

Hydrogen for Power

New Fuel Cell - Power (FCP) grade Hydrogen for power generation applications based on fuel cell technology is now available in 18 x 50 litre, 300 bar Manifolded Cylinder Packs (MCPs) from Air Products - the world's leading supplier of Hydrogen at the forefront of the transition to green, renewable energy. Each pack contains 19.1Kg of Hydrogen gas, equivalent to around 640 kWh* of energy.

Fuel Cell - Power (FCP) grade conforms with the specifications defined in ISO 14687 (Hydrogen Fuel Quality – Product Specification) for the following uses:

- Type 1 Grade B – Gaseous Hydrogen - Industrial Fuel for Power Generation
- Type 1 Grade E (Cat.3) – Gaseous Hydrogen - PEM fuel cells for stationary appliances; high power / high efficiency applications.



Applications incorporating Hydrogen fuel cell technology include CCTV systems, lighting towers, air quality monitoring stations, welfare units, and compaction equipment. Our 18 x 50 litre 300 Bar Manifolded Cylinder Packs (MCPs) are particularly well

suited to stationary and back-up power generation equipment used in construction, broadcasting, and large scale public events. MCPs are available as part of a much broader range of products and services to support the energy transition.

For added piece of mind, each MCP is clearly labelled as conforming to **ISO 14687**, with certificates of conformity readily accessible to users via our **MyAirProducts** customer portal.

Generating a Cleaner Future with Green Hydrogen

Air Products **Fuel Cell - Power (FCP)** grade Hydrogen is also available with CertifHy™ guarantees of green, renewable origin, sold separately. CertifHy™ has developed high-quality hydrogen certification schemes across Europe that will support hydrogen's market growth as a reliable tool for consumers to track the origin of Hydrogen and its environmental attributes. CertifHy™ has been initiated at the request of the European Commission and is financed by the Clean Hydrogen Partnership.



* Based on 100% efficiency.

Gas specifications

Constituents	FCP Fuel Cell - Power
Hydrogen (H ₂)	99.9% (3.0)
Max. Impurities	1,000 µmol/mol
Oxygen (O ₂)	50 µmol/mol
Carbon Dioxide (CO ₂)	2 µmol/mol
Carbon Monoxide (CO)	0.2 µmol/mol
Nitrogen (N ₂)	400 µmol/mol
THC (except CH ₄)	2 µmol/mol
Total Sulfur (S)	0.004 µmol/mol
Mercury (Hg)	0.004 µmol/mol
Ammonia (NH ₃)	0.1 µmol/mol
Methane (CH ₄)	100 µmol/mol
Formaldehyde (HCHO)	0.2 µmol/mol
Formic acid (HCOOH)	0.2 µmol/mol
Halogenated compounds	0.05 µmol/mol
Max. Particulate Concentration	1 mg/kg
Sum of N ₂ , Ar, He (mole fraction)	1,000 µmol/mol
Max. Particulate Diameter	75 µm

Technical details and product codes

Product Code	Description	Size	Valve	Pressure (Bar g)	Contents (m ³)**	Hydrogen Vol (Kg)
6063692	PR_H2_18X50S_FCP__BS_U_300B	18x50s	NEVOC	300	224.23	19.1

**Sm³ @ 15°C, 1013.25 mbar

Pack Dimensions

Size	Height (mm)	Width (mm)	Depth (mm)	Gross Weight (Kg)
18x50S	2,138	1,204	925	2,400

The Importance of Hydrogen Quality

The effects of impurities on fuel cell performance can be serious. Many impurities found in inappropriate grades of Hydrogen can cause deterioration of fuel cell performance, reduced efficiency, and in some scenarios, cause irreversible damage to the fuel cell. Air products **Fuel Cell - Power (FCP)** grade Hydrogen undergoes a strict quality control regime during which a broad range of harmful impurities are measured to ensure they are below the maximum thresholds defined in **ISO 14687**.

Damaging impurities can include sulphur compounds, formaldehyde, ammonia, halogenated compounds, particulates, siloxanes, and mercury, which may not be controlled or measured in inappropriate Hydrogen production processes and products. Some fuel cell manufacturer warranties can be affected by the use of inappropriate grades, or sources of Hydrogen.

See table for specification of Air Products **Fuel Cell - Power (FCP)** grade Hydrogen recommended for power generation.

Fuel Cell - Mobility (FCM) grade Hydrogen for road vehicle refuelling, forklifts, and industrial trucks also available.

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