



Designation: D6231 – 11

Standard Specification for HFC-125 (Pentafluoroethane, C₂HF₅)¹

This standard is issued under the fixed designation D6231; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers the requirements for HFC-125 as a fire-fighting medium.

1.2 This specification does not address the fire-fighting equipment or hardware that employs HFC-125 or the conditions of employing such equipment, for example, hand helds, fixed installations, etc.

1.3 This specification does not address the storage or transportation of HFC-125. Storage, handling, and transportation issues are addressed in Practice D6268.

1.4 The values stated in both inch-pound and SI units are to be regarded separately as the standard. The values given in parentheses are for information only.

1.5 The following safety hazards caveat pertains to the test methods portion, Section 6, of this specification. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* Specific hazards statements are given in 4.3.

2. Referenced Documents

2.1 ASTM Standards:²

D6268 Practice for Handling, Transportation, and Storage of HFC-125, Pentafluoroethane (C₂HF₅)

D6806 Practice for Analysis of Halogenated Organic Solvents and Their Admixtures by Gas Chromatography

2.2 ISO Standards:

ISO 3427 Gaseous Halogenated Hydrocarbons (Liquefied Gases) – Taking a Sample³

¹ This specification is under the jurisdiction of ASTM Committee D26 on Halogenated Organic Solvents and Fire Extinguishing Agents and is the direct responsibility of Subcommittee D26.09 on Fire Extinguishing Agents.

Current edition approved Jan. 1, 2011. Published August 2011. Originally approved in 1998. Last previous edition approved in 2003 as D6231-1998(2003). DOI: 10.1520/D6231-11.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

2.3 ARI Standards:

2008 Appendix C Analytical Procedures for ARI Standard 700-2006⁴

2.4 U.S. Government Standards:

Code of Federal Regulations (CFR) Title 49, Part 172.101, Tables of Hazardous Materials and Special Provisions⁵
Code of Federal Regulations (CFR) Title 49, Part 172 Subpart D, Marking Requirements of Packaging for Transportation⁵

2.5 American Society of Refrigeration Engineers:
ASRE Standard 34, Designation of Refrigerants⁶

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *halogenated hydrocarbon, n*—the halogenated compound coding terminology system provides a convenient means to reference halogenated hydrocarbons (see ASRE 34). Halogenated hydrocarbons are saturated hydrocarbons in which one or more of the hydrogen atoms have been replaced by atoms of the halogen series: fluorine, chlorine, bromine, and iodine. It is convention to prefix the number with an abbreviation of the compound:

CFC = chlorofluorocarbon
HCFC = hydrochlorofluorocarbon
HFC = hydrofluorocarbon
FC = fluorocarbon
R = refrigerant

3.1.1.1 *Discussion*—By definition, the right-most digit of the numbering system is the number of fluorine atoms. The second digit from the right is the number of hydrogen atoms plus one (+1). The third digit from the right is one less (-1) than number of carbon atoms in the compound (when this number is zero (0) it is omitted from the number). Unaccounted for valance requirements are assumed to be chlorine atoms. When the compound contains bromine or iodine, the same rules apply except the letter “B” for bromine or “I” for iodine follows the

⁴ Available from the Air Conditioning, Heating and Refrigeration Institute, 4100 North Fairfax Drive, Suite 200, Arlington, VA, 22203-1678.

⁵ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20036.

⁶ Available from American Society of Refrigeration Engineers, *Refrigeration Engineering* 65, 49 (1957).