



# UL's Low GWP Portfolio of Services

Delivering key insights, timely analysis and superior risk mitigation through advisory, benchmarking and certification services.

Empowering Trust<sup>®</sup>





Demand for greater corporate responsibility from consumers, regulators, investors and other stakeholders is growing at a rapid pace.



**Manufacturers now face new and complex development challenges as they consider integrating lower Global Warming Potential (Low GWP) refrigerants into their product mix. UL is the principal commercial leader in flammable refrigerant research with a full portfolio of advisory, benchmarking and certification services designed to help you mitigate risk, reduce product development time and achieve design goals within your project budget.**

### **UL is ready for your Low GWP products**

We help customers navigate the changing landscape of Low GWP compliance and trade to gain access to new markets and offer safer products around the globe – protecting people, products and reputations.

### **Plan for certification success – right from the start**

Involving UL early in your product development process is the most effective way to get your products to market quickly and safely. UL's modular engagement approach can help your teams make certification considerations an integral part of the process – right from the concept stage. UL provides the engineering expertise and certification knowledge you need to make informed product development decisions. This enables you to identify non-compliances early and have time to correct them before they affect launch dates. You benefit from faster speed to market, cost savings, and increased confidence and comfort along the way.



## Advisory and training services

Our expert advisory services provide personalized guidance and support that help you accelerate product development, effectively manage safety, compliance and regulatory risks, enhance security and sustainability, and access new markets.

- Flammable refrigerant basics and mitigation techniques
- Ignition-proof components (NCKL2)
- Flammable refrigerant applications for emerging markets
- Recent adoptions of flammable refrigerant requirements
- Current state of flammable refrigerant research
- Training for lab technicians on proper use and hazards of flammable refrigerants
- Pressure Equipment Directive for compressors & refrigeration pressure vessels
- ASHRAE Standard 15-2016. “Safety Standard for Refrigeration Systems”
- ASHRAE, proposed Standard 15.2
- Standards deep dive
- UL/IEC 60079-29-1: 2016, edition 1.0
- UL/IEC 60079-29-1: 2016, edition 2.0
- IEC 60335-2-40: 2018, edition 6.0
- JRA 4068T:2016R
- UL/IEC 60335-1
- UL/IEC 60335-2-34
- UL/IEC 60335-2-89
- UL/IEC 60335-2-24
- ISO 5149 series
- EN 378 series

## HVAC/R benchmarking services

Benchmarking can help you gain a level of insight that allows you to evolve your product and business strategies based on competitor insight. Knowledge is power, knowing how you compare may reveal competitive advantages that help define and accelerate medium and long-term strategies, giving you more control and power.

- Physical teardown/risk assessment
- Preliminary refrigerant leak testing
- Testing of ignition-proof components (NCKL2)
- Client/product specific mitigation technique advisory services
- CFD Modeling
- Full-scale release testing
- Verification of mitigation techniques in the presence of refrigerant
- Bench top response testing
- Fatigue pressure test

## HVAC/R certifications

Navigating the regulatory landscape of global markets is an intricate and challenging task even before introducing the complexity of low GWP refrigerants. Gain access to the scientific expertise, resources and services that will enable you to reach your target markets, safely, quickly and cost effectively.

- Product certification to 60335-2-40
- Product certification to 60335-2-24
- Product certification to 60335-2-34
- Product certification to 60335-2-89
- Pressure Equipment Directive
- UL Verified Mark for marketing claim support
- Energy verification/certification of new designs
- Energy efficiency testing
- Evaluation to ISO 14903 for joints
- ATEX directive
- Complete CE documentation
- Ignition proof components certificate



Let's discuss how UL can help with your Low GWP transition projects globally: [HVACInfo@ul.com](mailto:HVACInfo@ul.com) or visit [UL.com/LowGWP](https://www.ul.com/LowGWP).



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