 (Kst-value >300 bar m s-1).

Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. Exposure Controls/Personal Protection

Control parameters

Components with workplace control parameters

No occupational exposure limits known.

Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. In order to prevent contamination while handling, closed working clothes and working gloves should be used.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	powder
Colour:	yellow
Odour:	odourless
Odour threshold:	not determined
pH value:	approx. 7 (as suspension)
Melting point:	not determined
Boiling point:	not applicable
Flash point:	not applicable
Evaporation rate:	The product is a non-volatile solid.
Flammability:	not determined
Ignition temperature:	not determined
Vapour pressure:	not applicable
Density:	approx. 1.3 g/cm3 (25 °C)
Relative density:	No data available.
Relative vapour density (air):	The product is a non-volatile solid.
Solubility in water:	insoluble
Solubility (quantitative) :	insoluble
Partitioning coefficient n-octanol/water (log Kow):	Study does not need to be conducted.
Thermal decomposition:	> 200 °C
Viscosity, dynamic:	Study does not need to be conducted.
Explosion hazard:	not explosive
Fire promoting properties:	not fire-propagating

Other information

Grain size distribution: No data available.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Formation of flammable gases:	Start temperature:	220 °C

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Dust explosion hazard.

Conditions to avoid
No conditions to avoid anticipated.

Incompatible materials

Substances to avoid:
strong oxidizing agents, strong bases, strong acids

Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Experimental/calculated data:
LD50 rat (oral): > 5,000 mg/kg

LC50 (by inhalation):
not determined

LD50 (dermal):
not determined

Irritation

Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

Serious eye damage/irritation rabbit: non-irritant

Respiratory/Skin sensitization

Experimental/calculated data:
No data available concerning sensitizing effects.

Germ cell mutagenicity

Assessment of mutagenicity:
No data available concerning mutagenic effects.

Reproductive toxicity

Assessment of reproduction toxicity:
No data available concerning reproduction toxicity.

Developmental toxicity

Assessment of teratogenicity:
No data available concerning teratogenic effects.

Specific target organ toxicity (single exposure)

Remarks: No data available.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
No data available concerning repeated dose toxicity.

Aspiration hazard

not applicable

Other relevant toxicity information

The product has not been tested. The statement has been derived from the properties of the individual components.

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:
At the present state of knowledge, no negative ecological effects are expected.

Toxicity to fish:
LC50 (96 h), Fish
not determined

Aquatic invertebrates:
LC50 (48 h), daphnia
not determined

Aquatic plants:
EC50 (72 h), algae
not determined

Microorganisms/Effect on activated sludge:
EC50 (0.5 h), bacteria
not determined

Chronic toxicity to fish:
No data available.

Chronic toxicity to aquatic invertebrates:
No data available.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
The colourant is insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plant

Bioaccumulative potential

Assessment bioaccumulation potential:
The product has not been tested.

Mobility in soil (and other compartments if available)

Assessment transport between environmental compartments:
No data available.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fullfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria..

Additional information

Add. remarks environm. fate & pathway:
Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

Other ecotoxicological advice:
Do not discharge product into the environment without control. The product has not been tested. The statement has been derived from the properties of the individual components.

13. Disposal Considerations

Waste treatment methods

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

Contaminated packaging:
Uncontaminated packaging can be re-used.
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

14. Transport Information

Land transport

ADR

Not classified as a dangerous good under transport regulations

RID

Not classified as a dangerous good under transport regulations

Inland waterway transport
ADN

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).

Chemical Safety Assessment

Chemical Safety Assessment not yet performed due to registration timelines

16. Other Information

Due to the merger of CIBA and BASF Group all Material Safety Data Sheets have been reassessed on the basis of consolidated information. This may have resulted in changes of the Material Safety Data Sheets. In case you have questions concerning such changes please contact us at the address mentioned in Section I.

If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com
Vertical lines in the left hand margin indicate an amendment from the previous version.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name Irgazin Orange D2905
Product Code 881003

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Colouring agent

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE
Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements
Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

2.3. Other hazards
No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Diketo-pyrrolo-pyrrol	84632-50-8	412-640-1	-	-	-	99.5
water	7732-18-5	231-791-2	Exempt	-	-	0.5

Full text of H- and EUH-phrases: see section 16

Chemical name	CAS No	SVHC candidates
Diketo-pyrrolo-pyrrol	84632-50-8	-
water	7732-18-5	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Rinse mouth. Drink 1 or 2 glasses of water.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Dry powder. Foam.

Unsuitable Extinguishing Media
Carbon dioxide (CO2)

5.2. Special hazards arising from the substance or mixture

Avoid dust formation

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical name	European Union	United Kingdom	France	Spain	Germany
Diketo-pyrrolo-pyrrol 84632-50-8	-	-	-	-	-
water 7732-18-5	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**

Diketo-pyrrolo-pyrrol 84632-50-8	-	-	-	-	-
water 7732-18-5	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Diketo-pyrrolo-pyrrol 84632-50-8	-	-	-	-	-
water 7732-18-5	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Diketo-pyrrolo-pyrrol 84632-50-8	-	-	-	-	-	-	-	-
water 7732-18-5	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Diketo-pyrrolo-pyrrol 84632-50-8	-	-	-	-	-	-	-	-
water 7732-18-5	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Safety glasses with side-shields.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Breathing apparatus with filter.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Powder

Appearance	-	**Odour**	Odourless
Colour	orange	**Odour Threshold**	No information available

Property	**Values**	**Remarks**
pH	c.8	
Melting/freezing point	>360 °C	
Boiling point / boiling range		No information available
Flash Point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	0.012 mg/l	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature	410 °C	
Hyphen		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	Not explosive	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Density	1.48 g/cm3

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

Stable under recommended storage conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	Yes

10.3. Possibility of hazardous reactions

Dust can form an explosive mixture in air.

10.4. Conditions to avoid

Strong oxidising agents.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

Hydrogen cyanide. Nitrogen oxides (NOx). Carbon oxides.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Not expected to be hazardous following ingestion.
Inhalation	There is no data available for this product.
Eye contact	Non-irritating.
Skin contact	Non-irritating.
Sensitisation	Not a skin sensitiser.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

Unknown acute toxicity

99.5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Diketo-pyrrolo-pyrrol	LD50 rat (oral): > 5,000 mg/kg	LD50 rat (dermal): > 2,000 mg/kg	-
water	>90 mL/kg (Rat)	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Diketo-pyrrolo-pyrrol	EC50 (72 h) > 0.87 mg/l (growth rate), Selenastrum capricornutum	LC50: >0.73mg/L (96h, Oncorhynchus mykiss)	EC50 (48 h) > 0.25 mg/l, Daphnia magna
water			-

12.2. Persistence and degradability

Not readily biodegradable.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

No information available.

Chemical name	PBT and vPvB assessment
Diketo-pyrrolo-pyrrol	-
water	-

12.6. Other adverse effects

Endocrine Disruptor Information None known.

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disrupters - Evaluated Substances	Endocrine disrupting potential
Diketo-pyrrolo-pyrrol	-	-	-
water	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Diketo-pyrrolo-pyrrol	-	-
water	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
None

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 05-Oct-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

We create chemistry

Safety data sheet

BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.
Date / Revised: 08.06.2017 Version: 3.0
Product: **Irgazin® Red L 3630**
(ID no. 30472078/SDS_GEN_GB/EN)
Date of print 09.06.2017

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Irgazin® Red L 3630

Chemical name: C.I. PIGMENT Red 254
CAS Number: 84632-65-5

REACH registration number: 01-0000015139-70-0005, 01-2119937937-20-0000

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: colouring component

1.3. Details of the supplier of the safety data sheet

Company:
BASF Colors & Effects Switzerland AG
Klybeckstrasse 141
4057 Basel, SWITZERLAND

Contact address:
BASF plc
PO Box 4, Earl Road, Cheadle Hulme,
Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

No need for classification according to GHS criteria for this product.

2.2. Label elements

Globally Harmonized System, EU (GHS)

The product does not require a hazard warning label in accordance with GHS criteria.

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

The product is under certain conditions capable of dust explosion.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

Diketo-pyrrolo-pyrrol

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

No particular hazards known.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
Wash thoroughly with soap and water.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth and then drink plenty of water.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms: No significant reaction of the human body to the product known.

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
dry powder, foam

Unsuitable extinguishing media for safety reasons:
carbon dioxide

Additional information:
Avoid whirling up the material/product because of the danger of dust explosion.

5.2. Special hazards arising from the substance or mixture
harmful vapours
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Use personal protective clothing.

6.2. Environmental precautions
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up
For small amounts: Pick up with suitable appliance and dispose of.
For large amounts: Contain with dust binding material and dispose of.
Avoid raising dust.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling
Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Protection against fire and explosion:
Avoid dust formation. Take precautionary measures against static discharges.

7.2. Conditions for safe storage, including any incompatibilities
Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Keep only in the original container.

7.3. Specific end use(s)
For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

No occupational exposure limits known.

PNEC
freshwater: 0.499 mg/l

intermittent release: 0.499 mg/l

marine water: 0.499 mg/l

STP: 1 mg/l

sediment (marine water): 668 mg/l

sediment (freshwater): 668 mg/l

soil: 1 mg/l

DNEL
worker:
Long-term exposure - local effects, Inhalation: 1.25 mg/m3
The nuisance dust limit (alveolar fraction) was used as basis for the DNEL.

consumer:
Long-term exposure - local effects, Inhalation: 10 mg/m3
The nuisance dust limit (inhalativ fraction) was used as basis for the DNEL.

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:
Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended.

Environmental exposure controls
For information regarding environmental exposure controls, see Section 6.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	powder
Colour:	red

Odour:	odourless	
pH value:	of very low solubility	
Melting point:	> 300 °C	(Directive 84/449/EEC, A.1)
Boiling point:	(1,013.25 hPa) not applicable, solid with a melting temperature over 300 °C	
Flash point:	not relevant	
Flammability:	not highly flammable	(Directive 84/449/EEC, A.10)
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Ignition temperature:	> 500 °C	(BAM)
Vapour pressure:	not applicable	
Density:	1.58 g/cm3 (20 °C)	(Directive 84/449/EEC, A.3)
Relative density:	1.58 (20 °C)	(Directive 84/449/EEC, A.3)
Solubility in water:	< 0.499 mg/l (20 °C)	(OECD Guideline 105)
Solubility (quantitative) solvent(s):	standard fat < 10 MG/ 100 G FAT (37 °C)	
Partitioning coefficient n-octanol/water (log Kow):	< 3.0 The data refers to the undissociated form of the substance.	(Calculation Hansch/Leo)
Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
	Temperature: > 400 °C	Test type: Self-ignition at high temperatures. (Method: Directive 92/69/EEC, A.16)
Thermal decomposition:	No data available.	
Viscosity, dynamic:	not relevant	
Viscosity, kinematic:	not relevant	
Explosion hazard:	not explosive	(Directive 84/449/EEC, A.14)
Fire promoting properties:	not fire-propagating	(Directive 84/449/EEC, A.17)

9.2. Other information

Bulk density:	1,580 kg/m3 (20 °C)	
pKA:	The substance does not dissociate.	
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Molar mass:	357.20 g/mol	(calculated)

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:	No corrosive effect on metal.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

Dust explosion hazard.

10.4. Conditions to avoid

Avoid dust formation. Avoid deposition of dust. Avoid sources of ignition. Avoid electro-static discharge.

10.5. Incompatible materials

Substances to avoid:
strong oxidizing agents, strong bases, strong acids

10.6. Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation.

Experimental/calculated data:
LD50 rat (oral): > 5,000 mg/kg (Directive 84/449/EEC, B.1)

LC0 rat (by inhalation): > 2.25 mg/l 4 h (OECD Guideline 403)

LD50 rat (dermal): > 2,000 mg/kg (OECD Guideline 402)

Irritation

Assessment of irritating effects:
Not irritating to the skin. Not irritating to the eyes.

Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant (Directive 84/449/EEC, B.4)

Serious eye damage/irritation rabbit: non-irritant (Directive 84/449/EEC, B.5)

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing. (OECD Guideline 406)

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in studies with mammals.

Carcinogenicity

Assessment of carcinogenicity:
No data available concerning carcinogenic effects.

Reproductive toxicity

Assessment of reproduction toxicity:
No data available.

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies. Literature data.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
Repeated oral uptake of the substance did not cause substance-related effects.

Aspiration hazard

not applicable

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) > 100 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 84/449/EEC, C.1, static)
Nominal concentration. No toxic effects occur within the range of solubility. Limit concentration test only (LIMIT test).

Aquatic invertebrates:
EC50 (24 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
Nominal concentration. No toxic effects occur within the range of solubility.

Aquatic plants:
EC50 (72 h) > 100 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)

Microorganisms/Effect on activated sludge:
EC20 (3 h) > 100 mg/l, activated sludge, domestic (static)
Nominal concentration. No toxic effects occur within the range of solubility.

Chronic toxicity to fish:
No observed effect concentration (21 d), Oncorhynchus mykiss (OECD Guideline 204, Flow through.)
Nominal concentration. No toxic effects occur within the range of solubility. No effects at the highest test concentration. The product has low solubility in the test medium. A saturated solution has been tested.

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d), Daphnia magna (OECD Guideline 202, part 2, semistatic) Nominal concentration. No toxic effects occur within the range of solubility. No effects at the highest test concentration. The product has low solubility in the test medium. A saturated solution has been tested.

Soil living organisms:
LC50 (14 d) > 1,000 mg/kg, Eisenia foetida (artificial soil)

Terrestrial plants:
EC0 (15 d) > 1,000 mg/kg, Lolium perenne (OECD Guideline 208)

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria). Poorly biodegradable. Poorly eliminated from water.

Elimination information:
4 % CO2 formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic, non-adapted)

Information on Stability in Water (Hydrolysis):
Study technically not feasible.

12.3. Bioaccumulative potential

Bioaccumulation potential:
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

12.4. Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria. Self classification

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Not fulfilling vPvB (very persistent/very bioaccummulative) criteria. Self classification

12.6. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

12.7. Additional information

Adsorbable organically-bound halogen (AOX):
The product contains according to the formulation, organically bound halogen. It can increase the AOX-value in the water purification plants overflow or if it reaches waters.

Other ecotoxicological advice:
Do not discharge product into the environment without control.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

Contaminated packaging:
Uncontaminated packaging can be re-used.
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

SECTION 14: Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport

ADN

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Transport in inland waterway vessel

Not evaluated

Sea transport

IMDG

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Air transport

IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

14.1. UN number

See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).

15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

SECTION 16: Other Information

If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	MAGENTA J2V
Product Code	50468 200627
SAP Name	PRO-JET MAGENTA APD 3000 MAGENTA J2V

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Liquid colorant for use in Inkjet printing applications
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

Signal Word
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information
None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
water	7732-18-5	231-791-2	Exempt	-	-	75-85
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	980-26-7	213-561-3	01-2119456804-33-xxxx	-	-	2-20
Methacrylate polymer reacted with polyepoxide	1262996-21-3	-	-	-	-	<10
Potassium hydroxide	1310-58-3	215-181-3	01-2119487136-33-XXXX	019-002-00-8	Acute Tox. 4 (H302) Skin Corr. 1A (H314) Met. Corr. 1 (H290)	<1
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<1
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05
tetrasodium ethylene diamine tetraacetate	64-02-8	200-573-9	01-2119486762-27-XXXX	607-428-00-2	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Dam. 1 (H318) STOT RE2 (H373)	<1.0

Full text of H- and EUH-phrases: see section 16

Chemical Name	CAS No	SVHC candidates
water	7732-18-5	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	980-26-7	-
Methacrylate polymer reacted with polyepoxide	1262996-21-3	-
Potassium hydroxide	1310-58-3	-
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-
tetrasodium ethylene diamine	64-02-8	-

tetraacetate		

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical Name	European Union	United Kingdom	France	Spain	Germany
water 7732-18-5	-	-	-	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione 980-26-7	-	-	-	-	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	STEL: 2 mg/m³	STEL: 2 mg/m³	STEL: 2 mg/m³	-
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
water 7732-18-5	-	-	-	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	-	-	-	-	-

980-26-7					
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	Ceiling: 2 mg/m³	-	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
water 7732-18-5	-	-	-	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione 980-26-7	-	-	-	-	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-
Potassium hydroxide 1310-58-3	TWA: 2 mg/m³	TWA: 2 mg/m³	STEL: 1 mg/m³ TWA: 0.5 mg/m³	Ceiling: 2 mg/m³	STEL: 2 mg/m³
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical Name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
water 7732-18-5	-	-	-	-	-	-	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione 980-26-7	-	-	-	-	-	147 mg/m³	42 mg/kg	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	1 mg/m³	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	-	-	-	-	-	1.0 mg/m³	-	1.5 mg/m³

Predicted No Effect Concentration (PNEC)

Chemical Name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
water 7732-18-5	-	-	-	-	-	-	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione 980-26-7	-	-	-	-	-	-	-	-
Methacrylate polymer reacted with polyepoxide 1262996-21-3	-	-	-	-	-	-	-	-
Potassium hydroxide 1310-58-3	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-
tetrasodium ethylene diamine tetraacetate 64-02-8	2.86 mg/l	-	0.286 mg/l	-	-	-	0.937 mg/l	55.94 mg/l

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C Liquid
Appearance Aqueous solution of a polymer
Colour Magenta
Odour No information available
Odour Threshold No information available

Property	Values	Note
pH		No information available
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	

Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions

Explosion Data

Sensitivity to Mechanical Impact	none
Sensitivity to Static Discharge	none

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	>2000 mg/kg
ATEmix (dermal)	>2000 mg/kg

Unknown acute toxicity

<10 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<10 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<20 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
water	>90 mL/kg (Rat)	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	> 23 g/kg (Rat)	> 3 g/kg (Rabbit)	-
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	= 333 mg/kg (Rat)	-	-
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-
tetrasodium ethylene diamine tetraacetate	= 1658 mg/kg (Rat)	-	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
water	-	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	-	-	-
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	-	-	-
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l
tetrasodium ethylene diamine	-	>100 mg/L at 96 h	>500 mg/L at 24h

tetraacetate			

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical Name	log Pow
water	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	-
Methacrylate polymer reacted with polyepoxide	-
Potassium hydroxide	0.83
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3
tetrasodium ethylene diamine tetraacetate	-

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical Name	PBT and vPvB assessment
water	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	-
Methacrylate polymer reacted with polyepoxide	-
Potassium hydroxide	-
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-
tetrasodium ethylene diamine tetraacetate	-

12.6. Other adverse effects

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
water	-	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione	-	-	-
Methacrylate polymer reacted with polyepoxide	-	-	-
Potassium hydroxide	-	-	-
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-
tetrasodium ethylene diamine tetraacetate	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ICAO Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical Name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
water	-	-
2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-di one	-	-
Methacrylate polymer reacted with polyepoxide	-	-
Potassium hydroxide	-	-
Dipropylene glycol	-	-
1,2-benzisothiazol-3(2H)-one	-	-
tetrasodium ethylene diamine tetraacetate	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H400 - Very toxic to aquatic life
H314 - Causes severe skin burns and eye damage

Legend
SVHC : Substances of Very High Concern for Authorisation

Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 23-Jul-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This material can only be used for the purposes specified in section one of this Hazard Data Sheet (HDS). If an alternative use is required Toxicology and Regulatory Affairs must be informed. This is so that appropriate regulatory and safety assessments can be carried out before the HDS can be re-issued with the additional use included. This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

PRO-JET is a trade mark of Fujifilm Imaging Colorants Limited and is registered in certain countries in the world.

ConnectingChemistry

BRENNTAG

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

POTASSIUM CHLORIDE

Version 3.0 | Print Date 2016/03/10

Revision date / valid from 2016/03/10 | **MSDS code: MPCL100**

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name	:	POTASSIUM CHLORIDE
Substance name	:	Potassium chloride
CAS-No.	:	7447-40-7
EC-No.	:	231-211-8

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture	:	At this time we do not yet have information on identified uses. They will be included in this safety data sheet when available.
Uses advised against	:	At this moment we have not identified any uses advised against
Remarks	:	This substance is exempt from registration according to Regulation (EC) No. 1907/2006 (REACH).

1.3. Details of the supplier of the safety data sheet

Company	:	Brenntag UK & Ireland Albion House, Rawdon Park GB LS19 7XX Leeds Yeadon
Telephone	:	+44 (0) 113 3879 200
Telefax	:	+44 (0) 113 3879 280
E-mail address	:	msds@brenntag.co.uk

1.4. Emergency telephone number

Emergency telephone number	:	Emergency only telephone number (open 24 hours): +44 (0) 1865 407333 (N.C.E.C. Culham)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified as dangerous according to Regulation (EC) No. 1272/2008.

Most important adverse effects

Human Health	:	According to our experience and to the information provided to us, the product does not have any harmful effects if it is used and handled as specified.
Physical and chemical hazards	:	Stable under normal conditions.
Potential environmental effects	:	The product is not classified as dangerous for the environment.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is not labeled as dangerous according to Regulation (EC) No. 1272/2008.

Additional Labelling:

EUH210 Safety data sheet available on request.

2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substances

Non-hazardous component

Chemical name	Identification Number		Amount [%]
Potassium chloride	CAS-No. EC-No.	: 7447-40-7 231-211-8	>= 99 - <= 100

SECTION 4: First aid measures

4.1. Description of first aid measures

If inhaled	: Move to fresh air.
In case of skin contact	: Remove contaminated clothing and shoes. Rinse with water. Wash contaminated clothing before re-use. If symptoms persist, call a physician.
In case of eye contact	: Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses. If symptoms persist, call a physician.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. If

symptoms persist, call a physician. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	: See Section 11 for more detailed information on health effects and symptoms.
Effects	: See Section 11 for more detailed information on health effects and symptoms.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment	: No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Not combustible. In case of fire hazardous decomposition products may be produced such as: hydrogen chloride, Chlorine

5.3. Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further advice	:	No further information available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	:	For personal protection see section 8.

6.2. Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	:	Scoop or vacuum into a receptable. Avoid dust formation. See also section 13: Disposal Considerations.

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	:	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Provide for good ventilation. Avoid dusting. Use mechanical ventilation at dusting. Do not breathe dust.
Hygiene measures	:	When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep container tightly closed and dry. Keep away from acids. Protect against water.

7.3. Specific end use(s)

Note	:	No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation.

Provide appropriate exhaust ventilation at places where dust is formed.
Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Personal protective equipment

Respiratory protection

Advice	:	In case of insufficient ventilation, wear suitable respiratory equipment. Recommended Filter type: Particle filter:P2

Hand protection

Advice	:	Wear suitable gloves. Protective gloves should be replaced at first signs of wear.

Recommended Material:
Neoprene gloves
PVC gloves
Nitrile rubber

Eye protection

Advice : Safety glasses

Skin and body protection

Advice : Wear suitable protective clothing.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	:	powder or crystalline
Colour	:	colourless to white
Odour	:	odourless
Odour Threshold	:	no data available
pH	:	ca. 6 (50 g/l ; 20 °C)
Melting point/range	:	ca. 770 °C
Boiling point/boiling range	:	1,411 °C
Flash point	:	no data available
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available

Density	:	1.99 g/cm3
Water solubility	:	355 g/l (25 °C)
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Explosivity	:	no data available
Oxidizing properties	:	no data available

9.2. Other information

No further information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Advice : Stable under recommended storage conditions.

10.2. Chemical stability

Advice : Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Conditions to avoid : Exposure to moisture

10.5. Incompatible materials

Materials to avoid : Strong acids, Strong oxidizing agents

10.6. Hazardous decomposition products

Hazardous decomposition products : Chlorine

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Data for the product		
	Acute toxicity	
	Oral	
LD50	:	2600 mg/kg (Rat) This material may be a slight health hazard if ingested in large quantities.
	Inhalation	
		Inhalation of high concentration may cause mechanical overstraining of mucous membranes.
	Irritation	
	Skin	
Result	:	Prolonged skin contact may cause skin irritation.
	Eyes	
Result	:	Dust in the eyes may cause mechanical irritation.
	Sensitisation	
Result	:	No sensitizing effect known.

SECTION 12: Ecological information

12.1. Toxicity

Component:	Potassium chloride	CAS-No. 7447-40-7
	Acute toxicity	
	Fish	
LC50	:	2300 mg/l (Leuciscus idus (Golden orfe); 48 h) (DIN 38412)
	Toxicity to daphnia and other aquatic invertebrates	
EC50	:	825 mg/l (Daphnia magna; 48 h) (DIN 38412)
	algae	
EC50	:	2500 mg/l (72 h) (DIN 38412)

12.2. Persistence and degradability

Component:	Potassium chloride	CAS-No. 7447-40-7
	Persistence and degradability	
	Biodegradability	

Result : The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Data for the product
Bioaccumulation

Result : No information available.

12.4. Mobility in soil

Data for the product
Mobility

Result : The product is mobile in water enviroment.

12.5. Results of PBT and vPvB assessment

Data for the product
Results of PBT and vPvB assessment

Result : no data available

12.6. Other adverse effects

Data for the product
Additional ecological information

Result : Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : In accordance with local and national regulations.

Contaminated packaging	:	Packagings that cannot be cleaned are to be disposed of in the same manner as the product.
European Waste Catalogue Number	:	No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

Not dangerous goods for ADR, RID, IMDG and IATA.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packaging group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG : Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2. Chemical safety assessment

no data available

SECTION 16: Other information

Key literature references and sources for data	:	Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

|| Indicates updated section.

The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.

The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

PRO-JET BLACK APD 1000 NB

Version 15 Date of issue: 30-Nov-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	PRO-JET BLACK APD 1000 NB
Product Code	50370, 50607, 200620, 200696
Alternative names	PRO-JET Black APD 1000 NB

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Liquid colorant for use in Inkjet printing applications
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com
European Union Contact Details	FUJIFILM Europe GmbH Heesenstraße 31 40549 Düsseldorf, Germany Tele No. +49 (0)211 5089 137

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information

None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Carbon Black	1333-86-4	215-609-9	01-2119384822-32-xxxx	-	-	8-20
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<0.5
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05

Full text of H- and EUH-phrases: see section 16

Chemical name	CAS No	SVHC candidates
Carbon Black	1333-86-4	-
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated

	clothes and shoes.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Ingestion	Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms	No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical name	European Union	United Kingdom	France	Spain	Germany
Carbon Black 1333-86-4	-	STEL: 7 mg/m³ TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	Skin
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Carbon Black 1333-86-4	-	TWA: 3 mg/m³	-	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3.5 mg/m³
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Carbon Black 1333-86-4	-	-	TWA: 4 mg/m³	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3 mg/m³ STEL: 15 mg/m³
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Liquid

Appearance	-	**Odour**	No information available
Colour	black	**Odour Threshold**	No information available

Property	Values	Remarks
pH	8 - 10	
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air	Not applicable	Not applicable
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Hyphen		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate
mg/kg

Unknown acute toxicity

<10 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<10 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
~20 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon Black	> 8000 mg/kg (Rat)	-	> 4.6 mg/m³ (Rat) 4 h
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Carbon Black	EC50 (Scenedesmus subspicatus) >10000 mg/l 72h (OECD 201)	LC50 (Brachydanio rerio) >1000 mg/l 96h (OECD 203)	EC50 (Daphnia magna) >5600 mg/l 24h (OECD 202)
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical name	Partition coefficient
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Carbon Black	-
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-

12.6. Other adverse effects

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Carbon Black	-	-	-
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG	Not regulated.
RID	Not regulated.
ADR	Not regulated.
ICAO (air)	Not regulated.
IATA	Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Carbon Black - 1333-86-4	-	-
Dipropylene glycol - 25265-71-8	-	-
1,2-benzisothiazol-3(2H)-one - 2634-33-5	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H400 - Very toxic to aquatic life

Legend

SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 30-Nov-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

PRO-JET is a trade mark of Fujifilm Imaging Colorants Limited and is registered in certain countries in the world.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

PRO-JET Black APD 1000

Version 18 Date of issue: 30-Nov-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	PRO-JET Black APD 1000
Product Code	50370, 50607, 200620, 200696
Alternative names	PRO-JET Black APD 1000 NB

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Liquid colorant for use in Inkjet printing applications
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com
European Union Contact Details	FUJIFILM Europe GmbH Heesenstraße 31 40549 Düsseldorf, Germany Tele No. +49 (0)211 5089 137

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information

None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Carbon Black	1333-86-4	215-609-9	01-2119384822-32-xxxx	-	-	8-20
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<0.5
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05

Full text of H- and EUH-phrases: see section 16

Chemical name	CAS No	SVHC candidates
Carbon Black	1333-86-4	-
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated

	clothes and shoes.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Ingestion	Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical name	European Union	United Kingdom	France	Spain	Germany
Carbon Black 1333-86-4	-	STEL: 7 mg/m³ TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	Skin
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Carbon Black 1333-86-4	-	TWA: 3 mg/m³	-	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3.5 mg/m³
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Carbon Black 1333-86-4	-	-	TWA: 4 mg/m³	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3 mg/m³ STEL: 15 mg/m³
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Liquid

Appearance	-	**Odour**	No information available
Colour	black	**Odour Threshold**	No information available

Property	Values	Remarks
pH	8 - 10	
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air	Not applicable	Not applicable
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Water solubility	Miscible	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Hyphen		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate
mg/kg

Unknown acute toxicity

<10 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<10 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
~20 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon Black	> 8000 mg/kg (Rat)	-	> 4.6 mg/m³ (Rat) 4 h
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Carbon Black	EC50 (Scenedesmus subspicatus) >10000 mg/l 72h (OECD 201)	LC50 (Brachydanio rerio) >1000 mg/l 96h (OECD 203)	EC50 (Daphnia magna) >5600 mg/l 24h (OECD 202)
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical name	Partition coefficient
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Carbon Black	-
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-

12.6. Other adverse effects

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Carbon Black	-	-	-
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR Not regulated.

ICAO (air) Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Carbon Black - 1333-86-4	-	-
Dipropylene glycol - 25265-71-8	-	-
1,2-benzisothiazol-3(2H)-one - 2634-33-5	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H400 - Very toxic to aquatic life

Legend

SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 30-Nov-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

PRO-JET is a trade mark of Fujifilm Imaging Colorants Limited and is registered in certain countries in the world.

SAFETY DATA SHEET

FUJIFILM
FUJIFILM Imaging Colorants

according to Regulation (EC) No. 1907/2006

PRO-JET Black APD 1500

Version 5 Date of issue: 30-Nov-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name PRO-JET Black APD 1500
Product Code 200738
50921

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Liquid colorant for use in Inkjet printing applications

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE
Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

European Union Contact Details FUJIFILM Europe GmbH
Heesenstraße 31
40549 Düsseldorf, Germany
Tele No. +49 (0)211 5089 137

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information

None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Carbon Black	1333-86-4	215-609-9	01-2119384822-32-xxxx	-	-	8-20
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<0.2
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05

Full text of H- and EUH-phrases: see section 16

Chemical name	CAS No	SVHC candidates
Carbon Black	1333-86-4	-
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical name	European Union	United Kingdom	France	Spain	Germany
Carbon Black 1333-86-4	-	STEL: 7 mg/m³ TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	Skin
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Carbon Black 1333-86-4	-	TWA: 3 mg/m³	-	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3.5 mg/m³
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Carbon Black 1333-86-4	-	-	TWA: 4 mg/m³	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3 mg/m³ STEL: 15 mg/m³
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	-	**Odour**	No information available
Colour	black	**Odour Threshold**	No information available

Property	Values	Remarks
pH	8 - 10	
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air	Not applicable	Not applicable
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density	1.1	
Water solubility	Miscible	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Hyphen		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate
mg/kg

Unknown acute toxicity

<10 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<10 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<25 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon Black	> 8000 mg/kg (Rat)	-	> 4.6 mg/m³ (Rat) 4 h
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Carbon Black	EC50 (Scenedesmus subspicatus) >10000 mg/l 72h (OECD 201)	LC50 (Brachydanio rerio) >1000 mg/l 96h (OECD 203)	EC50 (Daphnia magna) >5600 mg/l 24h (OECD 202)
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical name	Partition coefficient
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Carbon Black	-
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-

12.6. Other adverse effects

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Carbon Black	-	-	-
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID	Not regulated.
ADR	Not regulated.
ICAO (air)	Not regulated.
IATA	Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Carbon Black - 1333-86-4	-	-
Dipropylene glycol - 25265-71-8	-	-
1,2-benzisothiazol-3(2H)-one - 2634-33-5	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H400 - Very toxic to aquatic life

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 30-Nov-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

PRO-JET Black APD 4000

Version 11 Date of issue: 30-Nov-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name	PRO-JET Black APD 4000
Product Code	200685 50559

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Liquid colorant for use in Inkjet printing applications
Uses advised against	See Section 16.

1.3. Details of the supplier of the safety data sheet

Company	FUJIFILM Imaging Colorants Limited Patricia Way, Pysons Road Industrial Estate, Broadstairs, Kent. CT10 2LE
Company Phone Number	+44(0) 1843 866668 (0830 to 1700 UK)
E-mail Address	FFIC-SDSManager@fujifilm.com
European Union Contact Details	FUJIFILM Europe GmbH Heesenstraße 31 40549 Düsseldorf, Germany Tele No. +49 (0)211 5089 137

1.4. Emergency telephone number

Europe	+(44) 870 82 00 418
Asia Pacific	+ (65) 315 81 349
North America	+ (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information

None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Carbon Black	1333-86-4	215-609-9	01-2119384822-32-xxxx	-	-	10-20
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<1
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05

Full text of H- and EUH-phrases: see section 16

Chemical name	CAS No	SVHC candidates
Carbon Black	1333-86-4	-
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours Not classified as flammable.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical name	European Union	United Kingdom	France	Spain	Germany
Carbon Black 1333-86-4	-	STEL: 7 mg/m³ TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	TWA: 3.5 mg/m³	Skin
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-on e 2634-33-5	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Carbon Black 1333-86-4	-	TWA: 3 mg/m³	-	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3.5 mg/m³
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-on e 2634-33-5	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Carbon Black 1333-86-4	-	-	TWA: 4 mg/m³	TWA: 3.5 mg/m³ STEL: 7 mg/m³	TWA: 3 mg/m³ STEL: 15 mg/m³
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-on e 2634-33-5	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Carbon Black 1333-86-4	-	-	-	-	-	-	-	-
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Aqueous solution of a polymer	**Odour**	none
Colour	black	**Odour Threshold**	Not applicable

Property	Values	Remarks
pH	8 - 10	
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air	Not applicable	Not applicable
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density	1.1	No information available
Water solubility	dispersible	No information available
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Hyphen		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	>2000 mg/kg
ATEmix (dermal)	>2000 mg/kg

Unknown acute toxicity

<10 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<10 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<25 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon Black	> 8000 mg/kg (Rat)	-	> 4.6 mg/m³ (Rat) 4 h
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Carbon Black	EC50 (Scenedesmus subspicatus) >10000 mg/l 72h (OECD 201)	LC50 (Brachydanio rerio) >1000 mg/l 96h (OECD 203)	EC50 (Daphnia magna) >5600 mg/l 24h (OECD 202)
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical name	Partition coefficient
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Carbon Black	-
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-

12.6. Other adverse effects

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Carbon Black	-	-	-
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not re-use empty containers. Decontaminate empty drums before disposal. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14: TRANSPORT INFORMATION

IMDG	Not regulated.
RID	Not regulated.
ADR	Not regulated.
ICAO (air)	Not regulated.
IATA	Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Carbon Black - 1333-86-4	-	-
Dipropylene glycol - 25265-71-8	-	-
1,2-benzisothiazol-3(2H)-one - 2634-33-5	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H400 - Very toxic to aquatic life

Legend

SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 30-Nov-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer
The information on this sheet is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

PRO-JET is a trade mark of Fujifilm Imaging Colorants Limited and is registered in certain countries in the world.

SAFETY DATA SHEET

FUJIFILM
FUJIFILM Imaging Colorants

according to Regulation (EC) No. 1907/2006

PRO-JET Blue APD 1000

Version 13 Date of issue: 30-Nov-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name PRO-JET Blue APD 1000
Product Code 200689
50568-P200

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Liquid colorant for use in Inkjet printing applications

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE
Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

European Union Contact Details FUJIFILM Europe GmbH
Heesenstraße 31
40549 Düsseldorf, Germany
Tele No. +49 (0)211 5089 137

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Additional information

None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No	EC No	REACH registration number	Annex No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight-%
Dipropylene glycol	25265-71-8	246-770-3	01-2119456811-38-XXXX	-	-	<1
1,2-benzisothiazol-3(2H)-one	2634-33-5	220-120-9	Exempt	613-088-00-6	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)	<0.05

Full text of H- and EUH-phrases: see section 16

Chemical name	CAS No	SVHC candidates
Dipropylene glycol	25265-71-8	-
1,2-benzisothiazol-3(2H)-one	2634-33-5	-

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air. If symptoms persist, call a doctor.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.

Ingestion Immediately rinse mouth with water. Do NOT induce vomiting. Never give anything by

mouth to an unconscious person. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours Not classified as flammable.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid contact with skin, eyes or clothing
Evacuate personnel to safe areas
Keep people away from and upwind of spill/leak

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas
Do not flush into surface water or sanitary sewer system
Prevent product from entering drains

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

6.4. Reference to other sections

None

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place.

Incompatible Materials
None known.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit value

Chemical name	European Union	United Kingdom	France	Spain	Germany
Dipropylene glycol 25265-71-8	-	-	-	-	TWA: 100 mg/m³ Ceiling / Peak: 200 mg/m³
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Dipropylene glycol 25265-71-8	-	-	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Dipropylene glycol 25265-71-8	-	STEL: 280 mg/m³ TWA: 140 mg/m³	-	-	-
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-

Derived No Effect Level (DNEL)

Chemical name	Acute Effects Local Dermal (Worker)	Acute Effects Local Inhalation (Worker)	Acute Effects Systemic Dermal (Worker)	Acute Effects Systemic Inhalation (Worker)	Chronic Effects Local Dermal (Worker)	Chronic Effects Local Inhalation (Worker)	Chronic Effects Systemic Dermal (Worker)	Chronic Effects Systemic Inhalation (Worker)
Dipropylene glycol 25265-71-8	-	-	-	-	-	-	84 mg/kg	238 mg/m³
1,2-benzisothiaz	-	-	-	-	-	-	-	-

ol-3(2H)-one 2634-33-5								

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater (continuous release)	Freshwater (intermittent release)	Marine water (continuous release)	Marine Water (Intermittent release)	Freshwater sediment	Marine sediment	Soil	Impact on Sewage Treatment
Dipropylene glycol 25265-71-8	0.1 mg/l	1 mg/l	0.01 mg/l	-	0.238 mg/l	0.0238 mg/l	-	1000 mg/l
1,2-benzisothiazol-3(2H)-one 2634-33-5	-	-	-	-	-	-	-	-

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Wear eye/face protection.

Hand Protection Wear protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection Ensure adequate ventilation.

General Hygiene Considerations When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Suspension	**Odour**	none
Colour	blue	**Odour Threshold**	No information available

Property	Values	Remarks
pH	8 - 10	neat
Melting/freezing point		No information available
Boiling point / boiling range	~ 100 °C	
Flash Point		no flash point due to high water content
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air	Not applicable	Not applicable
upper flammability limit		No information available
lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Relative density	1.06-1.08	

Water solubility	Miscible	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Hyphen		No information available
Viscosity, kinematic		No information available
Dynamic viscosity		No information available
Minimum Ignition Energy		No information available
Explosive Properties	No information available	
Oxidising Properties	No information available	

Other information

Softening point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	none.
Sensitivity to Static Discharge	none.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Acute toxicity

Ingestion	Unlikely to be hazardous if swallowed. By analogy.
Inhalation	Unlikely to be hazardous by inhalation. (based on components).
Eye contact	Unlikely to cause eye irritation. By analogy.
Skin contact	Unlikely to cause skin irritation. By analogy.
Sensitisation	There is no data available for this product.
Mutagenic Effects	There is no data available for this product.
Aspiration hazard	There is no data available for this product.

Chronic toxicity

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Carcinogenic effects	No information available.

Acute toxicity estimate

ATEmix (oral)	>2000 mg/kg
ATEmix (dermal)	>2000 mg/kg

Unknown acute toxicity

<30 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
<30 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
<30 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Dipropylene glycol	= >5000 mg/kg (Rat)	> 5010 mg/kg (rabbit)	>2.34mg/L (aerosol)
1,2-benzisothiazol-3(2H)-one	= 1020 mg/kg (Rat)	>2000 mg/kg (Rat)	-

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Dipropylene glycol	Desmodesmus subspicatus EC50 >100 mg/l 72h	Oryzias latipes >1000 mg/l 96h	Daphnia magna >100 mg/l 48h
1,2-benzisothiazol-3(2H)-one	ErC50 0.15 mg/l at 72 h	LC50 2.18 mg/l at 96 h	EC 50 48hr 2.94 mg/l NOEC 21d 1.7 mg/l

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical name	Partition coefficient
Dipropylene glycol	-0.462
1,2-benzisothiazol-3(2H)-one	1.3

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Dipropylene glycol	-
1,2-benzisothiazol-3(2H)-one	-

12.6. Other adverse effects

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Dipropylene glycol	-	-	-
1,2-benzisothiazol-3(2H)-one	-	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Do not empty into drains. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not re-use empty containers. Decontaminate empty drums before disposal. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14: TRANSPORT INFORMATION

IMDG Not regulated.

RID Not regulated.

ADR Not regulated.

ICAO (air) Not regulated.

IATA Not regulated.

Special precautions for users No information available.

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Dipropylene glycol - 25265-71-8	-	-
1,2-benzisothiazol-3(2H)-one - 2634-33-5	-	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this product

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H400 - Very toxic to aquatic life

Legend
SVHC : Substances of Very High Concern for Authorisation
Not Classified / Not Listed / No Data

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA: time weighted average	STEL: Short term exposure limit
Ceiling: Maximum limit value:	* Skin designation

Revision Date 30-Nov-2020

Reason for revision (M)SDS sections updated, 1.

Restrictions on use This product should only be used for applications identified in section one of this safety data sheet. Use of the material in applications other than those specified have not been assessed by FUJIFILM Imaging Colorants Limited (FFIC) for safety and regulatory compliance, consequently FFIC assumes no liability for such use. Alternative uses may be approved subject to appropriate safety/regulatory assessment and recipients wishing

to use this product in applications other than those listed, should consult with FFIC to discuss their requirements.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

PRO-JET is a trade mark of Fujifilm Imaging Colorants Limited and is registered in certain countries in the world.

SAFETY DATA SHEET

FUJIFILM
FUJIFILM Imaging Colorants

according to Regulation (EC) No. 1907/2006

PRO-JET Blue APD 1020

Version 5 Date of issue: 23-Jul-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name PRO-JET Blue APD 1020
Product Code 200692
50572

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Liquid colorant for use in Inkjet printing applications

Uses advised against See Section 16.

1.3. Details of the supplier of the safety data sheet

Company FUJIFILM Imaging Colorants Limited
Patricia Way,
Pysons Road Industrial Estate,
Broadstairs,
Kent.
CT10 2LE
Company Phone Number +44(0) 1843 866668 (0830 to 1700 UK)

E-mail Address FFIC-SDSManager@fujifilm.com

1.4. Emergency telephone number

Europe +(44) 870 82 00 418
Asia Pacific + (65) 315 81 349
North America + (1) 800 424 9300

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Not classified according to Regulation (EC) 1272/2008

Full text of H- and EUH-phrases: see section 16

2.2. Label elements

Not classified according to Regulation (EC) 1272/2008

Symbol(s)
None

Signal Word
None

EUH208 - Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH210 - Safety data sheet available on request

ATTACHMENT G

ESTIMATED EMISSIONS AND EMISSIONS OFFSET CALCULATIONS

ATTACHMENT G

TABLE G.1 SUMMARY OF 'NET INCREASE' EMISSION CALCULATIONS

Pollutant	New Parker Boiler 1		New Parker Boiler 2		New HVAC System		**Total 'Net Increase' Emissions**		**Amount of Offset Required (1.1 x Total 'Net Increase' Emissions)**
	lbs/day	tons/year	lbs/day	tons/year	lbs/day	tons/year	**lbs/day**	**tons/year**	**tons/year**
Nitrogen Oxides (NO_x)	2.650	0.484	2.650	0.484	0.314	0.0238	**5.613**	**0.991**	**1.090**
VOCs	0.595	0.109	0.595	0.109	0.0173	0.00131	**1.208**	**0.219**	**0.240**
Carbon Monoxide (CO)	6.094	1.112	6.094	1.112	0.264	0.0200	**12.452**	**2.244**	**2.469**
PM, Total	0.823	0.150	0.823	0.150	0.0238	0.00181	**1.669**	**0.302**	**0.332**
Sulfur Dioxide (SO_2)	0.0649	0.0119	0.0649	0.0119	0.00188	0.000143	**0.132**	**0.0238**	**0.0262**
TOC	0.595	0.109	0.595	0.109	0.0173	0.00131	**1.208**	**0.219**	**0.240**
Nitrous Oxide (N_2O)	0.0693	0.0126	0.0693	0.0126	0.00690	0.000525	**0.145**	**0.0258**	**0.0284**

Note:

1. New Parker Boiler emissions calculated in Table G.3.
2. New HVAC System emissions calculated in Table G.4.
3. Net Increase emissions include the emissions that will occur as a result of the addition of the two new Parker Boilers and the one new HVAC system. 'Net Increase' Emissions do not include existing emissions.
4. The required amount of offset required is 1.1 times the 'net increase' emissions. This does not include existing emissions. The required amount of offset for each pollutant must be compensated (as shown in Table G.2).
5. Criteria VOC have been separated from the broader category of TOC. TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.

ATTACHMENT G

TABLE G.2 SUMMARY OF 'EMISSIONS TO MEET OFFSET REQUIREMENT' CALCULATIONS

Pollutant	**Amount of Offset Required (1.1 x Total 'Net Increase' Emissions)**	Amount Offset from Two Retired Boilers (Small Boilers, Uncontrolled NO_X) + 3 Retired Forktrucks	Amount Offset from 1 NO_x Reduction Credit	Emissions Avoided by Use of Solar Panels	**Total Amount Offset by Credits**	Offset Requirement Met?
	tons/year	tons/year	tons/year	tons/year	**tons/year**	(Y/N)
Nitrogen Oxides (NO_x)	**1.090**	0.667	**1.00**	0.00652	**1.673**	Y
VOCs	**0.240**	0.286	**See Note 1**	-	**0.286**	Y
Carbon Monoxide (CO)	**2.469**	1.210	**2.300**	-	**3.510**	Y
PM, Total	**0.332**	0.00808	**0.310**	-	**0.319**	Y
Sulfur Dioxide (SO_2)	**0.0262**	0.000638	**0.0245**	0.00779	**0.0329**	Y
TOC	**0.240**	0.00585	**0.225**	-	**0.231**	Y
Nitrous Oxide (N_2O)	**0.0284**	0.00234	**0.0899**	-	**0.0922**	Y

Notes:

1. VOCs are not accounted for in offset of NO_x credit.
2. Emissions from each retired boiler calculated in Table G.5.
3. Propane Fork Truck emissions calculated in Table G.6.
4. Amount offset from 1 NO_x Reduction Credit calculated in Table G.8.
5. Each 'Amount Offset' contributes towards meeting the Offset Requirement.
6. Criteria VOC have been separated from the broader category of TOC. TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.
7. Solar panel emissions calculated in Table G.7.
8. Solar panels produce sufficient output to charge the electric forktrucks onsite. See calculations in Attachment D.

ATTACHMENT G - 'NET INCREASE' EMISSIONS

TABLE G.3 ESTIMATED EMISSIONS CALCULATIONS FOR EACH PARKER BOILER

Pollutant	Heat Input	Emission Factors		Emissions	Potential to Emit for One Boiler			
	MMBTU/hr	lbs/10^6scf	lbs/MMBTU	lb/hr	hrs/year	lbs/year	lbs/day	tons/year
NO_x	4.6	-	0.0240	0.110	8,760	967	2.650	0.484
CO	4.6	-	0.0552	0.254	8,760	2,224	6.094	1.112
N_2O (Controlled low NO_x burner)	4.6	0.64	0.000627	0.00289	8,760	25.284	0.0693	0.013
PM, Total	4.6	7.6	0.00745	0.0343	8,760	300	0.823	0.150
SO_2	4.6	0.60	0.000588	0.00271	8,760	24	0.0649	0.012
TOC	4.6	11	0.0108	0.0248	8,760	217	0.595	0.109
VOC	4.6	5.5	0.00539	0.0248	8,760	217	0.595	0.109

Note:

1. Used manufacturer data for emissions factors for NO_x and CO.
2. Assume 24 hours operation 365 days a year.
3. Emission factors from AP-42 Section 1.4 Natural Gas Combustion Table 1.4, controlled low NO_x small boilers less than 100 MMBTU/hour heat input.
4. Emissions calculated for one boiler at half capacity. There are two boilers total.
5. Each boiler is operating at full capacity. The application states that each boiler has a heat input of 4.6 MMBTU/hour.
6. Criteria VOC have been separated from the broader category of TOC. TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.

ATTACHMENT G - 'NET INCREASE' EMISSIONS

TABLE G.4 ESTIMATED EMISSIONS CALCULATIONS FOR NEW HVAC SYSTEM FOR L47

Pollutant	Heat Input	Emission Factors		Emissions	Estimated Actual Emissions			
	MMBTU/hr	lb/10^6scf	lbs/MMBTU	lb/hr	hrs/year	lbs/year	lbs/day	tons/year
NO_x	0.40	100	0.0980	0.039	1,216	48	0.314	0.0238
CO	0.40	84	0.0824	0.033	1,216	40	0.264	0.0200
N_2O Uncontrolled	0.40	2.2	0.00216	0.000863	1,216	1.049	0.00690	0.000525
PM Total	0.40	7.6	0.00745	0.00298	1,216	3.624	0.0238	0.00181
SO_x	0.40	0.60	0.00059	0.000235	1,216	0.286	0.00188	0.000143
TOC	0.40	11	0.0108	0.00216	1,216	2.623	0.0173	0.00131
VOC	0.40	5.5	0.00539	0.00216	1,216	2.623	0.0173	0.00131

Note:

1. Assume 8 hours operation 152 days a year.
2. Heat input determined based on 295,500 scf/year and the
3. To convert from lb/10^6scf to lbs/MMBTU, divided lb/10^6scf by 1,020 since 1 scf = 1,020 BTU.
4. Emission Factors derived from AP-42 Uncontrolled Small Industrial Boilers (<100) Table 1.4-1 and Table 1.4-2.
5. Heat Input = 400,000 BTU/hr from Part 6A of the new CZA permit application (HVAC for L47).
6. Emissions calculated for one HVAC System. There is one HVAC system total.
7. Criteria VOC have been separated from the broader category of TOC. TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.

ATTACHMENT G - ESTIMATED EMISSIONS FOR OFFSET REQUIREMENTS

TABLE G.5 ESTIMATED AMOUNT OF EMISSIONS OFFSET FROM EACH RETIRED L47 BOILER

Pollutant	Heat Input	Heat Input	Emission Factors		Estimated Actual Emissions			
	scf/year	MMBTU/hr	lb/10^6scf	lbs/MMBTU	hrs/year	lbs/year	lbs/day	tons/year
NO_x	1,063,600	0.124	100	0.0980	8,760	106	0.291	0.0532
CO	1,063,600	0.124	84	0.0824	8,760	89	0.245	0.0447
N_2O Uncontrolled	1,063,600	0.124	2.2	0.00216	8,760	2.340	0.00641	0.00117
PM Total	1,063,600	0.124	7.6	0.00745	8,760	8.083	0.0221	0.00404
SO_x	1,063,600	0.124	0.6	0.000588	8,760	0.638	0.00175	0.000319
TOC	1,063,600	0.124	11	0.0108	8,760	5.850	0.0160	0.00292
VOC	1,063,600	0.124	5.5	0.00539	8,760	5.850	0.0160	0.00292

Note:

1. Assume 24 hours per day operation 365 days a year.
2. Emission Factors derived from AP-42 Uncontrolled Small Industrial Boilers (<100) Table 1.4-1 and Table 1.4-2.
3. Heat input determined based on 10,636 ccf/year which is the fuel consumption from Attachment F of previous CZA permit application.
4. To convert from ccf/year to scf/year, multiply by 100.
5. Heat Input = 10,636 ccf/year x 100 scf/ccf = 1,063,600 scf/year
6. Emissions calculated for one L47 boiler with uncontrolled NO_x. There are two uncontrolled NO_x boilers total that will be removed.
7. Criteria VOC have been separated from the broader category of TOC. TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.

ATTACHMENT G - ESTIMATED EMISSIONS FOR OFFSET REQUIREMENTS

TABLE G.6 ESTIMATED EMISSIONS CALCULATIONS FOR PROPANE FORKLIFTS

Pollutant	Emission Standards	Max Engine Power	Emissions	Estimated Actual Emissions for One Propane Forklift		
	g/HP-hr	HP	lb/hr	hrs/year	lbs/year	tons/year
NO_x	2.0	59	0.260	1,436	374	0.187
VOCs	1.0	59	0.130	1,436	187	0.0934
CO	4.0	59	0.520	1,436	747	0.374

Note:

1. Emissions calculated for one propane forklift. There are three propane forklifts total that are projected to be removed.
2. Application states that propane fork lifts are each 59 HP.
3. Emission Standards are from 40 CFR Part 60 Subpart JJJJ, Table 1, Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG.
4. Emission Standards are for maximum enginer power of 100< or = HP < 500.
5. 1 kW = 1.341 HP, 1 kW = 3,412 BTU/hr, 1 BTU = 10^-6 MMBTU, and 453.59 grams = 1 pound
6. Assume operation of 359 days per year (365 minus 6 holidays off), 4 hours per day.

TABLE G.7 ESTIMATED OFFSET OF EMISSIONS AVOIDED BY USE OF SOLAR PANELS

Pollutant	Average 2020 Emissions	Net Electricity Surplus	Estimated Offset of Electricity based on Net Surplus	
	lbs/MWh	MWh/year	lbs/year	tons/year
NO_x	0.36	36.24	13.046	0.00652
CO_2	791	36.24	28,666	14.333
SO_x	0.43	36.24	15.583	0.00779

1. Net Electricity Surplus = Electricity Generated by Solar Panels - Anticipated Electricity Used by Facility
2. Average 2020 Emissions from PJM Annual Report, April 2021.

ATTACHMENT G - ESTIMATED EMISSIONS FOR OFFSET REQUIREMENTS

TABLE G.8 ESTIMATED AMOUNT OFFSET FROM NO_x EMISSION REDUCTION CREDIT (ERC) RATIOS (1 CREDIT = 1 TON PER YEAR NO_x OFFSET)

Pollutant	Heat Input	Emission Factors		Emissions	Estimated Actual Emissions		
	MMBTU/hr	lb/10^6 scf	lb/MMBTU	lb/hr	hrs/year	lbs/year	tons/year
NO_x	9.5	-	0.0240	0.228	8,760	2,000	1.000
CO	9.5	-	0.0552	0.525	8,760	4,600	2.300
N_2O (Uncontrolled)	9.5	2.2	0.00216	0.0205	8,760	180	0.0899
PM, Total	9.5	7.6	0.00745	0.0709	8,760	621	0.310
SO_2	9.5	0.6	0.000588	0.00560	8,760	49.020	0.0245
TOC	9.5	11	0.0108	0.0513	8,760	449	0.225
VOC	9.5	5.5	0.00539	0.0513	8,760	449	0.225

Note:

1. Assume boiler is low NO_x controlled boiler that is being decomissioned with this credit.
2. Assume 24 hours operation 365 days a year.
3. Used manufacturer data for emissions factors for NO_x and CO.
4. Remaining emission factors from AP-42 Section 1.4 Natural Gas Combustion Table 1.4, controlled low NO_x small boilers less than 100 MMBTU/hour heat input.
5. Estimated Heat Input of 9.5 MMBTU/hr determined based on 1 ton/year of NO_x.
6. Criteria VOC have been separated from the broader category of TOC. TOC values as presented include all exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds.
7. VOCs are not accounted for in offset of NO_x credit.

ATTACHMENT G - Example Calculations

Parker Boiler Emissions:

Table G.3, Boiler NO_x Emissions Calculation

Given:

Emission Factor from Manufacturer for Low NO_x Metal Fiber Premix Fan Assisted Atmospheric Natural Gas:

0.024 lbs/MMBTU

Heat Input: 4.6 MMBTU/hour, assume that each boiler operates at full capacity

Step 1: Calculate emissions in lbs/hour

0.024 lbs/MMBTU x 4.6 MMBTU/hr = 0.110 lbs/hour

Step 2: Assuming 365 days per year and 24 hours per day of boiler operations,

0.110 lbs/hour x 24 hours/day x 365 days/year = 967 lbs/year

Step 3: Convert to tons per year

967 lbs/year x 1 ton/2000 lbs = 0.484 tons per year per boiler

Table G.3, Boiler PM, Total Emissions Calculation

Given:

Emission Factor from AP-42 Section 1.4 Natural Gas Combustion Table 1.4, controlled low NO_x small boilers less than 100 MMBTU/hour heat input = 7.6 lbs/10^6scf

Heat Input: 4.6 MMBTU/hour, assume that each boiler operates at full capacity

Step 1: Convert Emission Factor to lbs/MMBTU

7.6 lbs/10^6scf / 1,020 MMBTU/10^6 scf = 0.00745 lbs/MMBTU

Step 2: Calculate emissions in lbs/hour

4.6 MMBTU/hour x 0.00745 lbs/MMBTU = 0.0343 lbs/hour

Step 3: Assuming 365 days per year and 24 hours per day operation,

0.0343 lbs/hour x 24 hours/day x 365 days/year = 300 lbs/year

Step 4: Convert to tons per year

300 lbs/year / 2000 lbs/ton = 0.150 tons per year per boiler

Table G.8, NO_x Emission Reduction Credit (ERC) Ratio Calculation

Given:

Emission of 1 ton per year of NO_x

Emission Factor from Manufacturer for Low NO_x Metal Fiber Premix Fan Assisted Atmospheric Natural Gas:

0.0240 lbs/MMBTU

Step 1: Determine lbs/year emitted.

1 ton/year x 2,000 lbs/ton = 2,000 lbs/year

Step 2: Assuming 365 days per year and 24 hours per day of operation, estimate lbs/hour

2,000 lbs/year x 1 year/365 days x 1 day/24 hours = 0.228 lbs/hour

Step 3: Determine heat input based on 1 ton per year of NO_x emissions

0.228 lbs/hour / 0.0240 lbs/MMBTU = 9.5 MMBTU/hour

Step 4: Based on heat input determined in Step 3, determine the tons per year of other pollutants emitted at the same heat input (9.5 MMBTU/hour) as in above example for PM total for the boilers.

Combustion of Natural Gas in a Boiler

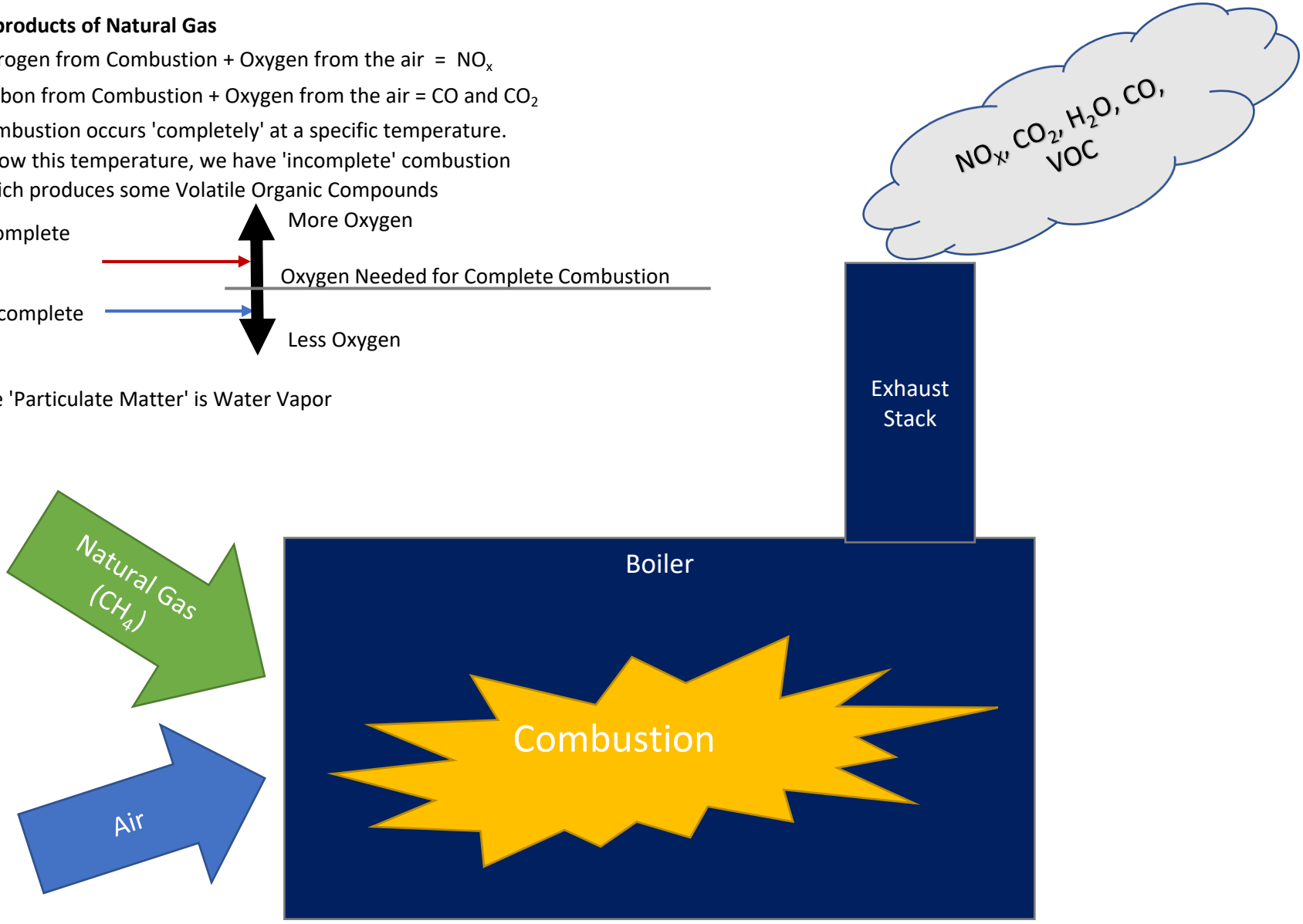
Byproducts of Natural Gas

Nitrogen from Combustion + Oxygen from the air = NO_x

Carbon from Combustion + Oxygen from the air = CO and CO_2

Combustion occurs 'completely' at a specific temperature.
Below this temperature, we have 'incomplete' combustion
which produces some Volatile Organic Compounds

The 'Particulate Matter' is Water Vapor



Duffield Associates, LLC
Project 14199

ATTACHMENT H

PUBLIC ENGAGEMENT PLAN

FUJIFILM Imaging Colorants, Inc. Community Engagement Plan
Update 9-12-2022

FUJIFILM Imaging Colorants, Inc. is committed to engaging with the community proximate to our facility at 233 Cherry Lane, in New Castle, Delaware. This commitment is consistent with FUJIFILM's long-term business plan to invest in its New Castle manufacturing facility in harmony with its neighbors. This commitment is also consistent with FUJIFILM's ISO 9001 and ISO 14001 certifications as good stewards of the environment.

Some of our recent outreach activities include various communications with representatives of the Wilmington Area Planning Council (WILMAPCO) and our participation in the Route 9 Monitoring Committee meetings. We also began reaching out to local community organizations and invited representatives to meet with FUJIFILM management at the New Castle manufacturing facility.

Such community outreach efforts have also served to highlight events or projects that would be beneficial to the surrounding neighborhoods. FUJIFILM has a long history of supporting both the local community and Delaware through charitable events and other fundraising activities. During recent community meetings, several projects have been discussed including a potential solar lighting project for a nearby park, a possible landscaping beautification project where DelDot and New Castle County would progress landscaping with sponsorship from local businesses like FUJIFILM to support ongoing maintenance, as well as other possible upcoming community events where businesses might be able to provide event support.

FUJIFILM looks forward to supporting local community events or projects in a meaningful way. Examples of some of our ongoing support initiatives include the following:

FUJIFILM participated for many years in the Sunshine Scramble Golf Tournament & Auction which is organized by the Sunshine Foundation. This foundation and event support a chronically ill, physically challenged or abused child each year, providing funds to grant wishes. In 2022, FUJIFILM has committed to again participate, and we will also provide sponsorship for the event, as well as donate an Instax camera for the child beneficiary.

FUJIFILM supports several donation drives each year, including the American Heart Association, the National Breast Cancer Foundation and the Warrior Expedition for U.S. Veterans. FUJIFILM also participates in the Wilmington based Stocking for Soldiers to bring holiday cheer to deployed soldiers by providing holiday stockings packed with goodies and useful things like socks, gum, and toothpaste. FUJIFILM also participates in the New Castle County Police Backpack Drive to provide underprivileged children much needed school supplies.

FUJIFILM has volunteered at the Delaware Food Bank pre-COVID, performing any assigned task. Working at the Food Bank has been a meaningful and in some cases humbling experience for our volunteers, especially when supporting local residents in need as they select their canned goods, fruits and vegetables, frozen foods and hygiene products, then helping to load their cars. Currently, we are participating in the Delaware Food Banks Can-Engineering competition, collecting food and using it to create a sculpture which will be donated to the food bank. FUJIFILM is scheduled for volunteer work at the Food Bank on September 8 and September 15.

In 2022, FUJIFILM participated and provided sponsorship for the Annual Christina River Watershed Cleanup held on April 2. This event is organized annually and volunteers pick up trash and remove debris from Delaware watersheds connected to the Christina River. For the event held on April 2,

FUJIFILM Imaging Colorants, Inc. Community Engagement Plan
Update 9-12-2022

FUJIFILM had 13 participants. All of the participants agreed it was a great event and they were excited to have participated in something so important to the environment.

On June 1, FUJIFILM participated in the DRBA Environmental World Day which was held at the local Veterans War Memorial Park and attended by many businesses in the area. This is a new event, held one time pre-COVID and re-introduced in 2022. An informative film loop was on display for attendees with information about FUJIFILM, its products and investment projects. Several FUJIFILM representatives were available to speak with the community about FUJIFILM's environmental commitment, and useful environmentally friendly giveaways were available.

Recently, FUJIFLM became aware through the New Castle Prevention Coalition (NCPC) of an upcoming Community Resilience Day planned for June 11. FUJIFILM donated funds to NCPC to support the event's table and chair rentals and to provide beverages to the community.

FUJIFILM has also recently progressed Sponsorship of the Delaware Art Museum and will participate in events held at the art museum throughout the next year, as well as donate several Instax cameras for use at kids events held at the museum.

FUJIFILM is committed to attending WILMAPCO Rt. 9 Monitoring and Health Sub-committee meetings and will support community initiatives as they are progressed. We are open to dialogue with community members toward improving their understanding of the FUJIFILM business and our operations at the New Castle, DE location.

ATTACHMENT I

CO_2 EMISSIONS CALCULATIONS

ATTACHMENT I - CO_2 Emissions Calculations

TABLE I.1 CO_2 EMISSIONS CALCULATIONS FOR PARKER BOILER

Pollutant	Heat Input	Emission Factors		Emissions	Potential to Emit for One Boiler		
	MMBTU/hr	lbs/10^6scf	lbs/MMBTU	lb/hr	hrs/year	lbs/year	tons/year
Carbon Dioxide (CO_2)	4.6	120,000	118	541	8,760	4,740,706	2,370

TABLE I.2 CO_2 EMISSIONS CALCULATIONS FOR NEW HVAC SYSTEM

Pollutant	Heat Input	Emission Factors		Emissions	Estimated Actual Emissions		
	MMBTU/hr	lb/10^6scf	lbs/MMBTU	lb/hr	hrs/year	lbs/year	tons/year
Carbon Dioxide (CO_2)	0.083	120,000	118	9.765	1,216	11,874	5.937

TABLE I.3 CO_2 EMISSIONS CALCULATIONS FOR RETIRED L47 BOILER

Pollutant	Heat Input	Emission Factors	Emission Factors	Emissions	Estimated Actual Emissions for One Retired Boiler		
	MMBTU/hr	lb/10^6scf	lbs/MMBTU	lb/hr	hrs/year	lbs/year	tons/year
Carbon Dioxide (CO_2)	0.12	120,000	118	14,880	8,760	130,348,800	65,174

TABLE I.4 CO_2 EMISSIONS CALCULATIONS FOR RETIRED PROPANE FORKLIFT

Pollutant	Heat Input	Emission Factors	Emissions	Estimated Actual Emissions for One Propane Forklift		
	MMBTU/hr	lb/MMBTU	lb/hr	hrs/year	lbs/year	tons/year
Carbon Dioxide (CO_2)	0.15	139	20.775	1,436	29,833	14.917

TABLE I.5 CO_2 EMISSIONS CALCULATIONS FOR NO_x EMISSION REDUCTION CREDIT (ERC) RATIOS (1 CREDIT = 1 TON NO_x PER YEAR OFFSET)

Pollutant	Heat Input	Emission Factors	Emission Factors	Emissions	Estimated Actual Emissions		
	MMBTU/hr	lb/10^6 scf	lb/MMBTU	lb/hr	hrs/year	lbs/year	tons/year
Carbon Dioxide (CO_2)	9.5	120,000	118	1,118	8,760	9,790,588	4,895

TABLE I.6 SUMMARY OF EMISSIONS CALCULATIONS

Pollutant	New Parker Boiler	New Parker Boiler	HVAC System	Total Amount Net CO_2 Emissions Generated	Total Amount Net CO_2 Emissions Generated	**Total Amount Net CO_2 Emissions Generated x 1.1**
	tons/year			lb/day	tons/year	**tons/year**
Carbon Dioxide (CO_2)	2,370	2,370	5.937	26,009	4,747	**5,221**

TABLE I.7 SUMMARY OF OFFSET EMISSIONS CALCULATIONS

Pollutant	**Total Amount Net CO_2 Emissions Generated x 1.1**	Amount Offset from Two Retired Boilers (Small Boilers, Uncontrolled NO_X) + 3 Retired Forktrucks	Amount Offset from 1 NO_x Reduction Credits	**Total Amount of CO_2 Emission Reductions**
	tons/year	tons/year	tons/year	**tons/year**
Carbon Dioxide (CO_2)	**5,221**	130,394	4,895	**135,289**

Note:

1. We do not definitively know that the retired source of VOCs was combustion related, therefore, we will only account for VOCs with VOC credit.
2. Table I.3: Retired L47 Boiler emission factor from AP-42 Uncontrolled Small Industrial Boilers, Table 1.4-3.
3. 1 horsepower = 0.00254 MBTU/HR
4. Table I.4: Propane forklift emission factor from United State Energy Information Administration, https://www.eia.gov/environment/emissions/co2_vol_mass.php (November 2021).

ATTACHMENT J

COASTAL ZONE ENVIRONMENTAL IMPACT OFFSET MATRIX

Environmental Impact Offset Matrix

Environmental Impact	Environmental Impact Description	Page #	Offset Proposal	Page #
Air Pollution	**Operation of Plant U45 will generate a net increase in air emissions due to combustion of natural gas in the two new hot water boilers and the HVAC system.** **Air emissions will increase as follows (see Attachment G, Table G.1 for summary and Tables G.3 and G.4 for detailed emissions calculations:** **NOx: 0.991 tpy** **VOCs: 0.219 tpy** **CO: 2.244 tpy** **Total Particulate Matter: 0.302 tpy** **Sulfur Dioxide: 0.0238 tpy** **Total Organic Compounds (does not include VOCs or exempted organic compounds such as methane, ethane, chlorofluorocarbons, toxics and HAPs, aldehydes, and semi-volatile compounds): 0.219 tpy** **Nitrous Oxide: 0.0258 tpy**	**6, 13-15**	**FFIC is required to offset emissions at 1.1 times the emission rate. To accomplish the offset emissions requirement, FFIC will** • **retire two small industrial boilers,** • **retire three propane forklifts and replace them with three electric forklifts,** • **install solar panels on the site to generate approximately 36.24 MWh per year to partially offset electricity usage,** • **use renewable energy from solar panels to power the three electric forklifts for Project Maxwell and 2 electric forklifts for Project Marconi instead of grid power, and** • **purchase 1 NO_x Emission Reduction Credits to offset the emissions.** **These actions will more than offset the emission increase associated with the addition of two new hot water boilers and one HVAC system for building L47 operations. See Attachment G, Table G.2 for a summary of emissions to meet offset requirements and Table G.5, G.6, G.7, and G.8 for detailed emission offset calculations.**	**6, 9, 24-28**
Solid Waste	**Additional solid waste from construction debris and regular operations including packaging materials are expected but cannot be estimated at this time. All waste products are managed in accordance with FFIC's ISO 14001 standard operating procedures.**	**19-20**	**Environmental considerations are taken into account when selecting waste disposal routes and companies. Large portions of the total waste are mitigated through re-use and recycling initiatives (e.g., plastic drums, IBCs and steel drums). Waste from FFIC is sent to Waste to Energy Plants whenever possible.** **It should be noted that for the 2020 calendar year, FFIC recycled the following: 9,900 lbs. of wood pallets, 176,400 lbs. of totes, 1,453 drums of various sizes, and 1,012 lbs. of paper.**	**-**
Hazardous Waste	**The quantity of hazardous waste cannot be accurately estimated at this time, but cumulative hazardous waste generated onsite is not expected to exceed that of the Facility's Small Quantity Generator Status.**	**11-12, 20-21**	**All hazardous waste will be transported out of state and thus out of the Coastal Zone.**	**-**

Flora and Fauna	**None**	**-**	**Not Applicable**	**-**
Threatened/Endangered Species	**None**	**-**	**Not Applicable**	**-**
Habitats	**None**	**-**	**Not Applicable**	**-**
Wetlands	**None**	**-**	**Not Applicable**	**-**
Site Drainage	**None**	**16-17**	**Not Applicable**	**-**
Land Erosion	**None**	**-**	**Not Applicable**	**-**
Flood Control	**None**	**-**	**Not Applicable**	**-**
Surface Water (Storm water)	**No negative stormwater impact will occur at Plant U45.**	**16-18**	**Not Applicable**	**-**
Groundwater	**State Permit Number WPCC 3032E/97, NPDES Permit Number DE 0051080, was issued with an effective date of October 1, 2020, and expiration date of September 30, 2025. The permit is issued to Croda, Inc. and FFIC. The permit authorizes the discharge of stormwater and treated groundwater through Outfall 005 to Magazine Ditch, a tributary to the Delaware River. In part, the permit covers the northwestern portion of the New Castle Site property and the adjoining portion of the Croda, Inc. property. The portion of the Croda, Inc. property that is covered by the NPDES permit referenced above is presently non- operational. Croda, Inc. discharges treated groundwater pumped from the on-site substance recovery Well #10 to Outfall 005 as required by the Atlas Point HSCA project. The NPDES permit authorizes the discharge of stormwater, noncontact cooling water and the treated groundwater through Outfall 005.**	**16-17**	**Not Applicable**	**-**
Water for Processing	**The products are all aqueous based and no organic solvents are used in the processing or clean-down operations.**	**18**	**Not Applicable**	**-**
Water for Cooling	**None**	**-**	**Not Applicable**	**-**
Water for Effluent Removal	**Plant U45 operation will increase the volume of wastewater generated at the FFIC facility and sent to the New Castle County sanitary sewage collection system.**	**7, 18**	**Not Applicable**	**-**

	However, the additional flow from the FFIC facility still will comply with the authorized flow volume and the permissible effluent quality criteria established and permitted by New Castle County. As such, there is no negative environmental impact associated with the increased wastewater flow.			
Glare	**None**	**-**	**Not Applicable**	**-**
Heat	**None**	**-**	**Not Applicable**	**-**
Noise	**None**	**-**	**Not Applicable**	**-**
Odors	**None**	**-**	**Not Applicable**	**-**
Vibration	**None**	**-**	**Not Applicable**	**-**
Radiation	**None**	**-**	**Not Applicable**	**-**
Electromagnetic Interference	**None**	**-**	**Not Applicable**	**-**
Raw Materials	**None**	**-**	**Not Applicable**	**-**
Intermediate Products	**None**	**-**	**Not Applicable**	**-**
Byproducts	**See Air Pollution as the emissions detailed are the byproduct of combustion.**	**6, 13-15**	**Not Applicable**	**-**
Final Products	**The current aqueous dispersion range is comprised of approximately 20 products, a mixture of Black, Yellow, Magenta and Cyan products with varying formulations for different customers. Products are all aqueous based and no solvents are used in the processing or clean-down operations. Therefore, the environmental impact is minimal as no Volatile Organic Compounds (VOCs), Hazardous Air Pollutants (HAPs) or Hazardous Wastes are generated from processing operations.**	**6-7**	**Not Applicable**	**-**
Other Effects	**None**	**-**	**Not Applicable**	**-**

ATTACHMENT K

ELECTRIC VERSUS NATURAL GAS BOILER POWER SOURCE COMPARISON

Attachment K - Electric versus Natural Gas Boiler Power Source Comparison

Step 1: Calculate Annual Megawatt-hours (MW) for Parker Boilers

As per Attachment G, Table G.4:

Power Output:	4.6	MMBTU/hr
Assume Run Time:	8,760	hours
	40,296	MMBTU/year
1 BTU =	2.931E-07	MWh
1 MMBTU =	1,000,000	BTU
1 MMBTU =	0.293	MWh
For one boiler,	11,810	MWh/year
No. of Boilers	2	
	23,619	**MWh/year for both boilers**

Step 2: Determine typical size of one solar panel.

65	inches	5.417	feet
39	inches	3.250	feet

Reference: https://us.sunpower.com/how-many-solar-panels-do-you-need-panel-size-and-output-factors#:~:text=Typical%20residential%20solar%20panel%20dimensions,61.3%20inches%20by%2041.2%20inches.

Area of 1 panel =	17.604	square feet
1	panel	200-400 Watts

Reference: https://news.energysage.com/what-is-the-power-output-of-a-solar-panel/

Step 3: Determine typical wattage of one solar panel.

Standard Panel	230-275	Watts/hour	https://brightstarsolar.net/common-sizes-of-solar-panels/
High Efficiency	327-345	Watts/hour	https://brightstarsolar.net/common-sizes-of-solar-panels/

Step 4: Determine approximate annual energy production of solar panels.

Assume Time:	4,380	hours (12 hours of sunlight per day, 365 days per year)
Annual Total =	**1.007**	**MWh**
1000000	Watts =	1 MW

Step 5: Determine the number of solar panels needed to provide the energy needed for both boilers.

Assuming solar panels each producing 230 Watts of power,

23,619	Annual MW for two boilers	=	**23,446**	**panels to meet**
1.007	MWh/panel			**energy needs of boilers**

Step 6: Determine the area needed to install the necessary number of solar panels to power the boilers.

Area of panels =	412,742	square feet
	9.475	**acres**

Attachment K - Electric versus Natural Gas Boiler Power Source Comparison

Power Source Emissions Calculations

PJM		Annual	
	2020 Avg	Marginal On-Peak	Marginal Off-Peak
Substances	lbs/MWh		
CO_2	791	1180	1046
SO_2	0.430	0.540	0.430
NO_x	0.360	0.760	0.450

From PJM Annual Report, April 2021.

Grid Power vs Natural Gas-Fueled Boiler Emissions Comparison

	2020 Average PJM Emissions	2020 PJM Emissions @ t = 12 hrs/day	Parker Boiler Emissions	Two Parker Boiler Emissions @ t = 24 hrs/day
Substances	lbs/MWh	lbs/MW	lbs/MWh	lbs/MW
CO_2	791	3,464,580	118	2,061,176
SO_2	0.43	1,883	0.00203	36
NO_x	0.36	1,577	0.08276	1,450

Notes:

1. PJM emission rates from PJM Annual Report, April 2021.
2. Used manufacturer data for boiler emissions rates for NO_x and remaining emission rates from AP-42 Section 1.4 Natural Gas Combustion Table 1.4, controlled low NO_x small boilers less than 100 MMBTU/hour heat input.