

Meeting Minutes
Wednesday, February 17, 2021
HFC Extruded Polystyrene Boardstock Compliance Date Work Group
Electronic-only Meeting on GoToWebinar

Members Present: Schuyler Pulleyn, Ming Xie, Lisa Massaro, Paul Lewandowski, and Frank Rambo.

Members Absent: Walton Shepherd, Jessica Olson

Other Attendees: John Szymanski (attending as alternate for Jessica Olson), Christina Theodoridi (attending as alternate for Walton Shepherd), Tanisha Edwards, Walter Reiter, Justin Koscher, Narissa Turner, Michael Dowd, Gary Graham, and Amy Kasper.

The meeting convened at 11:03 a.m. and adjourned at 2:41 p.m.

1. **Introductions and Meeting Logistics** [Michael Dowd, DEQ]. Mr. Dowd welcomed the members and introduced the DEQ staff members attending the meeting. Mr. Dowd reviewed how the meeting would proceed and discussed the agenda (Attachment 1).
2. **Introductory Remarks** [Michael Dowd, DEQ]. Mr. Dowd explained that the work group members will look at the list of issues resulting from discussions at the first meeting (Attachment 2) and subsequent comments (Attachment 3) and attempt to reach consensus on each of them.
3. **Discussion** [Michael Dowd, DEQ and members].
 - a. Mr. Dowd asked for consensus on the start date of the regulation. Based on the written materials submitted after the January 20, 2021 meeting, the group appeared to be coalescing around the start date of January 1, 2022 for the proposed regulation, with a couple exceptions. Mr. Dowd polled the members to see if the work group could live with the January 1, 2022 start date.

Decision: The work group reached consensus that the start date of the proposed regulation should be January 1, 2022.
 - b. Mr. Dowd led a discussion on sell-through date. Due to the nature of the XPS product, the group members did not believe that retailers would hoard a stockpile of products. A member pointed out that XPS boardstock represented only 7% of HFC use. There was concern expressed about limiting sell through for other products covered by the regulation also. SNAP Rule 20 and 21, the USCA Model Rule, and most state rules to date allow sell through without date restrictions. Members did not want to orphan materials in the state.

Decision: The work group reached consensus that the regulation should include a sell-through provision for all material manufactured prior to January 1, 2022 without an end date restriction.
 - c. Mr. Dowd led a discussion of labeling, recordkeeping and reporting requirements for the regulation. Members expressed that labeling is the most important and would like to see it consistent with the USCA model rule or the Colorado, Massachusetts, or Maryland's HFC regulations. Consistency with existing regulations in other states is helpful with supply chain, as is simplicity in the regulatory compliance language. Group agrees that recordkeeping requirements

of either 3 or 5 years is achievable. A member explained that reporting requirements are not necessary or useful to DEQ. The information is always available upon request.

Decision: The work group reached consensus that: (i) the regulation should include labeling requirements consistent with the USCA model rule or the Colorado, Massachusetts, or Maryland's HFC regulations; (ii) the regulation should include a recordkeeping requirement of either 3 or 5 years, consistent with other Virginia regulatory requirements; and (iii) recordkeeping requirements should be limited to a "provide copies of records upon request" provision.

- d. Mr. Dowd consulted the members concerning DuPont's and Owens Corning's comments about DEQ retaining discretion to follow SNAP rule iterations. Group members pointed out that the Virginia legislature's budget language is in flux right now and it is hard for them to comment meaningfully on that topic until the budget language is final.
- e. Mr. Dowd consulted the members concerning Honeywell's proposed changes to the definitions. Some group members expressed concern that if we open one definition from SNAP 20 or 21 it could open a long discussion with other stakeholders. The Honeywell representative, Mr. Szymanski, agreed to submit Honeywell's opinion of what the critical definitions are to DEQ for consideration after the meeting.
- f. Mr. Dowd led a discussion of the XPS Exemption required by the budget language (Attachment 4). The Kingspan representative, Mr. Xie, informed the group that (i) Kingspan has set a goal to be net zero by 2030; (ii) Kingspan does not look at this exemption as a free pass to continue using HFCs; and (iii) Kingspan is looking to the AIM Act to determine feasibility. With only some states regulating HFCs, they would have a disadvantage in the market if there were no exemption. A member suggested that the exemption include requirements for voluntary reporting and offsets. Mr. Dowd indicated that offsets and mitigation would have to be voluntary since the State Air Pollution Control Board ("the Board") does not have the regulatory authority to require it. The Kingspan representative will discuss the topic internally and get back to DEQ with a recommendation. Mr. Dowd proposed that Kingspan consider doing a Feasibility Study and a possible Mitigation Plan. Once the Feasibility Study is complete, DEQ could reconvene the work group to discuss setting a feasible compliance date in the future. Another member suggested including a compliance date of 2036 as a backstop since the AIM Act would bring supply down to 15% by that date. DEQ will consider including a backstop date when drafting the regulation.
- g. One of the members pointed out that the XPS industry is a small portion of what is regulated in SNAP Rule 20 and 21 and that since the requirement for HFC regulation was included only in the budget bill, many in the regulated community may not know about the potential regulation. The General Assembly made this regulatory process exempt from the Administrative Process Act and so it will not go through a full stakeholder or public participation process. Once the proposed regulation is passed by the Board, it is final, so DEQ may have to start out with some enforcement discretion. The group showed interest in reviewing a draft of the regulations. Mr. Dowd agreed that it could be helpful to have the

group look at the regulation beforehand but that opportunity will be time-dependent because of the time limits in the budget language. A member also requested that there be clarification as to whether the regulation applies to new or retrofit systems, and not to existing ones.

4. Discussion Summary [Mike Dowd, DEQ].

- a. The work group achieved consensus on the start date of 1/1/2022 for the regulations.
- b. The work group achieved consensus on including a sell-through provisions for anything manufactured prior to 1/1/2022.
- c. The work group achieved consensus that they the regulation should require that records be kept for 3 to 5 years and to have them available upon request. DEQ will determine if the requirement is 3 or 5 years.
- d. The work group achieved consensus on including labeling requirements in the regulation. The work group requests DEQ follow the USCA Model Rule and regulations in states like CO, MA, and MD.
- e. The Honeywell representative indicated that the definitions highlighted in his submitted comments (Attachment 4) have technical changes that he recommends DEQ use in the final regulation. Mr. Dowd will have to determine DEQ's authority to change the definitions from SNAP 20 and 21.
- f. DEQ will consider adding clarifying language that the regulation is for new or retrofit systems rather than existing systems.

5. Next Steps [Michael Dowd, DEQ].

- a. The Kingspan representative will respond to DEQ regarding the possibility of developing a Feasibility Study and Mitigation Plan.
- b. Mr. Dowd will determine DEQ's authority with attorneys on adding or removing prohibited HFCs.
- c. Mr. Dowd will discuss with our attorneys to determine the parameter of our authority with respect to the budget language.
- d. Work group members should reach out to DEQ if they have any issues with the enforcement provisions.
- e. DEQ will continue to investigate what "enter into commence" means.

A [recording of the meeting](#) is available for review on-line.

Attachments:

1. Meeting Agenda.
2. Draft Meeting Minutes for the January 20, 2021 Work Group meeting
3. Member comments.
4. Item 378, 2020 Virginia Acts of Assembly, as amended.

Attachment 1

AGENDA

HFC Extruded Polystyrene Boardstock Compliance Date Work Group

GotoWebinar <https://attendee.gotowebinar.com/register/1318146628217479950>

February 17, 2021 11 am – 4 pm

Moderator: Mike Dowd, Director - DEQ Air & Renewable Energy Division

DEQ Staff: Gary Graham – DEQ Office of Regulatory Affairs
Amy Kasper – DEQ Office of Air Compliance Coordination

11 am Welcome and Logistics (Dowd)
11:15 am Introductory Remarks (Dowd)
11:30 am Introduction of Submitted Materials
12:00 am Discussion
12:30 pm Break for Lunch
1:00 pm Resume Discussion
3:30 pm Meeting Summary and Closing Remarks (Dowd, Kasper)

Adjourn

Attachment 2

Draft Minutes of the January 20, 2021 Work Group Meeting

DRAFT Meeting Minutes
Wednesday, January 20, 2021
HFC Extruded Polystyrene Boardstock Compliance Date Work Group
Electronic-only Meeting on GoToWebinar

Members Present: Jessica Olson, Schuyler Pulleyn, Ming Xie, Lisa Massaro, Paul Lewandowski, and Frank Rambo.

Members Absent: Walton Shepherd.

Other Attendees: John Szymanski, Christina Theodoridi (attending as alternate for Walton Shepherd), Tanisha Edwards, Jean-Francois Côté, Justin Koscher, Chris Nolen, Walter Reiter, Narissa Turner, Stephen Wieroniey, Michael Dowd, Gary Graham, and Amy Kasper.

The meeting convened at 11:05 a.m. and adjourned at 1:30 p.m.

1. **Introductions and Meeting Logistics** [Michael Dowd, DEQ]. Mr. Dowd welcomed the attending members, acknowledged the non-member attendees, and introduced the DEQ staff members attending the meeting. He informed the attendees that while this group is a public body subject to the Virginia Freedom of Information Act (FOIA), it is an informal working group and will not be accepting questions from the public during the meeting. FOIA also requires that communication between more than two members of the public body concerning the business of the public body be open to public participation, so members should route all such communications through DEQ for distribution to the group. Mr. Dowd presented the agenda for the meeting (Attachment 1) and reviewed how the meeting would proceed.
2. **Introductions** [Michael Dowd, DEQ]. Mr. Dowd asked the Work Group members to introduce themselves, and they did so. A list of Work Group members (Attachment 2) had been distributed to the members prior to the meeting.
3. **Introductory Remarks** [Michael Dowd, DEQ]. Mr. Dowd presented the 2020 General Assembly budget language, as amended during the 2020 Special Session I (Attachment 3).
 - a. Mr. Dowd emphasized that:
 - i. The hydrofluorocarbon (HFC) prohibitions required for regulation in the budget language are restricted to those specific HFCs and those specific end uses included in Appendices U and V of 40 CFR Part 82, Subpart G;
 - ii. The versions of those appendices to be included in the Virginia regulation are fixed in time (as of January 3, 2017);
 - iii. The regulatory process to be used is exempt from the Administrative Process Act but not exempt from FOIA requirements;
 - iv. The amended language requires the Board to solicit input from a working group of XPS boardstock manufacturers and other relevant stakeholders in order to determine a feasible compliance date for those products.
 - v. The budget language requires the State Air Pollution Control Board (the Board) to adopt a regulation to be effective no later than July 1, 2021; and
 - vi. DEQ has no preconceived notions on a compliance date and believes the simpler the regulation, the better, especially due to the short time frame required in the budget language. DEQ is soliciting input from the work

group on both a recommended compliance date and recommendations concerning the structure of the regulation.

- b. Mr. Dowd reviewed the necessary timeline and milestones for the regulation and the work group:
 - i. The regulation must be effective July 1, 2021.
 - ii. DEQ must present a regulatory proposal to the Board at the April 23, 2021 Board meeting.
 - iii. The next (and probably final) meeting of the work group will be on February 17, 2021. Member comments and input will be discussed at that meeting and may be tested for consensus.
 - iv. Group members must submit member comments and recommendations to DEQ no later than February 9, 2021 in order to allow for distribution and consideration prior to the February work group meeting.

4. **Discussion** [Michael Dowd, DEQ and members].

- a. The member from Kingspan Insulation, LLC provided a verbal summary of the Kingspan letter and attachment provided to the group prior to the meeting (Attachment 4). Kingspan asks that Virginia to wait to see what the federal regulations say before DEQ decides on a regulation. The AIM Act requires EPA to propose a regulation soon.
- b. The group generally agreed that simplicity in the regulation is best.
- c. A member suggested that the Board adopt the SNAP Rules and push the dates in the rules to 2022. DEQ is encouraged to have uniformity with the SNAP Rules and with what other states are doing.
- d. The group generally does not feel that the budget language prohibits manufacture of products to be sold outside of Virginia. Some members requested more clarity on what “enter into commerce” means.
- e. There could be an option to exempt Kingspan’s operations and leave it open until EPA acts. The budget language requires us to contemplate a date but not to set one.
- f. There will be 12 states with HFC regulations in effect by the end of 2022 for products with HFC-134a. Stakeholders encourage DEQ to use similar language to the US Climate Alliance (USCA) model rule.
- g. Labeling and reporting requirements are the best way to ensure the regulation is enforced. Requests were made that DEQ standardize labeling and reporting requirements as much as possible. DEQ needs to double check its regulatory authority on labeling and reporting.
- h. DEQ should include the state preemptions included in the AIM Act.
- i. The DEQ HFC regulations must go into effect on July 21, 2021, but compliance with the prohibitions could take effect in later – even 2022. Industry members suggested a 12 to 18 month lead time for supply chain conversion. Six months should be the absolute minimum due to timeline for plant conversions.
- j. Suggestion of developing the regulation and then following that up with a DEQ guidance document which will go through public comment.

- k. The Work Group members are asked to submit written comments and examples of labelling and recordkeeping requirements.
 - l. Members emphasized that the regulation is a “phase down” not a “phase out” per the Kigali Amendments.
5. **Discussion Summary** [Amy Kasper, DEQ].
- a. Need more clarity on the term "enter into commerce."
 - b. Need standardized labeling, enforcement, and recordkeeping requirements.
 - c. Consider adopting the SNAP rules and push dates to 2022.
 - d. Consider uniformity with other states’ regulations.
 - e. Consider a requirement that manufacturers offset HFC emissions.
 - f. Consider the effect of supply change conversion and supply chain in setting the compliance date. There is possible consensus that a compliance date 6 to 12 months after the effective date would be appropriate to account for supply chain conversion.
 - g. DEQ might be able to use a guidance document for enforcement, compliance and labeling instead of including them as regulatory requirements.
 - h. Not setting a compliance date in the regulations would default to EPA regulations.
6. **Next Steps** [Michael Dowd, DEQ].
- a. Members submit written comments by close of business February 9, 2021.
 - b. DEQ investigate what “enter into commence” means.
 - c. DEQ check on regulatory authority for including labelling and recordkeeping requirements in the regulation (or enforcement guidance).

A [recording of the meeting](#) is available for review on-line.

Attachments:

1. Meeting Agenda.
2. Work Group Member List.
3. Item 378, 2020 Virginia Acts of Assembly.
4. Email and attachment from Mr. Ming Xie, Kingspan Insulation LLC, January 18, 2021.

Attachment 1

AGENDA

HFC Extruded Polystyrene Boardstock Compliance Date Work Group

GotoWebinar <https://attendee.gotowebinar.com/register/1318146628217479950>

January 20, 2020 11 am – 4 pm

Moderator: Mike Dowd, Director - DEQ Air & Renewable Energy Division

DEQ Staff: Gary Graham – DEQ Office of Regulatory Affairs
Amy Kasper – DEQ Office of Air Compliance Coordination

11 am	Welcome and Logistics (Dowd)
11:15 am	Introductory Remarks (Dowd)
11:30 am	Introductions
11:45 am	Discussion
12:30 pm	Break for Lunch
1:00 pm	Resume Discussion
3:30 pm	Meeting Summary and Closing Remarks (Dowd, Kasper)
3:30 pm	Next Steps (Dowd)

Adjourn

**COMMONWEALTH OF VIRGINIA
STATE AIR POLLUTION CONTROL BOARD**

**WORK GROUP
CONCERNING**

**A HYDROFLUOROCARBON EXTRUDED POLYSTYRENE (XPS) BOARDSTOCK
COMPLIANCE DATE**

Panel Facilitator

Michael Dowd, DEQ

Relevant Stakeholders

Jessica Olsen, Honeywell (Alternate: John Szymanski)

Ming Xie, Kingspan Insulation LLC

Lisa Massaro, Dupont

Schuyler Pulleyn, The Chemours Company

Paul Lewandowski, Owens Corning

Frank Rambo, Southern Environmental Law Center

Walton Shepard, National Resources Defense Council (Alternate: Christina Theodoridi)

DEQ Staff

Gary Graham, DEQ, Agency Contact

Amy Kasper, DEQ, Staff Support

ITEM 378 VIRGINIA STATE BUDGET

B.2. The State Air Pollution Control Board shall adopt regulations to prohibit the sale, lease, rent, installation or entry into commerce in Virginia of any products or equipment that use or will use hydroflouorocarbons for the applications and end uses restricted by Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017. Notwithstanding the foregoing, such regulations shall not prohibit the use of hydrofluorocarbons in the manufacturing process by extruded polystyrene boardstock and billet manufacturers located in Virginia to produce products for sale and distribution outside of the Commonwealth, until the Board has solicited input from such manufacturers in order to determine and set by regulation a feasible date by which such manufacturers must be required to comply. In developing regulations, the Board shall solicit input from a workgroup of relevant stakeholders assembled by the Department.

3. The regulations adopted by the State Air Pollution Control Board to initially implement the provisions of this item this shall be exempt from Chapter 40 of Title 2.2, Code of Virginia, and shall become effective no later than July 1, 2021...

Attachment 4

From: **Ming Xie** <ming.xie@kingspan.com>
Date: Mon, Jan 18, 2021 at 8:00 PM
Subject: Kingspan Comments to Department of Environmental Quality
Hydrofluorocarbon Stakeholder Workgroup
To: Dowd, Michael <michael.dowd@deq.virginia.gov>, gary.graham@deq.virginia.gov
<gary.graham@deq.virginia.gov>, todd.alonzo@deq.virginia.gov
<todd.alonzo@deq.virginia.gov>
CC: Nolen, Christopher R. <cnolen@mcquirewoods.com>

Hello Michael, Gary and Todd:

Hope you are doing well.

I would like to submit Kingspan's comment in advance of the upcoming stakeholder workgroup meeting.

Kingspan believes that it is imperative that Virginia based manufacturers such as Kingspan not disadvantaged compared to its competitors outside of Common Wealth, as a result of the new HFC regulation. Given the current situation that EPA is expected to release information on how HFC will be regulated under the structure outlined by AIM Act, Virginia should strive to be consistent with federal programs and withhold effort to set a specific sunset date until more information becomes available.

Kingspan would also like express its gratitude to VA government's effort to work with Kingspan to maintain our competitiveness in the marketplace.

Please feel free to reach out if you have any questions that I can help to answer.

Ming Xie

Dir. Business Development
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Introduction

These comments are submitted in anticipation of the work group being convened by the Virginia Department of Environmental Quality in response to language contained in Item 378 of Chapter 1289 of the 2020 Acts of Assembly, as amended by Chapter 56 of the 2020 Acts of Assembly, Special Session I (the “state budget”).

Item 378 of the state budget directs the State Air Pollution Control Board to adopt regulations to “prohibit the sale, lease, rent, installation or entry into commerce in Virginia of any products or equipment that use or will use hydrofluorocarbons for the applications and end uses restricted by Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017.”

Hydrofluorocarbons (HFCs) are commonly used as refrigerants, aerosols and blowing agents for XPS and Polyurethane foam insulation products. HFCs are used in many products, including XPS foam insulation. The use of HFCs, in blended form, in the XPS and polyurethane foam insulation manufacturing process provides the resulting insulation product with high thermal efficiency, as required by International Building Codes. Current federal law allows the use of HFCs in this manufacturing process.

Item 378 also provides that the regulations adopted by the Air Pollution Control Board “shall not prohibit the use of hydrofluorocarbons in the manufacturing process by extruded polystyrene boardstock and billet manufacturers located in Virginia to produce products for sale and distribution outside of the Commonwealth, until the Board has solicited input from such manufacturers in order to determine and set by regulation a feasible date by which such manufacturers must be required to comply. In developing regulations, the Board shall solicit input from a workgroup of relevant stakeholders assembled by the Department.”

The purpose of this document is to provide the DEQ with context and perspective from Kingspan Insulation, a leading manufacturer of XPS in North America whose only manufacturing facility is located in the Commonwealth of Virginia. While the original HFC ban in Item 378 was not solely aimed at the manufacturing of XPS foam insulation, Kingspan’s Insulation’s manufacturing of such product in Virginia is severely affected by the proposed ban in the budget language.

It is imperative to Kingspan Insulation that whatever regulation is adopted, it maintains a level competitive playing field and supports a safe and orderly transition from HFCs to acceptable alternatives.

Kingspan’s Virginia Presence and Operations

- Kingspan Group is a global leader in insulation and building envelope solutions for high performance, low carbon buildings. Its mission is to accelerate a net zero emissions future with the wellbeing of people and planet at its heart.

Kingspan Insulation LLC
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- The manufacturing site in Winchester, Virginia has operated continuously since 1980 and is where the Kingspan Insulation division manufactures its products for all of the North American market.
- The Winchester plant is home to four (4) Extruded Polystyrene (XPS) production lines, manufacturing a wide range of XPS building products.
- In 2017, working with Virginia’s Economic Development Partnership and local partners, Kingspan Group invested an additional \$26 million at the Winchester plant to expand manufacturing capacity of XPS foam insulation and other products. The expansion resulted in an additional fifteen (15) full time positions. Governor McAuliffe came to the plant in 2017 to officially commission the new manufacturing line.
- Kingspan uses a HFC-134a blend as a blowing agent to produce the XPS insulation product manufactured on two (2) of the four (4) lines at the Winchester plant. The two (2) production lines where a blowing agent containing a 134a blend is used are Kingspan’s largest, highest capacity production lines.
- The insulation products produced at the Winchester plant are primarily sold to customers outside of Virginia.
- The Winchester plant currently employs 130+ local team members.

About XPS Foam Insulation

- XPS manufacturers use HFCs as a blowing agent in the manufacturing process to produce XPS foam insulation in order to provide high thermal efficiency, as required by International Building Codes.
- XPS foam is a rigid, cellular foam insulation product with high thermal efficiency (R-value), excellent moisture resistance, and high compressive strength. It is mold, mildew, and corrosion resistant, has superior long-term performance characteristics, and provides resistance to many forms of wear, which make it an ideal choice for sustainable construction.
- Kingspan uses HFC-134a in a blend as its blowing agent. By using a blend, the GWP of the blowing agent mixture is less than 550, as opposed to 1430 of HFC-134a in its raw form.
- XPS foam insulation is a closed cell foam, which encapsulates the insulating gases such as HFC-134a within the cell wall to provide the long term thermal insulation required for building applications. Therefore, only small amount of HFC-134a is released to the ambient air during the manufacturing, transport, installation and long lifespan of the products.

Federal Activity on HFCs

U.S. EPA's Significant New Alternatives Policy Program

- Currently, HFCs are allowed to be used in a variety of industries and are currently being used in the manufacture of XPS foam insulation. The reference to the January 3, 2017 Appendices in the language in Item 378 of the state budget is a reference to action taken by the U.S. Environmental Protection Agency (EPA) in a 2015 rule (SNAP 16) that banned HFCs effective in 2021.
- At the time the EPA rule was promulgated, the agency believed that cost effective alternatives to HFCs would be prevalent in the marketplace by 2021. That rule was vacated, in part, by the D.C. Circuit Court of Appeals in 2017. Because that rule was vacated in part, the continued use of HFCs that were covered by the EPA rule is still allowed to some extent.
- In June of 2020, after the HFC language in the Virginia state budget was adopted, the EPA published notice of a proposed rule listing substitutes under the Significant New Alternatives Policy Program (“SNAP 23”).¹ Included in this rulemaking, EPA proposed to list three blends containing HFC–134a as acceptable blowing agents in extruded polystyrene: Boardstock and billet (XPS).

Specifically, the EPA stated in the proposed rule:²

EPA is proposing to list three specific blends of HFC–134a as acceptable in XPS. These blends have higher GWPs and are otherwise comparable or lower in risk than other alternatives listed as acceptable; however, EPA is taking this action **because the Agency believes that other acceptable alternatives are not generally available for most needs under this end-use.**

[...]

In order for substitutes to be available in this end-use, they must be capable of blowing foam that meets the technical needs of XPS products including density and ability to meet testing requirements of building codes and standards, such as for thermal efficiency, compressive strength, and flame and smoke generation.

[...]

Based on all of the evidence before the Agency, it now appears that only one of the substitutes that the Agency believed at the time of the 2015 Rule would be available for use in XPS foam as of January 1, 2021 is in fact available and likely could only be used to meet the needs for some portion of the XPS foams market.⁵⁴ **The Agency is concerned about ensuring that the needs of the full XPS foams market in the United States can be met.** In addition to a concern that all of the needs of the XPS foams market cannot be

¹ 85 Fed. Reg. No. 114 pg. 35,874 (June 12, 2020).

² 85 Fed. Reg. No. 114 pg. 35,888 (June 12, 2020).

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met, EPA considers it important that the SNAP program not limit the choice of acceptable substitutes to only one option, where possible. For these reasons, EPA is proposing to list additional blowing agent options for XPS that have been proven to work for this end-use.

[Corresponding Footnote 54, “The set of products that may be available to be manufactured with HFC-152a would account for a minority of the current market for XPS.”]

(Emphasis added.)

- In proposing to allow the use of three (3) blends containing HFC-134a, the EPA correctly concluded that other acceptable alternatives are not generally available for most needs under this end use, and has proposed to list as acceptable these blends containing HFC-134a. Although the SNAP 23 process is not final and the three (3) blends have not yet been approved as exceptions, we have every reason to believe they will ultimately be approved under the Biden Administration given the robust administrative record and support within EPA’s Office of Atmospheric Programs.
- Subsequent to publishing the SNAP 23 listing, the EPA also evaluated and issued a Letter of Completion to Kingspan for the blowing agent formulation submitted by Kingspan that partially contains HFC-134a.
 - Kingspan currently uses a blowing agent blend that consists of HFC-134a, Methyl Formate and Cyclopentane. The blend has an estimated GWP less than 550; substantially lower than HFC-134a’s GWP of 1430 in its raw form. Kingspan filed a SNAP Information Notice for this blowing agent with EPA in December 2019. On November 2, 2020, EPA issued a letter of completeness to Kingspan.
 - The proposed SNAP 23 rules added three (3) XPS blowing agent blends, all of which include HFC-134a. Both Methyl Formate and Cyclopentane (a Hydrocarbon) are listed by EPA’s SNAP 20 as acceptable alternatives to HFCs. We expect our blowing agent blend formula to be added to the list of approved formulations through a Notice once the SNAP 23 rule is finalized.

The AIM Act Amendment to the Federal FY2021 Omnibus Appropriations Bill (a/k/a/ COVID Relief Package)

- On December 21, 2020, Congress passed the *American Innovation and Manufacturing Act* as part of a massive year-end spending package. The overall objective of the AIM Act is to phasedown hydrofluorocarbon (HFC) production and consumption to 15 percent of the baseline by 2036 and the ability of EPA to restrict the use of HFCs on a sector-by-sector basis.

- The enacted federal legislation regulates HFCs in three ways:
 - It gradually phases down the production and consumption of HFCs over a 15-year period via an allowance allocation and trading program. This is substantially similar to the way ozone-depleting substances were regulated under Title VI.
 - It authorizes EPA to establish standards for the management of HFCs used as refrigerants, such as in equipment servicing and repair, and for the recovery of “used” HFCs for purification and resale, known as reclaim. This allows for a safe and efficient transition out of HFCs.
 - It authorizes EPA to establish sector-based use restrictions, as a way to facilitate transitions to next generation refrigerant technologies. These use restrictions would complement the broader production and consumption phase down, aiding sectors able to transition more quickly out of HFCs and providing more flexibility for those sectors in need of more time to complete the transition.

- A more detailed summary of the AIM Act is attached to this document.

Federal Law Should Govern the Phasedown of Kingspan’s Use of HFCs

- The AIM Act, which received bipartisan support in both chambers of congress, establishes a mandate for EPA to regulate HFCs and phasedown the use of such chemicals in a reasonable timeframe.
- The AIM Act establishes the timetable similar to Kigali Amendment to the Montreal protocol to phase down the production and consumption of HFC by 85% by the year 2036. This phasedown is done in a stepwise fashion that balances the need to reduce the use of HFCs while not completely upending industrial uses that have significant benefits to consumers and, in the case of insulation manufacturers, the environment.
- Kingspan is hopeful that, based on EPA’s understanding of how integral HFCs are as XPS blowing agents, and the minimal impact of their use in this sector, EPA will include this use as part of the residual 15% quota. Nonetheless, EPA may develop a glide path for the eventual phase out of the use of HFC as an XPS blowing agent.
- The federal regulatory landscape will evolve with this grant of authority to the EPA to set up a process for the orderly and significant phase down of HFCs. Given the conclusions reached by the EPA in developing the SNAP 23 rule regarding the lack of acceptable alternatives, EPA arguably has already made the requisite determination needed to grant an “essential use” exception for the manufacturing of XPS foam insulation for a period of time until viable alternatives to HFCs are readily available. See attached AIM Act summary for a discussion of the “essential use” process.

Competitive Disadvantage

- Not following the federal phasedown timeline will single out a Virginia manufacturer of XPS foam insulation and place it at a competitive disadvantage to the four (4) other manufacturers of this product with no appreciable corresponding benefit to the environment.
- The majority of the US states do not regulate the use of HFCs and it is expected they will likely follow the federal rules on phasing down the use of HFCs and provided in the AIM Act.
- Kingspan's competitors in the XPS insulation market all have plants located in states that do not prohibit or regulate HFCs. These competitors have plants located in Georgia, Idaho, Illinois, Missouri, Minnesota, Ohio and Oregon. To our knowledge, none of these states has regulations or statutes that ban HFC in manufacturing.
- Consequently, these competitors will likely operate under the evolving federal regulatory HFC phasedown scheme and not under a more restrictive state regulation. This will allow those competitors to manufacture their XPS foam insulation products at a lower cost as compared to what Kingspan will be required to incur if Virginia prematurely requires Kingspan to use a more expensive and less reliable alternative chemical as its blowing agent in the manufacturing process. Kingspan's competitors will need to move away from HFC-134a to support their ongoing business in states that are restricting the use of HFC-134a, however they will continue using HFC-134a to support their business in states where no restrictions have been passed.
- Kingspan's Winchester plant is its only manufacturing facility to support the North American market. Unlike its competitors that have multiple manufacturing facilities, it cannot shift production of XPS foam insulation to a state that does not regulate HFCs. Without a sufficient timeline to phasedown or out the use of HFCs in a blowing agent blend, Kingspan's Virginia manufacturing plant is placed at a severe competitive disadvantage relative to these other manufacturers of XPS insulation products.

Reasonable Alternatives to HFC Blends Are Not Readily Available

- There are a limited number of commercially available alternatives to replace HFC-134a as a blowing agent in the XPS foam insulation production process. Such alternatives are not widely available, are costly and produce inferior product performance.
 - When selecting a suitable blowing agent, there are many factors to consider in addition to the individualized properties offered by a particular molecule; i.e. solubility of the chemical to the particular resin mix; pressure and temperature of the extruder, which varies from production line to production line; die design; mixing power of the extruder, etc. to name but a few.
 - Therefore, there is no such thing as a universal blowing agent blend that will work for everyone. A manufacturer's blowing agent recipe is a highly individualized and closely guarded trade secret.

Kingspan Insulation LLC
Comments to Department of Environmental Quality
Hydrofluorocarbon Stakeholder Workgroup
01/19/21

- Kingspan Insulation and many of its XPS peers have invested significant resources to identify suitable blowing agent blends using commercially available agents and have yet to find suitable HFC-free options that are economical and offer comparable product performance.
- The HFC alternative that Kingspan is evaluating as a future replacement is a HydroFluoroOlefin (HFO). All current HFO options come at a substantial cost premium, approximately 3x of that of comparable HFC chemicals.
- The HFO option that Kingspan is currently evaluating is more flammable than HFC-134a, therefore, additional engineering control measures will have to be completed in order to begin using large quantities of this chemical. Kingspan is currently in the process of executing several large capital projects in order to modify the production line to adopt the use of a HFO chemical. These projects are experiencing multiple delays due to COVID related traveling restrictions and a shutdown at the equipment supplier's oversea production facility.
- While Kingspan has been working on HFC alternatives for several years, many obstacles and hurdles remain for Kingspan to safely transition to HFC alternatives. These include health, safety, environmental and market dynamic concerns, which will require additional time to safely and successfully address.
- Kingspan is attempting to modify its product formulation and production capability to use HFOs but there are technical issues concerning density, thermal resistance, compressive strength, etc. and solving the technical puzzle that comes with using HFOs cannot be done in a short timeframe. Incorporating HFOs into the production process takes a significant amount of engineering and monetary resources to accomplish.
- There are a limited number of suppliers of HFOs. Most producers, including Kingspan Insulation, become linked to a particular supplier of its chemical feedstock. In the normal course, that creates efficiencies and cost savings, but when there is a significant disruption to the regulatory landscape with little time to adjust, it limits a producer's options to seek cost competitive alternatives which reduces its bargaining power relative to its supplier of feedstock. This situation further exacerbates the ability to produce a product that is competitively priced in the market place.
- If Kingspan was forced to cease the usage of its HFC blowing agent blend while its competitors located in other states are still allowed to use HFC-based blowing agents in the XPS foam insulation product market, Kingspan's product will be at a severe disadvantage on cost and quality factors; making the Winchester operation unsustainable in the immediate future.

Use of HFC Blends As Blowing Agent Not As Harmful As Other Uses Of HFCs

- Kingspan encourages the DEQ to not take a “one size fits all” approach given the broad discretion given to the State Air Pollution Control Board in the budget language. Refrigeration, air-conditioning, and heat-pump applications account for the majority of the HFCs used globally.
- In 2015, the UNEP Ozone Secretariat, in analyzing data from 2012, found that the air-conditioning and refrigeration industry accounted for 86% of the total “GWP-weighted tonnes of CO₂ equivalent” HFCs. Foams, a broad category of which XPS is only a portion, constituted only 7%³.
- Kingspan uses HFC-134a in a blend as its blowing agent. By using a blend, the GWP of the blowing agent is less than 550, as opposed to 1430 of HFC-134a in its raw form.

Kingspan’s Proposed Approach

1. Extruded Polystyrene (XPS) Billets and Boards manufacturers in the Commonwealth of Virginia should be allowed to continue to use HFC chemical blends for products exported to other states if permitted under Federal laws or regulations.
2. The regulations should allow DEQ to conduct a review annually of the federal regulatory scheme concerning HFCs and HFC blends in order to be consistent with evolving regulatory status; and
3. Provide a minimum of a one (1) year notice prior to implementing a specific date to cease the exemption.

This proposed approach allows Virginia to be consistent with the recently adopted AIM Act which is a major step forward in the phasedown of the use of HFCs in the United States, while at the same time, not placing a Virginia manufacturer at a significant competitive disadvantage to the producers of the same insulation product in other states that do not similarly regulate the use of HFCs.

³ UNEP Ozone Secretariat Workshop on HFC management: technical issues Bangkok, 20 and 21 April 2015 FACT SHEET 2 Overview of HFC Market Sectors page 4. Last viewed on April 21, 2020. Downloadable online at http://conf.montreal-protocol.org/meeting/workshops/hfc_management-02/presession/English/FS%20%20Overview%20of%20HFC%20Markets%20final.pdf

American Innovation and Manufacturing Act Included in 2021 Omnibus

Summary

On December 21, 2020, Congress passed the *American Innovation and Manufacturing Act* as part of a massive year-end spending package. The overall objective of the AIM Act is to phasedown hydrofluorocarbon (HFC) production and consumption to 15 percent of the baseline by 2035 and the ability of EPA to restrict the use of HFCs on a sector-by-sector basis.

- The bill regulates HFCs in three ways:
 - It gradually phases down the production and consumption of HFCs over a 15-year period via an allowance allocation and trading program. This is substantially similar to the way ozone-depleting substances were regulated under Title VI.
 - It authorizes EPA to establish standards for the management of HFCs used as refrigerants, such as in equipment servicing and repair, and for the recovery of “used” HFCs for purification and resale, known as reclaim. This allows for a safe and efficient transition out of HFCs.
 - It authorizes EPA to establish sector-based use restrictions, as a way to facilitate transitions to next generation refrigerant technologies. These use restrictions would complement the broader production and consumption phase down, aiding sectors able to transition more quickly out of HFCs and providing more flexibility for those sectors in need of more time to complete the transition.

Listing of Regulated Substances

- The legislation authorizes the U.S. Environmental Protection Agency (EPA) to regulate a specific list of approximately 20 HFCs.
- The legislation provides for an “exchange value” for each HFC, which refers to the effective weight of each HFC, for purposes of trades, transfers, and related calculations, since not all HFCs are the same in terms of their manufacture and/or use.
- EPA is granted authority to adjust the values of the exchange values based on newly available scientific information. This allows for harmonization with other HFC-related regulatory programs among the states and internationally.
- EPA is granted authority to add substances that are considered “saturated hydrofluorocarbons” with an exchange value greater than 53. This prevents the development and use of a new HFC not listed in the table solely for purposes of avoiding regulation.

Monitoring and Reporting

- EPA is granted authority to require reporting of any production, consumption, import, export, reclaim, destruction, and feedstock usage of HFCs, which is necessary to carry out a regulatory program for HFCs.
- Because some of this information may already be reported to EPA, EPA is granted authority to coordinate and harmonize with existing reporting requirements, to minimize administrative burdens and avoid confusion.

Phase Down of Production and Consumption of Regulated Substances

- The production baseline provisions and percentage reductions are meant to reflect an internationally-recognized standard for HFC production, consumption, and corresponding reduction.
- EPA is directed to utilize an allowance allocation and trading program to administer a production and consumption phase down of HFCs, setting the quantity no later than October 1 of each calendar year, through regulations to be finalized within 270 days of date of enactment.

Essential Use Exceptions

- Essential use exceptions can be granted upon date of enactment.
- In granting an essential use exception, EPA must consider technical achievability, commercial demands, affordability for residential and small business consumers, safety, overall economic costs and environmental impacts as compared to historical trends, whether safe and feasible substitutes are available, and whether the entity seeking the essential use exception is able to secure an adequate supply of HFC in the market.
- The production and consumption used to fulfill an essential use exception are subject to the overall phase down and must be covered by allowances, which will be allocated by EPA solely for purposes of fulfilling essential use exceptions.
- In addition to any other essential use exception EPA may grant, the statute designates the following as statutory or “mandatory” essential use exceptions: propellant in metered-dose inhalers; defense sprays; structural composite preformed polyurethane foam for marine use and trailer use; the etching of semiconductor material or wafers and the cleaning of chemical vapor deposition chambers within the semiconductor manufacturing sector; mission-critical military end uses, such as armored vehicle engine and shipboard fire suppression systems and systems used in deployable and expeditionary applications; and onboard aerospace fire suppression.
- For these statutory essential uses, the amendment directs EPA to allocate allowances to cover production and consumption for these uses, based on projected, current, and historical trends.

Domestic Manufacturing

- The legislation allows for domestic production of HFCs for export to foreign countries.

Accelerated Schedule

- EPA can propose changes to the phase down schedule in response to a petition, and no petition may be granted before 2025.
- In proposing any change to the schedule, EPA must ensure sufficient quantities of HFCs will exist to service any essential use exceptions currently in place
- Any proposed change to the schedule is limited to current consumption levels, based on the prior year's data.

Exchange Authority

- EPA is granted authority to allow trading of HFC production and consumption allowances to facilitate compliance and reduce costs.
- The primary purpose of this language is to ensure (i) exchange values are utilized in the transferring of allowances, (ii) a net total reduction in production and consumption occurs as a result of each transfer, and (iii) transfers occur only between parties with compliance obligations for HFC production and consumption.
- The regulations must be finalized within 270 days of enactment.

Management of Regulated Substances

- EPA is granted authority to establish standards for HFC management, such as equipment servicing and repair, as well as the recovery of "used" HFCs from equipment for purification and resale, known as reclaim.
- Foams are exempt from the provisions of this subsection.

Technology Transitions

- EPA is granted authority to establish standards restricting the use of certain HFCs in certain applications. A person may petition EPA to promulgate a rule restricting a use.
- In reviewing a petition or carrying out a rulemaking restricting the use of a regulated substance in a sector or subsector, EPA is required to consider the best available data, availability of substitutes, overall economic costs and environmental impacts as compared to historic trends, and other criteria such as consumer costs, building codes, appliance efficiency standards, contractor training costs, and other relevant factors, including quantities of HFCs available from reclaim and prior production and import and the time remaining in the phase down period.
- Rules under this subsection cannot take effect before one year from the date the final rule is issued.
- Rules under this subsection also do not apply to applications currently under essential use exceptions or a "retrofit" application or existing equipment – i.e., the use restrictions can only apply to products manufactured after the effective date.

International Cooperation

- This section prohibits the export of HFCs to countries that have not enacted or otherwise imposed an HFC phase down, as a way to support a global transition out of HFCs and into various substitutes and alternatives.

Relationship to Other Laws

- For a five-year period beginning on the date of enactment, state laws involving the management or use of an HFC in the statutory essential uses are preempted, with this period extendable for up to an additional five years.

Attachment 3

Consolidated Member Comments

Performance Building Solutions
1501 Joseph Dr.
Midland, MI 48642



February 9, 2021

Michael Dowd
HFC Extruded Polystyrene Boardstock Compliance Date Work Group
Office of Regulatory Affairs
Virginia Department of Environmental Quality

DuPont understands and appreciates the intent of Virginia in regulating HFCs to reduce GHG emissions, and we are aligned in your objective of GHG emissions reduction. We believe that well insulated buildings play a critical role in helping mitigate and adapt to climate change, and that all people should have the opportunity to live, work and play in buildings that are safe, affordable and resilient.

We are writing in response to language contained in Item 378 of Chapter 1289 of the 2020 Acts of Assembly, as amended by Chapter 56 of the 2020 Acts of Assembly, Special Session I (the "state budget").

Item 378 of the state budget directs the State Air Pollution Control Board to adopt regulations to "prohibit the sale, lease, rent, installation or entry into commerce in Virginia of any products or equipment that use or will use hydrofluorocarbons for the applications and end uses restricted by Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017."

DuPont Performance Building Solutions manufactures and sells high performing Styrofoam™ Brand XPS insulation. Because XPS Insulation is a key component to cutting energy waste, reducing building emissions and reducing consumer costs for utility bills, it is a critical component to the Commonwealth of Virginia's energy efficiency plans. As part of the 2018 Virginia Energy Plan top priorities, energy efficiency targets such as Virginia's 10% energy conservation target must be met using high performing energy efficiency building insulation.¹

It is with this common goal that we highly encourage the state of Virginia to avoid creating its own conversion program that forces an immediate and complete phase out of HFC-134a use in XPS foams, which would have a severe and unintended consequence for this energy efficiency industry. Instead, we encourage Virginia to focus efforts on inclusion of the exception language for new SNAP blends and ensure HFC prohibitions are consistent with lead time needed for the impacted XPS industry as provided by similar finalized regulations and legislation in other states.

DuPont supports a harmonized regulatory framework for reducing HFCs, as this creates business certainty and the possibility for supply chain optimization required for doing business with our customers in Virginia and nationally. It is critical to understand that the link between the high insulation performance of our products, which makes them energy efficient, and their formulation. Blowing agent or other formulation changes can have considerable impacts to how our products perform, and therefore, extensive research and development needs to be taken to formulate the products using next generation technologies to have continued performance of our products.

¹ <https://vaeec.org/virginia-energy-plan-2/>

Manufacturing

DuPont agrees with the comments made at the January 20, 2021 meeting by the workgroup members, including the NRDC, Honeywell, Owens Corning, and Kingspan that the ongoing manufacturing of XPS in the state of Virginia is appropriate and necessary. DuPont believes that the December 2020 passing of the AIM Act by congress will be the best guidepost to manufacturing restrictions with HFCs, and that Virginia should not place a time limit for manufacturing in the DEQ regulation. The AIM Act directs the US EPA to handle HFC phase-down by allocations and end-uses through sector negotiations. This federal activity should take precedence over any individual US state in order to ensure fair market trade.

Conversion Date for XPS Boardstock

Unlike in the majority of HFC uses, XPS foams technology adoption must be carried out facility by facility and requires 12-18 months of implementation time at each site. A1/1/2022 enforcement date represents an extremely aggressive conversion timeline for DuPont as it does not allow for our minimum 12 months implementation time. That said, DuPont is committed to an aggressive conversion timeline as it aligns on the workgroup suggested enforcement date and the understanding that the Virginia DEQ began this discussion in 2020. However, it is critical to have a clearly communicated, appropriate transition period, as without clarity and sufficient lead time, the number of construction foam insulation products available in Virginia would be severely restricted (with some not available at all). A lack of high performing product would add major obstacles to Virginia's ability to meet its 10% energy conservation target, including making it more challenging to find products that meet building energy codes, and increasing prices for consumers and businesses.

- The absence of sufficient notification would disrupt the construction cycle in Virginia. This is extremely important due to the nuances of the construction industry that require planning, bidding, ordering, and shipping months in advance. Architects, who specify products for use, begin the process many months in advance, triggering builders to order product, which affects manufacturers planning so they can supply product to the building project. It typically takes 12-18 months to implement all changes to the supply chain for new formulations due to these specificities in logistics for the construction supply chain.
- Retroactive dates and near-term enforcement dates will not work in the construction industry and would cause Virginia job site closures, construction delays, and costly impacts to affordable housing, federal and municipal sustainable building projects in the state. There are currently approximately 930 commercial projects in the process of development in Virginia valued at \$4.9B with approximately two-thirds existing of state, federal, city and county funded projects all of which could be negatively impacted. This excludes the additional residential projects.

Coordination

This request for additional time is also noted in a letter to the Virginia Department of Environmental Quality (DEQ) by a coalition of XPS manufacturers and blowing agent suppliers dated August 18, 2020. Additional time has either been granted, is drafted or is being considered by multiple other US Climate Alliance states including Maryland, Oregon, and Maine. As noted in the response to comments on U.S. Federal Senate Bill S. 2754² by the Extruded Polystyrene Industry Association

² https://www.epw.senate.gov/public/_cache/files/3/e/3e7aed38-7fdb-4014-9a13-942a3a6e5a50/876B7C3D51660FADFE308E7620B67075.04.08.2020-extruded-polysterene-foam-association.pdf

(XPSA), sufficient and consistent lead time for the entire XPS industry is critical. The XPS industry has consistently stated that it needs at least twelve months to complete manufacturing conversions after the publication of a new regulation. It is critical that the DEQ consider stakeholder input during the regulatory process rather than copy an old federal regulation date without consideration of current impact and knowledge.

Phased conversion and continued R&D

DuPont's research of usable and available HFC-134a substitutes has never stopped since the original publication of U.S. EPA SNAP Rule 20. DuPont does not manufacture blowing agents, so we have invested heavily, and continue to invest, in finding HFC substitutes to be used in our XPS products. We are currently in the process of implementing a phased conversion of our manufacturing facilities, reformulating our products to a reduced GWP, and adjusting our supply chains to be able to handle these next generation products, many of which present new technical and safety related challenges in our Styrofoam™ Brand XPS boardstock that we are currently adapting to and preparing for conversions.

The reduced GWP Styrofoam™ XPS insulation represents the lowest GWP product that we can safely produce at this time and is Phase One of our overall GWP phasedown program. **This aligns with our commitment to a more aggressive timeline than the Kigali Amendment to the Montreal Protocol, and our conversion pathway is aligned with our DuPont Performance Building Solutions recently launched 2030 Sustainability Goals³, which commit to a reduction in GHG emissions from operations by 75% from 2019 levels.**

COVID-19 Impacts to timing of conversion

Most of the components currently approved to replace HFC-134a per the old SNAP Rule 20 referenced in HB30 are flammable and require major upgrades of our manufacturing facilities. Because of the change in the safety rating, the new processing equipment needed, and the need for proper rating and permitting of the building in which the manufacturing occurs, we require multiple building code certification approvals by code officials and detailed reviews by our safety teams who must follow Responsible Care®⁴ guidelines. Products must be trial manufactured at a production scale site. The large-scale trials are required for code approval, and therefore a code official witnessing the production must be present before that material is shipped for certification testing to their 3rd party sites. These activities are underway and began earlier this year.

Unfortunately, as the result of COVID-19, we have experienced new challenges including travel bans and U.S./Canada border closure since 3/22/20 which has caused major delays in our ability to run necessary trial production and have those trials tested and approved by the third-party organizations required for this process.

First ask to the State of Virginia:
Recognize 1/1/2022 date in discussion with the workgroup allows the absolute shortest lead time possible

In support of this need to have Virginia recognize required lead times in the construction sector, DuPont requests an XPS conversion date of no earlier than 1/1/2022.

³ <https://www.dupont.com/news/dupont-performance-building-solutions-corian-2030-sustainability-goals.html>

⁴ <https://icca-chem.org/focus/responsible-care/>

New US EPA SNAP Rules: SNAP Rule 23 and beyond

The US EPA SNAP program that lists acceptable blowing agents is not a static list and new approved compounds are often added. In their manufacturing processes, any XPS producer can use blends deemed as acceptable by SNAP Rule 23 and any future rules. SNAP Rule 23 is supported by two-thirds of the XPS manufacturers in the U.S. which account for about 60% of XPS volume in the U.S. In addition to pending SNAP Rule 23, we also understand that other XPS manufacturers have submitted applications for new blends, and we support the needs of others in the industry for new approved blends.

For DuPont, the new blends listed in SNAP Rule 23 for use in XPS foams would mean a 50% lower GWP compared with the current blowing agent being used. DuPont's R&D program continues aggressively toward an HFC-134a-free solution that will lower GWP further in the next few years.

US EPA SNAP History

The US EPA SNAP program previously approved several of the HFC blends for other end uses, all with global warming potentials (GWPs) at or under 750. Unfortunately, as XPS Boardstock is such a niche end user in a larger HFC-user market, the needs of our building insulation foam end uses were unintentionally overlooked during those previous applications. **This oversight left our products without permitted HFC blend options in the Federal approval lists, even though some of those same blends or blends with similar GWPs had already been approved for other end uses such as the refrigerant industry.**

Second ask to the State of Virginia: Recognize new SNAP rules to continue promoting technological innovation

In support of this need to have Virginia recognize SNAP Rule 23, DuPont requests inclusion of a minor modification of language outlined below in the DEQ regulation for newly approved U.S. EPA SNAP blends with Global Warming Potentials (GWPs) ≤ 750 for use in extruded polystyrene boardstock (XPS).

This minor modification based on the 2015 and 2016 US EPA Significant New Alternatives Policy (SNAP) rules has been adopted in Virginia's budget bill, California, Washington, New Jersey and Vermont, and should be included in the Virginia regulation.

The language, impacting XPS niche foam types, is the result of collaboration between the Natural Resources Defense Council (NRDC), blowing agent suppliers, and DuPont's Performance Building Solutions (PBS) business. The NRDC has helped promote the inclusion of this language in multiple U.S. States including Washington, California, Vermont and New Jersey. DuPont has offered to drop the reference to "rigid polyurethane low-pressure two-component spray foam" in the exception language as we no longer find it necessary.

The language reads:

"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 section 7671(k) of the federal clean air act (42 U.S.C. Sec. 7401 et seq.), the department must

expeditiously propose a rule consistent with RCW 34.05.320 to conform the requirements established under this section with that federal action.”

It is also captured in Delaware’s regulatory language section 6.1.2⁵:

6.1.2 Proposed Modifications to List of Prohibited Substances

6.1.2.1 A person subject to the list of prohibited substances in Section 6.0 may request that the Department modify the regulation to exempt hydrofluorocarbon blends with a global-warming-potential of 750 or less in rigid polyurethane low-pressure two-component spray foam and polystyrene extruded boardstock and billet (XPS) from the list of prohibited substances in Section 6.0. The request shall contain the following information:

6.1.2.1.1 A detailed description of the end-use category for which the modification is requested; and

6.1.2.1.2 A demonstration that the U.S. EPA has approved the hydrofluorocarbon blend under the Significant New Alternatives Policy under section 7671(k) of the Clean Air Act.

Wherever possible to convert to lower GWP alternatives earlier and avoid going through an unnecessary listing, we do. DuPont has offered to drop the reference to “rigid polyurethane low-pressure two-component spray foam” in the exception language as we no longer find it necessary.

Need for recognition of new SNAP rules

As mentioned previously, the SNAP rules provide the opportunity for continual listings to ensure continued innovation. Without the nuanced language that we outline above, the Virginia regulation would enable the historical oversight to continue, as described in the “SNAP history section,” blocking our ability to innovate. We have been working with the EPA SNAP technical career staff to include new innovative technologies for XPS in the Federal approval lists as they become developed and validated. The minimal effort required by the Virginia DEQ to follow the lead of other states to include these blend options will ensure that we can continue to bring our energy efficient products to market.

Sell-through language

VA DEQ regulation must include a clear sell-through provision for existing products. EPA’s SNAP Rules 20 and 21 and every other state that is regulating HFCs include a sell-through provision for existing products that are manufactured prior to the date of restriction.

DuPont recommends that VA DEQ include language to identify a sell-through period to facilitate stakeholders’ compliance and to promote consistency with other states. Without a clear sell-through period, the value chain will be unable to ensure product is not stranded in the distribution chain.

**Third ask to the State of Virginia:
Copy the language found in Vermont’s regulation**

“(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.

⁵ <https://regulations.delaware.gov/register/april2020/proposed/23%20DE%20Reg%20841%2004-01-20.htm>

(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.”

Other

Since VA DEQ has expressed an interest in a short regulatory piece, DuPont recommends following the lead of the recent regulation published by Vermont in December of 2020. By doing so, VA can avoid redefining the categories under HFC prohibitions, avoid cumbersome labeling requirements, and avoid handling submissions of reports and recordkeeping. This approach was successfully achieved by the recent regulation in Vermont: https://dec.vermont.gov/sites/dec/files/aqc/laws-regs/documents/Vermont_HFC_Rule_Adopted_CLEAN.pdf

Reporting and Recordkeeping

DuPont opposes recordkeeping and reporting requirements in favor of the on-product disclosures. Recordkeeping and reporting requirements add additional burden to the DEQ and manufacturers that comply with the HFC regulations without providing a meaningful benefit if the product contains an explicit written disclosure on the product or product label. The entire foam industry must be compliant with the new restrictions on the date the restriction becomes effective.

Labeling

If VA DEQ determines that labeling requirements are necessary, we recommend the following as seen in several current state regulations:

B. Disclosure Statement. As of the *{effective date}* of this regulation, any person who sells, offers for sale, leases, rents, installs, uses, or manufacturers or otherwise causes to be entered into commerce within the State of Virginia, products or equipment in the air-conditioning, refrigeration, foam, or aerosol propellant end-uses listed as prohibited in *{“xyz”}* of this Part, must provide a written disclosure to the buyer as part of the sales transaction, on the product, product packaging, or invoice.

1. The required written disclosure must state:
 - b. Foam:
 - (1) “Where sold, compliant with State HFC regulations

About our business & products

DuPont Performance Building Solutions commercializes a variety of thermal insulation and air sealing products and technologies which improve the energy efficiency (EE) performance of buildings. We collaborate with other companies, nonprofits, and industry partners to promote progressive policies and standards such as energy efficient and resilient building codes on a local, state, and national level. We believe that overly aggressive HFC-134a phase out timing, with the very limited basket of options currently approved for XPS foam use, fails to meet the flexibility needs of the market and jeopardizes these energy efficiency products that provide environmental benefits.

As mentioned previously, our HFC phase down commitment is on a more aggressive timeline than that referenced in the Kigali Amendment, and our conversion pathway is aligned with our DuPont

Performance Building Solutions' Sustainability Goals. Additionally, DuPont has corporately continued our support for the Paris Climate Agreement as seen on WeAreStillIn.com and as shown in our corporate commitments to emissions reductions.

Environmental impact of foam insulation

HFC-134a is a limited but critical ingredient required in the manufacturing process of our Styrofoam™ Brand XPS Insulation. Although there are limited emissions attributed to the manufacture of our XPS insulation, the use of Styrofoam™ building insulation has a large net positive contribution to GHG emissions reduction thanks to the energy savings the insulation provides throughout its lifetime.

Based on published Life Cycle information, current Styrofoam™ Brand XPS insulation produced using HFC-134a will prevent at least 28 times more GHG emissions relative to its own carbon footprint over 50 years.⁶ Therefore, even with no change to today's XPS product, use of Styrofoam™ Brand Insulation with HFC technology would lower Virginia's GHG emissions, helping the state move towards its GHG reduction targets. Our R&D efforts are focused on continued performance of our products while reducing the GWP of blowing agent used in our products. In other words, we will not jeopardize the energy efficiency performance of our products.

Conclusion

DuPont understands and appreciates the intent of Virginia in regulating HFCs to reduce GHG emissions, and we are aligned in your objective of GHG emissions reduction. It is with this common goal that we highly encourage Virginia to avoid creating its own conversion program that forces an immediate and complete phase out of HFC-134a use in XPS foams, due to its severe and unintended consequence for this energy efficiency industry. Inclusion of the exception language for new SNAP blends is critical.

We urge the VA DEQ to consider a holistic approach to GHG emissions reduction as acknowledged by other states, and that Virginia follow the lead of other states to include:

- 1. allowance of ongoing manufacturing in the state**
- 2. at least 12-18 months of lead time from regulation publication date or no earlier than 1/1/2022 to allow for the safe conversion of manufacturing as we continue to develop even lower GWP alternatives**
- 3. inclusion of the language for new SNAP approved blends as directed by the VA budget bill**
- 4. inclusion of sell-through language**
- 5. inclusion of on-product labeling rather than reporting and record keeping requirements**

By putting in minimal effort to do this, Virginia will ensure that these energy efficient products can continue to be brought to market in your state, ensuring products that will help you meet building code and environmental and energy reduction commitments are available for customers in your state, and avoid unintended environmental outcomes of this Virginia regulation.

⁶ Life Cycle Greenhouse Gas Emissions Reduction From Rigid Thermal Insulation Use in Buildings M.H. Mazor, J.D. Mutton, D.A.M. Russell, G.A. Keoleian, J. Ind. Ecology, 15, 2, pp 284–299, April 2011.

Our commitment to providing high performing products is critical to the energy efficiency of our products, as blowing agent or other formulation changes can have considerable impacts to how our products perform. For example, even a 10-15% reduction in thermal performance of our products would completely undermine the current emissions reductions benefit achieved when using these products.⁷

We are hopeful that Virginia will take the building insulation foams XPS industry into consideration, given the huge electricity savings that our high performing insulation produce. We look forward to seeing Virginia meet its efficiency targets, including its 10% energy conservation target within the 2018 Virginia Energy Plan. XPS should be an integral strategy to achieve this top priority for your state, and we look forward to doing our part to help achieve that goal.

If you have further questions or would like more information, please do not hesitate to contact us.

Sincerely,



Lisa Massaro
Advocacy & Product Stewardship Manager
Performance Building Solutions
Lisa.M.Massaro@DuPont.com

⁷ Life Cycle Greenhouse Gas Emissions Reduction From Rigid Thermal Insulation Use in Buildings. M.H. Mazor, April 2011.



February 9, 2020

Mike Dowd, Director
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Richmond, VA 23219

Via email

Re: Comments following first Hydrofluorocarbon (HFC) Stakeholder Workgroup meeting related to the legislative mandate to the State Air Pollution Control Board to adopt HFC regulations

Dear Director Dowd,

Virginia has taken a bold approach to combatting climate change as demonstrated by Governor Northam's continued leadership as a member of the U.S. Climate Alliance and the Commonwealth's several efforts via executive and legislative actions, including recently joining the Regional Greenhouse Gas Initiative. We applaud the undertaking of these significant and critical actions.

The 2020 budget included an important mandate for the State Air Pollution Control Board to adopt regulations to reduce use of hydrofluorocarbons (HFCs), the fastest growing source of greenhouse gas emissions globally, in specific products and equipment where several alternatives are available. The regulations are based on existing federal rules under the Significant New Alternative Policy (SNAP) program from 2015 and 2016 that were rendered uncertain by litigation and went unenforced by the previous federal Administration. Industry has long prepared to meet the transition dates the Board is now mandated to adopt, having significantly invested in developing and commercializing environmentally preferable HFC alternatives over the past several years.

Honeywell strongly supports these regulations and encourages the Department to align closely to the federal regulations and existing state regulations that have already adopted SNAP rules 20 and 21. We recognize that some transition dates have already passed and cannot be retroactively enforced. For dates that have already passed, we urge the Department to adopt a date as near-term as possible (e.g., July 1, 2021).

As was stated in the workgroup meeting, the Department need not start from scratch. There are eight other states with statutes or regulations in effect implementing the SNAP transition dates: California, Washington, Vermont, New Jersey, Colorado, New York, Maryland, and Massachusetts. We have attached Massachusetts' final regulation as a recently adopted example. While it includes the latest refinements that stakeholders have added throughout

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each of these state processes, we recommend additional updates to some of the definitions (noted on the attached) to improve technical accuracy.

Thank you for the opportunity to participate in this process. Honeywell strongly supports Virginia's efforts to reduce HFC use and looks forward to working with the Department to implement an effective regulation.

Sincerely,

DocuSigned by:

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Sanjeev Rastogi
Vice President & General Manager
Honeywell Fluorine Products

Adopt new 310 CMR 7.76 *Prohibitions on Use of Certain Hydrofluorocarbons in Refrigeration, Chillers, Aerosol Propellants, and Foam End-Uses* to read as follows:

(1) Purpose.

The purposes of 310 CMR 7.76 are to prevent and control pollution to the atmosphere as required by Sections 142A and 142B of Chapter 111 of the General Laws, to support Massachusetts in achieving greenhouse gas emissions reductions goals established pursuant to Chapter 21N of the General Laws and to reduce hydrofluorocarbon emissions by adopting specific prohibitions for certain substances in refrigeration equipment, chillers, aerosol propellants, and foam end-uses.

(2) Definitions.

The definitions in 310 CMR 7.76(2) apply to 310 CMR 7.76. Where a term defined in 310 CMR 7.70 also appears in 310 CMR 7.76, the definition in 310 CMR 7.76 is applicable for the purpose of 310 CMR 7.76.

Aerosol Propellant. A compressed gas or vapor in a container which, upon release of pressure and expansion through a valve, carries another substance from the container as a mist or spray

Replace with : 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.

Air Conditioning Equipment. Chillers, both centrifugal chillers and positive displacement chillers, intended for comfort cooling of occupied spaces.

Capital Cost. An expense incurred in the 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. Air conditioning equipment that utilizes a centrifugal compressor in a vapor-compression refrigeration cycle. Under Centrifugal Chiller, a centrifugal chiller is a chiller intended for comfort cooling and does not include chillers used for industrial process cooling and refrigeration.

Cold Storage Warehouse. A cooled facility designed to store meat, produce, dairy products, and other products that are delivered to other locations for sale to consumers.

Component. A part of a refrigeration system including, but not limited to, a condensing unit, compressor, condenser, evaporator, and receiver; and all of its ~~components and~~ subassemblies, without which the refrigeration system will not properly function or will be subject to failures.

Cumulative Replacement. All additions or changes in multiple components within a

Effective Date of Prohibition. The date on which the prohibitions in 310 CMR 7.76(6) take effect.

End-use. Processes or classes of specific applications within industry sectors including, but not limited to, those listed in 310 CMR 7.76(6).

Flexible Polyurethane. A non-rigid polyurethane foam including, but not limited to, that used in furniture, bedding, and chair cushions.

Foam. A 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.

Foam Blowing Agent. A substance that functions as a source of gas to generate bubbles or cells in the mixture during the formation of foam.

Household Refrigerators and Freezers. Refrigerators, refrigerator-freezers, freezers, and miscellaneous household refrigeration appliances intended for residential use. For the purposes of 310 CMR 7.76, Household Refrigerators and Freezers does not include Household Refrigerators and Freezers - Compact, or Household Refrigerators and Freezers - Built-in.

Household Refrigerators and Freezers – Compact. 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. 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 to accept a custom front panel.

Hydrofluorocarbon or HFC. A class of greenhouse gases that are saturated organic compounds containing hydrogen, fluorine, and carbon.

Integral Skin Polyurethane. A self-skinning polyurethane foam including, but not limited to, that used in car steering wheels and dashboards.

Metered Dose Inhaler, or Medical Dose Inhaler, or MDI. 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.

New means:

- (a) products or equipment that are manufactured on or after the effective date of prohibition in 310 CMR 7.76: *Table 1*;
- (b) products or equipment first assembled and installed for an intended purpose with new or used components on or after the effective date of prohibition in 310 CMR 7.76: *Table 1*;
- (c) products or equipment to which components have been added to increase system capacity on or after the effective date of prohibition in 310 CMR 7.76(6): *Table 1*; or
- (d) products or equipment replaced or cumulatively replaced such that the cumulative capital cost on or after the effective date of prohibition 310 CMR 7.76: *Table 1* of replacement exceeds 50% of the capital cost of replacing the whole system.

Person. Any individual, firm, association, organization, manufacturer, distributor, partnership, trust, corporation, limited liability company, company, state, or local governmental agency or public district.

Phenolic Insulation Board and Bunstock. Phenolic insulation including, but not limited to, that used for roofing and walls. Bunstock is a large solid box-like structure formed during the production of polystyrene insulation.

Replace with: Boards, blocks or other shapes fabricated with phenolic foam

Polyolefin. Foam sheets and tubes made of polyolefin, a macromolecule formed by the polymerization of olefin monomer units.

Replace with: Foam sheets and tubes made from polyolefin

Polystyrene Extruded Boardstock and Billet (XPS). 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.

Replace with: A foam formed from polystyrene 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. Polystyrene foam including, but not limited to, that used for packaging and buoyancy or floatation. It is also made into food-service items including, but not limited to, hinged polystyrene containers (for "take-out" from restaurants); food trays (meat and poultry), plates, bowls, and retail egg containers.

Polyurethane. A polymer formed principally by the reaction of an isocyanate and a polyol.

Replace with: A polymer formed principally by the reaction of an isocyanate and a polyol, and which it would include polyisocyanurate ('polyiso')

Refrigerant. Any substance, including blends and mixtures, which is used for heat transfer purposes.

Refrigerated Food Processing and Dispensing Equipment. Retail food refrigeration equipment that is designed to process food and beverages that are intended for immediate or near-immediate consumption including, but not limited to, chilled and frozen beverages, ice cream, and whipped cream. For the purpose of 310 CMR 7.76, Refrigerated Food Processing and Dispensing Equipment does not include water coolers, or units designed solely to cool and dispense water.

Refrigeration Equipment. Any stationary device that is designed to contain and use refrigerant to establish or maintain colder than ambient temperatures in a confined space including, but not limited to, retail or commercial refrigeration equipment, household refrigerators and freezers, and cold storage warehouses.

Remote Condensing Units. Retail refrigeration equipment or units that have a central condensing portion and may consist of compressors, condensers, and receivers 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. For example, Remote Condensing Units are commonly installed in convenience stores, specialty shops (e.g., bakeries, butcher shops), supermarkets, restaurants, and other locations where food or other products are stored, served, or sold.

Residential Use. Use by a private individual of a substance, or a product containing the substance, in or around a permanent or temporary household, including use in both single and multi-unit dwellings, 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. Equipment designed to store and display chilled or frozen goods for commercial sale including, but not limited to, stand-alone units, refrigerated goods processing and dispensing equipment, remote condensing units, supermarket systems, and vending machines.

Retrofit. 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..

Rigid Polyurethane and Polyisocyanurate Laminated Boardstock. Laminated board insulation made with polyurethane or polyisocyanurate foam including, but not limited to, that used for roofing and walls.

Rigid Polyurethane Appliance Foam. Polyurethane insulation foam in domestic (e.g. residential) appliances.

Rigid Polyurethane Commercial Refrigeration and Sandwich Panels. Polyurethane

foam, used to provide insulation in walls and doors including, but not limited to, that used for commercial refrigeration equipment and garage doors.

Replace with : Polyurethane foam, used to provide insulation 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. A liquid polyurethane foam system sold as two parts (*i.e.*, A-side and B-side) in non-pressurized containers; and is field or factory applied *in situ* using high-pressure proportioning pumps at 800-1600 pounds per square inch (psi) and an application gun to mix and dispense the chemical components.

Rigid Polyurethane Low-Pressure Two-Component Spray Foam. A liquid polyurethane foam system sold as two parts (*i.e.*, A-side and B-side) in containers that are pressurized to less than 250 psi during manufacture of the system for application without pumps; and are typically applied *in situ* relying upon a liquid blowing agent and/or gaseous foam blowing agent that also serves as a propellant.

Rigid Polyurethane Marine Flotation Foam. Buoyancy or flotation polyurethane foam used in boat and ship manufacturing for both structural and flotation purposes.

Rigid Polyurethane One-Component Foam Sealants. A polyurethane foam generally packaged in aerosol cans that is applied *in situ* using a gaseous foam blowing agent that is also the propellant for the aerosol formulation.

Replace with: Rigid Polyurethane One-Component Foam . A polyurethane foam generally 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. A rigid closed-cell polyurethane foam formed into slabstock insulation for panels and fabricated shapes for pipes and vessels.

Stand-Alone Unit. Retail refrigerators, freezers, and reach-in coolers (either open or with doors) where all refrigeration components are integrated and 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. A stand-alone unit that maintains goods at temperatures at or below 32°F (0°C).

Stand-Alone Medium-Temperature Unit. A stand-alone unit that maintains goods at temperatures above 32°F (0 °C).

State (when capitalized). The Commonwealth of Massachusetts for disclosure requirements in 310 CMR 7.76(5).

Substance. Any chemical intended for use in the end-uses listed in 310 CMR 7.76(6).

Supermarket Systems. Multiplex or centralized retail food refrigeration equipment

Use. Any utilization of any substance including, but not limited to, utilization in a manufacturing process or product in Massachusetts, consumption by the end-user in Massachusetts, or in intermediate applications in Massachusetts, such as formulation or packaging for other subsequent applications. For the purposes of 310 CMR 7.76, Use excludes residential use, but it does not exclude manufacturing for the purpose of residential use.

Vending Machines. A self-contained unit that dispenses goods that must be kept cold or frozen.

(3) Applicability.

310 CMR 7.76 applies to any person who sells, leases, rents, offers for sale, installs, uses, or manufactures, in Massachusetts, any product or equipment for the end-uses listed in 310 CMR 7.76(6). 310 CMR 7.76 does not apply to any person in Massachusetts who uses for residential use any combination of a Household Refrigerator or Freezer, a Household Refrigerator or Freezer - Compact, or a Household Refrigerator or Freezer - Built-in.

(4) Prohibitions.

- (a) No person may sell, lease, rent, offer for sale, install, use or manufacture, in Massachusetts, any product or equipment that uses or will use a prohibited substance in the end-uses listed in 310 CMR 7.76(6), unless an exemption is provided for the end-use in 310 CMR 7.76(7).
- (b) Except where existing equipment is retrofitted, nothing in 310 CMR 7.76 requires a person that acquired a product or equipment containing a prohibited substance prior to an effective date of prohibition in 310 CMR 7.76(6): *Table 1* to cease use of that product or equipment.
- (c) Products or equipment manufactured prior to the applicable effective date of the prohibitions in 310 CMR 7.76(6): *Table 1*, including foam systems not yet applied on site or new refrigeration equipment for which a facility has received a building permit prior to the effective date of prohibition, may be sold, leased, rented, imported, exported, distributed, installed, and used on or after the effective date of prohibition.

(5) Disclosure Statement.

Except for the exemptions listed in 310 CMR 7.76(7): *Table 1*, as of the effective date of prohibition in 310 CMR 7.76(6): *Table 1*, any person who manufactures for sale in Massachusetts products or equipment in the air conditioning, refrigeration, foam, or aerosol propellant end-uses listed in 310 CMR 7.76(6), must provide a written disclosure or label to the buyer as follows.

- (a) For motor-bearing refrigeration and air conditioning equipment that is neither factory-charged nor pre-charged with refrigerant, the required disclosure or label must state "This equipment is prohibited from using any substance on the "List of Prohibited Substances" for that specific end-use, in

accordance with State regulations for hydrofluorocarbons.”

(b) Except for products and equipment with existing labeling required by State building codes and safety standards which contain the information required in 310 CMR 7.76(5)(b)1. and 2., the disclosure or label for motor-bearing refrigeration and air conditioning equipment that are factory-charged or pre-charged with a hydrofluorocarbon or hydrofluorocarbon blend shall include:

1. The date of manufacture or a date code representing the date. If the manufacturer uses a date code for any product, the manufacturer shall file an explanation of each code with the Department; and
2. The refrigerant and foam blowing agent the product or equipment contains.

(c) Except for foam products with existing labeling required by State building codes and safety standards which contain the information required in 310 CMR 7.76(5)(c)1. and 2., the disclosure or label for foam products shall include one of the two alternatives in 310 CMR 7.76(5)(c)1. and 2.:

1. Alternative 1

- a. The date of manufacture or a date code representing the date. If the manufacturer uses a date code for any product, the manufacturer shall file an explanation of each code with the Department; and
- b. The foam blowing agent the product contains, or a reference to a Safety Data Sheet (complying with 29 CFR 1910.1200 requirements), if the latter identifies the foam blowing agent the product contains.

2. Alternative 2

- a. “Where sold, compliant with State HFC regulations.”

(d) For aerosol propellants, the disclosure or label shall include one of the two alternatives in 310 CMR 7.76(5)(d)1. and 2.:

1. Alternative 1

- a. The date of manufacture or a date code representing the date, which is indicated on the label, lid, or bottom of the container. If the manufacturer uses a date code for any product, the manufacturer shall file an explanation of each code with the Department; and
- b. The aerosol propellant the product contains, or availability of a Safety Data Sheet (complying with 29 CFR 1910.1200 requirements), if the latter identifies the propellant the product contains.

2. Alternative 2

- a. “Where sold, compliant with State HFC regulations.”

(6) List of Prohibited Substances by End-Use.

310 CMR 7.76(6): *Table 1* lists prohibited substances in specific end-uses and the effective date of prohibition, unless an exemption is provided for the end-use in 310 CMR 7.76(7). The prohibitions do not apply to products and equipment in specific end-uses manufactured prior to an applicable effective date of prohibition.

Table 1: End-use and Prohibited Substances.

End-Use	Prohibited Substances	Effective Date of Prohibition
End-Use Category: Aerosol Propellants		
Aerosol Propellants	HFC-125, HFC-134a, HFC-227ea and blends of HFC-227ea and HFC-134a	January 1, 2021
End-Use Category: Air Conditioning		
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		
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

End-Use	Prohibited Substances	Effective Date of Prohibition
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 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

End-Use	Prohibited Substances	Effective Date of Prohibition
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		
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-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
Phenolic Insulation Board and Bunstock	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	July 1, 2021

End-Use	Prohibited Substances	Effective Date of Prohibition
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

(7) Exemptions.

310 CMR 7.76(7): *Table 1* lists exemptions to the prohibited substances and end-uses in 310 CMR 7.76(6).

Table 1: Exemptions

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; sprays for aerospace manufacturing and rework operations; 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 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.

(8) Recordkeeping.

As of the effective date of prohibition for each end-use listed in 310 CMR 7.76(6): *Table 1*, any person who manufactures any product or equipment in the end-uses listed in 310 CMR 7.76(6), for sale or entry into commerce in Massachusetts must maintain for five years, and make available upon request by the Department, records sufficient to demonstrate that the product or equipment does not contain any substances listed in 310 CMR 7.76(6): *Table 1* as prohibited for that end-use or that the product is exempt in accordance with 310 CMR 7.76(7).

Kingspan Insulation LLC
Supplemental Comments to Department of Environmental Quality
Hydrofluorocarbon Stakeholder Workgroup
02/09/21

During the course of the conversation at the first workgroup meeting, it appeared that most of the group thought that manufacturing was not intended to be implicated by the HFC ban contained in the state budget; however, it was acknowledged that the proposed language could be interpreted to effectively preclude the use of HFCs in a manufacturing process.

2020 Acts of Assembly, Special Session I, Chapter 56, 378 B.2, provides:

The State Air Pollution Control Board shall adopt regulations to prohibit the sale, lease, rent, installation or entry into commerce in Virginia of any products or equipment that use or will use hydrofluorocarbons for the applications and end uses restricted by Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017. *Notwithstanding the foregoing, such regulations shall not prohibit the use of hydrofluorocarbons in the manufacturing process by extruded polystyrene boardstock and billet manufacturers located in Virginia to produce products for sale and distribution outside of the Commonwealth, until the Board has solicited input from such manufacturers in order to determine and set by regulation a feasible date by which such manufacturers must be required to comply. In developing regulations, the Board shall solicit input from a workgroup of relevant stakeholders assembled by the Department.*

[Emphasis in the original.]

Because Kingspan's manufacturing equipment uses HFCs in a way implicated by the prohibition in SNAP 20 (vacated in part by DC Circuit Court) which the budget language is referencing, Kingspan sought certainty by requesting the General Assembly to explicitly allow its continued use of HFCs in the manufacture of XPS foam insulation products for sale and distribution outside of the Commonwealth.

The XPS foam insulation exemption was adopted to recognize that regardless of how the budget language could be interrupted, a Virginia based manufacturer of XPS foam insulation should not be unfairly penalized for producing a product subject to the ban so long as the product was exported to be sold outside of Virginia.

Kingspan's Proposed Approach (as submitted in its 01/19/21 comments)

1. Extruded Polystyrene (XPS) Billets and Boards manufacturers in the Commonwealth of Virginia should be allowed to continue to use HFC chemical blends for products exported to other states if permitted under Federal laws or regulations.
2. The regulations should allow DEQ to conduct a review annually of the federal regulatory scheme concerning HFCs and HFC blends in order to be consistent with evolving regulatory status; and
3. Provide a minimum of a one (1) year notice prior to implementing a specific date to cease the exemption.

This proposed approach allows Virginia to be consistent with the recently adopted AIM Act which is a major step forward in the phasedown of the use of HFCs in the United States, while at the same

time, not placing a Virginia manufacturer at a significant competitive disadvantage to the producers of the same insulation product in other states that do not similarly regulate the use of HFCs.

Implementation date of proposed HFC regulation

- The HFC ban authorized by the budget language affects a variety of businesses. At a minimum, affected businesses include building owners, architects, engineers, distributors, contractors and others that utilize products or equipment that use the banned HFCs.
- The budget language requires the contemplated regulations be adopted by July 1, 2021, however, it appears the Air Board could provide that the regulations become effective at a later date, such as December 31, 2021.
- Although the “public” is technically “on notice” of the budget language, it is unclear if a significant number of companies affected are aware of the upcoming HFC ban. Additionally, the authorized regulations are entirely exempt from the normal notice and comment periods afforded the public through the Administrative Process Act. See Item 378.B.3.
- In the absence of the APA procedural protections of notice and opportunity to be heard, the DEQ should consider an implementation timetable that commences no earlier than the end of this calendar year so that businesses will have a sufficient time to prepare for this substantial change. States such as California and Washington delayed implementation by 12-18 months from adoption of the regulation banning HFCs.

“Sell-Through” Allowance

The DEQ should include a “sell-through” allowance in the regulations to permit products and component parts manufactured prior to the effective date of the prohibition to be distributed in commerce and used until the stock is depleted. Such an allowance should cover the sale, import, export, distribution, installation and use of such products or parts. This approach is consistent with the approach taken in other states.

Streamline labeling and reporting requirements

If the DEQ is considering labeling, reporting and disclosure measures, Kingspan recommends that these requirements be only applicable to manufacturers and not extended to distributors or contractors.

Kingspan’s comments regarding labeling and reporting are applicable only to the production of XPS foam board and billet. Kingspan does not offer comment on labeling and reporting requirements of products produced in other industries that will be affected by the HFC ban.

Labeling

To the extent the DEQ is contemplating a labeling requirement, it should consider requiring suppliers of XPS foam insulation products selling into Virginia to indicate on those products that the products are compliant with Virginia’s HFC prohibition. This labeling requirement

would be applicable to products manufactured after the effective date of the prohibition and should seek to be consistent with other states that have imposed HFC bans.

Kingspan recommends that the DEQ consider requiring a label for XPS foam board and billet stock manufactured after the effective date of the prohibition, and offered for sale in Virginia, that is affixed to, or printed on, the product or product packaging and contains the following information:

- (i) the date of manufacture of the product; and
- (ii) a disclaimer stating “Where applicable, this product complies with State regulations of hydrofluorocarbons” or, “Where sold, compliant with State HFC regulations.”

Recordkeeping and Reporting

To the extent the DEQ adopts recordkeeping and reporting requirements in the regulations, Kingspan urges the DEQ to require only that information that is necessary to demonstrate compliance with the HFC prohibition. Moreover, to the extent there are any requirements specific to XPS boardstock and billet manufacturers in Virginia, Kingspan asks that the information required to be submitted to the DEQ not include proprietary trade secrets regarding the HFC blend used as a blowing agent or other information that non-Virginia based manufacturers of the same product could use for competitive intelligence purposes if access were to be granted through a Freedom of Information Request to the agency.

Proposal regarding offsetting plant level emission

At the first workgroup meeting, there was a suggestion that the HFC regulations should consider requiring an “offset” for the continued use of HFCs. It was unclear if the proponent was suggesting DEQ develop a regulation requiring the use of offsets for all business that will continue to use equipment that contain prohibited HFCs, or whether it the proposal is specific to a Virginia manufacturer of XPS foam insulation allowed to continue the use of HFCs in the manufacturing process.

Kingspan does not support an “offset” requirement pertaining only to the use of a HFC blend in the production of XPS foam insulation at a Virginia manufacturing plant and questions whether the DEQ is authorized to include such a requirement in the regulations to implement the HFC ban or whether such a requirement is consistent with the spirit and intent of the adopted budget language.

Attachment 3

Gary Graham
Office of Regulatory Affairs
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, Virginia 23218

February 9, 2021

Dear Mr. Graham,

The Natural Resources Defense Council (NRDC) appreciates the opportunity to participate in the HFC XPS Boardstock Manufacturer Compliance Date Work Group. This is one of Department of Environmental Quality's (DEQ) most impactful initiatives to date on behalf of the citizens of the Commonwealth, to address climate changing pollutants while benefitting Virginia businesses.

We applaud the department for its prompt action to establish HFC rules. NRDC has been working on the state, federal and international levels on the transition away from hydrofluorocarbons (HFCs) and toward climate-friendlier alternatives.

Effective dates of HFC prohibitions

Item 378 of the state budget directs the State Air Pollution Control Board to adopt regulations in accordance with those included in Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017.

These regulations will help Virginia avoid significant greenhouse gas emissions, since HFCs are extremely potent climate pollutants. Our interpretation of the regulation's intent is that it's meant to reduce the state's emissions by requiring certain sectors to transition toward better, climate-friendlier alternatives and avoid unnecessary emissions from HFC-containing products and equipment.

The effective date of the prohibitions outlined in Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82 are already several years in the past. For those end-uses, the prohibitions should come into effect in Virginia as soon as possible, but in any case, no later than January 1, 2022. Any delay to the prohibitions will allow additional products and equipment into the state's market. Several of these end-uses have a useful life well over a decade. If introduced today, they will continue to emit HFCs for the next 10-15 years.

Alternative compliance pathway for local manufacturer

We recognize that Kingspan's production plant located in Virginia supports local jobs and is the company's only production plant that supplies the North American market. Therefore, we don't find it necessary to ban manufacturing of XPS foams containing HFCs in Virginia, as long as those products are exported to jurisdictions that allow their use. Based on existing state laws and regulations, the use of XPS foams containing high-GWP HFCs is prohibited in California, Washington, New York, Massachusetts, Colorado, New Jersey, Maryland, Vermont, and Canada.

However, Kingspan's foam production facility contributes to Virginia's HFC emissions. Fugitive emissions from the XPS foam manufacturing process can account for 25-50% of the total blowing agent used.¹ Kingspan's XPS foam is manufactured using a blend of HFC-134a, methyl formate and cyclopentane as a blowing agent with a GWP of approximately 550.

We encourage DEQ to work with Kingspan to establish a mitigation plan, if the department determines that it has the authority to do so.

As a first step, all Virginia based manufacturers that use HFCs in their operations, including Kingspan, should voluntarily report the emissions associated with their manufacturing process. We encourage Kingspan to make a good faith effort to report the plant's HFC emissions to the department and devise a plan to mitigate or offset them. The reporting should last until the manufacturer has transitioned away from the prohibited substances.

Precedent for such an alternative compliance pathway was set in Colorado. The Colorado Department of Public Health and the Environment (CDPHE) adopted HFC prohibitions that are very similar to the ones considered in Virginia. An alternative compliance pathway was devised to allow a local chiller manufacturer to continue their operations without however entirely foregoing their emissions reduction obligations. Together, CDPHE and the local manufacturer, agreed on a mitigation plan that included regular HFC emissions reporting for as long as the manufacturer uses prohibited substances. The plan requires the manufacturer to complete projects or activities within Colorado that reduce or offset the plant's emissions.²

Reporting & recordkeeping requirements

Similar rules have been adopted in another eight states that belong to the U.S. Climate Alliance. The U.S. Climate Alliance has drafted a model rule which can be used to ensure uniformity among states. We encourage the department to use this model rule as a template to ensure as much uniformity as appropriate between Virginia and other states. Uniformity makes it less burdensome for manufacturers and suppliers to comply with the prohibitions in several states and helps enforcement.

If the department determines that existing reporting and recordkeeping requirements are sufficient for enforcement of the prohibitions in Virginia, then we encourage you to adopt requirements aligned with those of other states.

We appreciate the opportunity to provide comments and look forward to working with the department and the other stakeholders in the HFC XPS Boardstock Manufacturer Compliance Date Work Group on this issue.

Sincerely,

Christina Theodoridi

Technical Analyst
Natural Resources Defense Council

¹ https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/3_Volume3/V3_7_Ch7_ODS_Substitutes.pdf

² Regulation 22, Part B, section I.C.3. <https://drive.google.com/file/d/1Pmk0aYNazwXcBNr6vvnH2biutzhahWn8/view>

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February 9, 2021

Via email: gary.graham@deq.virginia.gov

Mr. Gary E. Graham
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
P.O. Box 1105
Richmond, VA 23218

**Re: Recommendations for Virginia Department of Environmental Quality
Forthcoming Regulations Implementing Item 378 of Chapter 1289 of the
2020 Acts of Assembly**

Dear Mr. Graham:

Owens Corning (“OC”) appreciates the opportunity to submit these recommendations to the Virginia Department of Environmental Quality (“DEQ”) regarding the forthcoming regulations required by Chapter 1289 of the 2020 Acts of Assembly, Item 378. That provision requires the Air Pollution Control Board to “adopt regulations to prohibit the sale, lease, rent, installation or entry into commerce in Virginia” of products or equipment using certain hydrofluorocarbons (“HFCs”). We present below several specific recommendations, based on OC’s experience with federal and state HFC regulation. We have also attached three recent state regulations—Colorado, Maryland, and New York—that may serve as models for DEQ’s reference.

Background

OC is a U.S. company listed on the New York Stock Exchange, with thousands of employees in dozens of facilities across the U.S. and overseas. OC is an industry leader in roofing products, insulation and composites, and has been a Fortune 500® company for 65 consecutive years. OC manufactures and markets multiple extruded polystyrene (“XPS”) moisture-resistant foam board insulation products for a variety of different building applications. OC is a public leader in safety and sustainability, as discussed in detail in its 14th Annual Sustainability Report,¹ and has been ranked #1 on the Dow Jones Sustainability World Index for the building industry for

¹ See <https://www.owenscorning.com/corporate/sustainability/docs/2020/2019-Owens-Corning-Sustainability-Report.pdf>.

10 years.² Virginia's forthcoming regulation relates to foam blowing agents for XPS boardstock and billet, and OC is one of three major market participants in the Virginia XPS market. OC appreciates the opportunity to work with DEQ and other stakeholders in the XPS boardstock and billet working group.

OC supports Virginia's forthcoming regulation. In preparation for recent regulatory changes in multiple U.S. states and Canada to replace certain HFCs with lower "global warming potential" ("GWP") alternatives, OC has taken the necessary steps to ensure XPS products manufactured with other low GWP foam blowing agents will be available in 2021 in jurisdictions that will require them. After investing tens of millions of dollars over the past decade to bring low GWP options to the XPS boardstock and billet market, we are pleased to report that we anticipate those products will be ready for market to meet the 2021 deadline that will be enacted in these regulations. In particular, while the GWP of foam blowing agents containing HFC-134a **can exceed 1,430**,³ OC's new XPS products will be manufactured with an Opteon 1100 based blend containing Opteon 1100 and HFC-152a ("Opteon 1100 Blend"), developed by another U.S. company (the Chemours Company), and that has a GWP significantly less than 150. OC's new XPS products manufactured with Opteon 1100 Blend will meet all relevant state and local building codes in the U.S. and pose no problematic fire safety risks.

Recommendations

The recommendations below reflect certain considerations that OC deems important to address market challenges and minimize administrative burdens. Carefully crafted regulations will provide regulated entities, like OC, with much-needed certainty regarding compliance obligations.

1. Inclusion of a "sell-through" provision

The regulations should clearly limit the temporal scope of the prohibitions to equipment and product manufactured **after** the applicable prohibition date. To do so, most states with HFC regulations have expressly authorized the continued sale, use, lease and rent of equipment and products manufactured prior to the prohibition date. These "sell-through" provisions provide certainty to regulated entities that they can exhaust existing stocks of product that were manufactured before the regulatory prohibitions went into effect. By way of example:

- a. **5 Colo. Code Regs. § 1001-26:B.I.C.2:** "Products or equipment manufactured prior to the applicable date of prohibition specified in Table 1 of Section I.E.1 (including spray foam systems not yet applied on site) may be sold, imported, exported, distributed, installed, serviced, and used after the specified date of prohibition."

² See <https://www.businesswire.com/news/home/20190917006057/en/Owens-Corning-Earns-Dow-Jones-Sustainability-Index>.

³ See EPA, "Notice of Proposed Rulemaking," 79 Fed. Reg. 46,125 (Aug. 6, 2014).

- b. **COMAR 26:11:33.04(B)(2):** “Products or equipment manufactured prior to the applicable effective date of the restrictions specified in Regulation .03B of this chapter (including spray foam systems not yet applied on-site) may be sold, imported, exported, distributed, installed, and used after the specified date of prohibition.”
- c. **6 NYCRR § 494.2(c):** “Products or equipment manufactured prior to the applicable prohibition specified in listed in Section 494.4 of this Part may be sold, imported, exported, transported, distributed, installed, serviced, and used after the applicable prohibition date.”

2. **Clear exclusion of “manufacture,” “transport,” and “storage” from prohibited activities**

Chapter 1289 of the 2020 Acts of Assembly, Item 378 specifically requires regulations that prohibit “the sale, lease, rent, installation or entry into commerce in Virginia” of products or equipment that use certain HFCs. It does not reference prohibitions on other activities, such as manufacture, transport, or storage of such products. To eliminate any ambiguity, the regulations should make clear that the regulatory prohibitions do not extend to manufacture, transport or storage of products or equipment in Virginia, as long as there is no resulting “sale, lease, rent, installation or entry into commerce in Virginia,” consistent with the Acts of Assembly.

3. **Retain discretion for DEQ to evaluate any potential conformance to federal requirements**

In the absence of any enacted legislation to the contrary, the regulations should provide DEQ maximum discretion to evaluate any federal Significant New Alternatives Policy requirement that approves a previously prohibited HFC, so that DEQ may choose whether to take regulatory action “to conform” Commonwealth regulations to that federal action. The regulations should give DEQ flexibility to decide **not** to adopt all federal decisions that allow previously prohibited HFCs. For example, New Jersey’s statutory provision states:

If the United States 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 established pursuant to the federal “Clean Air Act,” 42 U.S.C. s.7671k, the department **may** propose a rule in accordance with the “Administrative Procedure Act,” P.L.1968, c. 410 (C.52:14B-1 et seq.), to conform the requirements established under this section with that federal action.

N.J. Stat. Ann. § 26:2C-61(d)(2) (emphasis added).

4. **Allow simple label statement**

OC recommends that the regulation allow for a simple statement on the label to document compliance with Virginia's requirements. Moreover, the regulation should facilitate uniformity in manufacturer compliance by allowing label text that could be used in multiple states with similar HFC regulations and labeling requirements. By way of example:

- a. **5 Colo. Code Regs. § 1001-26:B.I.D.1.a.(iii):** "For foam, the disclosure or label must include the date of manufacture and hydrofluorocarbon the product contains, or the hydrofluorocarbon used to make the product. Alternatively, the disclosure or label may state: 'Where sold, compliant with State HFC regulations.'"
- b. **COMAR 26:11:33.04(C)(4):** "For foam products, the disclosure shall be a label or sticker applied to product packaging that states: 'Where sold, compliant with State HFC regulations.'"

5. **Effective Date**

OC is comfortable with an effective date as soon as 7/1/2021. The effective date should be no later than 1/1/2022. All companies should be able to meet this effective date, especially if the regulations include a sell through provision as proposed.

As noted above, we have attached for DEQ's reference, the full regulations adopted in Colorado⁴, Maryland,⁵ and New York.⁶

I would be pleased to answer any questions DEQ may have regarding these recommendations and look forward to continuing productive stakeholder discussions.

Best regards,



Paul S. Lewandowski
Director, Regulatory Law and Product Stewardship Legal Counsel

Attachments

cc: Michael G. Dowd, Virginia Department of Environmental Quality
michael.dowd@deq.virginia.gov

⁴ 5 Colo. Code Regs. § 1001-26:B.

⁵ COMAR 26:11:33.

⁶ 6 NYCRR § 494.

Attachment 1:

Colorado Regulations - 5 Colo. Code Regs. § 1001-26:B

West's Colorado Administrative Code

Title 1000. Department of Public Health and Environment

1001. Air Quality Control Commission

5 CCR 1001-26. Regulation Number 22 Colorado Greenhouse Gas Reporting and Emission Reduction Requirements (Refs & Annos)

Part B. Greenhouse Gas Emission Reduction Requirements

5 CCR 1001-26:B.I

Alternatively cited as 5 CO ADC 1001-26

1001-26:B.I. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End-Uses

Currentness

I.A. Purpose and Applicability

I.A.1. The purpose of this regulation is to reduce hydrofluorocarbon (HFC) emissions in the State of Colorado by adopting United States Environmental Protection Agency (EPA) Significant New Alternatives Policy (SNAP) Program prohibitions for certain HFCs in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses. This regulation is designed to support greenhouse gas emission reductions identified in [Colorado Revised Statutes, Section 25-7-102\(2\)\(g\)](#).

I.A.2. This regulation applies to any person, who on or after June 1, 2020, sells, offers for sale, leases, rents, installs, uses, or manufacturers in the State of Colorado any product or equipment that uses or will use a substance listed as prohibited in the end-uses listed in Section I.E.1.

I.B. Definitions

I.B.1. "Aerosol 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.

I.B.2. "Air Conditioning Equipment" means chillers, both centrifugal chillers and positive displacement chillers, intended for comfort cooling of occupied spaces.

I.B.3. "Bunstock" or "bun stock" means a large solid box-like structure formed during the production of polyurethane, polyisocyanurate, phenolic, or polystyrene insulation.

I.B.4. "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, and installation of components and/or systems, and instrumentation, and contractor and construction fees.

I.B.5. “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.

I.B.6. “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.

I.B.7. “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.

I.B.8. “Cumulatively Replaced” means the addition of, or change in, multiple components within a three-year period.

I.B.9. “Date of Prohibition” means the applicable date after which the prohibition for use of HFCs in a specific end-use provided in Section I.E. goes into effect.

I.B.10. “End-use” means processes or classes of specific applications within industry sectors, including but not limited to those listed in Section I.E.

I.B.11. “Flexible Polyurethane” means a non-rigid synthetic foam containing polymers created by the reaction of isocyanate and polyol, including but not limited to that used in furniture, bedding, and chair cushions.

I.B.12. “Foam” means a 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.

I.B.13. “Foam Blowing Agent” means a substance used to produce foam.

I.B.14. “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.”

I.B.15. “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).

I.B.16. “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.

I.B.17. “Hydrofluorocarbons” or “HFC” means a class of greenhouse gases (GHGs) consisting of hydrogen, fluorine, and carbon.

I.B.18. “Integral Skin Polyurethane” means a synthetic self-skinning foam containing polyurethane polymers formed by the reaction of an isocyanate and a polyol, including but not limited to that used in car steering wheels and dashboards.

I.B.19. “Manufacturer” means any person, firm, association, partnership, corporation, governmental entity, organization, or joint venture that produces any product that contains or uses HFCs or is an importer or domestic distributor of such a product.

I.B.20. “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.

I.B.23. “Motor-bearing” means refrigeration equipment containing motorized parts, including compressors, condensers, and evaporators.

I.B.24. “New” means products or equipment that are manufactured after the date of prohibition or equipment first installed for an intended purpose with new or used components after the date of prohibition, expanded by the addition of components to increase system capacity after the date of prohibition, or replaced or cumulatively replaced such that the cumulative capital cost of replacement after the date of prohibition exceeds 50% of the capital cost of replacing the whole system. For the purposes of this rule, a supermarket system is considered manufactured on the date upon which the refrigerant circuit is complete, the system can function, the system holds a full refrigerant charge, and the system is ready for use for its intended purposes.

I.B.25. “Phenolic Insulation Board” means phenolic insulation including but not limited to that used for roofing and wall insulation.

I.B.26. “Polyolefin” means foam sheets and tubes made of polyolefin.

I.B.27. “Polystyrene Extruded Boardstock and Billet (XPS)” means a foam formed from 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.

I.B.28. “Polystyrene Extruded Sheet” means polystyrene foam including that used for packaging. 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.

I.B.29. “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.

I.B.30. “Refrigerant” or “Refrigerant Gas” means any substance, including blends and mixtures, which is used for heat transfer purposes.

I.B.31. “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.

I.B.32. “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 refrigerators and freezers, and cold storage warehouses.

I.B.33. “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.

I.B.34. “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.

I.B.35. “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.

I.B.36. “Retrofit” means to convert a system from one refrigerant to another refrigerant. Retrofitting includes the conversion of the system 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 system components.

I.B.37. “Rigid Polyurethane and Polyisocyanurate Laminated Boardstock” means laminated board insulation made with polyurethane or polyisocyanurate foam, including that used for roofing and wall insulation.

I.B.38. “Rigid Polyurethane Appliance Foam” means polyurethane insulation foam in household appliances.

I.B.39. “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.

I.B.40. “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.

I.B.41. “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.

I.B.42. “Rigid Polyurethane Marine Flotation Foam” means buoyancy or flotation foam used in boat and ship manufacturing for both structural and flotation purposes.

I.B.43. “Rigid Polyurethane Slabstock and Other” means a rigid closed-cell foam containing urethane polymers produced by the reaction of an isocyanate and a polyol and formed into slabstock insulation for panels and fabricated shapes for pipes and vessels.

I.B.44. “Stand-alone Unit” means retail refrigerators, freezers, and reach-in coolers (either open or with doors) where all refrigeration components are integrated and the refrigeration circuit may be entirely brazed or welded. These systems are fully charged with refrigerant at the factory and typically require only an electricity supply to begin operation.

I.B.45. “Stand-alone Low-Temperature Unit” means a stand-alone unit that maintains food or beverages at temperatures at or below 32°F (0 °C).

I.B.46. “Stand-alone Medium-Temperature Unit” means a stand-alone unit that maintains food or beverages at temperatures above 32°F (0 °C).

I.B.47. “Substance” means any chemical intended for use in the end-uses listed in Section I.E of this regulation.

I.B.48. “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.

I.B.49. “Use” means any utilization of any substance, including but not limited to utilization in a manufacturing process or product in the State of Colorado, consumption by the end-user in the State of Colorado, or in intermediate applications in the State of Colorado, 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.

I.B.50. “Vending Machine” means a self-contained unit that dispenses goods that must be kept cold or frozen.

I.C. Requirements

I.C.1. Prohibitions

I.C.1.a. No person may sell, lease, rent, install, use, or manufacture in the State of Colorado, any product or equipment using a prohibited substance for any air-conditioning, refrigeration, foam, or aerosol propellant end-use listed in Section I.E.1.

I.C.2. Exemptions.

I.C.2.a. Except where an existing system is retrofit after the date of prohibition, nothing in this regulation requires a person that acquired a product or equipment containing a prohibited substance prior to the applicable date of prohibition in Section I.E.1. to cease use of that product or equipment. Products or equipment manufactured prior to the applicable date of prohibition specified in Table 1 of Section I.E.1 (including spray foam systems not yet applied on site) may be sold, imported, exported, distributed, installed, serviced, and used after the specified date of prohibition.

I.C.2.b. End-uses that are exempted from Part B, Section I. of this regulation are provided for in Section I.E.2.

I.C.3. Alternative Compliance

I.C.3.a. This regulation does not prohibit a manufacturer of positive displacement chillers in the State of Colorado from the use of prohibited substances in Section I.E.1. provided that the manufacturer meets the following requirements:

I.C.3.a.(i) The manufacturer otherwise meets all other applicable requirements of Section I.D.

I.C.3.a.(ii) The manufacturer only uses the prohibited substances to manufacture or test positive displacement chillers designated for installation outside the State of Colorado.

I.C.3.a.(iii) The manufacturer submits a mitigation plan for emissions from prohibited substances from the manufacturing facility (including testing) to the Division no later than December 31, 2021 or prior to manufacturing or testing positive displacement chillers that use prohibited substances in the State of Colorado if no manufacturing or testing occurred on or before December 31, 2021. The plan must be approved by the Division and include:

I.C.3.a.(iii)(A) Details of emission mitigation efforts whether planned or implemented at the manufacturing facility, including dates of completion for any planned efforts.

I.C.3.a.(iii)(B) Projections of annual emissions from prohibited substances from the manufacturing facility, including emissions associated with manufacturing and testing, covering at least ten (10) calendar years from the date the plan is submitted.

I.C.3.a.(iv) The manufacturer must report actual emissions from prohibited substances to the Division on an annual basis for the prior calendar year no later than March 31st after the calendar year ends.

I.C.3.a.(iv)(A) For manufacturers producing or testing positive displacement chillers in the State of Colorado on or before December 31, 2021, the first emissions report is due March 31, 2023 for calendar year 2022.

I.C.3.a.(iv)(B) For manufacturers that first produce or test positive displacement chillers in the State of Colorado after December 31, 2021, the first emissions report is due March 31st following the first calendar year during which any emissions from prohibited substances occurred.

I.C.3.a.(iv)(C) Annual emissions reporting must continue until the manufacturer has fully transitioned from use of prohibited substances for positive displacement chillers listed in Section I.E.1.

I.C.3.a.(iv)(D) Emissions must be reported in metric tons for each prohibited substance.

I.C.3.a.(v) The manufacturer must complete project(s) within the State of Colorado that reduce greenhouse gas emissions by an amount equal to or greater than any projected annual carbon dioxide equivalent (CO₂e) emissions not reduced for calendar years 2024 and beyond as part of the emissions mitigation plan identified in Section I.C.3.a.(iii).

I.C.3.a.(v)(A) Proposals for projects required under this section may be submitted as part of the emissions mitigation plan but must be submitted no later than one (1) year after approval of the mitigation plan and must be approved by the Division prior to execution.

I.C.3.a.(v)(B) Emission reductions from approved project(s) may be applied to multiple calendar years of unmitigated emissions when the projected reductions are greater than the projected unmitigated emissions on a CO₂e basis.

I.C.3.a.(v)(C) A completion report for each project must be submitted to the Division no later than ninety (90) days after the project is completed and must include the details of project work completed, the amount of CO₂e emissions reduced or avoided over the lifetime of the project, and any estimated benefits or co-benefits to the environment and community in which the project is located.

I.D. Disclosure Statement and Recordkeeping

I.D.1. Disclosure Statement

I.D.1.a. Any person who manufactures or sells in the State of Colorado a product or equipment in the air-conditioning, refrigeration, foam, or aerosol propellant end-uses listed in Section I.E.1., must provide a written disclosure to the buyer as part of the sales transaction and invoice or a label on the product or equipment as of the applicable date of prohibition for the end-use in Section I.E.1.

I.D.1.a.(i) For motor-bearing refrigeration and air-conditioning equipment that is not factory-charged or pre-charged with refrigerant, the disclosure or label must state:

“This equipment is prohibited from using any substance on the “List of Prohibited Substances” for that specific end-use, in accordance with State regulations for hydrofluorocarbons.”

I.D.1.a.(ii) Except for products and equipment with existing labeling required by state or local building codes and safety standards which contain the information required in this subsection I.D.2.a.ii., the disclosure or label for

refrigeration and air-conditioning equipment that are factory-charged or pre-charged with an HFC or HFC blend must include the date of manufacture and the refrigerant and foam blowing agent the product or equipment contains.

I.D.1.a.(iii) For foam, the disclosure or label must include the date of manufacture and hydrofluorocarbon the product contains or the hydrofluorocarbon used to make the product. Alternatively, the disclosure or label may state: “Where sold, compliant with State HFC regulations.”

I.D.1.a.(iv) For aerosol propellant products, the disclosure or label must include the date of manufacture and the hydrofluorocarbon the product contains or the hydrofluorocarbon used to make the product. Alternatively, the disclosure requirement may be met if the hydrofluorocarbon the product contains or the hydrofluorocarbon used to make the product is listed in a Safety Data Sheet for the product that complies with the requirements of [29 CFR 1910.1200](#) (effective February 8, 2013).

I.D.2. Recordkeeping

I.D.2.a. Any person who manufactures any product or equipment in the end uses listed in Section I.E.1. for sale or entry into commerce in the State of Colorado must maintain records sufficient to demonstrate that the product or equipment does not contain applicable prohibited substances listed in Section I.E.1. as of the date of prohibition for that end-use or that the product or equipment is exempt in accordance with Section I.E.2.

I.D.2.b. Records must be maintained for five (5) years and made available to the Division upon request.

I.E. List of Prohibited Substances and Exemptions

I.E.1. Table 1 lists prohibited substances in specific end-uses and the date of prohibition for each end-use, unless an exemption is provided for in Section I.E.2.

Table 1: End-Use, Prohibited Substances, and Date of Prohibition

End-Use Category: Aerosol Propellants		
End-Use	Prohibited Substances	Date of Prohibition
Aerosol Propellants	HFC-125, HFC-134a, HFC-227ea and blends of HFC-227ea and HFC-134a	January 1, 2021
End-Use Category: Air Conditioning		
End-Use	Prohibited Substances	Date of Prohibition
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	January 1, 2024

	(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	
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	Date of Prohibition
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),	January 1, 2021

	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	
Household Refrigerators and Freezers--Built-in (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,	January 1, 2021

	R-426A, R-428A, R-434A, R-437A, R438A, R-507A, RS-24 (2002 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 (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
Vending Machines (Retrofit)	R-404A, R-507A	January 1, 2021
End-Use Category: Foams		
End-Use	Prohibited Substances	Date of Prohibition
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
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 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 Polyurethane Low-pressure Two-component Spray Foam	HFC-134a, HFC-245fa, and blends thereof; blends of HFC365mfc with at	January 1, 2021

	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	
Rigid Polyurethane 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

I.E.2. Table 2 lists exemptions to the prohibitions in Section I.E.1.

Table 2: Exemptions.

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; U.S. Food and Drug Administration (FDA)-approved MDIs for medical purposes; wound care sprays; topical coolant sprays for pain relief; products for removing bandage adhesives from skin; bear spray; and law enforcement pepper spray.

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 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 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 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.

Credits

Adopted July 15, 2020.

Current through CR, Vol. 43, No. 23, December 10, 2020. Some sections may be more current, see credits for details.

5 CCR 1001-26:B.I, 5 CO ADC 1001-26:B.I

End of Document

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Attachment 2:

Maryland Regulations – COMAR 26:11:33

Code of Maryland Regulations

Title 26. Department of the Environment

Subtitle 11. Air Quality

Chapter 33. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End--Uses

COMAR T. 26, Subt. 11, Ch. 33, Refs & Annos

[Currentness](#)

Editors' Notes

Authority: [Environment Article, §§1-404, 2-103, 2-301--303, 2-1202, and 2-1205](#), Annotated Code of Maryland

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

End of Document

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Code of Maryland Regulations

Title 26. Department of the Environment

Subtitle 11. Air Quality

Chapter 33. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End--Uses (Refs & Annos)

COMAR 26.11.33.01

.01 Applicability.

Currentness

This chapter applies to any person who sells, offers for sale, leases, rents, installs, uses, or manufactures in the State any substance for use in an end-use listed in Regulation .03 of this chapter or any product or equipment using such a substance.

Credits

Adopted Nov. 2, 2020.

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

COMAR 26.11.33.01, MD ADC 26.11.33.01

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Code of Maryland Regulations

Title 26. Department of the Environment

Subtitle 11. Air Quality

Chapter 33. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End--Uses (Refs & Annos)

COMAR 26.11.33.02

.02 Definitions.

Currentness

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "Aerosol propellant" means a compressed gas that serves to dispense the contents of an aerosol container when the pressure is released.

(2) "Air conditioning equipment" means chillers, both centrifugal chillers and positive displacement chillers, intended for comfort cooling of occupied spaces.

(3) "Bunstock" or "bun stock" means a large solid block-like structure formed during the production of polyurethane, polyisocyanurate, phenolic, or polystyrene insulation.

(4) "Capital cost" means an expense incurred in the production of goods or in rendering services, including the cost of engineering, purchase, and installation of components or systems, and instrumentation, and contractor and construction fees.

(5) Centrifugal Chiller.

(a) "Centrifugal chiller" means air conditioning equipment that utilizes a centrifugal compressor in a vapor-compression refrigeration cycle typically used for commercial comfort air conditioning.

(b) "Centrifugal chiller" does not include cooling for industrial process cooling and refrigeration.

(6) "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.

(7) "Component" means:

- (a) A part of a refrigeration system, including condensing units, compressors, condensers, evaporators, and receivers; and
- (b) All of a refrigeration system's connections and subassemblies, without which the refrigeration system will not properly function or will be subject to failures.
- (8) "Cumulatively replaced" means the addition of or change in multiple components within a 3-year period.
- (9) "Effective date" or "effective date of prohibition" means the date of manufacture after which the prohibitions provided in Regulation .03B of this chapter go into effect.
- (10) "End-use" means processes or classes of specific applications within industry sectors, including those listed in Regulation .03B of this chapter.
- (11) "Flexible polyurethane" means a non-rigid synthetic foam containing polymers created by the reaction of isocyanate and polyol, including that used in furniture, bedding, and chair cushions.
- (12) "Foam" means a 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.
- (13) "Foam blowing agent" means a substance used to produce foam.
- (14) Household Refrigerators and Freezers.
- (a) "Household refrigerators and freezers" means refrigerators, refrigerator-freezers, freezers, and miscellaneous household refrigeration appliances intended for residential use.
- (b) "Household refrigerators and freezers" does not include household refrigerators and freezers - compact or household refrigerators and freezers - built-in.
- (15) Household Refrigerators and Freezers - Built-In.
- (a) "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.
- (b) "Household refrigerators and freezers - built-in" contain sides which are not finished and not designed to be visible after installation.

- (c) “Household refrigerators and freezers - built-in” are designed, intended, and marketed exclusively to be:
- (i) Installed totally encased by cabinetry or panels that are attached during installation;
 - (ii) Securely fastened to adjacent cabinetry, walls, or floor; and
 - (iii) Equipped with an integral factory-finished face or accept a custom front panel.
- (16) “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).
- (17) “Hydrofluorocarbons (HFCs)” means a class of greenhouse gases that are saturated organic compounds containing hydrogen, fluorine, and carbon.
- (18) “Integral skin polyurethane” means a synthetic self-skinning foam containing polyurethane polymers formed by the reaction of an isocyanate and a polyol, such as that used in car steering wheels and dashboards.
- (19) “Manufacturer” means any person, firm, association, partnership, corporation, governmental entity, organization, or joint venture that produces any product that contains or uses hydrofluorocarbons or is an importer or domestic distributor of such a product.
- (20) “Medical dose inhaler”, “Metered dose inhaler” or “MDI” means a device that:
- (a) 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; and
 - (b) Consists of a pressurized canister of medication in a case with a mouthpiece.
- (21) “Miscellaneous residential refrigeration appliance” means a residential refrigeration appliance smaller than a refrigerator, refrigerator-freezer, or freezer, including coolers, cooler compartments, and combination cooler refrigeration or cooler freezer products.
- (22) “Motor-bearing” means refrigeration equipment containing motorized parts, including compressors, condensers, and evaporators.
- (23) “New” means products or equipment:

- (a) That are manufactured after the effective date of this chapter;
 - (b) First installed for an intended purpose with new or used components after the effective date of this chapter;
 - (c) Expanded after the effective date of this chapter, to handle an expanded cooling load by the addition of components in which the capacity of the system is increased, including refrigerant lines, evaporators, compressors, and condensers;
or
 - (d) Replaced or cumulatively replaced after the effective date of this chapter such that the capital cost of replacing or cumulatively replacing components after the effective date of this chapter exceeds 50 percent of the capital cost of replacing the whole system.
- (24) “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.
- (25) “Phenolic insulation board” means phenolic insulation including that used for roofing and wall insulation.
- (26) “Polyolefin” means foam sheets and tubes made of polyolefin.
- (27) “Polystyrene extruded boardstock and billet (XPS)” means a foam formed from 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, flooring, and pipes.
- (28) “Polystyrene extruded sheet” means polystyrene foam, including that used for packaging and 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.
- (29) Positive Displacement Chiller.
- (a) “Positive displacement chiller” means vapor compression cycle chillers that use positive displacement compressors, typically used for commercial comfort air conditioning.
 - (b) “Positive displacement chiller” does not include cooling for industrial process cooling and refrigeration.
- (30) “Refrigerant” or “refrigerant gas” means any substance, including blends and mixtures, which is used for heat transfer purposes.
- (31) Refrigerated Food Processing and Dispensing Equipment.

(a) “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 chilled and frozen beverages, ice cream, and whipped cream.

(b) “Refrigerated food processing and dispensing equipment” does not include water coolers or units designed solely to cool and dispense water.

(32) “Refrigeration equipment” means any stationary device that is designed to contain and use refrigerant gas, including commercial refrigeration equipment, household refrigeration equipment, and cold storage warehouses.

(33) “Remote condensing units” means retail refrigeration equipment or units that:

(a) Have a central condensing portion, and other parts of the system, located outside the space or area cooled by an evaporator;

(b) May consist of compressor(s), condenser(s), and receiver(s) assembled into a single unit, which may be located external to the sales area; and

(c) Are commonly installed in convenience stores, specialty shops (for example, bakeries, butcher shops), supermarkets, restaurants, and other locations where food is stored, served, or sold.

(34) Residential Use.

(a) “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.

(b) “Residential use” does not include use within a household for commercial or medical application, or in automobiles, watercraft, or aircraft.

(35) “Retail food refrigeration” or “commercial refrigeration” means equipment designed to store and display chilled or frozen goods for commercial sale including stand-alone units, refrigerated food processing and dispensing equipment, remote condensing units, supermarket systems, and vending machines.

(36) Retrofit.

(a) “Retrofit” means to convert an appliance from one refrigerant to another refrigerant.

(b) “Retrofit” includes the conversion of the appliance to achieve system compatibility with the new refrigerant and may include changes in lubricants, gaskets, filters, driers, valves, o-rings, or appliance components.

(37) “Rigid polyurethane and polyisocyanurate laminated boardstock” means laminated board insulation made with polyurethane or polyisocyanurate foam, including that used for roofing and wall insulation.

(38) “Rigid polyurethane appliance foam” means polyurethane insulation foam in household appliances.

(39) “Rigid polyurethane commercial refrigeration and sandwich panels” means polyurethane insulation for use in walls and doors, including that used for commercial refrigeration equipment and garage doors.

(40) “Rigid polyurethane high-pressure two-component spray foam” means a foam product that:

- (a) Is pressurized 800 - 1600 pounds per square inch (psi) during manufacture;
- (b) Is sold in pressurized containers as two parts (that is, A-side and B-side);
- (c) Is blown and applied in situ using high-pressure pumps to propel the foam components; and
- (d) May use liquid blowing agents without an additional propellant.

(41) “Rigid polyurethane low-pressure two-component spray foam” means a foam product that:

- (a) Is pressurized to less than 250 psi during manufacture;
- (b) Is sold in pressurized containers as two parts (that is, A-side and B-side); and
- (c) Is typically applied in situ relying upon a gaseous foam blowing agent that also serves as a propellant so pumps typically are not needed.

(42) “Rigid polyurethane marine flotation foam” means buoyancy or flotation foam used in boat and ship manufacturing for both structural and flotation purposes.

(43) “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.

(44) “Rigid polyurethane slabstock and other” means a rigid closed-cell foam containing urethane polymers produced by the reaction of an isocyanate and a polymer and formed into slabstock insulation for panels and fabricated shapes for pipes and vessels.

(45) “Stand-alone low-temperature unit” means a stand-alone unit that maintains food or beverages at temperatures at or below 32°F (0°C).

(46) “Stand-alone medium-temperature unit” means a stand-alone unit that maintains food or beverages at temperatures above 32°F (0°C).

(47) “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, and all are fully charged with refrigerant at the factory and typically requires only an electricity supply to begin operation.

(48) “Substance” means any chemical intended for use in the end-uses listed in Regulation .03B of this chapter.

(49) “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.

(50) Use.

(a) “Use” means any utilization of a compound or any substance, including utilization in a manufacturing process or product in the State, consumption by the end-user in the State, or in intermediate applications in the State, such as formulation or packaging for other subsequent applications.

(b) “Use” includes manufacturing for the purpose of residential use.

(c) “Use” does not include residential use.

(51) “Vending machines” means self-contained commercial food refrigeration equipment that dispense goods that must be kept hot, cold or frozen.

Credits

Adopted Nov. 2, 2020.

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

COMAR 26.11.33.02, MD ADC 26.11.33.02

Code of Maryland Regulations

Title 26. Department of the Environment

Subtitle 11. Air Quality

Chapter 33. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End--Uses (Refs & Annos)

COMAR 26.11.33.03

.03 List of Prohibited Substances.

Currentness

A. The table under § B of this regulation lists prohibited substances in specific end-uses and the applicable effective date of prohibition, unless an exemption is provided for in § C of this regulation. The prohibitions do not apply to products or equipment manufactured for listed end-uses prior to an applicable effective date.

B. 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, 2021
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,	January 1, 2024

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

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, 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,	January 1, 2023

	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	
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 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,	January 1, 2021

	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)	
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
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	July 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	July 1, 2021
Rigid polyurethane (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	July 1, 2021
Rigid polyurethane (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	July 1, 2021

C. Table 2 -- HFC Prohibition Exemptions. The following table lists exemptions to the prohibitions in § B of this regulation.

End-Use Category	Prohibited Substances	Acceptable Uses
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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 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.

Credits

Adopted Nov. 2, 2020.

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

COMAR 26.11.33.03, MD ADC 26.11.33.03

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Code of Maryland Regulations

Title 26. Department of the Environment

Subtitle 11. Air Quality

Chapter 33. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End--Uses (Refs & Annos)

COMAR 26.11.33.04

.04 General Requirements.

Currentness

A. No person may sell, lease, rent, install, use, or manufacture in the State, any product or equipment if it consists of, uses, or will use a listed substance for use in an end-use listed in Regulation .03B of this chapter, unless an exemption is listed in Regulation .03C of this chapter.

B. Existing Products and Equipment.

(1) Except where an existing system is retrofitted, nothing in this chapter requires a person that acquired a product or equipment containing a prohibited substance prior to the effective date of the prohibition in Regulation .03B of this chapter to cease use of that product or equipment.

(2) Products or equipment manufactured prior to the applicable effective date of the restrictions specified in Regulation .03B of this chapter (including spray foam systems not yet applied on-site) may be sold, imported, exported, distributed, installed, and used after the specified date of prohibition.

C. Disclosure Statement.

(1) Except for acceptable uses as listed in Regulation .03C of this chapter, as of the effective date listed in Regulation .03B of this chapter, any person who manufactures for sale, lease, rent, install, or use products or equipment in the air-conditioning, refrigeration, foam, or aerosol propellant end-uses listed in Regulation .03 of this chapter, shall provide a written disclosure to the buyer.

(2) For motor-bearing refrigeration and air-conditioning equipment that is not factory-charged or pre-charged with a refrigerant, the disclosure or label shall state: "This equipment is prohibited from using any substance on the "List of Prohibited Substances" for that specific end-use, in accordance with State regulations for hydrofluorocarbons."

(3) Except for products and equipment with existing labeling required by State building codes and safety standards which contain the information required in this subsection, the disclosure or label for refrigeration and air-conditioning equipment that are factory-charged or pre-charged with a refrigerant shall include:

- (a) The date of manufacture; and
 - (b) The refrigerant and foam blowing agent the product or equipment contains.
- (4) For foam products, the disclosure shall be a label or sticker applied to product packaging that states: “Where sold, compliant with State HFC regulations.”
- (5) For aerosol products:
- (a) Each aerosol propellant product shall comply with the product-dating requirements in [COMAR 26.11.32.13](#); and
 - (b) The propellant shall be listed in a Safety Data Sheet that complies with the requirements of [29 CFR § 1910.1200](#).

Credits

Adopted Nov. 2, 2020.

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

COMAR 26.11.33.04, MD ADC 26.11.33.04

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Chapter 33. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End--Uses (Refs & Annos)

COMAR 26.11.33.05

.05 Reporting.

Currentness

A. Any person who manufactures for sale, lease, rent, install, or use products or equipment that contain or use a substance listed in Regulation .03B of this chapter for specific end-uses listed in Regulation .03B of this chapter, shall follow the reporting requirements as specified in §§ B and C of this regulation.

B. Initial Notification.

(1) Within 90 days of the effective date of this chapter, each manufacturer shall provide the Department an initial status notification of the status of products or equipment within each end-use listed in Regulation .03B of this chapter that uses or is designed to use substances listed in Regulation .03B of this chapter.

(2) The initial status notification according to § B(1) of this regulation shall include:

(a) Contact information for the manufacturer;

(b) The name of the party authorized to represent the manufacturer for purposes of providing initial status notifications and status updates;

(c) All end-use categories that are applicable to the manufacturer;

(d) Which refrigerant, aerosol propellant, or foam blowing agent is being used by products within each end-use applicable to the manufacturer; and

(e) The signature and certification of the authorized representative for the manufacturer.

C. Status Update Notification.

(1) Manufacturers shall follow the requirements in § B of this regulation annually until products or equipment within each end-use listed in Regulation .03B of this chapter cease use of substances listed in Regulation .03B of this chapter.

(2) Manufacturers subject to this regulation shall notify the Department in writing when products or equipment within each end-use listed in Regulation .03B of this chapter cease use of substances listed in Regulation .03B of this chapter.

Credits

Adopted Nov. 2, 2020.

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

COMAR 26.11.33.05, MD ADC 26.11.33.05

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COMAR 26.11.33.06

.06 Record Keeping.

Currentness

A. As of the effective date of this chapter, any person who manufactures for sale, lease, rent, install, or use products or equipment in the end uses listed in Regulation .03B of this chapter shall maintain for 3 years a copy of the following records, where applicable:

- (1) The date of manufacture of the equipment or product;
- (2) The refrigerant, aerosol propellant, and foam blowing agent(s) blend that the equipment or product is designed to use;
- (3) The refrigerant, aerosol propellant, and foam blowing agent(s) in the equipment or product; and
- (4) A copy of the disclosure statement, label, or sticker issued to the buyer or recipient.

B. Any person who manufactures any product or equipment in the end uses listed in Regulation .03B of this chapter, shall make available, upon request, a copy of the records in § A of this regulation.

Credits

Adopted Nov. 2, 2020.

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

COMAR 26.11.33.06, MD ADC 26.11.33.06

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Title 26. Department of the Environment

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Chapter 33. Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End--Uses (Refs & Annos)

COMAR 26.11.33.9999

.9999. Administrative History

Currentness

Credits

Effective date: November 2, 2020 (47:22 Md. R. 936)

Complete through Maryland Register Vol. 47, Issue 25 dated Dec. 4, 2020. Some sections may be more current, see credits for details.

COMAR 26.11.33.9999, MD ADC 26.11.33.9999

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Attachment 3:

New York Regulations - 6 NYCRR § 494

Compilation of Codes, Rules and Regulations of the State of New York
Title 6. Department of Environmental Conservation
Chapter IV. Quality Services
Subchapter I. Climate Change
Part 494. Hydrofluorocarbon Standards and Reporting

NYCRR Title 6, Ch. IV, Subch. I, Pt. 494, Refs & Annos
[Currentness](#)

Current with amendments included in the New York State Register, Volume XLIII, Issue 5 dated February 3, 2021. Court rules under Title 22 and Executive Orders under Title 9 may be more current.

End of Document

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Compilation of Codes, Rules and Regulations of the State of New York
Title 6. Department of Environmental Conservation
Chapter IV. Quality Services
Subchapter I. Climate Change
Part 494. Hydrofluorocarbon Standards and Reporting (Refs & Annos)

6 NYCRR 494.1

Section 494.1. Purpose

Currentness

(a) This Part adopts prohibitions for certain hydrofluorocarbon substances in air conditioning and refrigeration equipment, aerosol propellants, and foam end-uses.

(b) The purpose of this Part is to control the emissions of greenhouse gases as a component of air pollution and driver of climate change, and to provide for the protection of the environment and natural resources of the State.

Credits

Filed Sept. 24, 2020 eff. Oct. 24, 2020.

Current with amendments included in the New York State Register, Volume XLIII, Issue 5 dated February 3, 2021. Court rules under Title 22 and Executive Orders under Title 9 may be more current.

N.Y. Comp. Codes R. & Regs. tit. 6, § 494.1, 6 NY ADC 494.1

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Compilation of Codes, Rules and Regulations of the State of New York
Title 6. Department of Environmental Conservation
Chapter IV. Quality Services
Subchapter I. Climate Change
Part 494. Hydrofluorocarbon Standards and Reporting (Refs & Annos)

6 NYCRR 494.2

Section 494.2. Applicability

Currentness

(a) This Part applies to any person who sells, offers for sale, installs, uses, or enters into commerce in the State of New York, any substance in end-uses listed in Section 494.4 of this Part.

(b) Substances used in end-uses listed in Section 494.5 of this Part are exempt from the prohibitions listed in Section 494.4 of this Part.

(c) Except where an existing system is retrofit after the applicable prohibition date, nothing in this regulation requires a person that acquired a product or equipment containing a prohibited substance prior to the applicable date of prohibition listed in Section 494.4 of this Part to cease use of that product or equipment. Products or equipment manufactured prior to the applicable prohibition specified in listed in Section 494.4 of this Part may be sold, imported, exported, transported, distributed, installed, serviced, and used after the applicable prohibition date.

Credits

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Title 6. Department of Environmental Conservation
Chapter IV. Quality Services
Subchapter I. Climate Change
Part 494. Hydrofluorocarbon Standards and Reporting (Refs & Annos)

6 NYCRR 494.3

Section 494.3. Definitions

Currentness

For the purposes of this Part, the following definitions apply:

- (a) *Aerosol Propellant*. A liquefied or compressed gas that is used in whole or part, such as a cosolvent, to expel a liquid or other material from the same self-pressurized container or from a separate container.
- (b) *Air Conditioning Equipment*. Chillers, both centrifugal chillers and positive displacement chillers, intended for comfort cooling of occupied spaces.
- (c) *Capital Cost*. An expense incurred in the 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.
- (d) *Centrifugal Chiller*. Air conditioning equipment that utilizes a centrifugal compressor in a vapor-compression refrigeration cycle intended for comfort cooling, but not cooling for industrial process cooling and refrigeration.
- (e) *Cold Storage Warehouse*. 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.
- (f) *Component*. 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.
- (g) *Cumulative Replacement*. The addition of or change in multiple components within a three-year period.
- (h) *Department*. The New York State Department of Environmental Conservation.
- (i) *End-use*. Processes or classes of specific applications within industry sectors, including but not limited to those listed in Sections 494.4 and 494.5 of this Part.

(j) *Flexible Polyurethane*. A non-rigid polyurethane foam.

(k) *Foam*. A 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.

(l) *Household Refrigerators and Freezers*. Refrigerators, refrigerator-freezers, freezers, and miscellaneous household refrigeration appliances intended for residential use, but does not include household refrigerators and freezers - compact, or household refrigerators and freezers - built-in.

(m) *Household Refrigerators and Freezers -- Built-in*. 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.

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

(o) *Integral Skin Polyurethane*. A self-skinning polyurethane foam.

(p) *Metered Dose Inhaler; or Medical Dose Inhaler; or MDI*. A device that delivers a measured amount of medication as a mist that a patient can inhale and consists of a pressurized canister of medication in a case with a mouthpiece.

(q) *Miscellaneous Residential Refrigeration Appliance*. A residential refrigeration appliance smaller than a refrigerator, refrigerator-freezer, or freezer, including coolers, cooler compartments, and combination cooler refrigeration or cooler freezer products.

(r) *Motor-bearing equipment*. Equipment containing motorized parts. This includes compressors, condensers, and evaporators.

(s) *New*. Products or equipment that are manufactured after the effective date of this Part or installed with new or used components, expanded by the addition of components to increase system capacity after the effective date of this Part, or replaced or cumulatively replaced after the effective date of this Part such that the cumulative capital cost of replacement exceeds 50% of the capital cost of replacing the whole system.

(t) *Person*. Any individual, firm, association, organization, manufacturer, distributor, partnership, business trust, corporation, limited liability company, company, state, or local governmental agency or public district.

(u) *Phenolic Insulation Board and Bunstock*. Boards, blocks, or other shapes fabricated with phenolic foam insulation.

(v) *Polyolefin*. Foam sheets and tubes made of polyolefin.

(w) *Polystyrene Extruded Boardstock and Billet (XPS)*. Polystyrene foam produced on extruding machines in the form of continuous foam slabs which can be cut and shaped into panels.

(x) *Polystyrene Extruded Sheet*. Polystyrene foam produced on extruding machines in the form of sheets.

(y) *Positive Displacement Chiller*. Vapor compression cycle chillers that use positive displacement compressors, typically used for commercial comfort air conditioning intended for comfort cooling, but not cooling for industrial process cooling and refrigeration.

(z) *Prohibition Date*. The date after which new or retrofit equipment or products are prohibited, where applicable.

(aa) *Refrigerant or Refrigerant Gas*. Any substance, including blends and mixtures, that is used for heat transfer purposes.

(bb) *Refrigerated Food Processing and Dispensing Equipment*. 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, but not water coolers, or units designed solely to cool and dispense water.

(cc) *Refrigeration Equipment*. 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.

(dd) *Remote Condensing Units*. Retail refrigeration equipment or units that consist of compressor(s), condenser(s), and receiver(s) assembled into a single unit, but where the condensing portion is not located in the space or area cooled by the evaporator.

(ee) *Residential use*. 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, but does not mean use within a household for commercial purposes.

(ff) *Retail Food Refrigeration or Commercial Refrigeration*. 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.

(gg) *Retrofit*. To convert equipment from one refrigerant to another refrigerant including the conversion of the equipment 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 components.

(hh) *Rigid Polyurethane and Polyisocyanurate Laminated Boardstock*. Laminated board insulation made with polyurethane or polyisocyanurate foam.

(ii) *Rigid Polyurethane Appliance Foam*. Polyurethane foam in domestic appliances used for insulation.

(jj) *Rigid Polyurethane Commercial Refrigeration and Sandwich Panels*. Polyurethane foam used to provide insulation in walls and doors of commercial refrigeration equipment.

(kk) *Rigid Polyurethane High-pressure Two-component Spray Foam*. A liquid polyurethane foam system sold as two parts in non-pressurized containers that is field or factory applied using high-pressure proportioning pumps at 800-1600 pounds per square inch and an application gun to mix and dispense the chemical components.

(ll) *Rigid Polyurethane Low-pressure Two-component Spray Foam*. A liquid polyurethane foam system sold as two parts in containers that are pressurized to less than 250 pounds per square inch during manufacture of the system for application without pumps and are typically applied in situ relying upon a liquid and/or gaseous blowing agent that also serves as a propellant.

(mm) *Rigid Polyurethane Marine Flotation Foam*. Buoyancy or flotation polyurethane foam used in boat and ship manufacturing for both structural and flotation purposes.

(nn) *Rigid Polyurethane One-component Foam Sealants*. A polyurethane foam generally packaged in aerosol cans that is applied in situ using a gaseous foam blowing agent that is also the propellant for the aerosol formulation.

(oo) *Rigid Polyurethane Slabstock and Other*. A rigid closed-cell polyurethane foam formed into slabstock insulation for panels and fabricated shapes for pipes and vessels.

(pp) *Stand-alone Unit*. Retail refrigerators, freezers, and reach-in coolers (either open or with doors) where all refrigeration components are integrated and, the refrigeration circuit may be entirely brazed or welded; systems fully charged with refrigerant at the factory and typically require only an electricity supply to begin operation.

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

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

(ss) *Substance*. Any chemical intended for use in the end-uses listed in Section 494.4 of this Part.

(tt) *Supermarket Systems*. 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. For the purposes of this rule, a supermarket system is considered manufactured on the date upon which the refrigerant circuit is complete, the system can function, the system holds a full refrigerant charge, and the system is ready for use for its intended purpose.

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

(vv) *Vending Machines*. Self-contained commercial food refrigeration equipment that dispense goods that must be kept cold or frozen.

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6 NYCRR 494.4

Section 494.4. Prohibitions

Currentness

No person may sell, supply, offer for sale, install, use, or enter into commerce, in the State of New York, any listed substance for use in any end-use listed in the following table, unless an exemption is provided for in Section 494.5 of this Part.

(a) End-Use Category -- Aerosol Propellants

End-Use	Prohibited Substances	Prohibition Date
1) Aerosol Propellants	HFC-125, HFC-134a, HFC-227ea and blends of HFC-227ea and HFC-134a	January 1, 2021

(b) End-Use Category -- Air Conditioning

End-Use	Prohibited Substances	Prohibition Date
1) Centrifugal Chillers (New)	FOR12A, FOR12B, HFC-134a, HFC-227ea, HFC-236fa, HFC-245fa, 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, R-438A, R-507A, RS-44 (2003 composition), THR-03	January 1, 2024
2) Positive Displacement Chillers (New)	FOR12A, FOR12B, HFC-134a, HFC-227ea, KDD6, 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,	January 1, 2024

R-417A, R-421A, R-422B,
R-422C, R-422D, R-424A,
R-434A, R-437A, R-438A,
R-507A, RS-44 (2003
composition), SP34E,
THR-03

(c) End-Use Category -- Refrigeration

End-Use	Prohibited Substances	Prohibition Date
(1) 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
(2) 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
(3) 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

(4) 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, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R-424A, R-428A, R-434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation).	January 1, 2021
(5) 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
(6) Supermarket Systems (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021
(7) 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
(8) Remote Condensing Units (Retrofit)	R-404A, R-407B, R-421B, R-422A, R-422C, R-422D, R-428A, R-434A, R-507A	January 1, 2021
(9) Stand-alone Units Medium Temperature (New)	FOR12A, FOR12B, HFC-134a, 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, R-422A, R-422B, R-422C, R-422D, R-424A, R-426A, R-428A, R-434A, R-437A, R-438A, R-507A, RS-24 (2002 formulation), RS-44 (2003 formulation), SP34E, THR-03	January 1, 2021
(10) Stand-alone Units Low Temperature (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, R-422A, R-422B, R-422C, R-422D, R-424A, R-428A, R-434A, R-437A, R-438A, R-507A, RS-44 (2003 formulation)	January 1, 2021

(11) Stand-alone Units (Retrofit)	R-404A, R-507A	January 1, 2021
(12) Vending machines (New)	FOR12A, FOR12B, HFC-134a, KDD6, 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-426A, R-437A, R-438A, R-507A, RS-24 (2002 formulation), SP34E	January 1, 2022
(13) Vending machines (Retrofit)	R-404a, R-507a	January 1, 2021
(14) Cold Storage Warehouses (New)	HFC-227ea, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407A, R-407B, R-410A, R-410B, R-417A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R-423A, R-424A, R-428A, R-434A, R-438A, R-507A, and RS-44 (2003 composition)	January 1, 2023

(d) End-Use Category -- Foam

End-Use	Prohibited Substances	Prohibition Date
(1) Rigid Polyurethane and Polyisocyanurate Laminated Boardstock	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021
(2) Flexible Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021
(3) Integral Skin Polyurethane	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
(4) Polystyrene Extruded Sheet	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
(5) Phenolic Insulation Board and Bunstock	HFC-143a, HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof	January 1, 2021

(6) Rigid Polyurethane Slabstock and Other	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
(7) Rigid Polyurethane Appliance Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
(8) Rigid Polyurethane Commercial Refrigeration and Sandwich Panels	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
(9) Polyolefin	HFC-134a, HFC-245fa, HFC-365mfc, and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
(10) Rigid Polyurethane Marine Flotation Foam	HFC-134a, HFC-245fa, HFC-365mfc and blends thereof; Formacel TI, Formacel Z-6	January 1, 2021
(11) 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
(12) 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
(13) 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
(14) 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	January 1, 2021

remainder HFC-365mfc;
Formacel TI

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6 NYCRR 494.5

Section 494.5. Exemptions

Currentness

The following table lists exemptions to the prohibitions listed in Section 494.4 of this Part..

(a) Table of Acceptable Uses

End-Use Category	Prohibited Substances	Acceptable Uses
(1) 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; 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 Metered Dose Inhalers for medical purposes; wound care sprays; topical coolant sprays for pain relief; and products for removing bandage adhesives from skin.
(2) Aerosol Propellants	HFC-227ea and blends of HFC-227ea and HFC-134a	FDA-approved Metered Dose Inhalers for medical purposes.
(3) 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.
(4) 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.
(5) Foams -- Except Rigid polyurethane (PU) spray foam	All substances in Section 494.4 of this Part prohibited for the foam end-use category	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.
(6) Foams -- Except Rigid polyurethane (PU) spray foam	All substances in Section 494.4 of this Part prohibited for the foam end-use category	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.

(7) Rigid polyurethane (PU) two-component spray foam

All substances in Section 494.4 of this Part prohibited for the foam-end use category

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.

(8) All End-Use Categories

Any substance prohibited from use in Section 494.4 of this Part.

Residential use as defined in Section 494.3 of this Part.

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6 NYCRR 494.6

Section 494.6. Administrative Requirements

Currentness

(a) Any person who manufactures for sale or entry into commerce in the State of New York new motor-bearing equipment or new foam products in the end-uses listed and after the applicable prohibition dates in Section 494.4 of this Part, must provide: (i) a written disclosure statement to the buyer as part of the sales transaction and invoice; or (ii) a label on the equipment, product, or its packaging.

(b) The written disclosure statement or label may be combined with such statements required by other jurisdictions.

(c) The written disclosure statement or label must state that the motor-bearing refrigeration equipment or foam product may only be used in the State of New York with substances that are in compliance with New York State regulations.

(d) If not combined with a written disclosure statement required by another jurisdiction, the written disclosure shall include the following statement signed by an authorized representative of the manufacturer: "I certify under penalty of law that the statements and information submitted in this document are to the best of my knowledge and belief true, accurate, and complete."

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6 NYCRR 494.7

Section 494.7. Record-Keeping Requirements

Currentness

(a) As of the applicable prohibition date listed in Section 494.4 of this Part, any person who manufactures for sale or entry into commerce in the State of New York new motor-bearing equipment or new foam product in the end-uses listed in Section 494.4 of this Part must maintain for five years and make available within 90 days upon request by the Department a copy of the following information:

- (1) Name, address, telephone number, and email address of the person purchasing the equipment or foam product, where provided to the manufacturer;
- (2) The type of equipment or foam product end-use;
- (3) Model and serial number of the equipment or foam 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) Date of manufacture of the equipment or foam product;
- (5) Date of sale of the equipment or foam product;
- (6) The substances that are intended to be used with the equipment or foam product;
- (7) The full charge capacity of the equipment or container, where applicable; and
- (8) A copy of the written disclosure statement or label issued to the buyer or recipient.

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6 NYCRR 494.8

Section 494.8. Severability

Currentness

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

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N.Y. Comp. Codes R. & Regs. tit. 6, § 494.8, 6 NY ADC 494.8

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February 9, 2021

BY EMAIL:

Gary Graham
Office of Regulatory Affairs
Virginia Department of Environmental Quality
P.O. Box 1105
1111 East Main Street, Suite 1400
Richmond, Virginia 23218
gary.graham@deq.virginia.gov

Re: HFC Extruded Polystyrene Boardstock Compliance Date Work Group

Dear Mr. Graham:

The Southern Environmental Law Center (SELC) appreciates the opportunity to submit comments as a member of the Department of Environmental Quality (DEQ) HFC Extruded Polystyrene Boardstock Compliance Date Work Group, formed pursuant to Item 378 of Chapter 1289 of the 2020 Acts of Assembly, as amended by Chapter 56 of the 2020 Acts of Assembly, Special Session I.

Item 378 of the state budget directs the State Air Pollution Control Board (Board) to adopt regulations to:

prohibit the sale, lease, rent, installation or entry into commerce in Virginia of any products or equipment that use or will use hydrofluorocarbons for the applications and end uses restricted by Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017. Notwithstanding the foregoing, such regulations shall not prohibit the use of hydrofluorocarbons in the manufacturing process by extruded polystyrene boardstock and billet manufacturers located in Virginia to produce products for sale and distribution outside of the Commonwealth, until the Board has solicited input from such manufacturers in order to determine and set by regulation a feasible date by which such manufacturers must be required to comply. In developing regulations, the Board shall solicit input from a workgroup of relevant stakeholders assembled by [DEQ]. The regulations adopted by the [Board] to initially implement the provisions of this item this shall be exempt from Chapter 40 of Title 2.2, Code of Virginia, and shall become effective no later than July 1, 2021.

After attending the first workgroup meeting on January 20, 2021, and reviewing the information provided at the meeting, SELC submits these comments. As detailed below, we explain that: 1) the strongest interpretation of Item 378 does not provide an outright exemption to

in-state extruded polystyrene (XPS) boardstock and billet manufacturers that ship out of state; 2) DEQ should strive for harmony with other states' labeling requirement, but only to the extent practicable; 3) DEQ should propose a general compliance date of January 1, 2022; and 4) DEQ should include compliance and enforcement requirements in the regulation that must become effective July 1, 2021.

It is important to note that these comments reflect our research and thinking to date. SELC recognizes that additional information and thoughts may be generated in the workgroup process, and looks forward to further deliberation.

A. “Entry into commerce” and the scope of the regulatory prohibition

While arguable, the most straightforward reading of Item 378 is that DEQ does not have authority to exempt in-state XPS foam manufacturers who ship their goods for sale out-of-state from the HFC prohibition regulation. Given the strength of that interpretation, DEQ and the stakeholders should consider what flexibility DEQ may have generally to tailor the HFC prohibition for such manufacturers.

To start, in the first sentence of Item 378, the most natural reading of “entry into commerce” is a broad one that easily includes manufacturing within Virginia and shipping the products out of state. While we have not done exhaustive research, this take on the plain meaning of the phrase finds some support in Virginia law. The terms “trade or commerce,” “trade,” and “commerce” have been deemed to include all economic activity involving or relating to any commodity, service or business activity.¹ “Receiving, loading, unloading, switching, and delivery are as essentially parts of interstate commerce as the act of transit.”² The result of this reading is that the act of manufacturing a good in Virginia to ship out of state for sale qualifies as an act of “entering into commerce”, and thus is an activity that falls within the scope of the HFC prohibition regulations that Item 378 directs the Board to issue.

It is true, though, that the phrase arguably has some ambiguity about it and one other state in a similar context has interpreted “entry into commerce” to allow manufacturing in the state up until the compliance date. Colorado interpreted “entry into commerce” to include manufacturing in the state but adopted a phase down approach to prohibit HFCs and “products or equipment manufactured prior to the applicable date of prohibition. . . may be sold, imported, exported, distributed, installed, and used after the specified date of prohibition.”³ We note that as far as we understand it, in this context most, if not all, other states have the “entering into commerce” language, but apparently the issue of whether the phrase captures in-state manufacturing has not arisen.

¹ § Va. Code Ann. § 59.1-9.3 (b). See also, *S. Ry. Co. v. Commonwealth*, 107 Va. 771, 776, 60 S.E. 70, 71 (1908).

² *S. Ry. Co. v. Commonwealth*, 107 Va. 771, 776, 60 S.E. 70, 71 (1908).

³ 5 Colo. Code Regs. § 1001-26:B.1

But any ambiguity in the first sentence seems to be resolved in favor of an interpretation that all manufacturing of products that use hydrofluorocarbons is prohibited regardless of the destination of the products by the second sentence of Item 378. That sentence states that regulations prohibiting that manufacturing cannot go forward until input has been received from those manufacturers as to “a feasible date by which such manufacturers must be required to comply.”⁴ The specification of the determination that the input must inform – the feasible compliance date – does not make sense unless it is based on the assumption that the first sentence sweeps into its ambit those manufacturers.

Given the impact of this probable legal interpretation, it may be helpful for the stakeholder group to consider options that DEQ may have to accommodate these manufacturers. The possibility of providing for an extended compliance date that applies specifically to the manufacturing of XPS foam, as opposed to other requirements such as labeling and recordkeeping, which would be subject to an earlier compliance date, is discussed below. Another possible requirement could be to require in-state manufacturers to have offsets for HFCs emitted during production. If offset requirements are put in place, DEQ should determine what existing authority allows this approach, as Item 378 does not appear to confer it, and consider the appropriate obligations for meeting the requirements. In Colorado, the state implemented mitigation options for manufacturers of positive displacement chillers based on existing authority.⁵

B. Labeling and Recordkeeping

SELC endorses the notion of consistency across state regulations. However, we note that strict uniformity in labeling and recordkeeping requirements is impracticable because differences already exist among the states that have already implemented restrictions on hydrofluorocarbons. The U.S. Climate Alliance created a template for implementing a phase down of HFCs, but this template was implemented differently by state. For example, in Washington, all manufacturers must notify the Department of Ecology about the status of each product class using restricted HFCs. In California, manufacturers must keep records for five years of any persons who purchase foam end-use. Notably, the Extruded Polystyrene Foam Association commented that “while the specific HFCs banned in the various states are similar across the board, the states are also adopting labelling and reporting requirements which are not standardized.”⁶ In Colorado, companies will use the EPA’s electronic greenhouse gas reporting tool to help the state save resources in developing a new reporting system⁷. So, while DEQ should propose regulations with an eye towards approaches taken by other states, ultimately it should look to the US Climate

⁴ 2020 Va. Acts Ch. 1289 Item 378.

⁵ 5 Colo. Code Regs. § 1001-26:B.1.

⁶ Letter dated May 8, 2020 to Lauren McDonnell from Extruded Polystyrene Foam Association.

⁷ <https://www.cpr.org/2020/05/22/colorado-greenhouse-gas-producers-are-now-required-to-report-emissions-data-to-the-state/>

Alliance template and incorporate the necessary labeling and recordkeeping requirements appropriate for Virginia.

C. Compliance Date

DEQ should propose a compliance date that is far enough in the future to provide adequate notice and allow the industry to adopt its usual business practices to comply. However, for many aspects of the industry, this time does not have to be long. The industry has been on notice for several years that the use and manufacturing of HFCs would be phased down. Virginia is the 9th state to regulate HFCs and many of the states that have already adopted regulations are considered big markets for the extruded polystyrene boardstock and billet industry. Given this background, for requirements that pertain to business matters like recordkeeping and labeling, the compliance should not exceed six months from the statutorily-mandated effective date, July 1, 2021. However, for conversions that go to the core of a company's operations, such as its actual manufacturing process, more time may be justified.

D. Adopting a Comprehensive Regulation

DEQ should implement a comprehensive regulation that addresses all issues, including enforcement and compliance, in a single formal rulemaking. One option DEQ proposed to the work group was to develop the regulation prohibiting hydrofluorocarbons and then follow up with a guidance document detailing enforcement and compliance. However, SELC is concerned with that approach since agencies are able to issue new guidance without the same public process required for changes to regulations.⁸ Moreover, regulations have the force of law and bind regulated entities and the regulator. On the other hand, guidance documents may sometimes bind regulators but do not bind their regulated entities.⁹ Given the short timeline to finalize the regulation, we recommend that DEQ take advantage of previous work in this area and look at the requirements imposed by the other states that are members of the U.S. Climate Alliance as a template.

⁸ Va. Code Ann. § 2.2-4002.1; see also Va. Code Ann. § 2.2-4101 (defining "guidance document" and "regulation").

⁹ <https://townhall.virginia.gov/um/guidancedocuments.cfm>



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Thank you for your consideration of these comments, and please let us know if you have questions. We look forward to continuing to participate and hearing from other members of the work group and DEQ.

Sincerely,

A handwritten signature in black ink that reads "Frank W. Rambo". The signature is fluid and cursive.

Frank Rambo, Senior Attorney
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ITEM 378 VIRGINIA STATE BUDGET

B.2. The State Air Pollution Control Board shall adopt regulations to prohibit the sale, lease, rent, installation or entry into commerce in Virginia of any products or equipment that use or will use hydroflouorocarbons for the applications and end uses restricted by Appendix U and Appendix V of Subpart G of 40 C.F.R. Part 82, as those read on January 3, 2017. Notwithstanding the foregoing, such regulations shall not prohibit the use of hydrofluorocarbons in the manufacturing process by extruded polystyrene boardstock and billet manufacturers located in Virginia to produce products for sale and distribution outside of the Commonwealth, until the Board has solicited input from such manufacturers in order to determine and set by regulation a feasible date by which such manufacturers must be required to comply. In developing regulations, the Board shall solicit input from a workgroup of relevant stakeholders assembled by the Department.

3. The regulations adopted by the State Air Pollution Control Board to initially implement the provisions of this item this shall be exempt from Chapter 40 of Title 2.2, Code of Virginia, and shall become effective no later than July 1, 2021...