

1999 STANDARD for

SPECIFICATION FOR FLUOROCARBON REFRIGERANTS

Standard 700



IMPORTANT

SAFETY RECOMMENDATIONS

It is strongly recommended that the product be designed, constructed, assembled and installed in accordance with nationally recognized safety requirements appropriate for products covered by this standard.

ARI, as a manufacturers' trade association, uses its best efforts to develop standards employing state-of-the-art and accepted industry practices. However, ARI does not certify or guarantee safety of any products, components or systems designed, tested, rated, installed or operated in accordance with these standards or that any tests conducted under its standards will be non-hazardous or free from risk.

This standard supersedes ARI Standard 700-95.

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SPECIFICATION FOR FLUOROCARBON REFRIGERANTS

Section 1. Purpose

1.1 Purpose. The purpose of this standard is to establish purity specifications and specify the associated methods of testing for acceptability of fluorocarbon refrigerants regardless of source (new, reclaimed and/or repackaged) for use in new and existing refrigeration and air-conditioning products within the scope of ARI.

1.1.1 Intent. This standard is intended for the guidance of the industry including manufacturers, refrigerant reclaimers, repackagers, distributors, installers, servicemen, contractors and users.

1.1.2 Review and Amendment. This standard is subject to review and amendment as the technology advances.

Section 2. Scope

2.1 Scope. This standard specifies acceptable levels of contaminants (purity requirements) for fluorocarbon refrigerants regardless of source and lists acceptable test methods. These refrigerants are: R-11; R-12; R-13; R-22; R-23; R-32; R-113; R-114; R-123; R-124; R-125; R-134a; R-143a; R-401A; R-401B; R-402A; R-402B; R-403A; R-403B; R-404A; R-405A; R-406A ; R-407A; R-407B; R-407C; R-407D; R-407E; R-408A; R-409A; R-409B; R-410A; R-410B; R-411A; R-411B; R-412A; R-413A; R-500; R-502; R-503; R-507A; R-508A; R-508B; and R-509A as referenced in the ANSI/ASHRAE Standard 34.

Section 3. Definitions

3.1 Definitions. All terms in this document will follow the standard industry definitions established in the current edition of ASHRAE Terminology of Heating, Ventilation, Air-Conditioning and Refrigeration, unless otherwise defined in this section.

3.2 "Shall," "Should," "Recommended," or "It Is Recommended." "Shall," "should," "recommended," or "it is recommended" shall be interpreted as follows:

3.2.1 Shall. Where "shall" or "shall not" is used for a provision specified, that provision is mandatory if compliance with the standard is claimed.

3.2.2 Should, Recommended, or It is Recommended. "Should", "recommended", or "it is recommended" is used to indicate provisions which are not mandatory but which are desirable as good practice.

Section 4. Characterization of Refrigerants and Contaminants

4.1 Characterization. Characterization of refrigerants and contaminants addressed are listed in the following general classifications:

4.1.1 Identification.

- a. Gas Chromatography
- b. Boiling point and boiling point range

4.1.2 Contaminants.

- a. Water
- b. Chloride
- c. Acidity
- d. High boiling residue
- e. Particulates/solids
- f. Non-condensables
- g. Volatile impurities including other refrigerants

Section 5. Sampling and Summary of Test Procedures

5.1 Referee Test. The referee test methods for the various contaminants are summarized in the following paragraphs. Detailed test procedures are included in *Appendix C to ARI Standard 700*. If alternative test methods are employed, the user must be able to demonstrate that they produce results at least equivalent to the specified referee method.