

	SURFACE VEHICLE INFORMATION REPORT	
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Pressure Terminology Used In Fuel Cells and Other Hydrogen Vehicle Applications		

RATIONALE

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

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1. SCOPE

SAE J2579 is being developed by the SAE Fuel Cell Vehicle (FCV) Standards Committee to provide recommended practices for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles. As part of this work, definitions for pressurized systems and containers were developed. The purpose of this document is to disseminate these definitions prior to the release of SAE J2579 such that other technical groups are aware of the information.

2. REFERENCES

2.1 Applicable Publications

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

2.1.1 SAE Publications

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

SAE J2578 Recommended Practice for General Fuel Cell Vehicle Safety

SAE J2600 Compressed Hydrogen Surface Vehicle Refuelling Connection Devices

2.2 Related Publications

The following publications are provided for information purposes and are not a required part of this document. They should be consulted for additional information.

2.2.1 ASME Publication

Available from the ASME, 22 Law Drive, PO Box 2900, Fairfield, NJ 07007-2900, Tel: 973-882-1170, www.asme.org.

ASME B&PVC Section VIII Part UG Section 125

2.2.2 CSA America Publications

Available from CSA America, 8501 East Pleasant Valley Road, Cleveland, OH 44131-5575, Tel: 216-524-4990, www.csa-america.org.

CSA America HGV 2	Compressed Hydrogen Vehicle Fuel Containers
CSA America HPRD-1	Pressure Relief Devices for Hydrogen Vehicle Fuel Containers
CSA America HGV 3.1	Fuel System Components for Hydrogen Gas Powered Vehicles
CSA America HGV 4.1	Hydrogen Gas Vehicle (HGV) Dispensing Systems
CSA America HGV 4.2	Hoses for Compressed Hydrogen Vehicles and Dispensing Systems
CSA America HGV 4.3	Temperature Compensation Devices for Gaseous Hydrogen Vehicle Fuelling Stations
CSA America HGV 4.4	Breakaway Devices for Hoses Used in Hydrogen Vehicle Fuelling Stations
CSA America HGV 4.5	Priority and Sequencing for Hydrogen Vehicle Fuelling
CSA America HGV 4.6	Manually Operated Valves Used In Gaseous Hydrogen Vehicle Fuelling Stations
CSA America HGV 4.7	Automatic Pressure Valves for Use In Gaseous Hydrogen Vehicle Fuelling Stations
CSA America HGV 4.8	Hydrogen Gas Vehicle Fuelling Station Compressor

3. DEFINITIONS

3.1 Chemical Hydride System

A system that stores materials with chemically bonded hydrogen, releases hydrogen through chemical reactions, and stores reaction byproducts for later removal.

3.2 Flammability Limits

The limits of sufficient concentrations of fuel and oxidant to propagate combustion from an ignition source.

NOTE: See SAE J2578 for a complete discussion.

3.2.1 Upper Flammability Limit (UFL)

Highest concentration of fuel at which there is sufficient oxidant in the gas mixture for the mixture to be flammable.

NOTE: The UFL of hydrogen is 74% in air and 95% in pure oxygen as in each case 5% oxygen is required in the mixture. See SAE J2578 for a complete discussion.

3.2.2 Lower Flammability Limit (LFL)

Lowest concentration of fuel at which a gas mixture is flammable.

NOTE: National and international standard bodies (such as NFPA and IEC) recognize 4% hydrogen in air as the LFL. See SAE J2578 for a complete discussion as this criterium is appropriate for some circumstances and inappropriate for other situations.