

Refrigerant (A2L) Transition

Industry Problem

Regulatory Background:

- **AIM Act of 2020 (American Innovation and Manufacturing Act)**
 - Requires an 85% reduction in HFC refrigerants within 15 years through 2036
 - Grants EPA with authority to regulate the transition
- **EPA Ruling of 2023**
 - AC and Heat Pumps GWP limit = 700
 - Ban on Manufacture and Import
 - Residential January 1, 2025
 - Ban on Installation and Sale
 - Residential January 1, 2026
 - Import of service equipment will continue for legacy installations
 - Commercial limitations 1 year later
 - Other products affected:
dehumidifiers, refrigerators, aerosols, foams, etc.
- **NYSDEC proposed Amendments**
 - One year prior to federal regulations

Industry Problem Continued...

- Manufacturer supply chain management and layoffs
- Distributor warehousing and purchase forecasting
 - Difficult to forecast which contractors will be early adopters and which will delay new tech adoption
- Contractor sales
 - 2025 both old and new equipment will be allowed to be sold and installed. Can cause confusion to customers of what option to choose
 - When to transition to new equipment for installations
- All could face ending up with excess stock that cannot be used post 2025 and could cause major overhead cost increases if not planned for

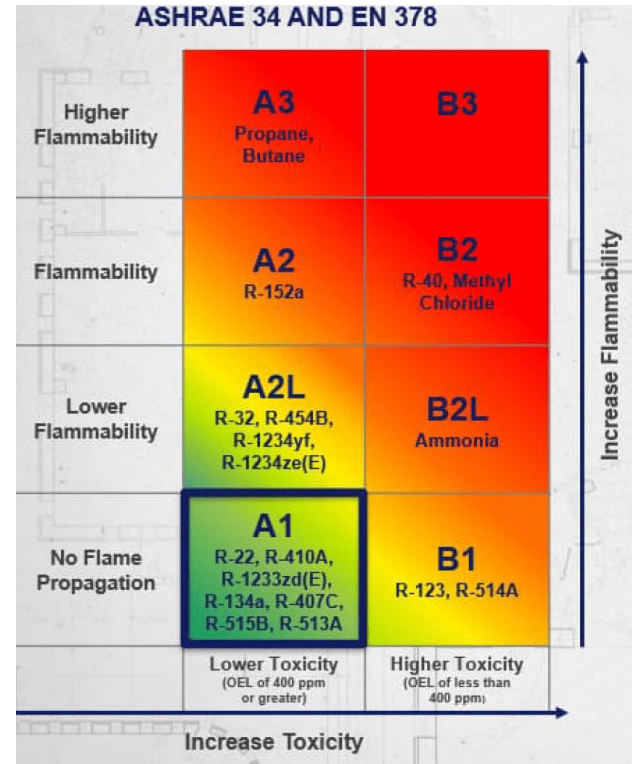


Industry Solution

New Refrigerant

- Current refrigerants are A1
- New refrigerants will all be A2L
- AC and Heat Pump: R-32 or R-454B

Refrigerant	R-22	R-410A	R-454B	R-32
Type	HCFC	HFC	Blend HFC+HFO	HFC
ASHRAE	A1	A1	A2L	A2L
GWP	1800	2088	465	670
Ozone	Yes	No	No	No



ARE
REFRIGERANTS
FLAMMABLE?



Opportunity

- Higher Efficiency
- Lower refrigerant quantities
 - Residential limit 6.6 pounds
 - Commercial limit 22 pounds
- Lower GWP (global warming potential)
- Leak detection sensors will be required - forcing higher quality installations and better leak prevention measures during installation
 - Sensors will be integrated with fans to disperse refrigerant and safety shut offs to limit the scope of any leaks




Homeowner Problems

- Increased Installation Costs
 - Equipment costs will increase from manufacturer R&D, additional required components, combined with new products that were delayed until new refrigerant could be used
 - Installer costs - possible new tools for each install truck
 - Vacuum pump, recovery equipment, leak detectors
 - estimated : \$1500 - \$2500 per truck
 - Stock: refrigerant, safe storage of A2Ls, additional bottle organizers in trucks
 - Repair costs of R-410A equipment
 - As HFCs are being reduced per the AIM Act, lower supply means increased cost of R-410A. Similar to what happened with R-22
 - Overhead expense for training on safety and new installs
- Aversion to “flammable materials” in the home



CASE/Tompkins County Solutions/Implementation

- Public awareness of transition - focusing on combating negative talking points against heat pumps because of the flammability, cost, etc.
 - Info Sheet - Maybe through the Regional Hubs
 - Code Enforcement Training - updates from EPA ruling coming to International Building Code (IBC), International Mechanical Code (IMC), International Fire Code (IFC), and review ASHRAE 15
 - Be aware of this in capital improvement projects as length of project could affect which systems are available and effect the project budget
 - Comment period for NYS has ended, but can continue to submit feedback
 - Discussion?
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Positive Outcomes

- Smoother transition without decrease in county-wide heat pump installations
- Tompkins County could be a case study (again) that regulatory changes of this nature aren't detrimental to electrification progress or economic growth
- Well informed code enforcement officials can raise confidence in property owners



References

- <https://www.epa.gov/climate-hfcs-reduction/technology-transitions>
- <https://www.iccsafe.org/building-safety-journal/bsj-technical/code-changes-on-a2l-refrigerants/>
- <https://www.epa.gov/climate-hfcs-reduction/technology-transitions-gwp-reference-table>
- <https://www.achrnews.com/articles/147113-finalizing-the-a2l-provisions-in-2024-mechanical-codes>
- <https://hardinet.org/posts/new-york-state-hfc-phaseout-amendment-could-leave-state-without-air?category=Government%20Affairs>
- https://dec.ny.gov/sites/default/files/2024-03/dehydrofluorocarbon_dra_reg_factsheet.pdf

Ideas/Thoughts/Suggestions

- Messaging needs to be about benefits of new refrigerants - more efficient, lower operating costs, less harmful to environment - and new regulations - sensors monitor for leaks so repair/optimization service happens right away
- [some organization] could poll contractors working in the County to assess how they are managing the transition (their message to prospects/customers) and what would be helpful.
- Code inspectors need to be aware of new requirements - County (DPS) could provide like the previous 2 heat pump trainings that were offered.

