



SURFACE VEHICLE STANDARD

J2851™

SEP2022

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Superseding J2851 FEB2015

Recovery Equipment for Contaminated R-134a or R-1234yf Refrigerant
from Mobile Automotive Air Conditioning Systems

RATIONALE

This standard has been updated to reflect the use of the Pacifica hybrid for recovery testing and to capture changes in previously cited ANSI 12.12.01 to UL 12.12.01 reference.

1. SCOPE

This SAE Standard covers equipment used to remove contaminated R-134a and/or R-1234yf refrigerant from mobile air conditioning (MAC) systems.

1.1 Purpose

1.2 The purpose of this SAE Standard is to provide minimum performance and operating requirements for equipment used to recover contaminated refrigerant or to recover refrigerant at facilities which do not service MAC systems. Any contaminated refrigerant recovered with this equipment is to be returned to an EPA approved refrigerant reclamation facility that will process it appropriately as per AHRI 700 standard or dispose of it. Refrigerant recovered with this equipment cannot be recycled. Refrigerant recovery equipment is required to ensure adequate refrigerant recovery and to reduce emissions during the removal of refrigerant from mobile air conditioning systems.

1.3 Equipment shall be certified to meet all performance requirements outlined in this document and international and regional construction and safety requirements as outlined in Section 8 of 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 +1 724-776-4970 (outside USA), www.sae.org.

2.1.1.1 System Design Guidelines

SAE J639 Safety Standards for Motor Vehicle Refrigerant Vapor Compression Systems

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For more information on this standard, visit
https://www.sae.org/standards/content/J2851_202209/

2.1.1.2 Service Activities

- SAE J2197 HFC-134a (R-134a) Service Hose Fittings for Automotive Air-Conditioning Service Equipment
- SAE J2888 R-1234yf Service Hose, Fittings, and Couplers for Mobile Refrigerant Systems Service Equipment

2.1.1.3 Technician Service Procedures

- SAE J2845 R-1234yf (HFO-1234yf) and R-744 Technician Training for Safe Service and Containment of Refrigerants Used in Mobile A/C Systems

2.1.1.4 Service Equipment

- SAE J2099 Standard of Purity for Recycled R-134a (HFC-134a) and R-1234yf (HFO-1234yf) for Use in Mobile Air-Conditioning Systems
- SAE J2788 HFC-134a (R-134a) Recovery/Recycle/Recharging Equipment for Mobile Air-Conditioning Systems
- SAE J2810 HFC-134a (R-134a) Refrigerant Recovery Equipment for Mobile Automotive Air-Conditioning Systems
- SAE J2843 R-1234yf (HFO-1234yf) Recovery/Recycling/Recharging Equipment for Flammable Refrigerants for Mobile Air-Conditioning Systems
- SAE J2912 Performance Requirements for R-134a and R-1234yf Refrigerant Diagnostic Identifiers (RDI) for Use with Mobile Air Conditioning Systems
- SAE J2927 R-1234yf Refrigerant Identifier Installed in Recovery and Recycling Equipment for Use with Mobile A/C Systems
- SAE J3030 Automotive Refrigerant Recovery/Recycling/Recharging Equipment Intended for Use with Both R-1234yf and R-134a

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 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

- SAE J2296 Retest of Refrigerant Container
- SAE J2776 Refrigerant Purity and Container Requirements for New HFC-134a 1,1,1,2 - Tetrafluoroethane Refrigerant Used in Mobile Air-Conditioning Systems
- 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

2.2.2 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

- ISO 7010:201 Graphical Symbols - Safety Colours and Safety Signs - Registered Safety Signs

2.2.3 AHRI Publications

Available from Air Conditioning and Refrigeration Institute, 1501 Wilson Boulevard, Sixth Floor, Arlington, VA 22209.

AHRI 700 Specifications for Fluorocarbon Refrigerants

2.2.4 CGA Publications

Available from CGA, 14501 George Carter Way, Suite 103, Chantilly, VA 20151, Tel: 703-788-2700, www.cganet.com.

CGA S-1.1 Pressure Relief Device Standard Part 1 - Cylinders for Compressed Gases

2.2.5 Specification for Cylinders

It is the responsibility of the equipment manufacturer and/or equipment user to be compliant with the most recent cylinder standards that apply in the region where the equipment is used for recovery. For reference, examples of cylinder specifications are shown below.

NOTE: This list is not exhaustive and local/regional standards may change recovery cylinder requirements.

EU Cylinders ADR Standard and TPED Standard

U.S. Cylinders DOT Standard CFR 49, Section 173.304: Shippers - General Requirements for Shipments and Packaging

2.2.6 UL Publications

Available from UL, 333 Pfingsten Road, Northbrook, IL 60062-2096, Tel: 847-272-8800, www.ul.com.

UL 1769 Cylinder Valves

UL 1963 (Revision 4) Refrigerant Recovery/Recycling Equipment Standard for Safety for Refrigerant Recovery/Recycling Equipment

2.2.7 ANSI Accredited Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

UL12.12.01/CSA C22.2#213:2017(or newer) Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations (these standards refer to NFPA-70 and NFPA497)

3. SPECIFICATIONS AND GENERAL DESCRIPTION

- 3.1 The equipment must be able to recover (extract) contaminated refrigerant from a MAC system as per the test procedure of Section 7.
- 3.2 The equipment shall be suitable for use in an automotive service garage environment as defined in 6.1.1.
- 3.3 The equipment must be certified that it meets requirements of this document and the requirements of SAE J2911.
 - 3.3.1 The manufacturer can state certification of compliance with this Standard only after meeting the requirements in SAE J2911. (See Appendix B for additional information.)
 - 3.3.2 Certification of compliance to the requirements of 3.3 shall be made by an independent testing organization that has received approval by the EPA administrator to certify equipment as meeting the standard requirements identified under U.S. EPA 40 CFR Ch. I (7-1-08 Edition) 82.38.