Lhyfe

Hydrogen 3.7

1 General

Hydrogen 3.7 fuel cell grade D type I is a gas with a purity > 99.97%.

2 Uses

Hydrogen 3.7 can be used in a wide range of applications and is particularly suitable as an energy source for fuel cells. Used to produce electricity without greenhouse gas emissions, these cells have applications in the transport sector and in stationary energy needs.

3 Physical properties

Under normal conditions of temperature and pressure, hydrogen is a flammable, colourless and odourless gas, which is lighter than air. It is soluble in water up to 1.6 mg/L at 21°C.

- **Chemical formula**
  H_2
- **Physical state**
  Gas
- **Molar mass**
  2.02g/mol
- **Density (1013hpa/15°C)**
  0.084kg/m3
- **Flammability limits**
  4 %-77%
- **Gas density relative to air (1013hpa/15°C)**
  0.0695
- **Melting point (1013hpa)**
  -259.2°C
- **Boiling point (1013hpa)**
  -253°C
- **Self-ignition point (1013hpa)**
  560°C

4 Chemical properties

Hydrogen is a powerful reducing agent, which ignites very easily when mixed with oxygen. Under unsafe conditions, it can cause violent vreactions or even explosions to occur, or react to form flammable mixtures that can ignite with heat and/or shock, or in contact with oxidants, halogens (bromine, chlorine, fluorine, iodine) or gas (acetylene, carbon monoxide). Metal catalysts, such as platinum and nickel, intensify these reactions.

5 Specifications

- **H_2 Purity**
  > 99.97 %
- **O_2 impurities**
  < 5 ppm
- **H_2O impurities**
  < 5 ppm
- **N_2 Impurities**
  < 300 ppm
- **Compliance with norms**
  ISO 14687 / EN 17124 / SAE J 27 19 (current standards)
- **Lhyfe reference**
  HY0003

6 Safety data sheet

Available at www.lhyfe.com