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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 ~~o~~ r-f 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(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.

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

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

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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.