SAE International

SURFACE VEHICLE RECOMMENDED PRACTICE

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Compatibility of Retrofit Refrigerants with Air-Conditioning System Materials

RATIONALE

The technical report covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE Interior Climate Control Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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Foreword—Refrigerants and refrigerant mixtures that might contain CFCs, HCFCs, HFCs, and hydrocarbons are being considered for introduction into the automotive aftermarket as retrofit refrigerants to service existing motor vehicles equipped with CFC-12 (R-12) mobile air-conditioning (A/C) systems. This document addresses the compatibility of air-conditioning system materials and components with such candidate retrofit refrigerants.

1. Scope—The purpose of this SAE Recommended Practice is to provide criteria for determining the compatibility of air-conditioning (A/C) system materials/components with candidate retrofit refrigerants intended to replace CFC-12 (R12) in mobile A/C systems originally designed to use CFC-12 (R-12).

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1657—Selection Criteria for Retrofit Refrigerants to Replace CFC-12 (R-12) in Mobile Air-Conditioning Systems

2.1.2 ASTM PUBLICATIONS—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 2670-88—Method for Measuring Wear Properties of Fluid Lubricants (Falex Method)
ASTM D 3233-86—Method for Measurement of Extreme Pressure Properties of Fluid Lubricants (Falex Method)

2.1.3 ASHRAE PUBLICATION—Available from ASHRAE, 1791 Tullie Circle NE, Atlanta, GA 30329-2305.

ASHRAE Standard 97-1989—Sealed Glass Tube Method to Test the Chemical Stability of Material for Use Within Refrigerant Systems

3. General Requirements

3.1 This document is complete only when combined with the requirements of SAE J1657.

3.2 For each refrigerant candidate, a recommended companion lubricant or class of lubricants shall be identified.