



SURFACE VEHICLE STANDARD

J3030™

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Automotive Refrigerant Recovery/Recycling/Recharging Equipment
Intended for Use with Both R-1234yf and R-134a

RATIONALE

Minor updates needed as part of Five-Year Review.

FOREWORD

The purpose of this document is to establish specific minimum equipment requirements for automotive refrigerant recovery/recycling/recharge equipment intended for use with both R-134a and R-1234yf in a common refrigerant circuit. Establishing such specifications will ensure that this equipment does not cross-contaminate refrigerant above specified limits when used under normal operating conditions.

1. SCOPE

The purpose of this SAE Standard is to establish the specific minimum equipment requirements for recovery/recycling/recharge equipment intended for use with both R-1234yf and R-134a in a common refrigerant circuit that has been directly removed from, and is intended for reuse in, mobile air-conditioning (A/C) systems. This document does not apply to equipment used for R-1234yf and R-134a having a common enclosure with separate circuits for each refrigerant, although some amount of separate circuitry for each refrigerant could be used.

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: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside U.S. and Canada), www.sae.org.

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

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Full document details: SAE J3030_202512

For more information on this standard, visit
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Documents

Standard, visit Sharing Hub

SAE J2843	R-1234yf (HFO-1234yf) Recovery/Recycling/Recharging Equipment for 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
SAE J2912	Performance Requirements for R-134a and R-1234yf Refrigerant Diagnostic Identifiers (RDI) for Use with Mobile Air Conditioning Systems

2.1.2 Code of Federal Regulations (CFR) Publications

Copies of these documents are available online at www.ecfr.gov.

40 CFR § 82.38 Approved Independent Standards Testing Organizations

2.1.3 UL Publications

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

UL 60730-1 Standard for Automatic Electrical Circuits for Household and Similar Use - Part 1: General Requirements

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: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside U.S. and Canada), www.sae.org.

SAE J639	Safety and Design Standards for Motor Vehicle Refrigerant Vapor Compression Systems
SAE J2196	Service Hose for Automotive Air Conditioning
SAE J2197	Hfc-134a (R-134a) Service Hose Fittings for Automotive Air-Conditioning Service Equipment
SAE J2762	Method for Removal of Refrigerant from Mobile Air-Conditioning System to Quantify Charge Amount
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 J2888	R-1234yf Service Hose, Fittings, and Couplers for Mobile Refrigerant Systems Service Equipment
SAE J2913	R-1234yf [HFO-1234yf] Refrigerant Electronic Leak Detectors, Minimum Performance Criteria
SAE J2927	Integrated R-1234yf Refrigerant Identifier for Recovery and Recycling Equipment Used in Mobile A/C System Servicing

2.2.2 CGA Publications

Available from Compressed Gas Association, 8484 Westpark Drive, Suite 220, McLean, VA 22102, Tel: +1 703-788-2700, www.cganet.com.

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

2.2.3 Code of Federal Regulations (CFR) Publications

Copies of these documents are available online at www.ecfr.gov.

49 CFR Section 173.304 Filling of cylinders with liquefied compressed gases

2.2.4 UL Publications

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

UL 12:12.01 Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations

UL 991 Standard for Tests for Safety Related Controls in Employing Solid-State Devices

UL 1769 Cylinder Valves

UL 1963 Refrigerant Recovery/Recycling Equipment, Version 4, subject to the four exceptions of SAE J2843, 2.1.4

3. SPECIFICATION AND GENERAL DESCRIPTION

3.1 The equipment shall be suitable for use in an automotive service garage environment and be capable of continuous operation in ambient temperatures from 10 to 49 °C.

3.2 The equipment shall be certified that it meets this standard by a certifying laboratory as listed by the EPA administrator as identified under U.S. EPA 40 CFR § 82.38.

3.3 The equipment shall meet all feature content and functional requirements of both SAE J2788 for R-134a and SAE J2843 for R-1234yf and pass all test requirements of these standards. In addition, it shall pass a changeover test to determine that any refrigerant cross-contamination is within the limits of this standard, as described in Section 6 of this document. A changeover mode, beginning with a clearing procedure to minimize the amount of residual refrigerant in the plumbing lines, may be specified immediately prior to the test, which is described in Sections 5 and 6.

3.3.1 The laboratory may test R-134a for SAE J2788 and R-1234yf for SAE J2843 in either order. Before proceeding to the second refrigerant and following the second refrigerant but prior to the cross-contamination test, it shall ensure the machine has been cleared of either choice for the first refrigerant using laboratory equipment of confirmed performance capability for the changeover mode previously described. It may not rely on the clearing procedure built into the machine by the equipment manufacturer, as this will not be validated until the entire SAE J3030 procedure has been completed.

3.4 The equipment shall have a label which states "Design Certified by (Certifying Laboratory) to meet SAE J3030 for recovering, recycling, and recharging R-1234yf or R134a using common refrigerant circuits, design certified to meet SAE J2788 certified for high-voltage service, when configured for R-134a. Design certified to meet SAE J2843 when configured for R-1234yf." Label shall use bold-type letters at a minimum of 3 mm in height.

4. EQUIPMENT REQUIREMENTS FOR MACHINES DESIGNED TO USE BOTH REFRIGERANTS ON AN ONGOING BASIS

4.1 General

4.1.1 The equipment shall have an electronically controlled electromechanical lockout to permit the recovery, recycle, recharge sequence of either R-1234yf or R-134a, based on a sample from the vehicle system and a subsequent readout of the appropriate refrigerant from an identifier that meets SAE J2912. If it determines that the vehicle does not contain R-1234yf or R-134a in the required purity, it shall not permit refrigerant recovery.