



ADDENDA

**ANSI/ASHRAE Addendum a to
ANSI/ASHRAE Standard 147-2019**

Reducing the Release of Halogenated Refrigerants from Refrigerating and Air-Conditioning Equipment and Systems

Approved by the ASHRAE Standards Committee on October 19, 2021, by the ASHRAE Board of Directors on November 10, 2021, and by the American National Standards Institute on December 6, 2021.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (<https://www.ashrae.org/continuous-maintenance>).

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ASHRAE Standing Standard Project Committee 147

Cognizant TC: 3.8, Refrigerant Containment

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FOREWORD

Addendum a modifies Section 9.2, "Refrigerant Transfer, Transport, and Storage," to address the safe storage of flammable refrigerants and adds NFPA 55 and IFC-ICC Chapter 58 to the normative references.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~striking through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum a to Standard 147-2019

Modify Section 9.2 to include new subsection 9.2.3.1 as shown.

9.2.3.1 Storage of Flammable Refrigerants. Storage of Class 2L, 2, and 3 refrigerants shall comply with NFPA 55, *Compressed Gases and Cryogenic Fluids Code*, and *International Fire Code (IFC)* Chapter 58, "Flammable Gases and Flammable Cryogenic Fluids."

Modify Section 11 as shown.

11. NORMATIVE REFERENCES

References required for compliance with this standard are listed below. Informative references are listed in Annex C.

1. UL. 2015. UL 1995, *Heating and Cooling Equipment*, 5th Edition. Northbrook, IL: Underwriters Laboratories.
2. ASHRAE. 2019. ANSI/ASHRAE Standard 15, *Safety Standard for Refrigeration Systems*. Atlanta: ASHRAE.
3. UL. 2011. UL60335-2-40, *Household and Similar Electrical Appliances—Safety—Part 2- 40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers*. Northbrook, IL: Underwriters Laboratories.
4. UL. 2017. UL60335-2-89, *Household and Similar Electrical Appliances—Safety—Part 2- 89: Particular Requirements for Commercial Refrigerating Appliances with an Incorporated or Remote Refrigerant Unit or Compressor*. Northbrook, IL: Underwriters Laboratories.
5. AHRI. 2014. AHRI 580, *Performance Rating of Non-Condensable Gas Purge Equipment for Use with Low Pressure Centrifugal Liquid Chillers*. Arlington, VA: Air-Conditioning, Heating and Refrigeration Institute.
6. ASTM. 2015. ASTM D642, *Standard Test Method for Determining Compressive Resistance of Shipping Containers, Components, and Unit Loads*. West Conshohocken, PA: ASTM International.
7. ASTM. 2019. ASTM D4577, *Standard Test Method for Compression Resistance of a Container Under Constant Load*. West Conshohocken, PA: ASTM International.
8. ASTM. 2015. ASTM D999, *Standard Test Methods for Vibration Testing of Shipping Containers*. West Conshohocken, PA: ASTM International.
9. ASTM. 2017. ASTM D4728, *Standard Test Method for Random Vibration Testing of Shipping Containers*. West Conshohocken, PA: ASTM International
10. ASTM. 2019. ASTM D6055, *Standard Test Methods for Mechanical Handling of Unitized Loads and Large Shipping Cases and Crates*. West Conshohocken, PA: ASTM International.
11. ASTM. 2014. ASTM D6179, *Standard Test Methods for Rough Handling of Unitized Loads and Large Shipping Cases and Crates*. West Conshohocken, PA: ASTM International.
12. ASTM. 2015. ASTM D880, *Standard Test Method for Impact Testing for Shipping Containers and Systems*. West Conshohocken, PA: ASTM International.

13. ASTM. 2019. ASTM D5276, *Standard Test Method for Drop Test of Loaded Containers by Free Fall*. West Conshohocken, PA: ASTM International.
14. ASHRAE. 2019. ANSI/ASHRAE Standard 34, *Designation and Safety Classification of Refrigerants*. Atlanta: ASHRAE.
15. GPO. 2004. *U.S. Code of Federal Regulations*. Title 40, Part 82, Subpart F, "Protection of stratospheric ozone." Washington, DC: U.S. Government Publishing Office.
16. ACCA. 2019. ANSI/ACCA 4QM, *Maintenance of Residential HVAC Systems*. Washington, DC: Air Conditioning Contractors of America.
17. ASHRAE. 2018. ANSI/ASHRAE/ACCA Standard 180, *Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems*. Atlanta: ASHRAE.
18. GPO. n.d. *U.S. Code of Federal Regulations*, Title 49, Part 178, Subpart C, "Specifications for packagings." Washington, DC: U.S. Government Publishing Office.
19. AHRI. 2015. AHRI Guideline K, *Containers for Recovered Non-Flammable Fluorocarbon Refrigerants*. Arlington, VA: Air-Conditioning, Heating, and Refrigeration Institute.
20. NFPA. NFPA 55, *Compressed Gases and Cryogenic Fluids Code*. Quincy, MA: National Fire Protection Association.
21. IFC. 2018. IFC-ICC, *Flammable Gases and Flammable Cryogenic Fluids*, Chapter 58. Washington, DC: International Code Council.

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ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

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As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

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