April 28, 2020

Colorado Air Quality Control Commission
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South, EDO-AQCC-A5
Denver, Colorado 80246
cdphe.agcc-comments@state.co.us

Re: Regulation Number 22, Part B, Section I, Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End-Uses
Polyisocyanurate Insulation Manufacturers Association Public Comments

Dear Air Quality Control Commissioners:

The Polyisocyanurate Insulation Manufacturers Association1 (“PIMA”) appreciates the opportunity to comment on the Colorado Department of Public Health and Environment’s (“Department”) proposed Regulation Number 22, Part B, Section I, Prohibitions on Use of Certain Hydrofluorocarbons in Aerosol Propellants, Chillers, Foam, and Stationary Refrigeration End-Uses (“HFC Phase-out Rule”). PIMA represents North American manufacturers of laminated polyisocyanurate insulation board products (“polyiso insulation”). Our members include Atlas Roofing Corporation, Carlisle Construction Materials, Firestone Building Products, GAF, Johns Manville, IKO Industries, Rmax, and Soprema. These manufacturers account for the majority of polyiso insulation produced and sold in North America, including Colorado.2

PIMA supports the State’s efforts to reduce harmful emissions of greenhouse gases through restrictions on the use of hydrofluorocarbons (HFCs) with high global warming potential (GWP) in the foam sector. Our comments respectfully request that the Department (1) narrowly scope the HFC Phase-out Rule’s requirements for written disclosures to apply to ongoing end-uses of HFCs only and (2) eliminate the record-keeping requirements for all end-uses. The rationale for our proposals is explained below.

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2 PIMA members operate polyiso insulation manufacturing facilities in the State of Colorado.
1. Introduction to Polyiso Insulation

Polyiso insulation is a rigid foam board product used to insulate roofs, walls, and other components of commercial and residential buildings. With respect to the blowing agent substances used to manufacture polyiso insulation, manufacturers in the North American market use pentane (or pentane blends) in their product formulations and have done so for more than twenty years.

Pentane is a non-ozone depleting, low GWP substance that offers an economical solution for polyiso insulation products and delivers exceptional thermal resistance that contributes to polyiso insulation’s high R-value – the primary physical property for thermal insulation products. Furthermore, polyiso insulation manufacturers have made significant capital investments in modifying existing facilities and constructing new plants that allow for the safe use of pentane technology in the manufacturing process. More information on the polyiso industry’s use of pentane blowing agents can be found in the attached performance bulletin.³

2. PIMA supports the prohibitions included in Section I.C. of the HFC Phase-out Rule.

PIMA supports the use restrictions for high-GWP HFCs as currently proposed for the end-use category that applies to polyiso insulation products (“Foams; Rigid Polyurethane and Polyisocyanurate Laminated Boardstock”). Furthermore, PIMA does not object to the prohibition date of January 1, 2021 for the aforementioned end-use category.

3. PIMA proposes modifications to the Proposed Rule that would limit the applicability of Section I.D.1. Disclosure Statement.

PIMA understands that the intent of Section I.D.1 is to inform buyers of whether the restricted HFC substances are used in a particular product or equipment. This intent must be consistent with the overall purpose of the HFC Phase-out Rule, which is to “reduce [HFC] emissions in the State of Colorado.” Further, the disclosure statement requirements must be consistent with the scope of the rule, which applies to “any person who sells . . . or manufacturers in the State of Colorado any product or equipment that uses or will use an HFC in end-uses listed in Section I.E.1.” (emphasis added).

Therefore, consistent with the regulatory intent of the HFC Phase-out Rule read as a whole, PIMA proposes the following modifications that would limit the applicability of the disclosure statement requirements to equipment and products that currently use HFCs.

³ The attached performance bulletin is available online at the PIMA website here: https://www.polyiso.org/resource/resmgr/performance_bulletins/2020/PIMA_PerfBull_LowGWP_Final01.pdf.
Proposed Modification Option #1:

Section I.A. Purpose and Applicability
I.A.3. The disclosure statement required by Section I.D.1. of this regulation shall apply to any equipment or product listed as an end-use in Section I.E. where the equipment or product contained or used a substance listed as prohibited in Section I.E. as of [Effective Date of HFC Phase-out Rule], or where the use of the prohibited substance has been initiated or resumed at any time after that date.

Proposed Modification Option #2:

Section I.D.1. Disclosure statement
I.D.1.a. Any person who manufacturers or sells in the State of Colorado a product or equipment in the air-conditioning, refrigeration, foam, or aerosol propellant end-uses listed as prohibited in Section I.E.1., where the product or equipment contained or used a substance listed as prohibited in Section I.E. as of [Effective Date of HFC Phase-out Rule], or where the use of the prohibited substance has been initiated or resumed at any time after that date, 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.

PIMA’s proposed modifications fulfill the Department’s legitimate objective of informing buyers whether purchased equipment or products – that are part of an end-use category where the use of high-GWP HFCs is common or ongoing – actually contain the prohibited substances. At the same time, our proposed modifications would not require written disclosures for equipment or products that do not use high-GWP HFCs as of a date certain (i.e., the effective date of the HFC Phase-out Rule). As stated above, this result is consistent with the Department’s intent to regulate and eliminate the use of the prohibited HFC substances.

The proposed modifications would also align the Department’s regulations with the requirements adopted by other jurisdictions. The California Air Resources Board agreed with PIMA’s argument to exclude polyiso manufacturers when it eliminated a proposed labeling requirement for end-uses that categorically do not use HFC substances. CARB concluded that labeling was unnecessary for end-uses that “have already transitioned out of using HFCs . . . [where] the risk that these end-uses revert to prohibited HFCs is low.” Additionally, Washington State’s draft rule has evolved to include a clear statement that the labeling requirements do not apply to all end-uses. The draft rule uses the effective date of the enabling

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legislation to create a cutoff date for those end-uses (products and equipment) subject to the labeling requirements.\(^5\)

Notwithstanding the proposed modifications above that would exclude products like polyiso insulation from the disclosure statement requirements, PIMA offers the concepts described below in order to expand the number of compliance paths that are available to sellers and manufacturers with regard to the disclosure statement requirements.

- First, we encourage the Department to allow the written disclosure to be in the form of “a label on the product \(\text{product packaging}\) or equipment” (added text underlined). Individual unit labels may not be feasible or practical for all products. A label on the product packaging accomplishes the same goal of passing information to the buyer.

- Second, we encourage the Department to allow the written disclosure for foam products to be satisfied where the substance is disclosed on the product’s Safety Data Sheet. This requirement is similar to the one proposed for aerosol propellant products in Section I.D.1.a.(iv).

- Third, we encourage the Department to allow for flexibility in combining or substituting the disclosure statements required by other jurisdictions. This flexibility is important as manufacturers produce or distribute products intended for use across state lines. Individually labeling products and equipment for compliance with numerous state regulations will likely create a burden on manufacturers and produce disclosure statement that are meaningless to buyers.

4. PIMA proposes to eliminate Section I.D.2. Recordkeeping from the HFC Phase-out Rule.

The HFC Phase-out Rule’s requirement for recordkeeping is not necessary for the effective enforcement of the rule’s prohibitions. Furthermore, the recordkeeping requirement is overly broad in that the requirement can be interpreted to apply to manufacturers that do not use the prohibited substances. And finally, the inclusion of a recordkeeping requirement within the HFC Phase-out Rule would create inconsistencies with other jurisdictions’ regulations that have to date not included a similar requirement in their final regulations. The actual equipment or product sold within Colorado is the best evidence of compliance. The administrative requirements of Section I.D.2. will not deter bad actors and only create additional administrative burdens for good actors. For these reasons and consistent with the actions of other jurisdictions, \(^5\) See Washington State draft rule (version January 28, 2020), Section WAC 173-443-020 Applicability.
PIMA proposes that the Department strike in whole Section I.D.2. Recordkeeping from the HFC Phase-out Rule.

Proposed Modification:

Section I.D.2. Recordkeeping [Strike section in its entirety.]

5. Conclusion

PIMA appreciates the opportunity to comment on the HFC Phase-out Rule. We would be pleased to explore the viability of the proposed modifications described above with the Department. Please contact me at jkoscher@pima.org should additional information be helpful to your deliberative regulatory process.

Respectfully submitted,

Justin Koscher
President
Insulation and Blowing Agents

Closed-cell foam insulation products like polyiso are manufactured with captive blowing agents. The blowing agents are primarily used to increase the final product's thermal resistance or R-value. The substances are also an integral part of the manufacturing process helping to produce the ideal cell structure.

In closed-cell products, the blowing agents are retained within the cell structure to provide long-term thermal performance. And while closed-cell insulation products can exhibit an initial drop in R-value due in large part to the diffusion of air into the foam, all polyiso insulation products are tested to reflect an aged (i.e., long-term) R-value.¹ For more information on polyiso’s R-value and the applicable testing requirements, visit the PIMA website.

Insulation products manufactured without captive blowing agents (e.g., expanded polystyrene, fiberglass, mineral wool) result in lower R-values per inch. Therefore, these products must be installed at greater thicknesses to equal the high R-value of polyiso insulation.

Polyiso + Pentane = Environmental Leadership

Polyiso products are manufactured using pentane or pentane blends.² Pentane is a hydrocarbon with zero ozone depletion potential (ODP) and low global warming potential (GWP). GWP is a measure of a substances ability to trap heat in the atmosphere and is calculated over a specific period of time (commonly 100 years). Specifically, GWP measures how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO₂.³ A substance that traps more heat will contribute more to global warming (and will be assigned a higher GWP value). Therefore, products that incorporate low-GWP blowing agents provide insulation solutions that offer reduced environmental footprints.

Notes:

1 The U.S. Federal Trade Commission’s R-value Rule requires that tests performed on samples of polyiso insulation reflect the effect of aging on the product’s R-value (Labeling and Advertising of Home Insulation, 16 CFR Part 460).

2 Pentane is used as a general term to describe the different pentane isomers or mixtures of isomers used by polyiso manufacturers. Isomers are molecules with the same molecular formula, but different bonding patterns. In terms of environmental impacts, all pentane isomers have the same GWP.

3 Ozone depletion potential, or ODP, is a relative measure of substance’s contribution to the degradation of the ozone layer. For more information, visit: [https://www.epa.gov/ozone-layer-protection/basic-ozone-layer-science](https://www.epa.gov/ozone-layer-protection/basic-ozone-layer-science).

For over 20 years, the polyiso industry has utilized pentane in product formulations. These products replaced formulations using CFCs and HCFCs, which are no longer permitted for use in insulation products in major markets, including the United States and Canada. The transition to pentane blowing agents was preceded by years of research and development. As a result of these efforts, the polyiso industry was recognized by the U.S. Environmental Protection Agency with the Stratospheric Ozone Protection Award for leadership in the phase-out of CFCs and exceptional contributions to global environmental protection. Please refer to PIMA's Environmental Product Declarations for additional information regarding GWP and polyiso’s overall environmental performance.

Comparing Polyiso to Other Insulation Products

Not all closed-cell foam insulation products are created equal when it comes to the environmental impacts of their blowing agents. **Pentane has a GWP of less than 10.** Other insulation products still utilize hydrofluorocarbon (HFC) blowing agents, which can have a GWP of 1300 or higher. This is more than 100 times the global warming impact of pentane used in polyiso insulation.

As a category, other closed-cell insulation products are transitioning to blowing agents with lower GWP in part as a response to international and domestic regulations. However, not all blowing agent substitutes are equivalent. In Canada, regulations prohibit the manufacture, import or sale of foam plastic insulation products that contain a blowing agent with a GWP greater than 150. The U.S. Environmental Protection Agency does not enforce GWP limits for blowing agents used in foam insulation products. However, several states have, or are in the process of, enacting prohibitions on the use of certain HFC blowing agents in foam insulation products manufactured or sold within their jurisdictions.

**Environmental Product Declarations**

GWP is an important measure of a product’s impact on the environment, but there is a larger story to tell for insulation products like polyiso. The polyiso insulation industry provides stakeholders with information on the environmental impacts of its products through the publication of Environmental Product Declarations (EPDs). An EPD is an internationally recognized and standardized tool that

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6 For example, XPS insulation is typically manufactured with HFC-134a. This compound has a GWP of 1430. Source: The Intergovernmental Panel on Climate Change, Fourth Assessment Report, Chapter 2 - Changes in Atmospheric Constituents and in Radiative Force (available at: https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf).

7 Effective on January 1, 2021 for plastic foam or rigid foam products. More information is available at: https://laws-lois.justice.gc.ca/eng/regulations/SOR-2016-137/FullText.html.

8 U.S. EPA SNAP Rules 20 and 21 were partially vacated by a decision of the Court of Appeals for the District of Columbia Circuit (Mexichem Fluor, Inc. v. EPA). As a result, EPA has issued interim guidance to stakeholders that the Agency will not enforce certain prohibitions that limit the use of blowing agents based solely on GWP (available at: https://www.govinfo.gov/content/pkg/FR-2018-04-27/pdf/2018-08310.pdf).

9 Information on state-level activities is available via the United States Climate Alliance: http://www.usclimatealliance.org/slcpchallenge. Under certain state laws or regulations, replacement substitutes may still have a GWP of nearly 750.
reports the environmental impacts of products. EPDs report data on environmental metrics across a product’s life cycle, including GWP, primary energy, resource depletion, and water use. Importantly, EPDs also provide an opportunity to disclose the environmental benefits of products. For example, the net return on environmental metrics like embodied energy, where polyiso’s long-term energy savings benefits far exceed the energy used to manufacture the product.

The polyiso industry’s third-party verified, ISO-compliant EPDs are available for download on the PIMA website.

PIMA

For more than 30 years, the Polyisocyanurate Insulation Manufacturers Association (PIMA) has served as the voice of the rigid polyiso industry, proactively advocating for safe, cost-effective, sustainable, and energy-efficient construction. Organized in 1987, PIMA is an association of polyiso manufacturers and industry suppliers. Polyiso is one of North America’s most widely-used and cost-effective insulation products.

PIMA produces performance bulletins to provide technical and industry information on key topics related to insulation performance. The resources provide the public with information that can be used to evaluate polyiso insulation products and compare their performance to other common insulation types. Industry professionals should review individual polyiso manufacturer resources for product-specific information.

For more information on polyisocyanurate insulation, visit www.polyiso.org