

Regulation 1151 Review Committee

date range 10:00 AM - 12:00 PM Tuesday October 08, 2019

business DNREC Division of Air Quality / Air Quality / Natural Resources and Environmental Control

MEETING DESCRIPTION

Review Committee Meetings for 7 DE Admin. Code 1151 Requirements for the Phase-Out of Hydrofluorocarbons.

Following the Governors directive and House Concurrent Resolution 60, the Department of Natural Resources and Environmental Control has been directed to begin its state-specific process to propose regulation for the use and manufacturing of Hydrofluorocarbons (HFCs) with regulation proposed by March 30, 2020. As part of our process, DNREC will establish a review committee to help craft regulatory language for Delaware. The review committee

CONTACT INFORMATION

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[Website](#)

ADDRESS

location or
Division of Waste & Hazardous Substances
715 Grantham Ln
New Castle DE 19720
West Conference Room

tv **VIRTUAL MEETING**

will be composed of manufacturers and end-users of HFCs (and equipment containing the refrigerants) of concern, industry associations, and persons with environmental interests.

[Regulation Under Development Webpage](#)

INFORMATION

None

DOCUMENTS

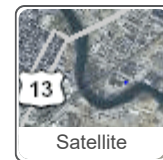
[Agenda](#)

CHANGE HISTORY

Date	Reason
09/12/2019	Topic change - Title
09/09/2019	Topic change - Meeting Information
09/04/2019	Document change - Agenda saved
09/04/2019	New

Meeting Location

Get Directions launch





Delaware.gov

GOVERNMENT :::

- Cities & Towns
- Delaware Courts
- Delaware State Code
- Elected Officials
- General Assembly
- Delaware Governor
- Locations Directory
- Phone Directory
- State Employees
- State Agencies
- State Regulations
- Transparency
- Calendar API
- Make a FOIA Request

BUSINESS :::

- Economic Development
- Incorporate
- Business First Steps
- Tax Center
- Bid for State Contracts
- Export Assistance
- Start a Small Business



DRAFT

Requirements for the Phase-out of Hydrofluorocarbons
Regulation 1151 Rule Development

HFCs Review Committee
October 8, 2019
10:00 am – 12:00 pm

Agenda

- Welcome/Introductions
- Staff Presentation
- Low-GWP Incentive Program
- Model Rule
- Open Discussion

MEETING SIGN-IN SHEET

Project:	HFCs Review Committee Meeting	Meeting Date:	October 8, 2019
Facilitator:	Ajo Rabemiarisoa & Christian Wisniewski	Place/Room:	Commons Training Room

Name	Title	Company	Phone	E-Mail
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Julie Wenger	Ex-Director	DFIC	302-545-8305	julie.mirowenger@gmail.com



Requirements for the Phase Down of Hydrofluorocarbons

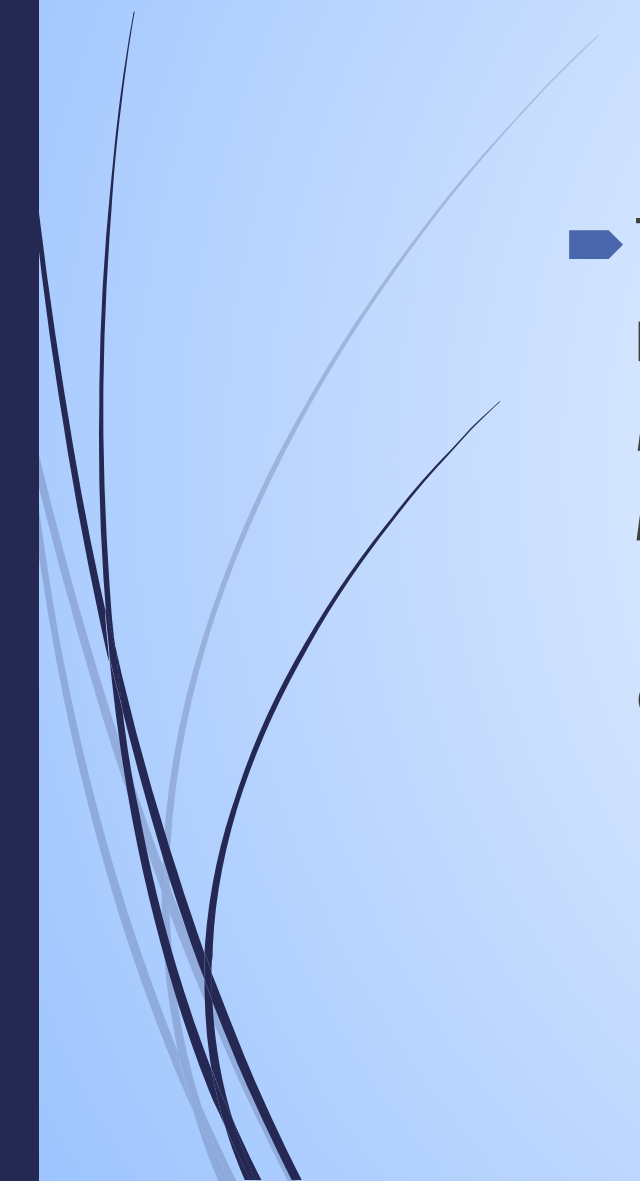
7 DE Admin Code 1151 – Review Committee Meeting

DNREC – DAQ

October 8, 2019



Review Committee Goal

- ▶ To help the Department craft/tailor the regulation (*7 DE Admin. Code 1151 Requirements for the Phase Down of Hydrofluorocarbons*) to be representative of Delaware's economic, social and environmental considerations.
- 



Agenda

- ❖ **Introductions**
- ❖ **Division of Coastal Climate and Energy Presentation on the *Cool Switch Program***
- ❖ **Review the Draft Regulation Language**
 - **Overview of the Changes since last Review Committee Meeting**
 - **Open Discussion**
 - **Regulatory Timeline Overview**



Cool Switch - Low Impact Refrigerant Program

October 8, 2019

Why? Refrigerants and Environmental Impact

The goal of the Cool Switch program is to incentivize the use of refrigerants with lower Global Warming Potential (GWP) impacts.

- ▶ Refrigerant systems use manufactured chemicals designed to efficiently move heat
- ▶ Some of these chemicals were banned by international treaty (1987 Montreal Protocol) because they damage the ozone layer
- ▶ Some of the new, replacement chemicals have high GWP impacts

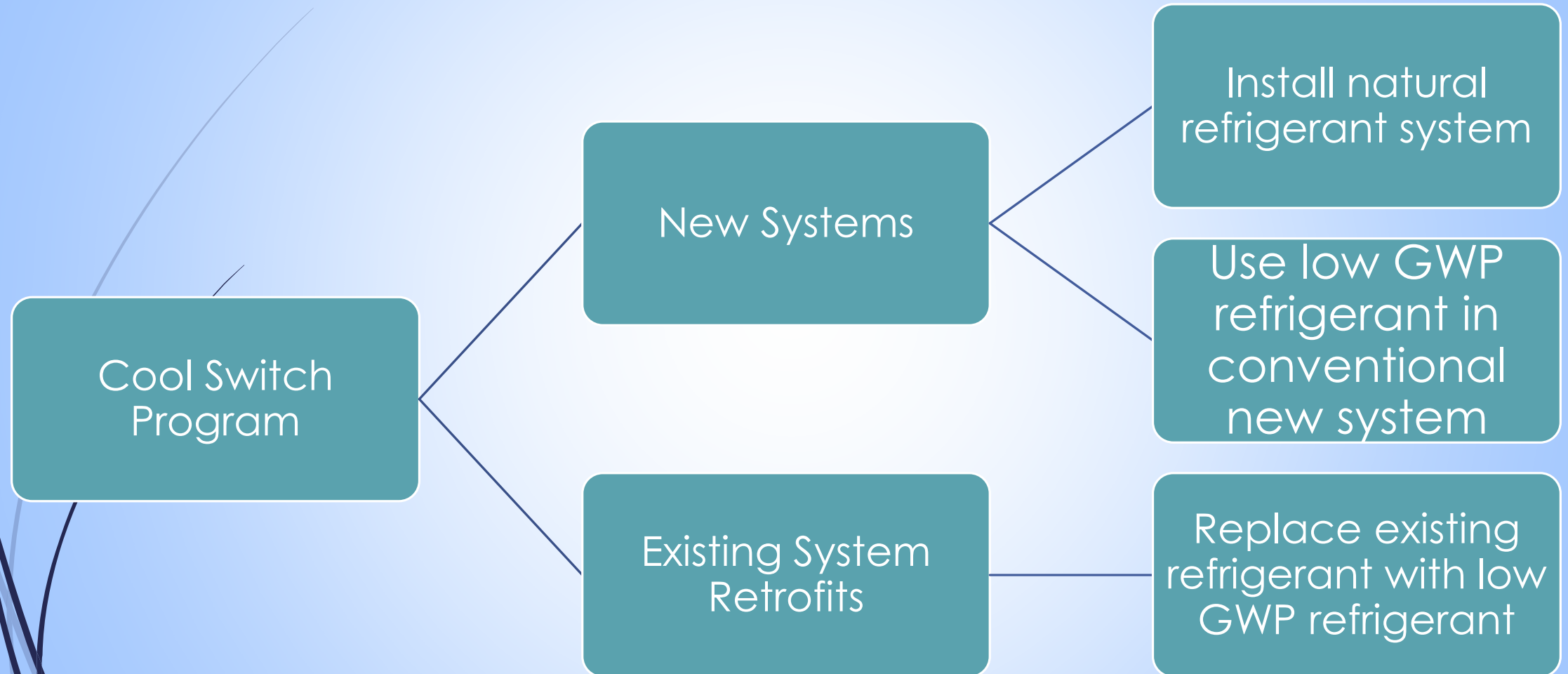


1 pound of R404A =
3922 GWP



1 pound of Ammonia
= 0 GWP

Program Pathways



Eligibility Requirements

- ▶ Cool Switch is available to non-residential consumers that use or will use **at least 50 lbs of refrigerant**
 - ▶ Usage could be one facility or multiple facilities in aggregate
- ▶ Installed refrigerants must have a **GWP less than 1,500**
 - ▶ Examples: R-449A, R-448A, Ammonia, and Carbon Dioxide

Application Process: Pre-Approval

- ▶ All grants require pre-approval prior to purchasing any services, equipment or refrigerants
- ▶ Participants will submit an application form to DNREC
 - ▶ Application asks for:
 - ▶ Contract/installer/vendor information
 - ▶ Baseline system specifications (retrofit)
 - ▶ Replacement/net system specifications
- ▶ Pre-installation site visit may be required

Program Incentive Limits

Incentives for all pathways will be paid at a rate of **\$25 per ton** of avoided CO₂-equivalent emissions

Retrofit System Limit

- Lesser of 50% of total project cost or \$100,000

New Systems Limits

- **Natural refrigerant systems:**
Lesser of 50% of total project cost or \$250,000
- **Conventional systems:**
Lesser of 25% of total project cost or \$100,000

Calculating Savings and Incentives

Details...

Formula 1. Avoided Emissions of CO₂-equivalent GHGs

$$tCO_2e = \text{Years of Operation} * [(GWP_B * Charge_B * Leakage_B) - (GWP_N * Charge_N * Leakage_N)]$$

Years of Operation X [Annual CO₂ equivalent from old system - Annual CO₂ equivalent from new system]

Formula 2. Total Project Incentives

$$\text{Total Incentive (\$)} = \text{MIN} \left\{ \begin{array}{l} \text{Incentive Cap (\$)} \\ \text{Avoided Emissions (ton)} * \text{Marginal Incentive (\$/ton)} \end{array} \right.$$

Summary

Avoided Emissions
X
 \$ per avoided ton
=
 Incentive Payment

Post Installation: Final Review

- After project completion, participant submits itemized invoices for all install equipment and refrigerants
- DNREC conducts final review
- DNREC may require a post-installation site visit
- Once the project passes final review, the grant is disbursed

Next Steps

- ▶ Program guidelines and application forms will be completed and available on DNREC's website in October
- ▶ The official program launch date will be announced within the next 30 days
- ▶ For questions or additional information, contact:
 - ▶ Ed Synoski, Edward.Synoski@delaware.gov
(302) 735-3358

A dark blue arrow points right from the left edge of the slide. Several thin, curved lines in shades of blue and grey sweep across the left side of the slide, extending from the bottom towards the top.

Questions?

Regulatory Timeline

- ▶ Start Action Notice approved August 15, 2019
- ▶ Review Committee Meetings – September 24, 2019 and October 8, 2019
 - ▶ Comments due by October 31st, 2019
- ▶ Public Workshop(s) – Week of December 9, 2019
- ▶ Initial Publication - March 1st Register
- ▶ Public Hearing on the Proposal – March 23-30, 2020





Thank you!

Discussion and Questions

Regulatory Development Process Website

<https://dnrec.alpha.delaware.gov/air/permitting/under-development/>

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TITLE 7 NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF AIR QUALITY
PROPOSED REGULATION

1151 Requirements for the Phase-out ~~Down~~ of Hydrofluorocarbons

3/1/2020

1.0 Purpose

1.1 This regulation establishes the phase-out ~~down~~ requirements for the use and manufacturing of hydrofluorocarbons in the State of Delaware by adopting specific United States Significant New Alternatives Policy (SNAP) Program prohibitions for certain substances in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses. This regulation is designed to support greenhouse gas emissions reductions in the State of Delaware.

2.0 Applicability

2.1 This regulation applies to any person who sells, offers for sale, installs, uses, or enters into commerce, in the State of Delaware, any substance used in end-uses listed in Section ~~5~~ **6.0**.

2.2 Substances used in end-uses listed in Section ~~6~~ **7.0** are exempt from the prohibitions covered in this regulation.

2.3 *Severability.* Each section of this regulation shall be deemed severable, and in the event that any provision of this regulation is held to be invalid, the remainder of this regulation shall continue in full force and effect.

3.0 Definitions

The following terms, when used in this regulation, shall have the following meanings unless the context clearly indicates otherwise. Terms used but not defined herein shall have the meanings given to them in 7 DE Admin. Code 1101 ~~or~~ the Clean Air Act as amended in 1990, in that order of:

“**Aerosol Propellant**” means a compressed gas that serves to dispense the contents of an aerosol container when the pressure is released.

“**Air Conditioning Equipment**” means chillers, both centrifugal chillers and positive displacement chillers, intended for comfort cooling of occupied spaces.

“**Capital Cost**” means an expense incurred in the production of goods or in rendering services, including but not limited to the cost of engineering, purchase,

Commented [RA(1): Following Industry comment. (Gradual) Phase Down being more appropriate when used in the broader sense of the regulation

Using the SNAP “Phase-out” terminology referenced to specific end-uses. Also some HFCs blends may still be used in the future, thus phase-out could be misleading.

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and installation of components or systems, and instrumentation, and contractor and construction fees.

“**Centrifugal Chiller**” means air conditioning equipment that utilizes a centrifugal compressor in a vapor-compression refrigeration cycle typically used for commercial comfort air conditioning. Centrifugal chiller in this definition is a chiller intended for comfort cooling and does not include cooling for industrial process cooling and refrigeration.

“**Cold Storage Warehouse**” means a cooled facility designed to store meat, produce, dairy products, and other products that are delivered to other locations for sale to the ultimate consumer.

“**Component**” means a part of a refrigeration system, including but not limited to condensing units, compressors, condensers, evaporators, and receivers; and all of its connections and subassemblies, without which the refrigeration system will not properly function or will be subject to failures.

“**Cumulative Replacement**” means the addition of or change in multiple components within a three-year period.

“**Effective Date**” or “**Effective Date of Prohibition**” means date after which the prohibitions provided in Section 5 6.0 go into effect.

“**End-use**” means processes or classes of specific applications within industry sectors, including but not limited to those listed in Section 5 6.0.

“**Flexible Polyurethane**” means a non-rigid synthetic foam containing polymers of urethane radicals created by the reaction of isocyanate and polyol, including, but not limited to that used in furniture, bedding, chair cushions, and shoe soles.

“**Foam**” or “**Foam Blowing Agent**” means a product or substance used to produce the product with a cellular structure formed via a foaming process in a variety of materials that undergo hardening or phase transition, such as polymers and plastics.

“**Household Refrigerators and Freezers**” means refrigerators, refrigerator-freezers, freezers, and miscellaneous household refrigeration appliances intended for residential use. For the purposes of this regulation, “household refrigerators and freezers” does not include “household refrigerators and freezers - compact”, or “household refrigerators and freezers - built-in.”

“**Household Refrigerators and Freezers Compact**” means any refrigerator, refrigerator-freezer or freezer intended for residential use with a total refrigerated volume of less than 7.75 cubic feet (220 liters).

“**Household Refrigerators and Freezers - Built-in**” means any refrigerator, refrigerator-freezer or freezer intended for residential use with 7.75 cubic feet or greater total volume and 24 inches or less depth not including doors, handles, and custom front panels; with sides which are not finished and not designed to be visible after installation; and that is designed, intended, and marketed exclusively to be: installed totally encased by cabinetry or panels that are attached during installation; securely fastened to adjacent cabinetry, walls or floor; and equipped with an integral factory-finished face or accept a custom front panel.

“**Integral Skin Polyurethane**” means a synthetic self-skinning foam containing polymers of urethane radicals polyurethane polymers formed by the reaction of an

Commented [RA(2): This section differs from your handouts,

Stakeholder commented to include “rendering services” as narrowed to accurately cover the costs related to repairs or the replacement of supermarket systems and components.

Commented [AR3]: Technical correction provided by Stakeholder

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isocyanate and a polyol, including but not limited to that used in car steering wheels, dashboards, and shoe soles.

~~‘Light duty vehicle’ means passenger cars and light duty trucks as defined in [insert State vehicle regulation]~~

“**Metered Dose Inhaler**,” or “**Medical Dose Inhaler**,” or “**MDI**” means a device that delivers a measured amount of medication as a mist that a patient can inhale, typically used for bronchodilation to treat symptoms of asthma, chronic obstructive pulmonary disease (COPD), chronic bronchitis, emphysema, and other respiratory illnesses. An MDI consists of a pressurized canister of medication in a case with a mouthpiece.

“**Miscellaneous Residential Refrigeration Appliance**” means a residential refrigeration appliance smaller than a refrigerator, refrigerator-freezer, or freezer; and which includes coolers, cooler compartments, and combination cooler refrigeration or cooler freezer products.

“**New**” means products or equipment that are manufactured after the effective date of this regulation or equipment first installed for an intended purpose with new or used components, expanded by the addition of components to increase system capacity; or replaced or cumulatively replaced such that the capital cost of replacement exceeds 50% of the capital cost of replacing the whole system.

“**Person**” means any individual, firm, association, organization, manufacturer, distributor, partnership, business trust, corporation, limited liability company, company, state, or local governmental agency or public district.

“**Phenolic Insulation Board**” means phenolic insulation including but not limited to that used for roofing and wall insulation.

“**Bunstock or bun stock**” is a large solid box-like structure formed during the production of polystyrene insulation.

“**Polyolefin**” means foam sheets and tubes made of polyolefin.

“**Polystyrene Extruded Boardstock and Billet (XPS)**” means a foam formed from polymers of styrene and produced on extruding machines in the form of continuous foam slabs which can be cut and shaped into panels used for roofing, walls, flooring, and pipes.

“**Polystyrene Extruded Sheet**” means polystyrene foam including that used for packaging and buoyancy or floatation. It is also made into food-service items, including hinged polystyrene containers (for “take-out” from restaurants); food trays (meat and poultry) plates, bowls, and retail egg containers.

“**Positive Displacement Chiller**” means vapor compression cycle chillers that use positive displacement compressors, typically used for commercial comfort air conditioning. Positive displacement chiller in this definition is a chiller intended for comfort cooling and does not include cooling for industrial process cooling and refrigeration.

“**Reclaim**” means to reprocess recovered refrigerant to all of the specifications in appendix A of this regulation (based on AHRI Standard 700-2016 or the most recent subsequent version), Specifications for Refrigerants, that are applicable to that refrigerant and to verify that the refrigerant meets these specifications using the analytical methodology prescribed in that standard.

Commented [AR4]: Technical correction provided by Stakeholder

Commented [RA(5): Overlooked in our previous version
USCA states are not looking to adopt right now

Commented [AR6]: This definition is consistent with our NSPS regulation.

Industry to suggest additional comments?
-Nominal Compressor Capacity

Commented [AR7]: Stakeholder comment: Technical correction-buoyancy and floatation foams are sold in billets not sheets

Any suggested language?

Commented [AR8]: The Department requests further clarifications on how including these considerations would support our goal of transitioning away from high GWP HFCs. Delaware, and many of the USCA states do not have quantifiable data supporting the fact that reclamation would result in lower GHG emissions than disposing of the used refrigerants, when looking at the entire life cycle analysis.

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“**Refrigerant**” or “**Refrigerant Gas**” means any substance, including blends and mixtures, which is used for heat transfer purposes.

“**Refrigerated Food Processing and Dispensing Equipment**” means retail food refrigeration equipment that is designed to process food and beverages dispensed via a nozzle that are intended for immediate or near-immediate consumption, including but not limited to chilled and frozen beverages, ice cream, and whipped cream. This end use excludes water coolers, or units designed solely to cool and dispense water.

“**Refrigeration Equipment**” means any stationary device that is designed to contain and use refrigerant gas, including but not limited to retail or commercial refrigeration equipment, household refrigeration equipment, and cold storage warehouses.

“**Remote Condensing Units**” means retail refrigeration equipment or units that have a central condensing portion and may consist of compressor(s), condenser(s), and receiver(s) assembled into a single unit, which may be located external to the sales area. The condensing portion (and often other parts of the system) is located outside the space or area cooled by the evaporator. Remote condensing units are commonly installed in convenience stores, specialty shops (e.g., bakeries, butcher shops), supermarkets, restaurants, and other locations where food is stored, served, or sold.

“**Residential use**” means use by a private individual of a substance, or a product containing the substance, in or around a permanent or temporary household, during recreation, or for any personal use or enjoyment. Use within a household for commercial or medical applications is not included in this definition, nor is use in automobiles, watercraft, or aircraft.

“**Retail Food Refrigeration**” or “**Commercial Refrigeration**” means equipment designed to store and display chilled or frozen goods for commercial sale including but not limited to stand-alone units, refrigerated food processing and dispensing equipment, remote condensing units, supermarket systems, and vending machines.

“**Retrofit**” means to convert an appliance from one refrigerant to another refrigerant. Retrofitting includes the conversion of the appliance to achieve system compatibility with the new refrigerant and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, o-rings or appliance components. the replacement of the refrigerant used in refrigeration equipment with a different refrigerant, and any related changes to the refrigeration equipment required to maintain its operation and reliability following refrigerant replacement.

“**Rigid Polyurethane and Polyisocyanurate Laminated Boardstock**” means laminated board insulation made with polyurethane or polyisocyanurate foam, including that used for roofing and walls.

“**Rigid Polyurethane Appliance Foam**” means polyurethane insulation foam in domestic appliances.

“**Rigid Polyurethane Commercial Refrigeration and Sandwich Panels**” means polyurethane insulation for use in walls and doors, including that used for commercial refrigeration equipment, and used in doors, including garage doors.

Commented [AR9]: Stakeholder suggestion to delete, but we believe this offers clarification.

Commented [RA(10): Section 152 of Subpart F of 40 C.F.R. Part 82, as that section existed as of January 3, 2017.

Consistent with EPA

Consistent with VT and WA legislation

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“**Rigid Polyurethane High-pressure Two-component Spray Foam**” means a foam product that is pressurized 800-1600 pounds per square inch (psi) during manufacture; sold in pressurized containers as two parts (i.e., A-side and B-side); and is blown and applied in situ using high-pressure pumps to propel the foam components, and may use liquid blowing agents without an additional propellant.

“**Rigid Polyurethane Low-pressure Two-component Spray Foam**” means a foam product that is pressurized to less than 250 psi during manufacture; sold in pressurized containers as two parts (i.e., A-side and B-side); and are typically applied in situ relying upon a gaseous foam blowing agent that also serves as a propellant so pumps typically are not needed.

“**Rigid Polyurethane Marine Flotation Foam**” means buoyancy or flotation foam used in boat and ship manufacturing for both structural and flotation purposes.

“**Rigid Polyurethane One-component Foam Sealants**” means a foam packaged in aerosol cans that is applied in situ using a gaseous foam blowing agent that is also the propellant for the aerosol formulation.

“**Rigid Polyurethane Slabstock and Other**” means a rigid closed-cell foam containing ~~polymers of urethane radicals~~ urethane polymers produced by the reaction of an isocyanate and a polyol and formed into slabstock insulation for panels and pipes.

Commented [AR11]: Stakeholder technical correction for accuracy

“**Stand-alone Unit**” means retail refrigerators, freezers, and reach-in coolers (either open or with doors) where all refrigeration components are integrated and, for the smallest types, the refrigeration circuit is entirely brazed or welded. These systems are fully charged with refrigerant at the factory and typically require only an electricity supply to begin operation.

“**Stand-alone Low-Temperature Unit**” means a stand-alone unit that maintains food or beverages at temperatures at or below 32°F (0 °C).

“**Stand-alone Medium-Temperature Unit**” means a stand-alone unit that maintains food or beverages at temperatures above 32°F (0 °C).

“**Substance**” means any chemical, product substitute, or alternative manufacturing process, whether new or retrofit, intended for use in the end-uses listed in Section ~~5~~ 6.0 of this regulation.

“**Supermarket Systems**” means multiplex or centralized retail food refrigeration equipment systems designed to cool or refrigerate, which typically operate with racks of compressors installed in a machinery room and which includes both direct and indirect systems.

Commented [AR12]: Stakeholder comment for the definition to be expanded to include distributed and micro-distributed systems. These systems do not necessarily with racks of compressors.

“**Use**” means any utilization of a compound or any substance, including but not limited to utilization in a manufacturing process or product in Delaware, consumption by the end-user in the State of Delaware, or in intermediate applications in the State of Delaware, such as formulation or packaging for other subsequent applications. For the purposes of this regulation, use excludes residential use, but it does not exclude manufacturing for the purpose of residential use.

“**Vending Machines**” means self-contained commercial food refrigeration equipment that dispense goods and must be kept cold or frozen.

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3.4.0 Standards (Requirements)

Commented [RA(13): Typo in our last draft proposal

3.4.1 Prohibitions

3.4.1.1 No person may sell, install, use or enter into commerce, in the State of Delaware, any listed substance for use in any air conditioning, refrigeration, foam, or aerosol propellant end-use listed as prohibited in Section 5 6.0 and not exempt by section 7.0.

3.4.1.2 ~~Except~~ where existing system equipment is retrofit, nothing in this regulation requires a person that acquired a prohibited substance product or equipment containing a prohibited substance prior to an effective date of the prohibition in Section 5 6.0 to cease use of that product or equipment.

Commented [RA(14): This article covers the repair and maintenance question raised during last RC meeting.

Similar language as VT legislation

Commented [RA(15): This needs to be strike-out in your handouts

3.4.2 Disclosure Statement

3.4.2.1 As of the effective date of this regulation, any person who manufactures and sells or enters into commerce in the State of Delaware, for products or equipment containing any listed substance in the air conditioning, refrigeration, foam, or aerosol propellant end-uses listed as prohibited in Section 5 6.0, must provide written disclosure to the buyer as part of the sales transaction and invoice, as follows.

3.4.2.1.1 The required written disclosure or label must state:

Commented [AR16]: Current leaning

-Require further discussions with USCA states
-Welcome additional industry comments

3.4.2.1.1.1 Refrigeration and air conditioning equipment:

~~“This equipment is prohibited from use in the State of Delaware with any refrigerant on the List of Prohibited Substances for the specific end use in Section 5 6.0 of 7 DE Admin. Code 1151. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”~~

“This equipment includes substances that are compliant with states that have prohibited the use of high GWP refrigerants for specific end-uses”

Commented [RA(17): Will require further discussions with USCA states

3.4.2.1.1.2 Foam:

~~“This foam system is prohibited from use in the State of Delaware with any foam blowing agent on the List of Prohibited Substances for the specific end use in Section 5 6.0 of 7 DE Admin. Code 1151. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”~~

“This product includes substances that are compliant with states that have prohibited the use of high GWP substances for specific end-uses”

Commented [RA(18): Comment from the foam industry on how disclosure statements/labels affect EACH end-uses in the foam industry?

Commented [RA(19): Will require further discussions with USCA states

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~~3.4.2.1.1.3~~ Aerosol propellants:

~~“This product is prohibited from use in the State of Delaware with any aerosol propellant on the List of Prohibited Substances for the specific end use in Section 5.6.0 of 7 DE Admin. Code 1151. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”~~

~~“This product includes substances that are compliant with states that have prohibited the use of high GWP substances for specific end-uses”~~

~~3.2.1.2 The disclosure statement or label must remain with the product or equipment while it is in use in the State of Delaware~~

4.5.0 Recordkeeping

4.5.1 As of the effective date of this regulation, any person who manufactures any product or equipment in the end uses listed in Section 5.6.0 for sale or entry into commerce in the State of Delaware, must maintain for five years and make available, upon request by the Department, a copy of the following records, where applicable:

4.5.1.1 Name and address of the person purchasing the equipment or product at the time of purchase,

4.5.1.2 telephone number and email address of the person purchasing the equipment or product at the time of purchase, if provided to the manufacturer,

4.5.1.3 model and serial number of the equipment or product, where applicable. When the affected equipment is part of an assembly without an individual serial number, the serial number of each component must be recorded. If a component or equipment does not have an individual serial number or the serial number is inaccessible after assembly, the physical description must be recorded in enough detail for positive identification,

4.5.1.4 date of manufacture of the equipment or product,

4.5.1.5 date of sale of the equipment or product,

4.5.1.6 the refrigerant(s), aerosol propellant(s), or foam-blowing agent(s) that the equipment or product is designed to use,

4.5.1.7 the refrigerant(s), aerosol propellant(s), or foam-blowing agent(s) used in the equipment of products and the full charge capacity, where available, and

4.5.1.8 a copy of the disclosure statement or label issued to the buyer or recipient.

Commented [RA(20): Will require further discussions with USCA states

Commented [RA(21): Recordkeeping is the first method to ensure enforcement

DE is considering removing Recordkeeping requirements

Aim to stay consistent with USCA states

Seeking additional feedback on how record-keeping may not be warranted.

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6.0 List of Prohibited Substances

6.1 End-use and prohibited substances

6.1.1 The following table lists prohibited substance in specific end-uses and the effective date of prohibition, unless and exemption is provided for in Section 6.7.0.

Table 1. End-use and Prohibited substances		
End-use Category: Aerosol Propellants		
End-use	Prohibited Substances	Effective Date
Aerosol Propellants	HFC-125, HFC-134a, HFC-227ea and blends of HFC-227ea and HFC 134a	January 1, 2020 ¹
End-use Category: Air Conditioning		
End-use	Prohibited Substances	Effective Date
Centrifugal chillers (new)	FOR12A, FOR12B, HFC-134a, HFC-227ea, HFC-236fa, HFC245fa, R-125/134a/600a (28.1/70/1.9), R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R-422B, R-422C, R-422D, R-423A, R-424A, R-434A, R438A, R-507A, RS-44 (2003 composition), THR-03	January 1, 2024
Positive displacement chillers (new)	FOR12A, FOR12B, HFC-134a, HFC-227ea, KDD6, R125/134a/600a (28.1/70/1.9), R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R-422B, R-422C, R-422D, R-424A, R-434A, R-437A, R438A, R-507A, RS-44 (2003 composition), SP34E, THR-03	January 1, 2024
End-use Category: Refrigeration		
End-use	Prohibited Substances	Effective Date
Cold storage warehouses (new)	HFC-227ea, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R404A, R-407A, R-407B, R-410A, R-410B, R-417A, R-421A, R421B, R-422A, R-422B, R-422C, R-422D, R-423A, R-424A, R428A, R-434A, R-438A, R-507A, RS-44 (2003 composition)	January 1, 2023
Household refrigerators and freezers (new)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A,	January 1, 2022

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	R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	
Household refrigerators and freezers—compact (new)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2021
Household refrigerators and freezers—built in appliances (new)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2023
Supermarket Systems (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R428A, R-434A, R-507A	January 1, 2021
Supermarket Systems (New)	HFC-227ea, R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021
Remote Condensing Units (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R428A, R-434A, R-507A	January 1, 2021
Remote Condensing Units (New)	HFC-227ea, R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021
Stand-Alone Units (Retrofit)	R-404A, R-507A	January 1, 2021
Stand-Alone Medium-Temperature Units (New)	FOR12A, FOR12B, HFC-134a, HFC-227ea, KDD6, R125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R407A, R-407B, R-407C, R-407F, R-410A, R-410B, R417A, R-421A, R-421B, R-422A, R-422B, R-422C, R422D, R-424A, R-426A, R-428A, R-434A, R-437A, R438A, R-507A, RS-24 (2002	January 1, 2021

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	formulation), RS-44 (2003 formulation), SP34E, THR-03	
Stand-Alone Low-Temperature Units (New)	HFC-227ea, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407A, R-407B, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R422A, R-422B, R-422C, R-422D, R-424A, R-428A, R434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation)	January 1, 2021
Refrigerated food processing and dispensing equipment (New)	HFC-227ea, KDD6, R-125/ 290/ 134a/ 600a (55.0/1.0/42.5/1.5), R-404A, R-407A, R-407B, R-407C, R-407F, R-410A, R-410B, R417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-428A, R-434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation)	January 1, 2021
Vending Machines (Retrofit)	R-404A, R-507A	January 1, 2021
Vending Machines (New)	FOR12A, FOR12B, HFC-134a, KDD6, R125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R407C, R-410A, R-410B, R-417A, R-421A, R-422B, R422C, R-422D, R-426A, R-437A, R-438A, R-507A, RS-24 (2002 formulation), SP34E	January 1, 2022
End-use Category: Foams		
End-use	Prohibited Substances	Effective Date
Rigid Polyurethane and Polyisocyanurate Laminated Boardstock	HFC 134a, HFC 245fa, HFC 365mfc, and blends thereof	January 1, 2021
Flexible Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021
Integral Skin Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polystyrene Extruded Sheet	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Phenolic Insulation Board and Bunstock	HFC-143a, HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021
Rigid Polyurethane Slabstock and Other	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021

Commented [RA(22): EPA SNAP rules for Vending Machines
 Retrofitted: 2016
 New: 2019

Industry feedback:
 -Issues with Flammability of substitutes products – thus limitation for location in space
 -Currently undergoing testing with ASHRAE to test their different options
 - 2022 would provide a later date for vending machines to allow additional time for the industry to adopt the lowest-GWP options

2022 adopted by WA

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Rigid Polyurethane Appliance Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Commercial Refrigeration and Sandwich Panels	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polyolefin	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Marine Flotation Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polystyrene Extruded Boardstock and Billet (XPS)	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel B, Formacel Z-6	January 1, 2021 ** —
Rigid polyurethane (PU) high-pressure two-component spray foam	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021
Rigid PU low-pressure two-component spray foam	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021 ** —
Rigid PU one-component foam sealants	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021

****** If the U.S. Environmental Protection Agency approves a previously prohibited hydrofluorocarbon blend with a global warming potential of 750 or less for foam blowing of polystyrene extruded boardstock and billet and rigid polyurethane low-pressure two component spray foam pursuant to the Significant New Alternatives Policy under section 7671(k) of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.), the Department shall expeditiously propose a rule to conform to the requirements established under this section with that federal action.

Commented [RA(23): Consistent with VT legislation language and other USCA states' intent.

Following Industry comments, supported by environmental advocacy group NRDC.

We agree that this consideration promotes energy efficiency and air sealing improvements; and that the exemption has the overall intent of reducing GHG emissions

3/1/2020

6 7.0 End-use and prohibited substances exemptions

6 7.1 The following table lists exemptions to the prohibitions in Section 5 6.0

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End-use category	Prohibited Substances	Acceptable Uses
Aerosol Propellants	HFC-134a	Cleaning products for removal of grease, flux and other soils from electrical equipment; refrigerant flushes; products for sensitivity testing of smoke detectors; lubricants and freeze sprays for electrical equipment or electronics; sprays for aircraft maintenance; sprays containing corrosion preventive compounds used in the maintenance of aircraft, electrical equipment or electronics, or military equipment; pesticides for use near electrical wires, in aircraft, in total release insecticide foggers, or in certified organic use pesticides for which EPA has specifically disallowed all other lower-GWP propellants; mold release agents and mold cleaners; lubricants and cleaners for spinnerettes for synthetic fabrics; duster sprays specifically for removal of dust from photographic negatives, semiconductor chips, specimens under electron microscopes, and energized electrical equipment; adhesives and sealants in large canisters; document preservation sprays; FDA-approved MDIs for medical purposes; wound care sprays; topical coolant sprays for pain relief; and products for removing bandage adhesives from skin.
Aerosol Propellants	HFC-227ea and blends of HFC-227ea and HFC 134a	FDA-approved MDIs for medical purposes.
Air Conditioning	HFC-134a	Military marine vessels where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.
Air Conditioning	HFC-134a and R-404A	Human-rated spacecraft and related support equipment where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.
Foams – Except Rigid polyurethane (PU) spray foam	All substances	Military applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2022.
Foams – Except Rigid	All substances	Space- and aeronautics-related applications where reasonable efforts have been made to ascertain that

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polyurethane (PU) spray foam		other alternatives are not technically feasible due to performance or safety requirements until January 1, 2025.
Rigid polyurethane (PU) two-component spray foam	All substances	Military or space- and aeronautics-related applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2025.



October 10, 2019

The DuPont Performance Building Solutions business would like to thank you for your time and attention to our request for a small change to the proposed HFC regulation.

You requested information on the sell-through allowance for foams manufactured with blowing agents that are being phased-down.

In support of our conversations we were asked to provide additional reference information. The following documents attached to this letter are intended to meet that request.

Thank you, Lisa Massaro

LIST OF APPENDIXES

The exact language from the 3 currently completed state legislations:	2
Governor Approved Washington State Legislation: HB-1112	3
Governor Approved California State Legislation: SB-1013	16
Governor Approved Vermont Legislation: Senate Bill 30 (Act 65)	21

The exact language from the 3 currently completed state legislations:

Vermont:

Section (b) (3) page 2:

(3) Products or equipment manufactured prior to an applicable effective date of the restrictions in subdivision (b)(4) of this section may be sold, imported, exported, distributed, installed, and used after the specified effective date.

Washington State:

Section 3 (1) page 4:

“Products or equipment manufactured prior to the applicable effective date of the restrictions specified in subsection (2) of this section may be sold, imported, exported, distributed, installed, and used after the specified effective date.”

California:

Section (1) page 2:

(c) (1) All prohibitions on the use of class I substances and class II substances as set forth in 42 U.S.C. Secs. 7671a and 7671k, as those read on November 15, 1990, or any substitute as set forth in Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017, shall apply, except as otherwise provided by in paragraph (3), state statute, or state regulation.

US EPA SNAP reference as pertains to California reference:

Final Rule 21, pg 86872

“EPA also disagrees with the comment regarding the inability to sell existing supply as the status changes in the rule relate to new manufacturing and do not limit the sale of existing supply”

Final Rule 20, Page 212

“Since regulations establishing the SNAP program were promulgated in 1994, we have interpreted the unacceptability determinations in this sector to apply to blowing foam with the foam blowing agent and not to products made with foam (e.g., 65 FR 42,653, 42,656; July 11, 2000).”

EPA presentation to Center for Polyurethanes Industries, slide 13:

“Unacceptability determinations for foam blowing agents apply to use of closed cell foam products and products that contain closed cell foam where the products are manufactured on or after the change of status date”

Governor Approved Washington State Legislation: HB-1112

CERTIFICATION OF ENROLLMENT

ENGROSSED SECOND SUBSTITUTE HOUSE BILL 1112

Chapter 284, Laws of 2019

66th Legislature
2019 Regular Session

HYDROFLUOROCARBON GREENHOUSE GAS EMISSIONS

EFFECTIVE DATE: July 28, 2019

Passed by the House March 1, 2019
Yeas 55 Nays 39

FRANK CHOPP

Speaker of the House of Representatives

Passed by the Senate April 22, 2019
Yeas 30 Nays 19

CYRUS HABIB

President of the Senate

Approved May 7, 2019 3:23 PM

JAY INSLEE

Governor of the State of Washington

CERTIFICATE

I, Bernard Dean, Chief Clerk of the House of Representatives of the State of Washington, do hereby certify that the attached is **ENGROSSED SECOND SUBSTITUTE HOUSE BILL 1112** as passed by the House of Representatives and the Senate on the dates hereon set forth.

BERNARD DEAN

Chief Clerk

FILED

May 13, 2019

Secretary of State
State of Washington

ENGROSSED SECOND SUBSTITUTE HOUSE BILL 1112

Passed Legislature - 2019 Regular Session

State of Washington 66th Legislature 2019 Regular Session

By House Appropriations (originally sponsored by Representatives Fitzgibbon, Kloba, Peterson, Tharinger, Jenkins, Macri, Goodman, Bergquist, Doglio, Robinson, Pollet, Stanford, and Frame)

READ FIRST TIME 02/22/19.

1 AN ACT Relating to reducing greenhouse gas emissions from
2 hydrofluorocarbons; amending RCW 70.235.010, 70.94.430, 70.94.431,
3 and 70.94.015; adding a new section to chapter 70.235 RCW; adding a
4 new section to chapter 19.27 RCW; adding a new section to chapter
5 39.26 RCW; creating new sections; and prescribing penalties.

6 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

7 NEW SECTION. **Sec. 1.** (1) The legislature finds that
8 hydrofluorocarbons are air pollutants that pose significant threats
9 to our environment and that safer alternatives for the most damaging
10 hydrofluorocarbons are readily available and cost-effective.

11 (2) Hydrofluorocarbons came into widespread commercial use as
12 United States environmental protection agency-approved replacements
13 for ozone-depleting substances that were being phased out under an
14 international agreement. However, under a 2017 federal appeals court
15 ruling, while the environmental protection agency had been given the
16 power to originally designate hydrofluorocarbons as suitable
17 replacements for the ozone-depleting substances, the environmental
18 protection agency did not have clear authority to require the
19 replacement of hydrofluorocarbons once the replacement of the
20 original ozone-depleting substances had already occurred.

1 (3) Because the impacts of climate change will not wait until
2 congress acts to clarify the scope of the environmental protection
3 agency's authority, it falls to the states to provide leadership on
4 addressing hydrofluorocarbons. Doing so will not only help the
5 climate, but will help American businesses retain their positions as
6 global leaders in air conditioning and refrigerant technologies.
7 Although hydrofluorocarbons currently represent a small proportion of
8 the state's greenhouse gas emissions, emissions of hydrofluorocarbons
9 have been rapidly increasing in the United States and worldwide, and
10 they are thousands of times more potent than carbon dioxide. However,
11 hydrofluorocarbons are also a segment of the state's emissions that
12 will be comparatively easy to reduce and eliminate without widespread
13 implications for the way that power is produced, heavy industries
14 operate, or people transport themselves. Substituting or reducing the
15 use of hydrofluorocarbons with the highest global warming potential
16 will provide a significant boost to the state's efforts to reduce its
17 greenhouse gas emissions to the limits established in RCW 70.235.020.

18 (4) Therefore, it is the intent of the legislature to transition
19 to the use of less damaging hydrofluorocarbons or suitable
20 substitutes in various applications in Washington, in a manner
21 similar to the regulations that were adopted by the environmental
22 protection agency, and that have been subsequently adopted or will be
23 adopted in several other states around the country.

24 **Sec. 2.** RCW 70.235.010 and 2010 c 146 s 1 are each amended to
25 read as follows:

26 The definitions in this section apply throughout this chapter
27 unless the context clearly requires otherwise.

28 (1) "Carbon dioxide equivalents" means a metric measure used to
29 compare the emissions from various greenhouse gases based upon their
30 global warming potential.

31 (2) "Climate advisory team" means the stakeholder group formed in
32 response to executive order 07-02.

33 (3) "Climate impacts group" means the University of Washington's
34 climate impacts group.

35 (4) "Department" means the department of ecology.

36 (5) "Director" means the director of the department.

37 (6) "Greenhouse gas" and "greenhouse gases" includes carbon
38 dioxide, methane, nitrous oxide, hydrofluorocarbons,

1 perfluorocarbons, sulfur hexafluoride, and any other gas or gases
2 designated by the department by rule.

3 (7) "Person" means an individual, partnership, franchise holder,
4 association, corporation, a state, a city, a county, or any
5 subdivision or instrumentality of the state.

6 (8) "Program" means the department's climate change program.

7 (9) "Western climate initiative" means the collaboration of
8 states, Canadian provinces, Mexican states, and tribes to design a
9 multisector market-based mechanism as directed under the western
10 regional climate action initiative signed by the governor on February
11 22, 2007.

12 (10) "Class I substance" and "class II substance" means those
13 substances listed in 42 U.S.C. Sec. 7671a, as it read on November 15,
14 1990, or those substances listed in Appendix A or B of Subpart A of
15 40 C.F.R. Part 82, as those read on January 3, 2017.

16 (11) "Hydrofluorocarbons" means a class of greenhouse gases that
17 are saturated organic compounds containing hydrogen, fluorine, and
18 carbon.

19 (12) "Manufacturer" includes any person, firm, association,
20 partnership, corporation, governmental entity, organization, or joint
21 venture that produces any product that contains or uses
22 hydrofluorocarbons or is an importer or domestic distributor of such
23 a product.

24 (13) "Residential consumer refrigeration products" has the same
25 meaning as defined in section 430.2 of Subpart A of 10 C.F.R. Part
26 430 (2017).

27 (14) "Retrofit" has the same meaning as defined in section 152 of
28 Subpart F of 40 C.F.R. Part 82, as that section existed as of January
29 3, 2017.

30 (15) "Substitute" means a chemical, product substitute, or
31 alternative manufacturing process, whether existing or new, that is
32 used to perform a function previously performed by a class I
33 substance or class II substance and any substitute subsequently
34 adopted to perform that function, including, but not limited to,
35 hydrofluorocarbons. "Substitute" does not include 2-BTP or any
36 compound as applied to its use in aerospace fire extinguishing
37 systems.

38 NEW SECTION. Sec. 3. A new section is added to chapter 70.235
39 RCW to read as follows:

1 (1) A person may not offer any product or equipment for sale,
2 lease, or rent, or install or otherwise cause any equipment or
3 product to enter into commerce in Washington if that equipment or
4 product consists of, uses, or will use a substitute, as set forth in
5 appendix U and V, Subpart G of 40 C.F.R. Part 82, as those read on
6 January 3, 2017, for the applications or end uses restricted by
7 appendix U or V of the federal regulation, as those read on January
8 3, 2017, consistent with the deadlines established in subsection (2)
9 of this section. Except where existing equipment is retrofit, nothing
10 in this subsection requires a person that acquired a restricted
11 product or equipment prior to the effective date of the restrictions
12 in subsection (2) of this section to cease use of that product or
13 equipment. Products or equipment manufactured prior to the applicable
14 effective date of the restrictions specified in subsection (2) of
15 this section may be sold, imported, exported, distributed, installed,
16 and used after the specified effective date.

17 (2) The restrictions under subsection (1) of this section for the
18 following products and equipment identified in appendix U and V,
19 Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017,
20 take effect beginning:

21 (a) January 1, 2020, for:

22 (i) Propellants;

23 (ii) Rigid polyurethane applications and spray foam, flexible
24 polyurethane, integral skin polyurethane, flexible polyurethane foam,
25 polystyrene extruded sheet, polyolefin, phenolic insulation board,
26 and bunstock;

27 (iii) Supermarket systems, remote condensing units, stand-alone
28 units, and vending machines;

29 (b) January 1, 2021, for:

30 (i) Refrigerated food processing and dispensing equipment;

31 (ii) Compact residential consumer refrigeration products;

32 (iii) Polystyrene extruded boardstock and billet, and rigid
33 polyurethane low-pressure two component spray foam;

34 (c) January 1, 2022, for residential consumer refrigeration
35 products other than compact and built-in residential consumer
36 refrigeration products;

37 (d) January 1, 2023, for cold storage warehouses;

38 (e) January 1, 2023, for built-in residential consumer
39 refrigeration products;

1 (f) January 1, 2024, for centrifugal chillers and positive
2 displacement chillers; and

3 (g) On either January 1, 2020, or the effective date of the
4 restrictions identified in appendix U and V, Subpart G of 40 C.F.R.
5 Part 82, as those read on January 3, 2017, whichever comes later, for
6 all other applications and end uses for substitutes not covered by
7 the categories listed in (a) through (f) of this subsection.

8 (3) The department may by rule:

9 (a) Modify the effective date of a prohibition established in
10 subsection (2) of this section if the department determines that the
11 rule reduces the overall risk to human health or the environment and
12 reflects the earliest date that a substitute is currently or
13 potentially available;

14 (b) Prohibit the use of a substitute if the department determines
15 that the prohibition reduces the overall risk to human health or the
16 environment and that a lower risk substitute is currently or
17 potentially available;

18 (c) (i) Adopt a list of approved substitutes, use conditions, or
19 use limits, if any; and

20 (ii) Add or remove substitutes, use conditions, or use limits to
21 or from the list of approved substitutes if the department determines
22 those substitutes reduce the overall risk to human health and the
23 environment; and

24 (d) Designate acceptable uses of hydrofluorocarbons for medical
25 uses that are exempt from the requirements of subsection (2) of this
26 section.

27 (4) (a) Within twelve months of another state's enactment or
28 adoption of restrictions on substitutes applicable to new light duty
29 vehicles, the department may adopt restrictions applicable to the
30 sale, lease, rental, or other introduction into commerce by a
31 manufacturer of new light duty vehicles consistent with the
32 restrictions identified in appendix B, Subpart G of 40 C.F.R. Part
33 82, as it read on January 3, 2017. The department may not adopt
34 restrictions that take effect prior to the effective date of
35 restrictions adopted or enacted in at least one other state.

36 (b) If the United States environmental protection agency approves
37 a previously prohibited hydrofluorocarbon blend with a global warming
38 potential of seven hundred fifty or less for foam blowing of
39 polystyrene extruded boardstock and billet and rigid polyurethane
40 low-pressure two-component spray foam pursuant to the significant new

1 alternatives policy program under section 7671(k) of the federal
2 clean air act (42 U.S.C. Sec. 7401 et seq.), the department must
3 expeditiously propose a rule consistent with RCW 34.05.320 to conform
4 the requirements established under this section with that federal
5 action.

6 (5) A manufacturer must disclose the substitutes used in its
7 products or equipment. That disclosure must take the form of:

8 (a) A label on the equipment or product. The label must meet
9 requirements designated by the department by rule. To the extent
10 feasible, the department must recognize existing labeling that
11 provides sufficient disclosure of the use of substitutes in the
12 product or equipment.

13 (i) The department must consider labels required by state
14 building codes and other safety standards in its rule making; and

15 (ii) The department may not require labeling of aircraft and
16 aircraft components subject to certification requirements of the
17 federal aviation administration.

18 (b) Submitting information about the use of substitutes to the
19 department, upon request.

20 (i) By December 31, 2019, all manufacturers must notify the
21 department of the status of each product class utilizing
22 hydrofluorocarbons or other substitutes restricted under subsection
23 (1) of this section that the manufacturer sells, offers for sale,
24 leases, installs, or rents in Washington state. This status
25 notification must identify the substitutes used by products or
26 equipment in each product or equipment class in a manner determined
27 by rule by the department.

28 (ii) Within one hundred twenty days after the date of a
29 restriction put in place under this section, any manufacturer
30 affected by the restriction must provide an updated status
31 notification. This notification must indicate whether the
32 manufacturer has ceased the use of hydrofluorocarbons or substitutes
33 restricted under this section within each product class and, if not,
34 what hydrofluorocarbons or other restricted substitutes remain in
35 use.

36 (iii) After the effective date of a restriction put in place
37 under this section, any manufacturer must provide an updated status
38 notification when the manufacturer introduces a new or modified
39 product or piece of equipment that uses hydrofluorocarbons or changes
40 the type of hydrofluorocarbons utilized within a product class

1 affected by a restriction. Such a notification must occur within one
2 hundred twenty days of the introduction into commerce in Washington
3 of the product or equipment triggering this notification requirement.

4 (6) The department may adopt rules to administer, implement, and
5 enforce this section. If the department elects to adopt rules, the
6 department must seek, where feasible and appropriate, to adopt rules,
7 including rules under subsection (4) of this section, that are the
8 same or consistent with the regulatory standards, exemptions,
9 reporting obligations, disclosure requirements, and other compliance
10 requirements of other states or the federal government that have
11 adopted restrictions on the use of hydrofluorocarbons and other
12 substitutes. Prior to the adoption or update of a rule under this
13 section, the department must identify the sources of information it
14 relied upon, including peer-reviewed science.

15 (7) For the purposes of implementing the restrictions specified
16 in appendix U of Subpart G of 40 C.F.R. Part 82, as it read on
17 January 3, 2017, consistent with this section, the department must
18 interpret the term "aircraft maintenance" to mean activities to
19 support the production, fabrication, manufacture, rework, inspection,
20 maintenance, overhaul, or repair of commercial, civil, or military
21 aircraft, aircraft parts, aerospace vehicles, or aerospace
22 components.

23 (8) The authority granted by this section to the department for
24 restricting the use of substitutes is supplementary to the
25 department's authority to control air pollution pursuant to chapter
26 70.94 RCW. Nothing in this section limits the authority of the
27 department under chapter 70.94 RCW.

28 (9) Except where existing equipment is retrofit, the restrictions
29 of this section do not apply to or limit any use of commercial
30 refrigeration equipment that was installed or in use prior to the
31 effective date of the restrictions established in this section.

32 **Sec. 4.** RCW 70.94.430 and 2011 c 96 s 49 are each amended to
33 read as follows:

34 (1) Any person who knowingly violates any of the provisions of
35 chapter 70.94 or 70.120 RCW, section 3 of this act, or any ordinance,
36 resolution, or regulation in force pursuant thereto is guilty of a
37 gross misdemeanor and upon conviction thereof shall be punished by a
38 fine of not more than ten thousand dollars, or by imprisonment in the

1 county jail for up to three hundred sixty-four days, or by both for
2 each separate violation.

3 (2) Any person who negligently releases into the ambient air any
4 substance listed by the department of ecology as a hazardous air
5 pollutant, other than in compliance with the terms of an applicable
6 permit or emission limit, and who at the time negligently places
7 another person in imminent danger of death or substantial bodily harm
8 is guilty of a gross misdemeanor and shall, upon conviction, be
9 punished by a fine of not more than ten thousand dollars, or by
10 imprisonment for up to three hundred sixty-four days, or both.

11 (3) Any person who knowingly releases into the ambient air any
12 substance listed by the department of ecology as a hazardous air
13 pollutant, other than in compliance with the terms of an applicable
14 permit or emission limit, and who knows at the time that he or she
15 thereby places another person in imminent danger of death or
16 substantial bodily harm, is guilty of a class C felony and shall,
17 upon conviction, be punished by a fine of not less than fifty
18 thousand dollars, or by imprisonment for not more than five years, or
19 both.

20 (4) Any person who knowingly fails to disclose a potential
21 conflict of interest under RCW 70.94.100 is guilty of a gross
22 misdemeanor, and upon conviction thereof shall be punished by a fine
23 of not more than five thousand dollars.

24 **Sec. 5.** RCW 70.94.431 and 2013 c 51 s 6 are each amended to read
25 as follows:

26 (1) (a) Except as provided in RCW 43.05.060 through 43.05.080 and
27 43.05.150, and in addition to or as an alternate to any other penalty
28 provided by law, any person who violates any of the provisions of
29 this chapter, chapter 70.120 (~~RCW, chapter~~) or 70.310 RCW, section
30 3 of this act, or any of the rules in force under such chapters or
31 section may incur a civil penalty in an amount not to exceed ten
32 thousand dollars per day for each violation. Each such violation
33 shall be a separate and distinct offense, and in case of a continuing
34 violation, each day's continuance shall be a separate and distinct
35 violation.

36 (b) Any person who fails to take action as specified by an order
37 issued pursuant to this chapter shall be liable for a civil penalty
38 of not more than ten thousand dollars for each day of continued
39 noncompliance.

1 (2) (a) Penalties incurred but not paid shall accrue interest,
2 beginning on the ninety-first day following the date that the penalty
3 becomes due and payable, at the highest rate allowed by RCW 19.52.020
4 on the date that the penalty becomes due and payable. If violations
5 or penalties are appealed, interest shall not begin to accrue until
6 the thirty-first day following final resolution of the appeal.

7 (b) The maximum penalty amounts established in this section may
8 be increased annually to account for inflation as determined by the
9 state office of the economic and revenue forecast council.

10 (3) Each act of commission or omission which procures, aids or
11 abets in the violation shall be considered a violation under the
12 provisions of this section and subject to the same penalty. The
13 penalties provided in this section shall be imposed pursuant to RCW
14 43.21B.300.

15 (4) All penalties recovered under this section by the department
16 shall be paid into the state treasury and credited to the air
17 pollution control account established in RCW 70.94.015 or, if
18 recovered by the authority, shall be paid into the treasury of the
19 authority and credited to its funds. If a prior penalty for the same
20 violation has been paid to a local authority, the penalty imposed by
21 the department under subsection (1) of this section shall be reduced
22 by the amount of the payment.

23 (5) To secure the penalty incurred under this section, the state
24 or the authority shall have a lien on any vessel used or operated in
25 violation of this chapter which shall be enforced as provided in RCW
26 60.36.050.

27 (6) Public or private entities that are recipients or potential
28 recipients of department grants, whether for air quality related
29 activities or not, may have such grants rescinded or withheld by the
30 department for failure to comply with provisions of this chapter.

31 (7) In addition to other penalties provided by this chapter,
32 persons knowingly under-reporting emissions or other information used
33 to set fees, or persons required to pay emission or permit fees who
34 are more than ninety days late with such payments may be subject to a
35 penalty equal to three times the amount of the original fee owed.

36 (8) ~~((By January 1, 1992,))~~ The department shall develop rules
37 for excusing excess emissions from enforcement action if such excess
38 emissions are unavoidable. The rules shall specify the criteria and
39 procedures for the department and local air authorities to determine

1 whether a period of excess emissions is excusable in accordance with
2 the state implementation plan.

3 **Sec. 6.** RCW 70.94.015 and 1998 c 321 s 33 are each amended to
4 read as follows:

5 (1) The air pollution control account is established in the state
6 treasury. All receipts collected by or on behalf of the department
7 from RCW 70.94.151(2), and receipts from nonpermit program sources
8 under RCW 70.94.152(1) and 70.94.154(7), and all receipts from RCW
9 (~~70.94.650, 70.94.660, 82.44.020(2), and 82.50.405~~) 70.94.6528 and
10 70.94.6534 shall be deposited into the account. Moneys in the account
11 may be spent only after appropriation. Expenditures from the account
12 may be used only to develop and implement the provisions of chapters
13 70.94 and 70.120 RCW and section 3 of this act.

14 (2) The amounts collected and allocated in accordance with this
15 section shall be expended upon appropriation except as otherwise
16 provided in this section and in accordance with the following
17 limitations:

18 Portions of moneys received by the department of ecology from the
19 air pollution control account shall be distributed by the department
20 to local authorities based on:

21 (a) The level and extent of air quality problems within such
22 authority's jurisdiction;

23 (b) The costs associated with implementing air pollution
24 regulatory programs by such authority; and

25 (c) The amount of funding available to such authority from other
26 sources, whether state, federal, or local, that could be used to
27 implement such programs.

28 (3) The air operating permit account is created in the custody of
29 the state treasurer. All receipts collected by or on behalf of the
30 department from permit program sources under RCW 70.94.152(1),
31 70.94.161, 70.94.162, and 70.94.154(7) shall be deposited into the
32 account. Expenditures from the account may be used only for the
33 activities described in RCW 70.94.152(1), 70.94.161, 70.94.162, and
34 70.94.154(7). Moneys in the account may be spent only after
35 appropriation.

36 NEW SECTION. **Sec. 7.** A new section is added to chapter 19.27
37 RCW to read as follows:

1 The building code council shall adopt rules that permit the use
2 of substitutes approved under section 3 of this act and that do not
3 require the use of substitutes that are restricted under section 3 of
4 this act.

5 NEW SECTION. **Sec. 8.** The department of ecology, in consultation
6 with the department of commerce and the utilities and transportation
7 commission, must complete a report addressing how to increase the use
8 of refrigerants with a low global warming potential in mobile
9 sources, utility equipment, and consumer appliances, and how to
10 reduce other uses of hydrofluorocarbons in Washington. The report
11 must be submitted to the legislature consistent with RCW 43.01.036 by
12 December 1, 2020, and must include recommendations for how to fund,
13 structure, and prioritize a state program that incentivizes or
14 provides grants to support the elimination of legacy uses of
15 hydrofluorocarbons regulated under section 3 of this act or uses of
16 hydrofluorocarbons not covered by section 3 of this act.

17 NEW SECTION. **Sec. 9.** A new section is added to chapter 39.26
18 RCW to read as follows:

19 (1) The department shall establish purchasing and procurement
20 policies that provide a preference for products that:

21 (a) Are not restricted under section 3 of this act;

22 (b) Do not contain hydrofluorocarbons or contain
23 hydrofluorocarbons with a comparatively low global warming potential;

24 (c) Are not designed to function only in conjunction with
25 hydrofluorocarbons characterized by a comparatively high global
26 warming potential; and

27 (d) Were not manufactured using hydrofluorocarbons or were
28 manufactured using hydrofluorocarbons with a low global warming
29 potential.

30 (2) No agency may knowingly purchase products that are not
31 accorded a preference in the purchasing and procurement policies
32 established by the department pursuant to subsection (1) of this
33 section, unless there is no cost-effective and technologically
34 feasible option that is accorded a preference.

35 (3) Nothing in this section requires the department or any other
36 state agency to breach an existing contract or dispose of stock that
37 has been ordered or is in the possession of the department or other
38 state agency as of the effective date of this section.

1 (4) By December 1, 2020, and each December 1st of even numbered
2 years thereafter, the department must submit a status report to the
3 appropriate committees of the house of representatives and senate
4 regarding the implementation and compliance of the department and
5 state agencies with this section.

6 NEW SECTION. Sec. 10. If any provision of this act or its
7 application to any person or circumstance is held invalid, the
8 remainder of the act or the application of the provision to other
9 persons or circumstances is not affected.

--- END ---

Governor Approved California State Legislation: SB-1013



Senate Bill No. 1013

CHAPTER 375

An act to add Section 39734 to the Health and Safety Code, and to add Division 45 (commencing with Section 76000) to the Public Resources Code, relating to greenhouse gases.

[Approved by Governor September 13, 2018. Filed with Secretary of State September 13, 2018.]

LEGISLATIVE COUNSEL'S DIGEST

SB 1013, Lara. Fluorinated refrigerants.

(1) Existing law prohibits the manufacture and sale of specified chlorofluorocarbons (CFCs) as aerosol propellants, limits the percentage of new motor vehicles equipped with air-conditioners that utilize CFC-based products, requires the State Air Resources Board to adopt regulations to provide for the enforcement of those provisions, and imposes a civil penalty on persons violating those provisions.

This bill would apply all prohibitions on the use of class I substances, as defined, class II substances, as defined, and substitutes, as defined, under the federal Clean Air Act, as it read on specified dates, except as specified. The bill would authorize the state board to include in a specified regulation the modification of the deadlines of those prohibitions, a prohibition on the use of any substitute, and the creation and update of a list of approved substitutes, use conditions, or use limits if the state board makes certain findings for each. The bill would allow a violation of these provisions to be enjoined and would subject persons who violate these provisions to specified penalties. The bill would require all civil penalty money collected by the state board to be deposited in the Air Pollution Control Fund rather than the General Fund. Because a violation of these requirements would also be a crime, this bill would impose a state-mandated local program.

This bill would establish the Fluorinated Gases Emission Reduction Incentive Program, to be administered by the state board, to promote the adoption of new refrigerant technologies to achieve short- and long-term climate benefits, energy efficiency, and other cobenefits, as specified. The bill would authorize moneys from the Greenhouse Gas Reduction Fund to be allocated for incentives offered as part of the program.

This bill would require the Public Utilities Commission to consider developing a strategy for including low-global-warming-potential refrigerants in equipment funded by the energy efficiency programs overseen by the Public Utilities Commission.

This bill would require the State Energy Resources Conservation and Development Commission to identify opportunities to assess the energy

efficiency performance for low-global-warming-potential alternatives to current fluorinated-gas-based appliances and equipment.

This bill would require the Department of Community Services and Development to consider integrating low global warming potential as part of its ongoing administration of energy efficiency programs for household appliances.

(2) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

The people of the State of California do enact as follows:

SECTION 1. Section 39734 is added to the Health and Safety Code, to read:

39734. (a) The Legislature finds and declares that certain fluorinated gases are potent causes of global warming, and it is in the public interest that restrictions or prohibitions on the use of these gases be maintained and enhanced as appropriate in the state.

(b) For purposes of this section, the following definitions apply:

(1) "Class I substances" and "class II substances" mean those substances listed in 42 U.S.C. Sec. 7671a, as it read on November 15, 1990, or those substances listed in Appendix A or B of Subpart A of 40 C.F.R. Part 82, as those read on January 3, 2017.

(2) "Hydrofluorocarbons" mean fluorinated gases used primarily as refrigerants in refrigeration, air-conditioning equipment, foam expansion agents, aerosol propellants, solvents, and fire suppressants.

(3) "Residential consumer refrigeration products" has the same meaning as defined in Section 430.2 of Subpart A of 10 C.F.R. Part 430.

(4) "Substitute" means a chemical, product substitute, or alternative manufacturing process, whether existing or new, that is used to perform a function previously performed by a class I substance or class II substance and any substitute subsequently adopted to perform that function, including, but not limited to, hydrofluorocarbons.

(c) (1) All prohibitions on the use of class I substances and class II substances as set forth in 42 U.S.C. Secs. 7671a and 7671k, as those read on November 15, 1990, or any substitute as set forth in Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017, shall apply, except as otherwise provided by in paragraph (3), state statute, or state regulation.

(2) If the United States Environmental Protection Agency approves a previously prohibited hydrofluorocarbon blend for foam blowing pursuant to the Significant New Alternatives Policy Program, adopted pursuant to Section 7671k of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.), the state board shall expeditiously initiate a rulemaking pursuant to this

section or other existing legal authority to conform its regulations with that federal action.

(3) (A) Prohibitions on residential consumer refrigeration products, except compact and built-in residential consumer refrigeration products, shall take effect January 1, 2022.

(B) Prohibitions on built-in residential consumer refrigeration products shall take effect on January 1, 2023.

(d) The state board may adopt a regulation that includes any of the following:

(1) The modification of the deadlines of a prohibition established pursuant to subdivision (c) if the state board determines that the modified deadline meets both of the following:

(A) Reduces the overall risk to human health or the environment.

(B) Reflects the earliest date that a substitute is currently or potentially available.

(2) The prohibition on the use of any substitute if the state board determines that the prohibition meets both of the following criteria:

(A) Reduces the overall risk to human health or the environment.

(B) A lower-risk substitute is currently or potentially available.

(3) The creation of a list of approved substitutes, use conditions, or use limits, if any, and the addition or removal of substitutes, use conditions, or use limits to or from the list of approved substitutes if the state board determines those substitutes reduce the overall risk to human health and the environment.

(e) A person shall not offer any equipment or product for sale, lease, rent, or otherwise cause any equipment or product to enter into commerce in California if that equipment or product uses or will use a substitute in a manner inconsistent with any of the following:

(1) Any prohibitions in subdivision (c).

(2) Any prohibitions, use conditions, or use limits in subdivision (d) or a state regulation.

(3) Any other applicable laws, including, but not limited to, the California Building Standards Code (Title 24 of the California Code of Regulations).

(f) (1) The state board may enforce this section. A violation of the requirements of this section may be enjoined pursuant to Section 41513 and is subject to the penalties set forth in Article 3 (commencing with Section 42400) of Chapter 4 of Part 4.

(2) Notwithstanding subdivisions (i) and (j) of Section 42410, the state board may impose an administrative penalty pursuant to Section 42410.

(3) Penalties collected pursuant to this section shall be deposited in the Air Pollution Control Fund.

(g) The provisions of this section are severable. If any provision of this section or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

SEC. 2. Division 45 (commencing with Section 76000) is added to the Public Resources Code, to read:

DIVISION 45. FLUORINATED REFRIGERANTS

76000. For purposes of this division, “GWP” means global warming potential.

76002. The Public Utilities Commission shall consider developing a strategy for including low-GWP refrigerants in equipment funded by the energy efficiency programs overseen by the Public Utilities Commission.

76004. The State Energy Resources Conservation and Development Commission shall identify opportunities to assess the energy efficiency performance for low-GWP alternatives for current fluorinated-gas-based appliances and equipment.

76006. The Department of Community Services and Development shall consider integrating low GWP as part of its ongoing administration of energy efficiency programs for household appliances, including, but not limited to, the Energy Efficiency Low-Income Weatherization Program.

76008. (a) (1) The Fluorinated Gases Emission Reduction Incentive Program is hereby established to be administered by the State Air Resources Board to promote the adoption of refrigerant technologies to achieve short- and long-term climate benefits, energy efficiency, and other cobenefits.

(2) Moneys for the program shall be available to the State Air Resources Board, upon appropriation by the Legislature, including, but not limited to, moneys from the Greenhouse Gas Reduction Fund, created pursuant to Section 16428.8 of the Government Code.

(b) The state board may contract with a third party to administer this section.

(c) Eligible applicants shall be users of systems of refrigerant technologies.

(d) When awarding incentives, the State Air Resources Board shall prioritize both of the following:

(1) Low-GWP alternatives that maximize emissions reductions and focus on key cooling sectors where technology is commercially available.

(2) The use of low-GWP alternatives in new technologies for which higher upfront costs, compared with hydrofluorocarbon systems, have been identified by the State Air Resources Board as a market impediment.

(e) The program shall include all of the following:

(1) Allow a retailer to apply for funding for multiple stores or units.

(2) Identify opportunities for outreach efforts to demonstrate and provide information about low-GWP alternatives in refrigeration and air-conditioning.

(3) Require the professional installation and maintenance of alternative refrigeration and air-conditioning equipment in order to maximize energy efficiency and minimize emissions.

(4) Identify opportunities to increase the recovery, reclamation, or destruction of existing high-GWP refrigerants.

(5) Identify opportunities to offer matching funds to local publicly owned electric and gas utilities that offer their own low-GWP incentive programs.

(6) Comply with federal and state laws regarding the disposal and capture of fluorinated gases.

(7) Determine the most environmentally beneficial outcome for the replaced equipment.

SEC. 3. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

Governor Approved Vermont Legislation: Senate Bill 30 (Act 65)

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No. 65. An act relating to the regulation of hydrofluorocarbons.

(S.30)

It is hereby enacted by the General Assembly of the State of Vermont:

Sec. 1. 10 V.S.A. § 586 is added to read:

§ 586. REGULATION OF HYDROFLUOROCARBONS

(a) As used in this section:

(1) "Class I substance" and "class II substance" mean those substances listed in the 42 U.S.C. § 7671a, as it read on November 15, 1990 and Appendix A or B of Subpart A of 40 C.F.R. Part 82, as those read on January 3, 2017.

(2) "Hydrofluorocarbon" means a class of greenhouse gases that are saturated organic compounds containing hydrogen, fluorine, and carbon.

(3) "Residential consumer refrigeration product" has the same meaning as in Section 430.2 of Subpart A of 10 C.F.R. Part 430.

(4) "Retrofit" has the same meaning as in section 152 of Subpart F of 40 C.F.R. Part 82, as that section existed as of January 3, 2017.

(5) "Substitute" means a chemical, product, or alternative manufacturing process, whether new or retrofit, that is used to perform a function previously performed by a class I substance or class II substance and any substitute subsequently adopted to perform that function, including hydrofluorocarbons.

(b)(1) A person may not offer any product or equipment for sale, lease, or rent, or install or otherwise cause any equipment or product to enter into commerce in Vermont if that equipment or product consists of, uses, or will

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use a substitute, as set forth in Appendix U or V, Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017, for the applications or end uses restricted by Appendix U or V, as those read on January 3, 2017, and consistent with the dates established in subdivision (b)(4) of this section.

(2) Except where existing equipment is retrofit, nothing in this subsection requires a person that acquired a restricted product or equipment prior to an effective date of the restrictions in subdivision (b)(4) of this section to cease use of that product or equipment.

(3) Products or equipment manufactured prior to an applicable effective date of the restrictions in subdivision (b)(4) of this section may be sold, imported, exported, distributed, installed, and used after the specified effective date.

(4) The restrictions under subdivision (b)(1) of this section shall take effect beginning:

(A) January 1, 2021, for propellants, rigid polyurethane applications and spray foam, flexible polyurethane, integral skin polyurethane, flexible polyurethane foam, polystyrene extruded sheet, polyolefin, phenolic insulation board and bunstock, supermarket systems, remote condensing units, stand-alone units, and vending machines;

(B) January 1, 2021, for refrigerated food processing and dispensing equipment, compact residential consumer refrigeration products, and

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polystyrene extruded boardstock and billet, and rigid polyurethane low-pressure two component-spray foam:

(C) January 1, 2022, for residential consumer refrigeration products other than compact and built-in residential consumer refrigeration products:

(D) January 1, 2023, for cold storage warehouses and built-in residential consumer refrigeration products:

(E) January 1, 2024, for centrifugal chillers and positive displacement chillers; and

(F) January 1, 2020, or the effective date of the restrictions identified in appendix U or V, Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017, whichever comes later, for all other applications and end uses for substitutes not covered by the categories listed in subdivisions (A) through (E) of this subsection (b).

(c) The Secretary may adopt rules that include any of the following:

(1) The modification of the date of a prohibition established pursuant to subsection (b) of this section if the Secretary determines that the modified deadline meets both of the following criteria:

(A) reduces the overall risk to human health or the environment; and

(B) reflects the earliest date that a substitute is currently or potentially available.

(2) The prohibition on the use of any substitute if the Secretary determines that the prohibition meets both of the following criteria:

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(A) reduces the overall risk to human health or the environment; and

(B) a lower-risk substitute is currently or potentially available.

(3) The creation of a list of approved substitutes, use conditions, or use limits, if any, and the addition or removal of substitutes, use conditions, or use limits to or from the list of approved substitutes if the Secretary determines those substitutes reduce the overall risk to human health and the environment.

(4) The creation of a list of exemptions from this section for medical uses of hydrofluorocarbons.

(d) If the U.S. Environmental Protection Agency approves a previously prohibited hydrofluorocarbon blend with a global warming potential of 750 or less for foam blowing of polystyrene extruded boardstock and billet and rigid polyurethane low-pressure two-component spray foam pursuant to the Significant New Alternatives Policy Program under section 7671(k) of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.), the Secretary shall expeditiously propose a rule to conform to the requirements established under this section with that federal action.

Sec. 2. ADOPTION OF RULES AND REPORTING

(a) On or before July 1, 2020, the Secretary of Natural Resources shall file with the Secretary of State proposed rules to establish a schedule to phase down the use of hydrofluorocarbons to meet the goal of a 40 percent reduction from the 2013 level of use by 2030.

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(b) On or before January 15, 2020, the Secretary of Natural Resources shall submit a report to the Senate Committee on Natural Resources and Energy and the House Committee on Natural Resources, Fish, and Wildlife on progress in filing proposed rules pursuant to subsection (a) of this section and any delays in such rulemaking.

Sec. 3. EFFECTIVE DATE

This act shall take effect on July 1, 2019.

Date Governor signed bill: June 17, 2019

END OF DOCUMENT

October 14, 2019

Director Dayna Cobb
Division of Climate, Coastal, & Energy
Department of Natural Resources and Environmental Control
100 W. Water Street, Suite 5A
Dover, DE 19904

Letter submitted electronically to dayna.cobb@delaware.gov and Ajo.Rabemiarisoa@delaware.gov

Dear Director Cobb,

On behalf of the Extruded Polystyrene Foam Association (XPSA), we are writing with respect to the Department of Natural Resources and Environmental Control's pre-proposal stakeholder draft on hydrofluorocarbons (HFCs) to respectfully request that you:

- (1) Incorporate a minor exception under the category of "foam blowing agents" for foams that are approved for use by the United States Environmental Protection Agency (EPA) under the Significant New Alternatives Policy Program (SNAP)
- (2) Extend the proposed effective dates for the proposed phase-out of HFCs

XPSA is a trade association representing manufacturers of extruded polystyrene foam (XPS) insulation products and the industry's raw material suppliers. XPSA members collectively manufacture more than 95 percent of all XPS destined for use in the North American market. XPSA promotes the benefits that accrue to society from appropriate use of XPS foam insulation applications.

Extruded polystyrene foam is an excellent thermal insulation product, which reduces the temperature differential across thermal bridges, maintains thermal and structural integrity during the building service life, and reduces GHG emissions from the heating and cooling of buildings. XPS insulation contributes significantly to these reductions in energy use in buildings and should be evaluated in that context when examining cost-effectiveness of an industries transition.

Due to the energy efficiency benefits, the energy savings from XPS insulation far exceeds the energy consumed and GHG emitted in the manufacturing process. Furthermore, the emissions of blowing agents in XPS insulation is offset by the energy savings over the life of the building. The product lifetime benefit more than offsets GWP impact at the time of manufacture. Typical in-use emissions rates will be 0.5 percent to 1.0 percent per year. Therefore, there will be significant amounts of HFC-134a remaining in the foam at the end of a 50-year building life.

XPSA supports the Montreal Protocol and the EPA's SNAP program under which XPS manufacturers are transitioning out of using HFC-134a, and we understand the desire for State action in light of the uncertainty at the Federal level. We also support labeling/disclosure requirements for XPS products. However, we feel that enforcement of invoice labelling requirements will be difficult. Given the end use of XPS foam on construction sites, it would be more appropriate to mandate unit labels that include language such as: "This product includes substances that are compliant with states that have prohibited the use of high GWP substances for specific end-uses."

XPSA supports sell through allowance provisions for foams manufactured with blowing agents that are being phased down. Sell through language is found in numerous completed state legislations, including Vermont, Washington State, and California. XPSA supports language such as “Products or equipment manufactured prior to the applicable effective date of the restrictions specified may be sold, imported, exported, distributed, installed, and used after the specified effective date.”

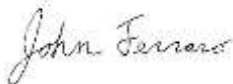
We also strongly believe a minor exception should be incorporated in the Department’s proposed regulation allowing for the use of niche foam end uses in Delaware that are approved for use by the technical career staff at the EPA. California, Washington, and Vermont recently incorporated such a minor exception into their enacted legislation governing the phase-out of HFCs and we respectfully request Delaware take the same approach as those other States.

In addition, XPSA strongly believes more time is needed for proper implementation of the proposed regulation. As currently drafted, the pre-proposal would ban HFCs in certain applications effective January 1, 2020. A few short months is simply not enough time to properly implement the proposed regulation. More time is needed for the following reasons:

- Identify alternatives to HFC-134a
- Assess and address risks of alternative components
- Analyze capabilities and make modifications to equipment, facilities, manufacturing processes, and worker safety and training programs
- Work with suppliers on equipment and component needs
- Build and engage in pilot- and plant-scale trials
- Obtain permits, approvals, and financing
- Address commercialization issues such as ensuring production capacity to meet global market demand

As a result, we respectfully request a one-year extension of the proposed effective dates in the Department’s pre-proposal stakeholder draft. Thank you in advance for your consideration.

Sincerely yours,



John Ferraro
Executive Director
Extruded Polystyrene Foam Association (XPSA)
529 14th Street NW, Suite 1280
Washington, DC 20045





Center for the
Polyurethanes Industry

October 15, 2019

Ajo Rabemiarisoa
Environmental Engineer
Department of Natural Resources and Environmental Control
Division of Air Quality

Submitted via email to: ajo.rabemiarisoa@delaware.gov

RE: 1151 Requirements for the Phase-Out of Hydrofluorocarbons

Ms. Rabemiarisoa,

The American Chemistry Council's Center for the Polyurethanes Industry¹ (CPI) appreciates the opportunity to comment on the Delaware Department of Natural Resources and Environmental Control's (DNREC) draft of the proposed 1151 Requirements for the Phase-Out of Hydrofluorocarbons (draft regulations).

The polyurethane foam insulation industry is committed to the commercialization of products that have low environmental impacts during the manufacturing process and that provide energy and greenhouse gas (GHG) savings over their life cycle. The polyurethane industry advocates consistency across all states that are regulating the use of HFCs in the foam sector. Therefore, CPI encourages DNREC to coordinate, to the extent possible, with other states that are regulating the use of HFCs. Building a consistent approach across the United States will streamline manufacturing and minimize the burden on regulated entities. For reference, CPI's comments are developed on the draft regulations circulated *prior* to the stakeholder workshops.

CPI is recommending several changes to the draft regulations. First, there are several technical issues with the definitions in section 3.0. CPI has provided suggested edits in section A. Second, over the last decade, manufacturers in the polyurethane industry have made significant progress in the transition out of HFC technology, therefore disclosure and recordkeeping requirements are not needed to encourage the transition. The disclosure and recordkeeping requirements proposed in sections 3.2 and 4.0 would add additional burden in the form of administrative requirements that will not provide a meaningful benefit towards a phasedown of HFCs. In fact, based on our concerns outlined in section B, the California Air Resources Board (CARB) did not include invoice disclosures for the foam sector in its final regulations. Third, CPI has developed suggested edits to the sell-through provisions for product manufactured prior to the restriction date in section 3.1.2. Fourth, CPI recommends that DNREC review exemptions for the foam sector that have been developed by other states that are currently regulating HFC foam blowing agents.

¹ The Center for the Polyurethanes Industry's (CPI) mission is to promote the growth of the North American polyurethanes industry through effective advocacy, delivery of compelling benefits messages demonstrating how polyurethanes deliver sustainable outcomes, and creation of robust safety education and product stewardship programs.



A) Section 3.0 – Definitions

CPI recommends the following changes to section 3:

1. “Flexible Polyurethane” means a non-rigid synthetic foam containing polymers of ~~urethane radicals~~ created by the reaction of isocyanate and polyol, including but not limited to, that used in furniture, bedding, and chair cushions, ~~and shoe soles~~.
2. “Integral Skin Polyurethane” means a synthetic self-skinning foam containing polymers of ~~urethane radicals~~ created by the reaction of isocyanate and polyol, such as that used in car steering wheels, and dashboards, ~~and shoe soles~~.
3. “Rigid Polyurethane Slabstock and Other” means a rigid closed-cell foam containing polymers of ~~urethane radicals~~ created by the reaction of isocyanate and polyol formed into slabstock insulation for panels and pipes.

Replacing “urethane radicals” with “created by the reaction of isocyanate and polyol” improves the accuracy of these definitions. Additionally, shoe shoes are not a good example to include in definitions. Shoe soles are different types of polyurethane depending on the type of shoe.

4. “Foam” ~~or “Foam Blowing Agent”~~ means a product ~~or substance used to produce the product~~ with a cellular structure formed via a foaming process in a variety of materials that undergo hardening via a chemical reaction or phase transition, ~~such as polymers and plastics~~.

The Stakeholder Draft regulations restrict the use of certain substances (foam blowing agents) in specified products (foam). Defining “foam” and “foam blowing agent” using a single definition adds confusion into the regulations. These changes increase clarity.

5. “Rigid Polyurethane and Polyisocyanurate Laminated Boardstock” means laminated board insulation made with polyurethane or polyisocyanurate foam, including that used for roofing and wall insulations.
6. “Substance” means any chemical, ~~product substitute, or alternative manufacturing process, whether new or retrofit~~, intended for use in the end-uses listed in Section 5 of this chapter.

This definition is likely derived from the U.S. Environmental Protection Agency’s (EPA) definition of “substitute or alternative” in 40 CFR 82.172. However, the term has been changed from “substitute” to “substance.” These changes help clarify the intent of the regulations.

B) Invoice disclosures and recordkeeping are not the most effective forms of enforcement of HFC restrictions.

CPI questions the utility of the invoice disclosure requirements in section 3.2 and the recordkeeping requirements in section 4.0 of the draft regulations. It appears that DNREC developed these requirements to help enforce the HFC restrictions.

Requiring manufacturers to proactively assert compliance by including a disclosure statement on an invoice and maintaining production records is unnecessary and only creates administrative requirements that burden manufacturers, and could create additional burden for DNREC. Product invoices and production records are not effective enforcement tools. In the foam sector, invoices and production records do not accompany products during installation or use. Therefore, invoices and production records cannot help the product user or DNREC enforcement verify compliance prior to use of the product.

Further, including multiple disclosures on a product's invoice could become problematic if additional authorities regulate the use of HFCs in the foam sector.

CPI recommends that DNREC consider potential options that will allow the user and DNREC to verify compliance *prior* to using the product. CPI is working with the U.S. Climate Alliance to develop a proposed uniform regulatory approach for disclosures that would serve as a more effective enforcement tool for polyurethane products. CPI is currently vetting our approach and will share more information with DNREC and the U.S. Climate Alliance when it is available. CPI is hoping to have more information available to DNREC by the end of October or early November.

C) DNREC should develop a clear sell-through provision

In the polyurethane foam sector, there are different processes used to manufacture the variety of foam products on the market. For foam board products, such as rigid polyisocyanurate boardstock and rigid polyurethane boardstock foam, and thermoplastic foam, CPI understands "manufacture" to mean the date the manufacturer combines the component chemicals (e.g., polyol, blowing agent, catalyst, and isocyanate) in a factory to form the foam product. For spray polyurethane foam products, CPI understands "manufacture" of spray polyurethane foam products to mean the date a manufacturer combines component chemicals (e.g., polyol, blowing agent, catalyst) to form the polyol resin blend and packages the blend in the drum, canister, or can that is sold to end users for application. However, for both types of products, CPI understands "use" to mean the date the product is installed, either as a foam board or as spray foam.

In the Stakeholder Draft, section 3.0 restricts the sale, installation, and use of foams manufactured with foam blowing agents restricted in section 5. It is not clear if the sell-through provisions in section 3.1.2 allows product manufactured prior to the restriction date can remain in commerce or only product purchased prior to the date of restriction can remain in commerce. EPA's Significant New Alternatives Policy (SNAP) Rules 20 and 21, California, Vermont, and Washington State regulations all include a sell-through provision for existing product that was manufactured prior to the date of restriction.

CPI suggests the final regulations include language to help confirm our interpretations and identify a sell-through period to facilitate stakeholders' regulatory compliance and understanding. Without a clear sell-through period, the value chain will be unable to ensure product is not stranded in the distribution chain and possibly destroyed.

Accordingly, CPI recommends the following changes to section 3.0:

- 3.1 No person may sell, install, use, or introduce into commerce in the State of Delaware, any listed substance for use in any air-conditioning, refrigeration, foam, or aerosol propellant end-use listed as prohibited in Section 5.0.
- 3.1.2 ~~Except where existing equipment is retrofit, nothing in this regulations requires a person that acquired a prohibited substance or equipment containing a prohibited substance prior to an effective date of prohibition in Section 5.0 to cease use of that product or equipment.~~ Foam products manufactured with substances restricted in Section 5.0 prior to the date of restriction can be sold, installed, used, and introduced into commerce.

D) Exemptions

To ensure consistency across states regulating the use of HFCs, CPI recommends that DNREC adopt exemptions for blends of foam blowing agents with restricted substances if EPA approves the blend under

the SNAP program. For reference, California SB 1013, Washington St HB 1112, and Vermont S 30 all implement a variation of this exemption.

If you have any questions or need additional information, please contact me at Stephen_wieroniey@americanchemistry.com, or (202) 249-6617.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen Wieroniey", with a long horizontal flourish extending to the right.

Stephen Wieroniey, Director
Center for the Polyurethanes Industry

October 29, 2019
Ms. Ajo Rabemiarisoa
DNREC – Division of Air Quality

Re: NRDC Comments to DNREC on Proposed HFC Regulation

NRDC commends the Department of Natural Resources and Environmental Control (DNREC) for their prompt action to reduce greenhouse gas emissions from hydrofluorocarbons and appreciates the opportunity to participate as a key stakeholder in the review committee. Following the review committee's meeting on October 8, 2019 we would like to offer some additional feedback on the latest proposal's provisions:

a. Statement of Purpose

Through the comments provided by stakeholders during the October 8 meeting, it became evident that the exact purpose of this regulation was not unilaterally understood among stakeholders. Some confusion arose as to whether the prohibitions apply to the use, sale and distribution of HFCs or to the products and equipment containing high-GWP chemicals. To avoid unintended confusion, we encourage some additional clarification on the intention of the proposed rule. We think that the following proposal aids in further clarifying the intent of the rule and who it applies to:

This regulation establishes the phase down requirements for the use of hydrofluorocarbons in the State of Delaware used in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses by adopting specific United State Significant New Alternatives Policy (SNAP) Program prohibitions ~~for certain substances in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses~~. This regulation is designed to support greenhouse gas emissions reductions in the State of Delaware and does not apply to the production of hydrofluorocarbons or their use in products and equipment manufactured prior to the effective dates outlined in Section 6.0.

b. Reclaim

Reclamation is a critical step to promote proper refrigerant management at the end of the equipment's useful life and ensure that the refrigerant is not vented, but rather collected, treated and reused.

Under the proposed regulation, reclaimed refrigerant remains an available option for servicing existing equipment. The regulation does not place any restrictions on the use of reclaimed HFCs in equipment manufactured prior to the effective dates of this regulation. As a result, there is no evident need for the proposed definition of "Reclaim" in section 3 of the attached draft, nor is there need for an article outlining an exemption for reclaimed refrigerants.

In the past, proposals have come up to allow the use of reclaimed refrigerant in new equipment, essentially exempting products or equipment containing reclaimed substances from the prohibitions. NRDC opposed, and continues to oppose, exempting the use of reclaimed refrigerant in **new** equipment past the effective date of the prohibitions. Such an exemption would allow the introduction to the market

of systems operating with high-GWP refrigerants that will continue to leak these harmful pollutants during their useful life.

c. Environment climate change Canada - permits for essential purposes

During the October 8 HFC Review Committee meeting, AHRI proposed introducing a permit process for essential purposes, similar to the one currently in place in Canada. Unlike the US, Canada is following an HFC supply phase-down during which nationwide consumption of HFCs in the country is gradually reduced. In addition to the phase-down, Canada has sector-specific bans on the use of high-GWP HFCs in specific products and equipment, similar to those promulgated under the US EPA SNAP rules and those currently under consideration in Delaware.

Importation of bulk HFCs and HFC-containing equipment in Canada is prohibited without a permit. Permits to import HFCs are issued for specific purposes. A person may import, manufacture, use or sell a substance or a product containing or designed to contain a prohibited substance if the substance or product will be used for an essential purpose and if a permit is specifically issued under the relevant regulations for that purpose.

The intention of the permits in Canada is to selectively allow the use of HFCs in essential purposes where there are no alternatives. Under Canada's Ozone-depleting Substances and Halocarbon Alternatives Regulations, an essential purpose is defined as "a purpose requiring the use of a substance or a product containing or designed to contain a substance, when that use is necessary for the health and safety or the good functioning of society, encompassing its cultural and intellectual aspects, and when there are no technically or economically feasible alternatives to that use that are acceptable from the standpoint of the environment and of health."

Such a permit process is not necessary in Delaware and may undermine the purpose of the proposed Delaware regulation. The US is not implementing a nationwide supply phase-down and the US EPA SNAP rules only apply to a limited array of end-use categories. The EPA has already carved-out exemptions for essential purposes, following rigorous analyses and industry feedback. These exempted uses are included in Delaware's proposed HFC regulation. Permits for essential purposes do not exist in any of the other states regulating HFC-containing products and equipment or in the EPA SNAP rules. There is no need for a new process to allow exemptions, nor should the responsibility fall on DNREC to evaluate whether a specific use should qualify as essential.

When probed to explain for what essential purposes there should be an exemption for, AHRI failed to identify a particular use that currently requires one and indicated ice-makers as an example. Ice-makers are not subject to this regulation and therefore are an irrelevant example.

Exemptions for essential purposes should be backed by thorough analyses and data gathering and should be granted following an extensive and inclusive stakeholder engagement process, like the one currently underway in Delaware. The process must be inclusive and transparent and allow for proper feedback from industry and sector experts. The exemption process through DNREC-issued permits proposed by AHRI endangers transparency and undermines the validity of any potential, subsequent decision.

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TITLE 7 NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF AIR QUALITY
PROPOSED REGULATION

1151 Requirements for the Phase-out ~~Down~~ of Hydrofluorocarbons

3/1/2020

1.0 Purpose

1.1 This regulation establishes the phase-out ~~down~~ requirements for the use ~~and manufacturing~~ of hydrofluorocarbons in the State of Delaware used in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses by adopting specific United States Significant New Alternatives Policy (SNAP) Program prohibitions ~~for certain substances in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses~~. This regulation is designed to support greenhouse gas emissions reductions in the State of Delaware and does not apply to the production of hydrofluorocarbons or their use in products and equipment manufactured prior to the effective dates outlined in Section 6.0.

2.0 Applicability

- 2.1 This regulation applies to any person who sells, offers for sale, installs, uses, or enters into commerce, in the State of Delaware, any substance used in end-uses listed in Section ~~5~~ 6.0.
- 2.2 Substances used in end-uses listed in Section ~~6~~ 7.0 are exempt from the prohibitions covered in this regulation.
- 2.3 *Severability.* Each section of this regulation shall be deemed severable, and in the event that any provision of this regulation is held to be invalid, the remainder of this regulation shall continue in full force and effect.

3.0 Definitions

The following terms, when used in this regulation, shall have the following meanings unless the context clearly indicates otherwise. Terms used but not defined herein shall have the meanings given to them in 7 DE Admin. Code 1101 ~~o~~r the Clean Air Act as amended in 1990, in that order of:

“**Aerosol Propellant**” means a compressed gas that serves to dispense the contents of an aerosol container when the pressure is released.

Commented [RA(1)]: Following Industry comment. (Gradual) Phase Down being more appropriate when used in the broader sense of the regulation

Using the SNAP “Phase-out” terminology referenced to specific end-uses. Also some HFCs blends may still be used in the future, thus phase-out could be misleading.

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“**Air Conditioning Equipment**” means chillers, both centrifugal chillers and positive displacement chillers, intended for comfort cooling of occupied spaces.

“**Bunstock or bun stock**” is a large solid block-like structure formed during the production of polyurethane, polyisocyanurate, phenolic, or polystyrene insulation.

“**Capital Cost**” means an expense incurred in the purchase of components or in rendering services related to production of goods or in rendering services, including but not limited to the cost of engineering, purchase, and installation of components or systems, and instrumentation, and contractor and construction fees.

“**Centrifugal Chiller**” means air conditioning equipment that utilizes a centrifugal compressor in a vapor-compression refrigeration cycle typically used for commercial comfort air conditioning. Centrifugal chiller in this definition is a chiller intended for comfort cooling and does not include cooling for industrial process cooling and refrigeration.

“**Cold Storage Warehouse**” means a cooled facility designed to store meat, produce, dairy products, and other products that are delivered to other locations for sale to the ultimate consumer.

“**Component**” means a part of a refrigeration system, including but not limited to condensing units, compressors, condensers, evaporators, and receivers; and all of its connections and subassemblies, without which the refrigeration system will not properly function or will be subject to failures.

“**Cumulative Replacement**” means the addition of or change in multiple components within a three-year period.

“**Effective Date**” or “**Effective Date of Prohibition**” means date after which the prohibitions provided in Section 5 6.0 go into effect.

“**End-use**” means processes or classes of specific applications within industry sectors, including but not limited to those listed in Section 5 6.0.

“**Flexible Polyurethane**” means a non-rigid synthetic foam containing polymers of urethane radicals created by the reaction of isocyanate and polyol, including, but not limited to that used in furniture, bedding, chair cushions, and shoe soles.

“**Foam**” or “**Foam Blowing Agent**” means a product or substance used to produce the product with a cellular structure formed via a foaming process in a variety of materials that undergo hardening via chemical reaction or phase transition, such as polymers and plastics.

“**Household Refrigerators and Freezers**” means refrigerators, refrigerator-freezers, freezers, and miscellaneous household refrigeration appliances intended for residential use. For the purposes of this regulation, “household refrigerators and freezers” does not include “household refrigerators and freezers - compact”, or “household refrigerators and freezers - built-in.”

“**Household Refrigerators and Freezers Compact**” means any refrigerator, refrigerator-freezer or freezer intended for residential use with a total refrigerated volume of less than 7.75 cubic feet (220 liters).

“**Household Refrigerators and Freezers - Built-in**” means any refrigerator, refrigerator-freezer or freezer intended for residential use with 7.75 cubic feet or greater total volume and 24 inches or less depth not including doors, handles, and custom front panels; with sides which are not finished and not designed to be

Commented [RA(2): Additional comments to come from honeywell

Commented [OJ3]: Narrowed to more accurately cover the costs related to repairs or replacement of supermarket systems and components.

Commented [OJ4]: Additional small correction for accuracy

Commented [AR5]: Technical correction provided by Stakeholder

Commented [OJ6]: Regulation below address prohibited “substances” (used as “foam blowing agents” in certain foam products). Adjusted definition accordingly.

Deleted text at the end was redundant from a technical perspective

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visible after installation; and that is designed, intended, and marketed exclusively to be: installed totally encased by cabinetry or panels that are attached during installation; securely fastened to adjacent cabinetry, walls or floor; and equipped with an integral factory-finished face or accept a custom front panel.

“**Integral Skin Polyurethane**” means a synthetic self-skinning foam containing ~~polymers of urethane radicals~~ polyurethane polymers formed by the reaction of an isocyanate and a polyol, including but not limited to that used in car steering wheels, dashboards, and shoe soles.

~~“Light duty vehicle” means passenger cars and light duty trucks as defined in [insert State vehicle regulation]~~

“**Metered Dose Inhaler**,” or “**Medical Dose Inhaler**,” or “**MDI**” means a device that delivers a measured amount of medication as a mist that a patient can inhale, typically used for bronchodilation to treat symptoms of asthma, chronic obstructive pulmonary disease (COPD), chronic bronchitis, emphysema, and other respiratory illnesses. An MDI consists of a pressurized canister of medication in a case with a mouthpiece.

“**Miscellaneous Residential Refrigeration Appliance**” means a residential refrigeration appliance smaller than a refrigerator, refrigerator-freezer, or freezer; and which includes coolers, cooler compartments, and combination cooler refrigeration or cooler freezer products.

“**New**” means products or equipment that are manufactured after the effective date of this regulation or equipment first installed for an intended purpose with new or used components, expanded by the addition of components to increase system capacity, or replaced or cumulatively replaced such that the capital cost of replacement exceeds 50% of the capital cost of replacing the whole system.

“**Person**” means any individual, firm, association, organization, manufacturer, distributor, partnership, business trust, corporation, limited liability company, company, state, or local governmental agency or public district.

“**Phenolic Insulation Board**” means phenolic insulation including but not limited to that used for roofing and wall insulation.

~~“**Bunstock or bun stock**” is a large solid box-like structure formed during the production of polystyrene insulation.~~

“**Polyolefin**” means foam sheets and tubes made of polyolefin.

“**Polystyrene Extruded Boardstock and Billet (XPS)**” means a foam formed from ~~polymers of~~ predominantly styrene monomer and produced on extruding machines in the form of continuous foam slabs which can be cut and shaped into panels used for roofing, walls, and flooring, and pipes.

“**Polystyrene Extruded Sheet**” means polystyrene foam including that used for packaging ~~and buoyancy or floatation~~. It is also made into food-service items, including hinged polystyrene containers (for “take-out” from restaurants); food trays (meat and poultry) plates, bowls, and retail egg containers.

“**Positive Displacement Chiller**” means vapor compression cycle chillers that use positive displacement compressors, typically used for commercial comfort air conditioning. Positive displacement chiller in this definition is a chiller intended for comfort cooling and does not include cooling for industrial process cooling and refrigeration.

Commented [AR7]: Technical correction provided by Stakeholder

Commented [RA(8)]: Oversight in our previous version USCA states are not looking to adopt right now

Commented [AR9]: This definition is consistent with our NSPS regulation.

Industry to suggest alternative language including -Nominal Compressor Capacity

Commented [OJ10]: Technical corrections necessary for accuracy

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“Reclaim” means to reprocess recovered refrigerant to all of the specifications in appendix A of this regulation (based on AHRI Standard 700-2016 or the most recent subsequent version). Specifications for Refrigerants, that are applicable to that refrigerant and to verify that the refrigerant meets these specifications using the analytical methodology prescribed in that standard.

“Refrigerant” or “Refrigerant Gas” means any substance, including blends and mixtures, which is used for heat transfer purposes.

“Refrigerated Food Processing and Dispensing Equipment” means retail food refrigeration equipment that is designed to process food and beverages dispensed via a nozzle that are intended for immediate or near-immediate consumption, including but not limited to chilled and frozen beverages, ice cream, and whipped cream. This end use excludes water coolers, or units designed solely to cool and dispense water.

“Refrigeration Equipment” means any stationary device that is designed to contain and use refrigerant gas, including but not limited to retail or commercial refrigeration equipment, household refrigeration equipment, and cold storage warehouses.

“Remote Condensing Units” means retail refrigeration equipment or units that have a central condensing portion and may consist of compressor(s), condenser(s), and receiver(s) assembled into a single unit, which may be located external to the sales area. The condensing portion (and often other parts of the system) is located outside the space or area cooled by the evaporator. Remote condensing units are commonly installed in convenience stores, specialty shops (e.g., bakeries, butcher shops), supermarkets, restaurants, and other locations where food is stored, served, or sold.

“Residential use” means use by a private individual of a substance, or a product containing the substance, in or around a permanent or temporary household, during recreation, or for any personal use or enjoyment. Use within a household for commercial or medical applications is not included in this definition, nor is use in automobiles, watercraft, or aircraft.

“Retail Food Refrigeration” or “Commercial Refrigeration” means equipment designed to store and display chilled or frozen goods for commercial sale including but not limited to stand-alone units, refrigerated food processing and dispensing equipment, remote condensing units, supermarket systems, and vending machines.

“Retrofit” means to convert an appliance equipment from one refrigerant to another refrigerant. Retrofitting includes the conversion of the appliance to achieve system compatibility with the new refrigerant and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, o-rings or appliance components, the replacement of the refrigerant used in refrigeration equipment with a different refrigerant, and any related changes to the refrigeration equipment required to maintain its operation and reliability following refrigerant replacement.

“Rigid Polyurethane and Polyisocyanurate Laminated Boardstock” means laminated board insulation made with polyurethane or polyisocyanurate foam, including that used for roofing and walls.

Commented [AR11]: The Department requests further clarifications on how including these considerations would support our goal of transitioning away from high GWP HFCs. Delaware, does not have quantifiable data supporting the fact that reclamation would result in lower GHG emissions than disposing of the used refrigerants, when looking at the entire life cycle analysis.

Industry suggested language:
Reclamation and re-use of refrigerants in existing equipment is exempt from the prohibitions in Section 6.0.

Commented [OJ12R11]: Additional exemption is not needed as EPA SNAP already allows continued use of HFCs (either reclaimed or virgin) in existing equipment after the prohibition date

Commented [AR13]: Stakeholder suggestion to delete, but we believe this offers clarification.

Commented [RA(14): Section 152 of Subpart F of 40 C.F.R. Part 82, as that section existed as of January 3, 2017.

Consistent with EPA

Consistent with VT and WA legislation

Commented [RA(15): Change appliance to equipment or system

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“**Rigid Polyurethane Appliance Foam**” means polyurethane insulation foam in domestic appliances.

“**Rigid Polyurethane Commercial Refrigeration and Sandwich Panels**” means polyurethane insulation for use in walls and doors, including that used for commercial refrigeration equipment, and used in doors, including garage doors.

“**Rigid Polyurethane High-pressure Two-component Spray Foam**” means a foam product that is pressurized 800-1600 pounds per square inch (psi) during manufacture; sold in pressurized containers as two parts (i.e., A-side and B-side); and is blown and applied in situ using high-pressure pumps to propel the foam components, and may use liquid blowing agents without an additional propellant.

“**Rigid Polyurethane Low-pressure Two-component Spray Foam**” means a foam product that is pressurized to less than 250 psi during manufacture; sold in pressurized containers as two parts (i.e., A-side and B-side); and are typically applied in situ relying upon a gaseous foam blowing agent that also serves as a propellant so pumps typically are not needed.

“**Rigid Polyurethane Marine Flotation Foam**” means buoyancy or flotation foam used in boat and ship manufacturing for both structural and flotation purposes.

“**Rigid Polyurethane One-component Foam Sealants**” means a foam packaged in aerosol cans that is applied in situ using a gaseous foam blowing agent that is also the propellant for the aerosol formulation.

“**Rigid Polyurethane Slabstock and Other**” means a rigid closed-cell foam containing ~~polymers of urethane radicals~~ urethane polymers produced by the reaction of an isocyanate and a polyol and formed into slabstock insulation for panels fabricated shapes for and pipes and vessels.

“**Stand-alone Unit**” means retail refrigerators, freezers, and reach-in coolers (either open or with doors) where all refrigeration components are integrated and, for the smallest types, the refrigeration circuit is entirely brazed or welded. These systems are fully charged with refrigerant at the factory and typically require only an electricity supply to begin operation.

“**Stand-alone Low-Temperature Unit**” means a stand-alone unit that maintains food or beverages at temperatures at or below 32°F (0 °C).

“**Stand-alone Medium-Temperature Unit**” means a stand-alone unit that maintains food or beverages at temperatures above 32°F (0 °C).

“**Substance**” means any chemical, ~~product substitute, or alternative manufacturing process, whether new or retrofit,~~ intended for use in the end-uses listed in Section ~~5~~ **6.0** of this regulation.

“**Supermarket Systems**” means multiplex or centralized retail food refrigeration equipment systems designed to cool or refrigerate, which typically operate with racks of compressors installed in a machinery room and which includes both direct and indirect systems.

“**Use**” means any utilization of a compound or any substance, including but not limited to utilization in a manufacturing process or product in Delaware, consumption by the end-user in the State of Delaware, or in intermediate applications in the State of Delaware, such as formulation or packaging for other subsequent applications. For the purposes of this regulation, use excludes

Commented [AR16]: Stakeholder technical correction for accuracy

Commented [AR17]: Stakeholder comment for the definition to be expanded to include distributed and micro-distributed systems. These systems do not necessarily operate with racks of compressors.

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residential use, but it does not exclude manufacturing for the purpose of residential use.

“Vending Machines” means self-contained commercial food refrigeration equipment that dispense goods ~~and that~~ must be kept hot, cold or frozen.

3/1/2020

3 4.0 Standards (Requirements)

3 4.1 Prohibitions

3 4.1.1 No person may sell, install, use or enter into commerce, in the State of Delaware, any listed substance for use in any air conditioning, refrigeration, foam, or aerosol propellant end-use listed as prohibited in Section 5 6.0 ~~and not exempt by section 7.0.~~

3 4.1.2 ~~Except where an existing system equipment is retrofit, nothing in this regulation requires a person that acquired a prohibited substance product or equipment containing a prohibited substance prior to an effective date of the prohibition in Section 5 6.0 to cease use of that product or equipment. Products or equipment manufactured prior to the applicable effective date of the restrictions specified in Table 1 of §BSection 6.1.1 of this regulation (including spray foam systems not yet applied on site) may be sold, imported, exported, distributed, installed, and used after the specified date of prohibition.~~

3 4.2 Disclosure Statement

3 4.2.1 As of the effective date of this regulation, any person who manufactures and sells or enters into commerce in the State of Delaware, ~~for products or equipment containing any listed substance~~ in the air conditioning, refrigeration, foam, or aerosol propellant end-uses listed as prohibited in Section 5 6.0, must provide ~~written disclosure to the buyer as part of the sales transaction and invoice, as follows.~~

3 4.2.1.1 ~~The required written disclosure or label must state:~~

3 4.2.1.1.1 Refrigeration and air conditioning equipment:

~~“This equipment is prohibited from use in the State of Delaware with any refrigerant on the List of Prohibited Substances for the specific end-use in Section 5 6.0 of 7 DE Admin. Code 1151. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”~~

~~“This equipment includes substances that are compliant with states that have prohibited the use of high GWP refrigerants for specific end-uses”~~

3 4.2.1.1.2 Foam:

Commented [RA(18): Typo in our last draft proposal

Commented [RA(19): This article covers the repair and maintenance question raised during last RC meeting.

Similar language as VT legislation

Commented [OJ20]: With this change, the definition of “use” can be retained without creating the loophole we were previously concerned about.

Commented [RA(21): Add “...containing the substance”?

Commented [RA(22): Addition of a Sell through provision?

“Products or equipment manufactured prior to the applicable effective date of the restrictions specified in Section 6.0 (including spray foam systems not yet applied on site) may be sold, imported, exported, distributed, and installed after the specified date of prohibition.”

2 industry Stakeholders asked for this addition, in consistent with EPA?

Commented [A23]: This is an important change, which closes a potential loophole created by the original language, which could be interpreted to grandfather existing manufacturing with prohibited substitutes after the phase out date.

The revised language is consistent with the Washington-enacted legislation (HB 1112) (“Except where existing equipment is retrofit, nothing in this subsection requires a person that acquired a restricted product or equipment prior to the effective date of the restrictions in subsection (2) of this section to cease use of that product or equipment. Products or equipment manufactured prior to the applicable effective date of the restrictions specified in subsection (2) of this section may be sold, imported, exported, ...

Commented [OJ24]: Change needed here to clarify the obligation since “listed substance” is not defined. If this is intended to be the same as prohibited substance, then this disclosure only applies to products or equipment containing prohibited substances, but th...

Commented [AR25]: Current leaning

-Require further discussions with USCA states
-Welcome additional industry comments

Commented [RA(26): Will require further discussions with USCA states

Commented [RA(27): Negative statement suggested by the stakeholders:

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~~“This foam system is prohibited from use in the State of Delaware with any foam blowing agent on the List of Prohibited Substances for the specific end-use in Section 5 6.0 of 7 DE Admin. Code 1151. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”~~

~~“This product includes substances that are compliant with states that have prohibited the use of high GWP substances for specific end-uses”~~

~~3-4-2.1.1.3 Aerosol propellants:~~

~~“This product is prohibited from use in the State of Delaware with any aerosol propellant on the List of Prohibited Substances for the specific end-use in Section 5 6.0 of 7 DE Admin. Code 1151. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”~~

~~“This product includes substances that are compliant with states that have prohibited the use of high GWP substances for specific end-uses”~~

~~3.2.1.2 The disclosure statement or label must remain with the product or equipment while it is in use in the State of Delaware~~

4-5.0 Recordkeeping

4-5.1 As of the effective date of this regulation, any person who manufactures any product or equipment in the end uses listed in Section 5 6.0 for sale or entry into commerce in the State of Delaware, must maintain for five years and make available, upon request by the Department, a copy of the following records, where applicable:

4-5.1.1 Name and address of the person purchasing the equipment or product at the time of purchase,

4-5.1.2 telephone number and email address of the person purchasing the equipment or product at the time of purchase, if provided to the manufacturer,

4-5.1.3 model and serial number of the equipment or product, where applicable. When the affected equipment is part of an assembly without an individual serial number, the serial number of each component must be recorded. If a component or equipment does not have an individual serial number or the serial number is inaccessible after assembly, the physical description must be recorded in enough detail for positive identification,

4-5.1.4 date of manufacture of the equipment or product,

Commented [RA(28): Recordkeeping is the first method to ensure enforcement

DE is considering removing Recordkeeping requirements

Aim to stay consistent with USCA states

Seeking additional feedback on how record-keeping may not be warranted.

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4.5.1.5 date of sale of the equipment or product,

4.5.1.6 the refrigerant(s), aerosol propellant(s), or foam-blowing agent(s) that the equipment or product is designed to use,

4.5.1.7 the refrigerant(s), aerosol propellant(s), or foam-blowing agent(s) used in the equipment of products and the full charge capacity, where available, and

4.5.1.8 a copy of the disclosure statement or label issued to the buyer or recipient.

3/1/2020

5.6.0 List of Prohibited Substances

5.6.1 End-use and prohibited substances

5.6.1.1 The following table lists prohibited substance in specific end-uses and the effective date of prohibition, unless an exemption is provided for in Section 6.7.0.

Table 1. End-use and Prohibited substances		
End-use Category: Aerosol Propellants		
End-use	Prohibited Substances	Effective Date
Aerosol Propellants	HFC-125, HFC-134a, HFC-227ea and blends of HFC-227ea and HFC 134a	January 1, 2020 1
End-use Category: Air Conditioning		
End-use	Prohibited Substances	Effective Date
Centrifugal chillers (new)	FOR12A, FOR12B, HFC-134a, HFC-227ea, HFC-236fa, HFC245fa, R-125/134a/ 600a (28.1/70/1.9), R-125/ 290/134a/ 600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R-422B, R-422C, R-422D, R-423A, R-424A, R-434A, R438A, R-507A, RS-44 (2003 composition), THR-03	January 1, 2024
Positive displacement chillers (new)	FOR12A, FOR12B, HFC-134a, HFC-227ea, KDD6, R125/ 134a/ 600a (28.1/70/1.9), R-125/ 290/ 134a/ 600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R-422B, R-422C, R-422D, R-424A, R-434A, R-437A, R438A, R-507A, RS-44 (2003 composition), SP34E, THR-03	January 1, 2024
End-use Category: Refrigeration		
End-use	Prohibited Substances	Effective Date

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Cold storage warehouses (new)	HFC-227ea, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R404A, R-407A, R-407B, R-410A, R-410B, R-417A, R-421A, R421B, R-422A, R-422B, R-422C, R-422D, R-423A, R-424A, R428A, R-434A, R-438A, R-507A, RS-44 (2003 composition)	January 1, 2023
Household refrigerators and freezers (new)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2022
Household refrigerators and freezers—compact (new)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2021
Household refrigerators and freezers—built in appliances (new)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2023
Supermarket Systems (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R428A, R-434A, R-507A	January 1, 2021
Supermarket Systems (New)	HFC-227ea, R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021
Remote Condensing Units (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R428A, R-434A, R-507A	January 1, 2021
Remote Condensing Units (New)	HFC-227ea, R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021

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Stand-Alone Units (Retrofit)	R-404A, R-507A	January 1, 2021
Stand-Alone Medium-Temperature Units (New)	FOR12A, FOR12B, HFC-134a, HFC-227ea, KDD6, R125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R407A, R-407B, R-407C, R-407F, R-410A, R-410B, R417A, R-421A, R-421B, R-422A, R-422B, R-422C, R422D, R-424A, R-426A, R-428A, R-434A, R-437A, R438A, R-507A, RS-24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2021
Stand-Alone Low-Temperature Units (New)	HFC-227ea, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407A, R-407B, R-407C, R-407F, R-410A, R-410B, R-417A, R-421A, R-421B, R422A, R-422B, R-422C, R-422D, R-424A, R-428A, R434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation)	January 1, 2021
Refrigerated food processing and dispensing equipment (New)	HFC-227ea, KDD6, R-125/ 290/ 134a/ 600a (55.0/1.0/42.5/1.5), R-404A, R-407A, R-407B, R-407C, R-407F, R-410A, R-410B, R417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R424A, R-428A, R-434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation)	January 1, 2021
Vending Machines (Retrofit)	R-404A, R-507A	January 1, 2021 2022
Vending Machines (New)	FOR12A, FOR12B, HFC-134a, KDD6, R125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R407C, R-410A, R-410B, R-417A, R-421A, R-422B, R422C, R-422D, R-426A, R-437A, R-438A, R-507A, RS-24 (2002 formulation), SP34E	January 1, 2022
End-use Category: Foams		
End-use	Prohibited Substances	Effective Date
Rigid Polyurethane and Polyisocyanurate Laminated Boardstock	HFC 134a, HFC 245fa, HFC 365mfc, and blends thereof	January 1, 2021
Flexible Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021

Commented [RA(29): EPA SNAP rules for Vending Machines
 Retrofitted: 2016
 New: 2019

Industry feedback:
 -Issues with Flammability of substitutes products – thus limitation for location in space
 -Currently undergoing testing with ASHRAE to test their different options
 - 2022 would provide a later date for vending machines to allow additional time for the industry to adopt the lowest-GWP options

2022 adopted by WA

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Integral Skin Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polystyrene Extruded Sheet	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Phenolic Insulation Board and Bunstock	HFC-143a, HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021
Rigid Polyurethane Slabstock and Other	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Appliance Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Commercial Refrigeration and Sandwich Panels	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polyolefin	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Rigid Polyurethane Marine Flotation Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Polystyrene Extruded Boardstock and Billet (XPS)	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel B, Formacel Z-6	January 1, 2021 ** —
Rigid polyurethane (PU) high-pressure two-component spray foam	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021
Rigid PU low-pressure two-component spray foam	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021 ** —
Rigid PU one-component foam sealants	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at least 4 percent HFC-245fa, and commercial blends of HFC-365mfc with 7 to 13 percent HFC-227ea and the remainder HFC-365mfc; Formacel TI	January 1, 2021

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** If the U.S. Environmental Protection Agency approves a previously prohibited hydrofluorocarbon blend with a global warming potential of 750 or less for foam blowing of polystyrene extruded boardstock and billet and rigid polyurethane low-pressure two component spray foam pursuant to the Significant New Alternatives Policy under section 7671(k) of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.), the Department shall expeditiously propose a rule to conform to the requirements established under this section with that federal action.

Commented [RA(30): Consistent with VT legislation language and other USCA states' intent.

3/1/2020

6.7.0 End-use and prohibited substances exemptions

Following Industry comments, supported by environmental advocacy group NRDC.

6.7.1 The following table lists exemptions to the prohibitions in Section 6.0

We agree that this consideration promotes energy efficiency and air sealing improvements; and that the exemption has the overall intent of reducing GHG emissions

End-use category	Prohibited Substances	Acceptable Uses
Aerosol Propellants	HFC-134a	Cleaning products for removal of grease, flux and other soils from electrical equipment; refrigerant flushes; products for sensitivity testing of smoke detectors; lubricants and freeze sprays for electrical equipment or electronics; sprays for aircraft maintenance; sprays containing corrosion preventive compounds used in the maintenance of aircraft, electrical equipment or electronics, or military equipment; pesticides for use near electrical wires, in aircraft, in total release insecticide foggers, or in certified organic use pesticides for which EPA has specifically disallowed all other lower-GWP propellants; mold release agents and mold cleaners; lubricants and cleaners for spinnerettes for synthetic fabrics; duster sprays specifically for removal of dust from photographic negatives, semiconductor chips, specimens under electron microscopes, and energized electrical equipment; adhesives and sealants in large canisters; document preservation sprays; FDA-approved MDIs for medical purposes; wound care sprays; topical coolant sprays for pain relief; and products for removing bandage adhesives from skin.
Aerosol Propellants	HFC-227ea and blends of HFC-227ea and HFC 134a	FDA-approved MDIs for medical purposes.
Air Conditioning	HFC-134a	Military marine vessels where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.

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Air Conditioning	HFC-134a and R-404A	Human-rated spacecraft and related support equipment where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements.
Foams – Except Rigid polyurethane (PU) spray foam	All substances	Military applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2022.
Foams – Except Rigid polyurethane (PU) spray foam	All substances	Space- and aeronautics-related applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2025.
Rigid polyurethane (PU) two-component spray foam	All substances	Military or space- and aeronautics-related applications where reasonable efforts have been made to ascertain that other alternatives are not technically feasible due to performance or safety requirements until January 1, 2025.

October 31, 2019

Ms. Ajo Rabemiarisoa
Environmental Engineer
DNREC - Division of Air Quality

Submitted via email

Re: NAMA Comments to DNREC on Refrigerant Transition for the Vending Industry

Dear Ms. Rabemiarisoa:

The National Automatic Merchandising Association (NAMA), representing hundreds of large and small businesses that provide vending, coffee and convenience services to thousands of customers in Delaware each day, appreciates the opportunity to submit the following comments regarding the phase out of HFC refrigerants in the State of Delaware. We are additionally appreciative that Wes Fisher from our staff was able to attend the stakeholder meeting held at DNREC on October 8, 2019.

Founded in 1936, the National Automatic Merchandising Association (NAMA) is the association representing the \$26 billion U.S. convenience services industry, with its core membership being comprised of owners and operators of vending machine, micro market, and coffee, tea and water service and pantry service companies. With nearly 1,000-member companies – including many of the world’s most recognized brands – NAMA provides advocacy, education and research for its membership.

NAMA continues to emphasize that our industry is committed to a transition away from Hydrofluorocarbons (HFC’s) in a timely, efficient, and business feasible manner, however there are several issues that necessitate an extension for implementation. The attached position paper that has been distributed to the US Climate Alliance outlines our industry’s efforts to transition away from HFCs as quickly and safely as possible.

As the industry embarked on this path several challenges remained unresolved. The industry is committed to solving these problems in coordination with the US Climate Alliance and the states and standards bodies. However, we believe that we cannot do this as quickly as other industries given our unique placement restrictions. We therefore support the proposed phase out date of January 1, 2022 that has been proposed in the draft DNREC regulation.

Sincerely,



Mike Goscinski
Director, Federal and State Affairs
NAMA

OVERVIEW: VENDING MACHINE PLACEMENT ISSUE

R-290 refrigerant, the most prominent low GWP refrigerant of the vending machine industry that provides a **global** solution is a flammable chemical designated A-3 by ASHRAE 34. In addition, UL 541 and ASHRAE 15 safety standards have authority over products containing this chemical and their placement within public buildings. They are considered commercial products and must comply with these safety standards.

In the US, vending machines with any refrigerant other than A1 (non-flammable) classification may not be placed in locations of ingress, egress, hallways, or lobby areas of any buildings. This would prevent building code officials and fire marshals from permitting placement, and should an incident occur the manufacturer and/or operator of the machine may be threatened with unknown legal, reputational, and financial risk. In many cases, a violation of this would be found through the building or fire inspection not from the insurance carrier of the commercial building.

The practical impact of the UL 541 and ASHRAE 15 placement restrictions is that nearly no vending operator is willing to purchase a machine cooled with an A3 coolant while the standards remain unchanged. These prohibited placement locations encompass a large amount of potential vending machine placement sites.

UL has informed NAMA that the UL 541 restriction on vending machine placement was based on ASHRAE 15. NAMA is actively working with ASHRAE and UL to have the restrictive language removed by providing data requested by ASHRAE and UL.

To that end, NAMA and NAMA members commissioned a research study in June 2018 overseen by a NAMA technical working group and an ASHRAE 15 Working Group to undertake rigorous laboratory tests. The results of these tests were not sufficient to prompt ASHRAE or UL to change their standards. Thus, additional research is being actively pursued as well as a risk mitigation study. The NAMA technical working group meets weekly and continues to actively work on this issue.

In addition to the safety standards (UL and ASHRAE) the model building codes must be changed to accept flammable refrigerants and equipment using them. The work has been underway for 3 years to begin the changes. For example, California does not follow the ICC or SCC codes but has its own. It is likely that the 2021 and 2022 building codes will accept these new refrigerants as long as they are cited in the relevant UL and ASHRAE standards.

NAMA Position Paper Submitted to the U.S. Climate Alliance on HFC Refrigerant Phase Out in the Vending Industry

Background

Founded in 1936, the National Automatic Merchandising Association (NAMA) is the association representing the \$26 billion U.S. convenience services industry, with its core membership being comprised of owners and operators of vending machine, micro market, coffee, tea and water service, and pantry service companies. With nearly 1,000-member companies – including many of the world’s most recognized brands – NAMA provides advocacy, education and research for its membership. In the United States, the convenience services industry represents nearly \$26 billion in economic impact and over 140,000 jobs.

The convenience services industry is committed to a transition away from Hydrofluorocarbons (HFC’s) in a timely, efficient, and business feasible manner, however there are several issues that necessitate an extension for implementation in order to do so. Specifically, current machine placement restrictions enacted by the American Society of Heating and Air-Conditioning Engineers (ASHRAE) and Underwriters Laboratories (UL) for machines using HC R-290.

NAMA has worked with these standards organizations to overcome this additional hurdle in our transition away from HFCs and is in the process of promoting allow for safe placement of vending machines with flammable and partially flammable refrigerants in restricted areas.

Refrigerant that Offers Global Solution Has Placement Restriction

R-290 is the preferred low Global Warming Potential (GWP) refrigerant of the vending machine industry to provide a global solution with a GWP of 3 and is currently designated as a flammable chemical A-3 by ASHRAE 34. In addition, UL 541 and ASHRAE 15 safety standards have authority over products containing this chemical and their placement within public buildings. These standards are cited by the International Building Code, a project of the International Code Council, which has been adopted as the base building and fire prevention code across the United States.ⁱ

Vending machines are considered commercial products and must comply with these safety standards. In the US, vending machines with any refrigerant other than A1 (non-flammable) classification may not be placed in locations of ingress, egress, hallways, or lobby areas of any buildings, pursuant to ASHRAE and UL requirements. This would prevent building code officials and fire marshals from permitting placement, and should an incident occur the manufacturer and/or operator of the machine may be threatened with unknown legal, reputational, and financial risk. In many cases, a violation of this would be found through the building or fire inspection not from the insurance carrier of the commercial building.

The practical impact of the UL 541 and ASHRAE 15 placement restrictions is that nearly no vending operator is willing to purchase a machine cooled with an A3 coolant while the restrictive standards remain in place. These prohibited placement areas encompass a very high number of potential vending machine placement locations.

Some have raised the question as to why Hydrofluoroolefin (HFO) blends can't solve this problem. While we believe that HFO blends should continue to be allowed as a refrigerant in vending machines, they are not ideal for the vending industry as a global solution for several reasons:

- The EU, as of 2022 has banned refrigerants with a GWP of 150 or higher; HFO's for vending have a GWP higher than 150 thus products using these refrigerants would not be permitted for use in the EU starting in 2022.
- Available HFO's are propriety blends controlled by a singular manufacturer that could dictate pricing, demand, or experience supply chain disruptions.
- HFO's cost a minimum of three times what R134a and R290 cost, per pound. Transitioning to propriety chemicals would represent a triple digit percentage increase in commodity costs making them prohibitively more expensive.
- HFO's contain HFC's and are not naturally occurring and many in our industry have made commitments to use only "natural" refrigerants.
- HFO's still contribute Ozone Depleting Potential (ODP) whereas R290 – a HC – does not. Additionally, R290 is more energy and cost efficient compared to HFO's and CO2.

In the current situation, HC's are the only feasible refrigerant for a global solution. However, as previously mentioned, the UL and ASHRAE restrictions must be altered before use of R-290 is feasible.

Our industry must go through the process of changing UL 541 and ASHRAE 15 or making our products work within the current guidelines.

Timeline for Change to Standards

NAMA has been assembled a technical working group of industry experts who have spent nearly two years testing and working on solutions to this issue. Through his research we have been able to provide valuable information to ASHRAE about the limited risks associated with allowing small amounts of flammable refrigerants in vending machines.

We have also been actively working with ASHRAE and UL to change these standards. NAMA and its members are seeking to create a safe, methods based, cost effective, transition to meet the proposed state requirements and overall market driven changes taking place in the industry.

In September 2019 after over a year of research and engagement, NAMA submitted a proposed rule change to the ASHRAE 15 committee that would allow for up to 114 grams of an A3 (flammable) refrigerant in currently restricted areas. The proposal is currently out for an initial round of comments from the committee and will be up for a vote of the full ASHRAE 15 committee in February 2020.

If successful, NAMA will go through the same process with the UL 541 standard for vending machines. This process is expected to take a few months as well.

If both the UL and ASHRAE revision processes go according to plan, it will allow for vending machines with R-290 and other A3 refrigerants to be sold on the US market by the end of 2020, with manufacturers ramping up production of such machines through 2021.

Conclusion

NAMA is committed to successfully transitioning the vending industry away from HFCs and has been in contact with each state that is working on phasing out HFCs. With the additional hurdle of placement restrictions to overcome, our industry needs additional time to make this transition. The Washington State Department of Environmental Conservation worked with NAMA to delay the proposed phase out of HFCs in vending machines from the original date of January 1, 2020 to January 1, 2022. Language of the emergency rule making that change and the adoption notice are attached for reference.

As the industry embarked on this path several challenges outlined above remained unresolved. The industry is committed to solving these problems in coordination with the EPA, states, and standards bodies. However, we believe that we cannot do this as quickly as other industries given the unique placement restrictions currently in place from UL and ASHRE. We therefore request that states extend the date for compliance for refrigerated vending machines until the issues with ASHRAE and UL are fully resolved or January 1, 2022.

ⁱ ICC Code Adoption By State: <https://cdn-web.iccsafe.org/wp-content/uploads/Master-I-Code-Adoption-Chart-DEC.pdf>

October 31, 2019

via electronic transmission

Ajo Rabemiarisoa
Environmental Engineer
Delaware Department of Natural Resources and Environmental Control
Division of Air Quality
715 Grantham Lane
New Castle, DE 19720
ajo.rabemiarisoa@delaware.gov

Subject: Draft Proposed Regulation 1151 Requirements for the Phase Down of Hydrofluorocarbons; DE Reg 1151

Dear Ms. Rabemiarisoa,

The Household & Commercial Products Association¹ (HCPA) appreciates the opportunity to offer comments on Delaware Department of Natural Resources and Environmental Control (DNREC) Division of Air Quality's (DAQ's) draft proposed regulation to phase down the use of certain hydrofluorocarbons (HFCs) in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses by adopting specific United States Significant New Alternatives Policy (SNAP) Program prohibitions. HCPA supports the draft proposal to adopt the 2015² and 2016³ United States Environmental Protection Agency (EPA) prohibitions on the use of HFCs as substitutes for ozone-depleting substances to ensure consistency with other state activity to limit the use of certain HFCs.

HCPA represents a wide range of products, from household cleaners and air fresheners to commercial disinfectant and pest control whose use of aerosol technology makes the aerosol industry an integral part of the household and commercial products industry. HCPA has represented the U.S. aerosol products industry since 1950 through its Aerosol Products Division, representing the interest of companies that manufacture, formulate, supply and market a wide variety of products packaged in an aerosol form.

¹The Household & Commercial Products Association (HCPA) is the premier trade association representing companies that manufacture and sell \$180 billion annually of products used for cleaning, protecting, maintaining, and disinfecting homes and commercial environments. HCPA member companies employ 200,000 people in the U.S. whose work helps consumers and workers to create cleaner, healthier and more productive lives.

² Appendix U of Subpart G of 40 CFR Part 82

³ Appendix V of Subpart G of 40 CFR Part 82

I. HCPA Supports Delaware's Actions to Restrict the Use of High Global Warming Potential HFCs in a Manner that Is Consistent with Other States

HCPA supports the DAQ's goal to restrict the use of high global warming potential (GWP) HFCs through limiting their use in a manner that is consistent with similar action taken by other states to restrict the use of HFCs. California, Vermont and Washington recently enacted legislation or promulgated regulation to achieve the same goal of limiting the use of certain high GWP HFCs by utilizing Appendix U and Appendix V of Subpart G of 40 CFR Part 82 (Jan. 3, 2017). DAQ's draft proposed regulation is consistent with other state actions, which provides the regulatory certainty that industry needs for ensuring compliance and for future planning, investment, sales and research and development decisions.

Aerosol manufacturers produced approximately 3.854 billion aerosol products⁴ in the United States in 2018, utilizing a variety of propellants, a small portion of which utilize 1,1,1,2-Tetrafluoroethane (HFC-134a). Propellants pressurize the aerosol system and influence how the product is expelled from the container. HCPA members first began utilizing HFC propellants in the 1990s for compliance with volatile organic compounds (VOCs) standards for established by EPA and states such as California. The aerosol industry constantly investigates all opportunities to improve their aerosol products and the introduction of non-VOC and low GWP alternatives has led HCPA members to replace HFC-134a as the aerosol propellant for many types of aerosol products. Reformulating aerosol products takes a considerable amount of time and effort to ensure safe and effective products leaving little incentive for responsible manufacturers to return to HFC-134a. Consequently, HCPA members have few remaining HFC-134a uses, all of which were exempted in the SNAP Rules and continue to be exempted by other states as the use of HFC-134a in these product categories is critical due to its non-flammability.

II. HCPA Supports an Effective Date One Year after the Publication of the Final Regulation

HCPA supports limiting the use of certain high GWP HFC propellants in aerosol products. While HCPA is not aware of any member company utilizing a high GWP HFC as an aerosol propellant unless the use is exempted from the prohibition, HCPA believes that providing one year is a reasonable amount of time for companies to assess their products and make any necessary changes to comply with the proposed regulation. While HCPA believes this measure maintains consistency with other states that have or are instituting similar regulations, HCPA is open to discussing the merits of an earlier effective date during the public stakeholder process.

⁴ 2018 Household & Commercial Products Association (HCPA) Aerosol Pressurized Products Survey, June 2019.

III. HCPA Recommends the Following Modifications to the Draft Proposed Regulation

HCPA would like to request a few modifications to DAQ on the draft proposed regulation.

a) HCPA Recommends Modifying the Definition of an Aerosol Propellant

HCPA supports DAQ's draft proposal because it is consistent with other state activity to limit the use of high GWP HFCs; however, it is also important to align with already existing Delaware regulations.

HCPA recommends DAQ refer to the definition of a Propellant in the state's regulation "Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products." Here, the definition of an Aerosol Propellant is as follows:

Propellant means a liquefied or compressed gas that is used in whole or in part, such as a cosolvent, to expel a liquid or other material from the same self-pressurized container or from a separate container.⁵

By referring to an already existing Delaware regulation, DAQ would maintain consistency in the definition of an aerosol propellant.

b) HCPA Recommends Modifying the Proposed Recordkeeping Requirements to Be Consistent with Provisions in other Existing Delaware Regulations

Aerosol product manufacturers currently keep manufacturing records for a minimum of three years. Companies follow this standard due to Delaware's "Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products"⁶ as well as other states that have similar consumer product regulations. HCPA recommends that DAQ require that any person who manufactures aerosol products for sale or entry into commerce in Delaware maintain the required records for three years rather than five years to ensure internal consistency with other currently enforceable Delaware regulations.

c) HCPA Recommends that the DAQ Remove the Proposal to Require a Disclosure Statement on Labels for Aerosol Products.

The aerosol delivery form is utilized across a vast array of product categories, from household and personal care products to industrial products, including products subject to strict federal regulation and labeling requirements, such as food, drugs and pesticides. Therefore, HCPA believes that a state-specific labeling requirement will impose an unnecessary burden on interstate commerce. HCPA respectfully requests that this requirement be deleted.

⁵ 7 DE Admin. Code 1141 § 2.2

⁶ 7 DE Admin. Code 1141 § 2.8.2.1

d) Rather than Requiring a State-specific disclosure, HCPA Recommends that DAQ Use Existing Safety Data Sheets (SDSs) to Verify Compliance.

Under the U.S. Occupation Safety and Health Administration's (OSHA) hazard communication standard,⁷ the safety data sheet will contain the information of each hazardous chemical in Section 3 (Composition/information on ingredients). Because these high GWP HFCs are responsible for the pressure of any aerosol product which utilizes them, they must be listed in this section. While consumer products are outside of the scope of OSHA, manufacturers and marketers of virtually all consumer products have appropriate corresponding SDS.

Manufacturers and marketers have generated SDS for virtually all consumer products because they are produced and stored in workplace settings and many retailers require them as part of doing business. Therefore, HCPA believes that obtaining an SDS for an aerosol product to verify compliance is the best and most efficient option for enforcement.

e) HCPA Recommends Including a Procedural Mechanism to Allow Previously Prohibited Uses if EPA Subsequently Approves its Use in a New Regulation

Other currently enforceable state statutory provisions and/or regulatory language include a process to allow previously prohibited uses if sufficiently warranted.

For example, the California statute includes the following provision:

If the United States Environmental Protection Agency approves a previously prohibited hydrofluorocarbon blend for foam blowing pursuant to the Significant New Alternatives Policy Program, adopted pursuant to Section 7671k of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.), the state board shall expeditiously initiate a rulemaking pursuant to this section or other existing legal authority to conform its regulations with that federal action.⁸

Washington State recently enacted legislation that includes the following provision:

If the United States Environmental Protection Agency approves a previously prohibited hydrofluorocarbon blend with a global warming potential of seven hundred fifty or less for foam blowing of polystyrene extruded boardstock and billet and rigid polyurethane low-pressure two-component spray foam pursuant to the Significant New Alternatives Policy Program under to Section 7671k of the federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.), the department must expeditiously propose a rule consistent with

⁷ 29 CFR 1910.1200(g)

⁸ Cal Health & Safety Code § 39734(c)(2)

RCW 34.05.320 to conform the requirements established under this section with that federal action.⁹

HCPA recommends that DAQ include in any future regulation a procedure to review an aerosol product that is currently prohibited from using high GWP HFCs but is later determined to be acceptable by EPA or another state. If DAQ reviews such an approval and deems it to be appropriate because there are not currently any potential alternatives that are technologically feasible for that specific application, HCPA recommends that a procedural mechanism be included to approve that specific use as acceptable in Delaware without having to go through a formal rulemaking.

In summary, HCPA believes that it would be beneficial for DAQ to have an expeditious process to review and approve uses as appropriate in the event EPA or another state approves a prohibited use and DAQ deems it to be appropriate.

f) HCPA Recommends Modify Section 4.1.2 of the draft proposal to Include a Sell-Thru Provision for Existing Stock of Aerosol Products Manufactured Before the Effective Date of the Final Regulation.

As previously stated, HCPA is not aware of any member company still utilizing a high GWP HFC as an aerosol propellant unless the use is exempted from the prohibition. The draft proposal includes a provision that allows a person with existing product or equipment containing a prohibited substance to continue using that product or equipment. However, this draft proposed provision is silent on whether existing stock of products that have been manufactured before the effective date of the new prohibition and may still in the channels of distribution can be sold. Therefore, HCPA respectfully requests that the DAQ modify Section 4.1.2 of the draft proposal to adopt the approach set forth in the law recently enacted by Vermont, which in pertinent part, states:

Products or equipment manufactured prior to an applicable effective date of the restrictions in subdivision (b)(4) of this section may be sold, imported, exported, distributed, installed, and used after the specified effective date.¹⁰

This type of sell-through provision will minimize the generation of unnecessary waste generated by manufacturers and retailers disposing existing stocks of products.

⁹ Washington State HB 1112 was enacted and filed in Office of Secretary of State on May 13, 2019. See 2019 Washington Chapter 284, Laws of 2019 (the new law took effect on July 28, 2019).

¹⁰ 10 V.S.A. § 586(b)(3). The full text of this statutory provision is posted at: <https://legislature.vermont.gov/statutes/section/10/023/00586>

IV. Conclusion

HCPA appreciates the opportunity to offer these comments on DAQ's draft proposed regulation. By developing consistent regulations, states can achieve a reduction in HFC emissions without imposing impediments to interstate commerce.

If you have any questions about our support or suggestions presented in these comments, please do not hesitate to contact me directly at (202) 833-7304 or ngeorges@thehcpa.org.

Respectfully,

A handwritten signature in cursive script that reads "Nicholas Georges".

Nicholas Georges
Senior Director, Scientific and International Affairs

cc: HCPA Aerosol Products Division Atmospheric Policy Committee
HCPA Air Quality Council
HCPA Industrial and Automotive Division
HCPA Pest Management Division



October 31, 2019

Ajo Rabemiarisoa,
Environmental Engineer
DNREC - Division of Air Quality
(Submitted via email to ajo.rabemiarisoa@delaware.gov)

Re: Delaware Draft Regulation 1151 – Requirements for the Phase-Down of Hydrofluorocarbons

Dear Ms. Rabemiarisoa,

Arkema is a diversified chemicals manufacturer operating production and R&D facilities around the world. In the United States, Arkema and its subsidiaries operate 36 facilities employing over 3,000 people in 19 states. We make advanced and innovative materials for a variety of applications, including automotive, packaging, hygiene and beauty, electronics, agriculture and water treatment, among others. Our products also include hydrofluorocarbons (HFC) and low Global Warming Potential (GWP) hydrofluoroolefins (HFO) for use in refrigeration, air conditioning, foams, medical inhalers and other applications that will be affected by Regulation 1151.

Like Delaware, Arkema recognizes the need to lower greenhouse gas emissions. Concerned about our own environmental footprint, Arkema and its affiliates made a worldwide commitment to reduce GHG emissions from our operations by 50% between 2012 and 2025. With respect to HFCs, Arkema supports the global phasedown of HFCs as negotiated under the Kigali Amendment to the Montreal Protocol, and we have invested heavily in the next generation of low GWP solutions. We believe that the best approach is through a holistic, predictable, and flexible regulatory framework that allows market-based solutions to efficiently phase down overall HFC use.

We appreciate Delaware reaching out and meeting with stakeholders. As we are aligned on the need for phasing down high GWP HFCs, our suggestions and comments below address only the timing of your proposed actions, not the direction.

- At the end of 2019, only 3 states (CA, WA and VT) will have implemented HFC restrictions with the same dates as DE is proposing. Going forward, other states that want to implement HFC restrictions will need to re-evaluate these dates, which will put businesses and consumers in the states that act sooner at a commercial disadvantage.
- In many applications, the cost of likely substitutes is significantly higher than of the HFCs being used today. While this cost will decrease in the coming years, it may make new equipment prohibitively expensive presently, forcing many users, particularly those that operate on low margins, to postpone equipment upgrades and run older equipment beyond its intended service life, increasing emissions and defeating the purpose of the proposed regulations.
- Many of the low GWP solutions are hazardous – highly flammable (hydrocarbons), toxic (ammonia), or require high operating pressure (CO₂). Training of technicians is paramount to ensure safety, particularly for systems that are not sealed and contain larger quantities of refrigerant.

- The states who are pursuing the restrictions on HFCs are doing so because of the past absence of federal action. However, just yesterday a new bipartisan US Senate Bill S 2754 was introduced that would result in establishing a countrywide HFC phasedown. The bill is supported by the industry as well as the environmental community.

For the reasons described above, we believe that the earliest implementation date should be 1/1/2022, except for the automotive industry that will be switching with MY 2021 anyway. The later dates appear workable, except Cold Storage Warehouses, which may need until 2025 to allow technicians to be trained.

Thank you again for seeking input from stakeholders. Please feel free to reach out to me at (610) 205-7077 for any additional information you may need.

Sincerely,



Allen Karpman
Director, Government Activities, Fluorochemicals
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October 31, 2019

Ajo Rabemiarisoa,
Environmental Engineer
DNREC - Division of Air Quality
(Submitted via email to ajo.rabemiarisoa@delaware.gov)

Comments to Delaware Draft Regulation 1151 – Requirements for the Phase-out of Hydrofluorocarbons Working Development Review Committee Meeting, October 8, 2019

Dear Ms. Rabemiarisoa,

The following comments supplement previous comments from Daikin US Corporation (Daikin US) and are also in response to the Delaware Department of Natural Resources and Environmental Control, Division of Air Quality Draft Regulation 1151 – Requirements for the Phase-out of Hydrofluorocarbons meeting on October 8, 2019.

Daikin US offers these comments on behalf of the Daikin Industries, Ltd. (DIL) businesses operating in the United States: Goodman Global Group, Inc.; Daikin North America LLC; Daikin Applied Americas Inc.; and Daikin America, Inc. DIL is a world leader in advancing air quality in our work, home and shared spaces and continues to pioneer HVAC technologies that promote higher standards for American industry, environment, and quality of life. DIL and its subsidiaries are focused on reducing greenhouse gas emissions and climate impacts.

On September 26, 2019, Daikin announced its intent to develop ducted and ductless residential, light-commercial, and applied products utilizing R-32 refrigerant for the North American market. Daikin selected R-32 due to the drastically lower GWP profile when compared to the currently commonly used R-410A, its energy efficiency benefits, and the ease to reuse, reclaim, and recycle the refrigerant.

First, we appreciate the recognition our previous comment suggesting the consistent use of the term “phase down” and not “phase out” when discussing the proposal. This is consistent with the Kigali Agreement to the Montreal Protocol. It also eliminates confusion in cases where some alternatives are called Hydrofluoroolefin (HFO) when they are actually usually HFC blends, which means using “phase out,” would have been misleading.

While Daikin US contends that federal regulations are the most desirable way to regulate the phase-down of hydrofluorocarbons, we intend to work with individual states



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as they look to achieve their emissions reduction goals. Our goal is to assist states and territories to adopt and implement consistent laws and regulations, and to avoid a patchwork of regulations. Meeting state greenhouse gas reduction objectives and meeting the desire for comfort cooling is a fundamental part of crafting these regulations.

Daikin US's comments will focus on suggestions on aligning regulations across states and with the EPA's SNAP 20 and 21 rules to create a harmonized framework of HFC regulations across the country.

Definitions

These comments are intended to support the comments of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), the national trade association for HVAC equipment manufacturers.

We recommend definitions as follows:

"New Refrigeration Equipment" means

- 1) Any refrigeration equipment system, manufactured after the effective date of this regulation, that is first installed for an intended purpose using new or used components; or
 - a) Additions to existing equipment such that they increase the total nominal compressor capacity of a system after the date at which this sub article becomes effective;
- 2) Any refrigeration equipment that is modified such that it is:
 - a) Modified to increase the total nominal compressor capacity of a system after the date at which this sub article becomes effective; or
 - b) Replaced or cumulatively replaced after the date at which this sub article becomes effective, such that the capital cost of subsequent service, repair, or replacement would exceed 50 percent of the capital cost of replacing the entire refrigeration system based on quoted system replacement cost.

"Nominal Compressor Capacity" means the capacity of the system's compressor(s) based on published ratings in accordance with a recognized standard such as AHRI Standard 540.

"Reclaim" means to reprocess recovered refrigerant to all of the specifications in appendix A of this subpart (based on AHRI Standard 700-2016, Specifications for Refrigerants) that are applicable to that refrigerant and to verify that the refrigerant meets these specifications using the analytical methodology prescribed in section 5 of appendix A of this subpart.



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Formal Exemption Process

Again, here we support the comments of AHRI by requesting a process to allow for potentially necessary exceptions that may come to light in the future. AHRI requests that DNREC consider including a clause within this regulation to account for necessary exceptions similar to Canada's essential purpose permit option in their Ozone-depleting Substances and Halocarbons Alternatives Regulations (ODSHAR). To prepare for the transition to low-GWP alternatives with such complex products as commercial refrigeration equipment, the clause is intended to allow a person to import, manufacture, use, or sell a substance or product designed to contain a substance if it will be used for an essential purpose and a permit is specifically issued. Environment and Climate Change Canada (ECCC) defines 'essential purpose' as a purpose requiring the use of a substance or a product containing or designed to contain a substance, when that use is necessary for the health and safety or the good functioning of society, encompassing its cultural and intellectual aspects, and when there are no technically or economically feasible alternatives to that use that are acceptable from the standpoint of the environment and of health.

The ODSHAR essential purpose exemption and definition clause can be reviewed at Part 5 – s.66 (1) and (2). The process is still being finalized by ECCC, but any specific questions can be sent to ECCC's Halocarbons Management Team at ec.gestionhalocarbures-halocarbonsmanagement.ec@canada.ca.

Disclosures

The proposed requirement for a written disclosure statement is of serious concern. We recommend removing the requirement for a "written" statement and instead support allowing the use of internet disclosures. Daikin US supports AHRI's comment on the disclosure requirement. We agree that it is an unwarranted and unnecessary burden, and that it is impossible to execute given the complexity of sales channels across all the different states.

As proposed by AHRI a more generic label used across states would be preferable. The language below as suggested by AHRI is acceptable.

"This equipment meets the regulatory requirements for hydrofluorocarbons in all states as of the manufacturing date. Only those refrigerants approved in the state for specific end-uses may be used."

Ensuring that states enacting SNAP Rules 20 and 21 maintain a generic label requirement will allow for market certainty and for sale of products throughout the United States.



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Recordkeeping

Likewise, Daikin US finds the requirements for recordkeeping burdensome on manufacturers. We recommend that Delaware delete all recordkeeping requirements. We agree with AHRI's position that additional recordkeeping by states can be impossible across supply chains, especially when equipment usually does not ship from the manufacturer to the final end-user. Likewise, we agree that products enter into market and often distribute geographically. Delaware's proposed requirements do not account for the many different ways components of a full system may travel. Also, we agree that these requirements will not assist in enforcement of the regulations.

Finally, we agree with AHRI that for any information submitted by a manufacturer, confidential business information may be implicated and manufacturers should not be required to disclose such information. Any confidential business information should be excluded from recordkeeping, or other, requirements should Delaware choose to maintain some recordkeeping requirements.

Codes and Standards

Daikin US agrees with AHRI that in order for Delaware and other states to meet their HFC emissions reductions goals, the model building code must enable the use of mildly flammable refrigerants. In order for manufacturers to adopt some low-GWP alternative refrigerants, the safety standards and building codes must enable the use of mildly flammable refrigerants. Currently, EPA's Significant New Alternatives Program lists no refrigerants as acceptable alternatives for chillers designed to use high pressure "410A"-like refrigerants.

We also encourage Delaware to work with the appropriate county offices that approve and update the building codes. Without the adoption of codes that allow for the use of low GWP refrigerants, the state will not achieve its goals. Specifically, we request the regulation direct the Division of Codes and Standards to adopt ASHRAE 15-2019 and UL 60335-2-40 3rd edition, or equivalent (e.g. model codes that include those standards).

Reclaim

Daikin US recommends Delaware consider adding provisions to promote refrigerant reclamation in order to promote best practices. As the only HVACR equipment manufacturer that is also a producer of refrigerants, we suggest that an essential part of Delaware's strategy to reduce HFC emissions should be to address refrigerant management. Any ban that does not exempt reclaimed product will leave stranded all existing equipment that relies on a banned refrigerant. We believe that Delaware's strategy should not only exempt reclaimed refrigerant but should start with a heavy emphasis on the value of refrigerant reclamation as a means to reduce emissions and we strongly recommend that DNREC not only exempt it from future sales bans, but



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also take affirmative steps to promote reclamation. A strategy that promotes the recovery, reclamation and re-use of refrigerants directly achieves DNREC's goal of reducing HFC emissions by eliminating, or at least reducing, the need to service existing systems with newly manufactured product.

Daikin recommends the state suggest and encourage that reclamation should also be done in conjunction with mandatory leak repair per existing US EPA requirements.

Technician Training

Training and servicing requirements for technicians will be important considerations for future regulations. The industry intends to develop a standardized training program for technicians, contractors, wholesalers, and trainers. As with past refrigerants transitions, training will be important so that installation, repairs, and maintenance will result in optimized performance and minimized refrigerant losses. Addressing the safety concerns with A2L refrigerants is paramount. On this topic Daikin is willing to work with the Department of Resources and Natural Control and other stakeholders to provide guidance on training materials and curriculum.

Thank you for the opportunity to provide these comments.

Sincerely,

A handwritten signature in cursive script that reads 'Charlie McCrudden'.

Charlie McCrudden
Director, Government Affairs