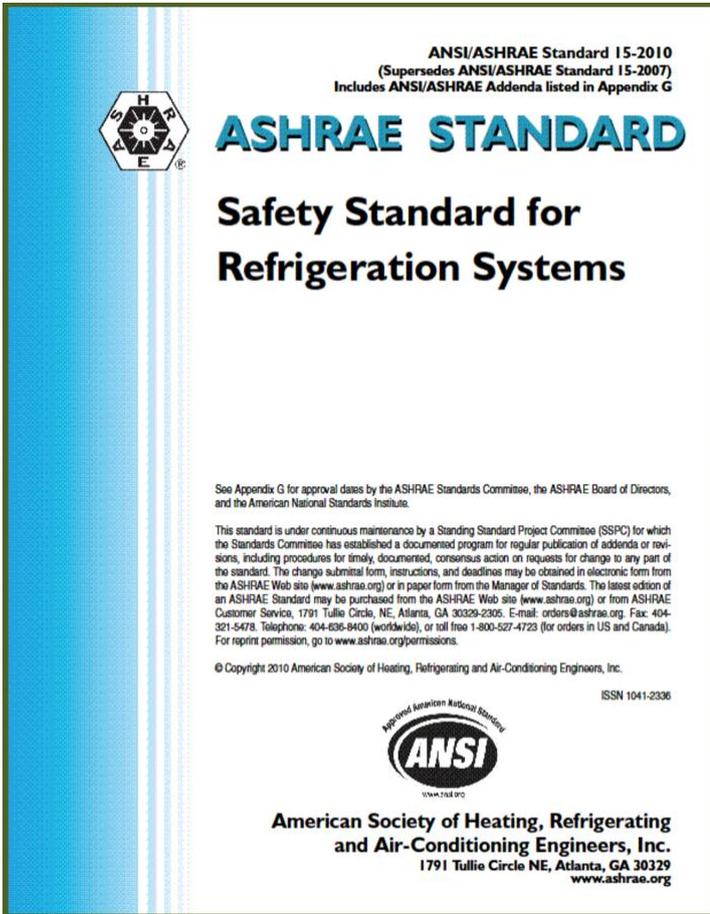


The major ASHRAE standards dealing with refrigerants are:

1. Standard 34, Designation and Safety Classification of Refrigerants
2. Standard 15, Safety Standard for Refrigeration Systems
3. Standard 147, Reducing the Release of Halogenated Refrigerants from Refrigerating and Air-Conditioning Equipment.

ASHRAE safety standards 15 and 34 covered the flammability and toxicity requirements.

Standard 15 Overview by Tom Watson, P.E. President ASHRAE



## Standard 15

- First developed as Safety Code for Mechanical Refrigeration in 1930
- Scope
  - design, construction, installation, operation and inspection of mechanical and absorption machines
  - modifications if not identical in function and capacity
  - refrigerant substitutions with different designation
- Generally written as self-sufficient document, it normatively references other standards, including Standard 34

## Status

- Standard 15 Committee formed ad hoc committee to draft requirements for use of all 2L refrigerants based on data and additional information made available to committee
- Prior to formal public review of proposed changes, committee sought input through Advisory Public Review
- Review of Addendum a to Standard 15-2010 initiated in July 2011
- Committee has reviewed comments and continues to work on inclusion of requirements for 2L refrigerants

## Class 2L Refrigerants Background

- Rules for Class 2L must be changed when compared to Class 2 and 3 to be useful. Failing this, there is no point in having Class 2L
- General guidance for Ad Hoc Working Group
  - Understand safety considerations in real applications considering most flammable refrigerants in new class
  - Rules given in ISO 5149 for use of Class 2L should be considered
  - Standard 15 and IIR 2 have rules for ammonia – rules should not be altered

## Standard 15 Concept

- Avoid ignition event entirely
  - Eliminate sources of ignition from areas where 2L refrigerant migrates during leak event
- Provide air movement to mitigate ignition
  - Risk of ignition directly proportional to time that large refrigerant leak fills a space at concentration above LFL. Use Ventilation to dilute and exhaust refrigerant Standard 15 Committee needed technical justification for proposed standards change through CFD and/or testing.

Source:

- “International Refrigerant Standards and their Influence on the Global HVAC Industry and Refrigerant Replacement” : [/www.unep.org/ozonaction/Portals/105/documents/virtualexpo/crh2013-WatsonTom%20\(ASHRAE\).pdf](http://www.unep.org/ozonaction/Portals/105/documents/virtualexpo/crh2013-WatsonTom%20(ASHRAE).pdf)