Impact of international safety standards on UL safety standards in the USA
In February 2011, UL facilitated the initial JTG meeting in Las Vegas, NV. Near the end of this meeting, the JTG established three (3) working groups (WG’s).

1. WG 1 was asked to develop requirements for flammable refrigerants applicable to air conditioning equipment.

2. WG 2 was asked to develop similar requirements for refrigeration equipment.

3. WG 3 to address requirements for the testing and evaluation of flammable refrigerants (including the new A2L types) and take into consideration the recommended requirements of the equipment WG’s.

Each WG subsequently met a number of times via teleconference as well as face-to-face.
UL Air-Conditioning Standards

UL 484 – Room Air Conditioners
Published 3x LFL limit

UL 474 – Dehumidifiers
No flammable requirements planned (being superseded by UL 60335-2-40)

UL 60335-2-40 – Household and Similar Electrical Appliances
Part 2: Particular Requirements for Heating and Cooling Equipment Edition 1; current deviation to not allow flammable refrigerants

- Proposed 2\textsuperscript{nd} edition will have requirements for flammable refrigerants similar to UL 484
- Proposed 3\textsuperscript{rd} edition will have enhanced requirements for A2L flammable refrigerants
UL JTG Flammable Refrigerants WG2
UL UL Refrigeration

- UL 250 – Household Refrigerators and Freezers; published 57 gram limit
- UL 471 – Commercial Refrigerators and Freezers; published 150 gram limit
- UL 60335-2-24 – Household and Similar Electrical Appliances, Part 2: Particular Requirements for Refrigerating Appliances, Ice-Cream Appliances and Ice-Makers; published 150 gram limit
- UL 399 – Drinking Water Coolers; published 60 gram limit
- UL 541 – Refrigerated Vending Machines; published 150 gram limit
- UL 563 – Ice Makers; published 150 gram limit
- UL 621 – Ice Cream Makers; Waiting on proposal from UL JTG
IEC/UL 60335-2-89
Particular requirements for commercial refrigerating appliances with an incorporated or remote refrigerant unit or compressor.
UL JTG Flammable Refrigerants WG3

Working Group #3 (Refrigerants):
• Discussing recommended updates to UL 2182, “Safety Standard for Refrigerants” including:
  • Eliminating 100°C flammability testing to harmonize with ASHRAE 34 and ISO 817
  • Incorporating optional burning velocity testing to differentiate Class 2L from Class 2 refrigerants
  • Retaining Auto Ignition Temperature test to support hot surface requirements in end-use standards
  • Considering hydrocarbon purity requirements (but not odorization/stenching which would require new technology)
  • Not incorporating Minimum Ignition Energy (MIE) testing pending input from the other two WG’s
• Discussing test apparatus for burning velocity of Class 2L refrigerants
International Standards

**IEC 60335-2-24** – Particular requirements for refrigerating appliances, ice-cream appliances, and ice-makers

**IEC 60335-2-34** – Particular Requirements for Motor-Compressors

**IEC 60335-2-40** – Particular requirements for electrical heat pumps, air conditioners, and dehumidifiers

**IEC 60335-2-89** – Particular requirements for commercial refrigerating appliances with an incorporated or remote refrigerant unit or compressor

**ISO 817** – Refrigerants -- Designation and safety classification

**ISO 5149** – Refrigerating systems and heat pumps -- Safety and environmental requirements -- Part 1: Definitions, classification and selection criteria
Council for Harmonization of Electrotechnical Standards of the Nations in the Americas (CANENA)

• An Overview of the CANENA Harmonization Process
• Project Initiation
• Formation of the Technical Harmonization Committee
• Initial Development of Draft
• Preliminary Technical Review - by the Standards Development Organization (SDOs)
Standards Development Process

- **Proposal Stage**
  - Proposal submitted via UL’s Collaborative Standards Development system (CSDS)

- **Preliminary Review**
  - Proposal undergoes preliminary review for commenting by the STP and Standards Subscribers. (2 weeks)

- **Consideration of Comments**
  - Proposal submitter reviews any comments received on their proposal

- **Proposal Review (Ballot)**
  - Proposal undergoes review and balloting by the STP, review by Standards Subscribers, and public review (30-45 days)

- **Resolution of Comments**
  - Resolution of comments

- **Recirculation**
  - Recirculation of any changes to the proposal based on comments received & STP confirms or changes votes. (14-30 days)

- **Comment Resolution**
  - If consensus is achieved, then the proposal is adopted and has achieved ANSI approval. If consensus is not achieved, then the proposal fails.
  - Some circumstances may require a second recirculation to occur.

**AVERAGE OF 7 MONTHS**

1 Consensus: Consensus during ballot is considered achieved when (1) a majority of the STP have returned a ballot and (2) there is approval by at least two-thirds of those members who have submitted a vote, excluding abstentions.

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Thank you!

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