

**Name of the organization**

European Commission DG-JRC, Institute for Energy and Transport

Name of the infrastructure / laboratory

GasTeF: High Pressure Gas Testing Facility

Address and country of the infrastructure / laboratory

Westerduinweg 3, 1755 LE Petten, The Netherlands

Person responsible of the access / Contact person

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Main field of activity of the infrastructure / laboratory

► Transportation and Refueling Infrastructure

Short description of the infrastructure / laboratory

GasTeF is a unique facility among the publicly funded research centres in Europe, because it can test under real conditions full scale high-pressure components using hydrogen as a medium. Vehicle storage components (mainly tanks) are pressure-cycled for a pre-defined number of cycles. A typical cycle will consist of 3 minutes filling time and ca. 20 minutes emptying to the low pressure.

GASTE F consists basically of a two-stage compressor and a testing chamber equipped with temperature control and hydrogen tank diagnostics such as thermocouples, pressure gauges and a gas chromatograph. These components are installed in a safety bunker filled with nitrogen during experiments and protecting the external environment from every possible accidental situation. The facility is designed to be able to fill in an hydrogen container to a pressure 880 MPa within 5 minutes and to slowly empty it. Permeation rates and temperature evolution can be continuously monitored and life cycle studies can be performed.

Main research area(s) of the infrastructure / laboratory

High pressure hydrogen storage tanks testing

Instruments and tools available for the above mentioned research

High pressure piston compressor, hydrogen pre-cooler, system for inside tank temperature measurement, gas chromatograph for hydrogen permeation measurements, the facility is fully automated and remotely controlled.

