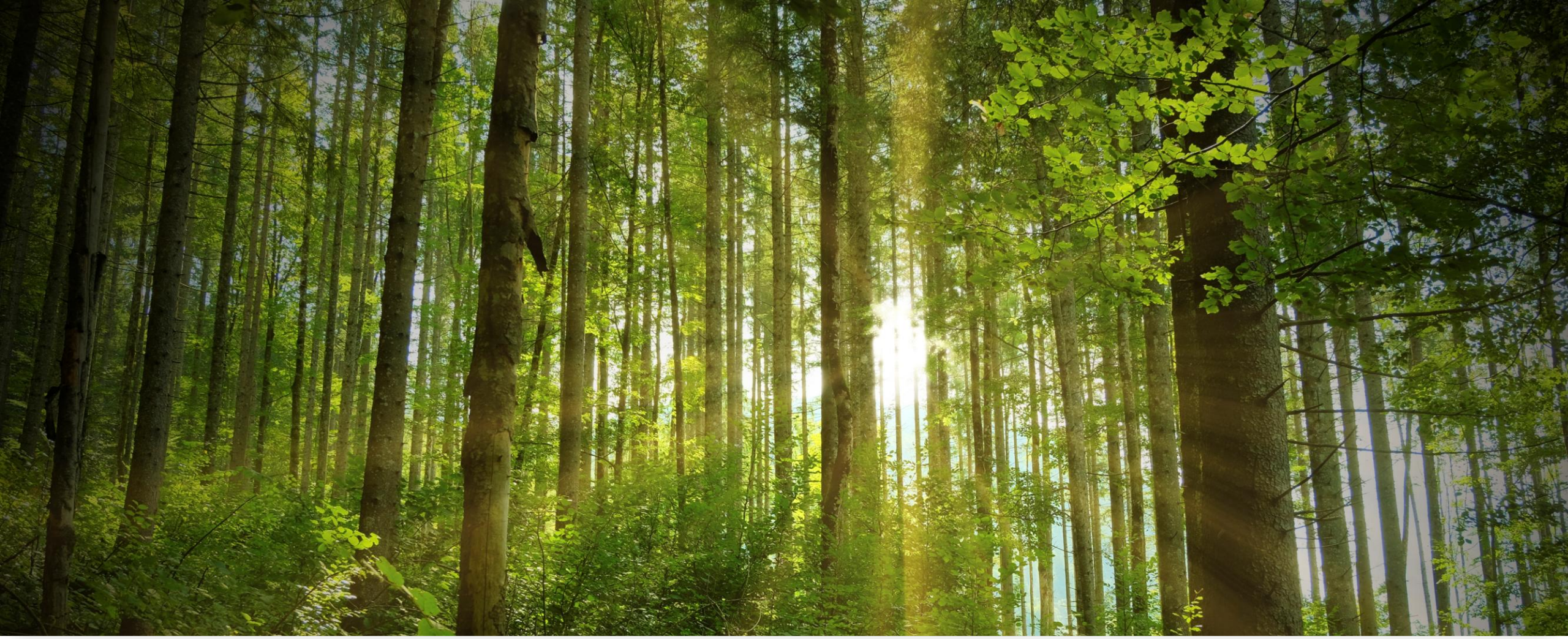

IIAR – OMB Meeting on EPA Aim Act and other Regulations

July 17, 2025

The International Institute of All-Natural Refrigeration®

EPA Press Release

"The Trump EPA is heeding the call of Alta Refrigeration, Georgians, and Americans across the country," said EPA Administrator Zeldin. "This proposal will fix the mistakes of the Technology Transitions Rule and deliver for hardworking individuals who are sick and ***tired of government failing to represent them****."*

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EPA Press Release

The Technology Transitions Rule, implemented by the Biden-Harris EPA, would, starting next year, require cold storage warehouses to use products like ammonia or carbon dioxide **instead of more available alternatives.** The rule also forces companies to use particular technologies for refrigerant systems, using substances like ammonia that are more toxic and flammable. **The Technology Transitions Rule raises the cost of food at the grocery store, harms semiconductor manufacturing, and restricts Americans from being able to purchase affordable air conditioning systems for their homes.**

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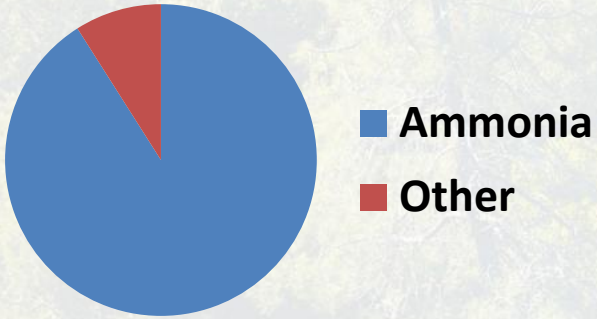
Ammonia’s Proven Success in F&B and Cold Storage

- Ammonia is by far the most commonly used refrigerant in large cold storage and food processing. 91% for Cold Storages
- Warehouses benefit by aligning with upstream F&B manufacturers who overwhelmingly use ammonia, often co-located w/ cold storge.



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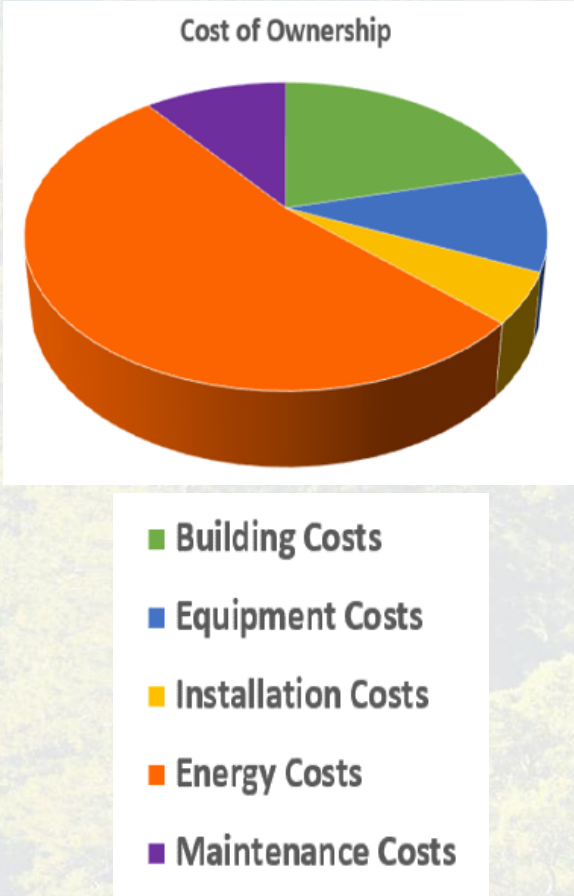
Why is Ammonia the Refrigerant of Choice

- Energy is a top operating cost; efficiency directly affects margins.
- Rising electricity rates and demand charges replacing stable prices as Data Centers change the power market.
- Regulatory complexity adds cost and delays. HFC phase downs inevitable over time.



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Why is Ammonia the Refrigerant of Choice

- Electricity is a top operating cost Refrigerant Comparison - Refrigerant Evaluator Tool. Ammonia systems use much less electricity.

View Refrigerant Comparison

Refrigerant Temp: -20F	R-717 (Ammonia)	R-513A	R-134a
Chemical Name	Ammonia		1,1,1,2 Tetrofluoroethane
BHP/TR @ 70CT | 95CT | 120CT	100% | 100% | 100%	119.1% | 119.8% | 131.6%	117.9% | 117.2% | 122.6%
GWP 100/ODP	0 | 0	631 | 0	1430 | 0
Flammability ***	Yes	No	No
Toxicity ***	Higher	Lower	Lower
Safety Class ***	B2L	A1	A1
RCL ***	320 ppm	72,000 ppm	50,000 ppm
LFL ***	167,000 ppm		
Glide	0	0	0
Lubricants	MO, PAO	POE	POE
Type	Natural	HFC/HFO Blend	HFC

*Use at your own risk. Follow local AHJ compliance, and EPA general regulations: SNAP link here

** Determination made based upon GWP and how it relates to the EPA Rule of 10/6/23 authorized under The American Innovation & Manufacturing (AIM) Act enacted on 12/27/20.

*** Classifications determined in accordance with the ASHRAE 34 Standard.

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Why is Ammonia the Refrigerant of Choice

Ammonia vs. Synthetics: Cost, Sustainability, Supply

Ammonia:

- ~1^{29}/lb. to ~3^{00}/lb.
- zero ODP, zero GWP,
- widely available.

HFC R-513A:

- ~18^{00}/lb. to ~24^{00}/lb.
- PFAS-based blend,
- patented supply constraints

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What Limits the choice of ammonia

Ammonia Toxicity

- IIAR standards, building codes, PPE, and emergency plans underpin safe operation.
- Toxicity is well-managed through design, maintenance, and training.

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What Limits the choice of ammonia

Overbearing Regulation

- EPA RPM – Risk Management Program Requirement.
- OSHA PSM – Process Safety Management
- EPA & OSHA General Duty Clause
- Local state, county, & town restrictions on NH3 use
- Unknown or inconsistent "Authority Having Jurisdiction" interpretation of such regulations

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Lower Grocery Costs for all Americans

- With an overwhelming majority of food processing and cold storage operations using ammonia refrigeration, *the biggest savings to Americans will be to further reduce the cost of operating an Ammonia refrigeration system*

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Lower Grocery Costs for all Americans

- The best and largest impact in lowering grocery costs for all Americans is to remove burdensome and unnecessary government regulations for ammonia refrigeration.

- Costs of quality designs, operational procedures, and maintenance are already accounted for by industry. These requirements should remain via standards.

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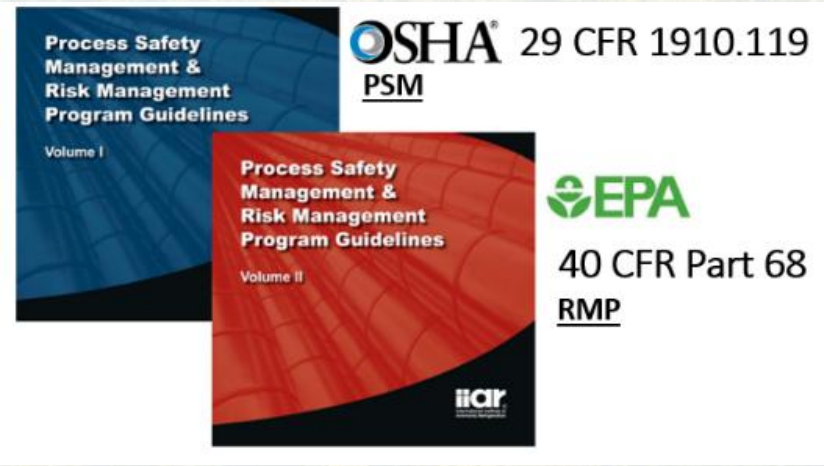
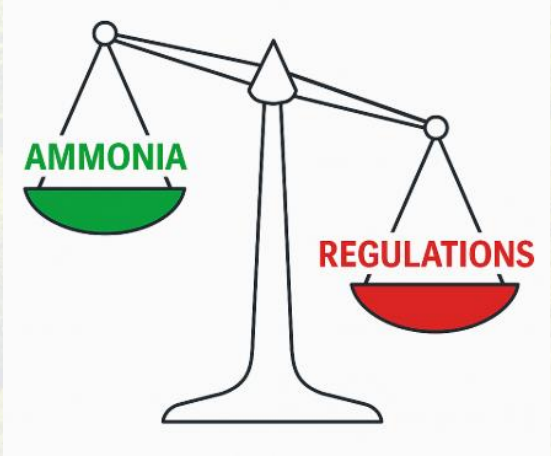
Regulatory Burden: Cost without Commensurate Benefit

- Additional layers (EPA GDC & RMP, OSHA GDC & PSM, state/local) raise costs - especially for smaller operators.
- Peer regions (EU, LatAm) deploy ammonia widely with fewer overlapping mandates.
- Maintain core safety; streamline duplicative or disproportionate requirements.
  - ➢ Ammonia Reg's have been overdone!





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What the Industry Needs from Government (Policy Asks)

- **Exempt ammonia refrigeration facilities from EPA RMP**, modeled after exemption for farmers when used as an agricultural nutrient.
- **Exempt ammonia refrigeration facilities from OSHA PSM**, OSHA PSM & EPA RPM apply to systems of 10,000 lbs. plus.
- **Streamline & Simplify EPA and OSHA's *General Duty Clause* Requirements & Interpretation of Requirements when applied to ammonia refrigeration systems**; GDC for both EPA & OSHA apply to all charge sizes of ammonia refrigeration systems, the majority of industrial refrigeration systems are less than 10,000 lbs.

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What the Industry Needs from Government (Policy Asks)

- **Discontinue the OHSA National Emphasis Program for ammonia refrigeration systems**; safety record does not justify the emphasis
- **Remove or adjust the EPCRA reporting requirement for ammonia leaks**; Currently at 100 lbs. over 24 hours and short time to report to multiple agencies. No other refrigerant has this requirement.

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What the Industry Needs from Government (Policy Asks)

- **Create Consistency & Fairness in Penalty Enforcement**; OSHA, EPA, and states have different penalties, varying factors for those penalties, and sometimes extreme penalties for small violations that could be found in any other system using another refrigerant with still having the same risks.
- **Disallow duplicative enforement**; Disallow penalties from multiple agencies for the same violation.

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What the Industry Needs from Government (Policy Asks)

- **Preempt state "special work" mandates** that uniquely burden ammonia (e.g., NJ's "blue-seal" stationary engineer requirement).
- **Fund and amplify public education** on ammonia's benefits vs. risks managed through strong & existing standards & building codes to support broader adoption
- **Avoid pushing large-volume new use of HFC's** to preserve limited supply for maintaining millions of existing systems and to prevent price spikes

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Call to Action: Align the Cold Chain on Safe Deregulation of Ammonia

- Align warehouses with upstream F&B manufacturers, multinationals & food retail already using ammonia or CO2.
- Support policies that lower operating cost and consumer food prices through efficient & sustainable refrigeration.

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Allow Americans to purchase the most cost-effective cooling & refrigeration systems

- Americans should be easily able to purchase & operate highly efficient ammonia cooling and heat pump systems with regulatory oversight similar to its use at farms in agriculture. (Ag uses 80% of ammonia produced)

- Other natural refrigerants of Propane and Isobutane already dominate the home refrigerator, beverage cooler and home appliance market.

- Innovation has allowed these highly flammable refrigerants to be safely used. In recent years most home appliances purchased by Americans in appliance stores use Isobutane or propane.

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Allow Americans to purchase the most cost-effective cooling & refrigeration systems

- The world adopted these more efficient refrigerants of propane & isobutane for appliances years ago. The USA lagged in its adoption.
- U.S. leads the way in innovation for ammonia refrigeration systems and has for decades. (Uniquely American)
- Let's lead the way for America to use ammonia for much more of its cooling and heat-pump needs.

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Other Considerations

- IIAR represents the perspectives of manufacturers, contractors and end users in all industry sectors, but IIAR is especially strong in the cold storage and industrial refrigeration sector.
- The vast majority of this industrial industry uses ammonia for its cooling and freezing needs and support the 150 GWP limit.
- Deregulation of ammonia refrigeration will magnify the grocery savings potential as 9 out of 10 cold storages use ammonia.
- Americans employed in support of the Cold Storage industry using ammonia refrigeration outnumber those employed in the Cold Storage industry using other refrigerants 9 to 1.

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Other Considerations

- This Industrial Refrigeration sector petitioned for wider adoption of the 150 GWP limit including for industrial chillers.
- Allowing 700 GWP refrigerants for the cold storage sector will not lower the costs for food & beverage products, in fact, it can be economically disruptive to the overall cooling & HVAC industry.
- Reminder – Existing Cold Storages can keep their current refrigerant & system or even expand it. This 150 GWP ruling does not require existing high GWP systems to shutdown or do a full replacement.

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Other Considerations

- Industrial systems, like New cold storages, use large amounts of refrigerant.
- R-513A is 56% R-1234yf & 44% R-134A.
- R-134A is of limited supply and will be needed for maintenance of millions of existing commercial, automotive, and residential applications.
- Large volume use of R-513A (and thus R-134A) for NEW cold storage applications will drive up the price and quickly limit its availability for those sectors that need R-134A. (not just for cooling)

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Other Considerations

- Because the Industrial Refrigeration engineers, manufacturers and contractors that use ammonia currently supply 91% of the cold storage applications……
- Their well-established capacity and capability clearly shows that ammonia is not the new alternative for Cold Storage and Industrial Refrigeration Applications.

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Other Considerations

- We applaud the MAHA movement and support its efforts to find chemicals in our food and environment that are causing the many severe health issues for Americans.

- We applaud the EPA's stated efforts regarding PFAS

"I have long been concerned about PFAS and the efforts to help states and communities dealing with legacy contamination in their backyards. With today's announcement, we are tackling PFAS from all of EPA's program offices, advancing research and testing, stopping PFAS from getting into drinking water systems, holding polluters accountable, and providing certainty for passive receivers. This is just a start of the work we will do on PFAS to ensure Americans have the cleanest air, land, and water," ***said EPA Administrator Zeldin.***

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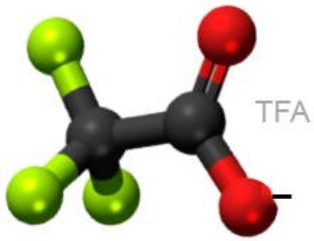
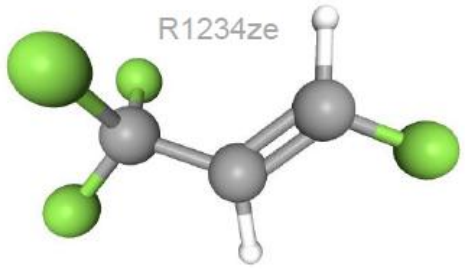
Other Considerations

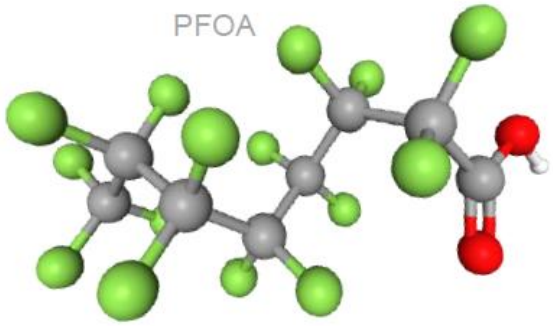
PFAS – *forever chemicals*

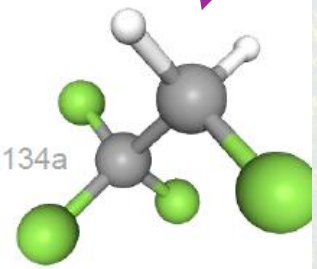
= per and polyfluorinated alkyl substances

(organic carbon chain with fluorine atoms [simplified])









carbon
hydrogen
oxygen
fluorine

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Other Considerations

HFO	Main uses	Production[16]	Direct climate/ ozone impact[17]	Atmospheric breakdown to HFC-23	PFAS[18]
HFO-1234yf $CF_3CF=CH_2$	Refrigerant and HFC-HFO refrigerant blends (eg, R-454C, R-454A, R-455A, R-449A, R-513A)[19]	Produced from HCFC-22 feedstock (ODP 0.038) (with byproducts including HFC-23 (GWP 14,700) and PFC-318 (GWP 10,600)) or from CTC (ODP 0.87) feedstock.[20]	GWP <1	No	Yes. TFA yield 100%.

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Other Considerations

- The two chemicals that make up R-513A, R-134a and R-1234yf are both PFAS chemicals.
- There is no certainty, at this time, on the current and future impacts of these man-made chemicals that exist and whose volumes continue to grow in our water and environment.
- However, with non-PFAS refrigerants readily available for cold storage applications, it is not necessary to take the risk of potential PFAS impacts to human health. And the burdensome costs of future clean-up.

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Q&A