



# SURFACE VEHICLE STANDARD

**SAE****J2776 JAN2013**Issued 2006-10  
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Superseding J2776 OCT2006

(R) Refrigerant Purity and Container Requirements for New HFC-134a 1,1,1,2 - Tetrafluoroethane Refrigerant Used in Mobile Air-Conditioning Systems

## RATIONALE

This standard is being revised to add the requirements for certification to SAE J2911 and also add the same requirements which currently exist in SAE J2844 for R1234yf refrigerant.

### 1. SCOPE

This SAE Standard applies to new refrigerant used in motor vehicle passenger air-conditioning (A/C) systems designed to use HFC-134a.

Hermetically sealed, refrigerated cargo systems are not covered by this document.

### 2. REFERENCES

#### 2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

##### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

SAE J2844 R-1234yf (HFO-1234yf) New Refrigerant Purity and Container Requirements for Use in Mobile Air-Conditioning Systems

SAE J2911 Procedure for Certification that Requirements for Mobile Air Conditioning System Components, Service Equipment, and Service Technician Training Meet SAE J Standards

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[http://www.sae.org/technical/standards/J2776\\_201301](http://www.sae.org/technical/standards/J2776_201301)**

### 2.1.2 AHRI Publications

Available from Air-Conditioning, Heating and Refrigeration Institute, 4100 North Fairfax Drive, Suite 200, Arlington, VA 22203, Tel: 703-524-8800, [www.ari.org](http://www.ari.org).

## 2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

### 2.2.1 Compressed Gas Association Publications

Available from Compressed Gas Association, 4221 Walney Road, 5th Floor, Chantilly VA 20151-2923, Tel: 703-788-2700, [www.cganet.com](http://www.cganet.com).

## 3. PURITY SPECIFICATION

The refrigerant referred to in this document shall fulfill all requirements of ARI 700-2004 including the following levels. The refrigerant shall be tested according to the methods of test in ARI 700-1995 Appendix C.

### 3.1 Purity

#### 3.1.1 Volatile Impurities Including Other Refrigerants

##### 3.1.1.1 Method

The amount of volatile impurities including other refrigerants in the subject refrigerant shall be determined by gas chromatography as described in Appendix C to ARI Standard 700.

##### 3.1.2 Limits

The test sample shall not contain more than 0.5% by weight of volatile impurities including other refrigerants.

##### 3.1.2.1 Unsaturated Compound Volatile Impurities

The test sample of HFC-134a shall not contain more than 40 ppm by weight of halogenated unsaturated volatile impurities, unless listed individually in 3.1.2.2.

##### 3.1.2.2 Individual Listed Volatile Impurities

There is no individual impurity exceptions listed in this version of the Standard. Interested parties may petition SAE to list individual impurities at desired levels by submitting a request and information to justify the request to SAE headquarters for consideration by the SAE Interior Climate Control Standards Committee.

### 3.2 Other Requirements

3.2.1 As referenced in ARI 700-2004 moisture shall not exceed 10 ppm by weight.

3.2.2 High boiling residue shall not exceed 0.01% by volume.

3.2.3 Particulates/solids shall be visually clean to pass.

3.2.4 Acidity shall not exceed 1 ppm as expressed in ppm by weight as HCl.

3.2.5 Air and other non-condensables shall not exceed 1.5% gas phase by volume at 23.9 °C.