

NOVEMBER 6, 2019

CSA Group Updates

7th Meeting for UN GTR 13 (Phase 2)

CSA Group's Hydrogen Standards

PUBLISHED BY CSA GROUP

- CSA Group has engaged with U.S. Department of Energy since early 2000s to develop initial suite of standards for FCEV and hydrogen station deployment
- 22 standards published to date
- 13 standards licensed to ISO for international standards development
- MOU with SAE International
- MOU with Bureau de normalisation du Québec

CSA FC 1

Stationary Fuel Cell Power Systems

CSA HPIT 2

Compressed Hydrogen Station and Components for Fueling Industrial Trucks

Compressed Hydrogen Powered Industrial Trucks On-Board Fuel Storage and Handling Components

A CSA HGV 4 SERIES:

CSA HGV 4.1

Hydrogen Dispensing Systems

CSA HGV 4.2

Hoses for Compressed Hydrogen Fuel Stations. Dispensers, and Vehicle Fuel Systems

CSA HGV 4.4

Breakaway Devices for Compressed Hydrogen Dispensing Hoses and Systems

CSA HGV 4.5

Priority and Sequencing Equipment for Hydrogen Vehicle Fueling

CSA HGV 4.6

Manually Operated Valves for Use in Gaseous Hydrogen Vehicle Fueling Stations

CSA HGV 4.7

Automatic Valves for Use in Gaseous Hydrogen Vehicle **Fueling Stations**

CSA HGV 4.8

Hydrogen Gas Vehicle Fueling Station Compressor Guidelines

CSA HGV 4.9

Hydrogen Fueling Station Guidelines

CSA HGV 4.10

Fittings for Compressed Hydrogen Gas and Hydrogen Rich Gas Mixtures

G CSA HPRD 1

Thermal Activated Pressure Relief Devices for Compressed Hydrogen Vehicle Fuel Containers

CSA HGV 4.3

Test Methods for Hydrogen Fueling Parameter Evaluation

CSA HGV 3.1

Fuel System Components for Compressed Hydrogen Gas Powered Vehicles

CSA HGV 2

Compressed Hydrogen Gas Vehicle Fuel Containers

CSA FC 3 Portable Fuel Cell Power Systems





CSA Group's Hydrogen Standards

RECENT ACTIVITIES

Recently Published

- HGV 4.3 Test methods for hydrogen fueling parameter validation
 - Companion document to SAE J2601
 - First binational HGV standard published by CSA Group
- CHMC 2 Test methods for evaluating material compatibility for compressed hydrogen applications – polymers
 - Binational standard

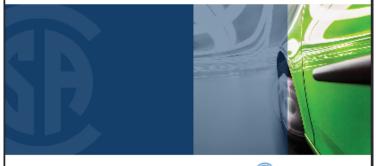


CSA/ANSI CHMC 2:19 National Standard of Canada

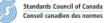
National Standard of Canada American National Standard



Test methods for evaluating material compatibility in compressed hydrogen applications — Polymers







Thank you for your ongoing financial guppor of CSA. Group standards development. This document is provided to you as a CSA Group standards are considered as a CSA Group committee and standards and of the committee and the standards and the committee and the commit





CSA Group's Hydrogen Standards

RECENT ACTIVITIES

In Development

- HGV 2 Hydrogen vehicle fuel containers
 - Binational edition due for public review Q4 2019
 - Harmonizing with ISO 19881
- HPRD 1 Thermally activated pressure relief devices for compressed hydrogen vehicle fuel containers
 - Binational edition due for public review Q1 2020
 - Harmonizing with ISO 19882

- HGV 3.1 Fuel system components for compressed hydrogen gas powered vehicles
 - Project initiation in Q4 2019
- HGV 4.3 Test methods for hydrogen fueling parameter validation
 - Update to align with J2601-2019
 - Project initiation in Q4 2019







Questions?



Thank you.

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