VÄTGAS SVERIGE

Hydrogen Europe

HYDROGEN SAFETY

For over 40 years, industry has used hydrogen in vast quantities as an industrial chemical (50 million T/year Source) and fuel for space exploration. During that time, industry has developed an infrastructure to produce, store, transport and utilise hydrogen safely.

In many cases, hydrogen is safer than the fuel we currently use to power our cars. Carbon-based fuels tend to spread as liquids. When it burns, conventional fuel produces hot ash, creating radiant heat. This isn't the case with hydrogen. In its pure form, hydrogen burns no carbon and produces no hot ash and very little radiant heat.

Hydrogen is being used for a long time already and has been produced, stored and transported all across Europe for decades. Several thousand customer sites are supplied with bottled hydrogen and thousands semi-trailers deliver several hundreds million cubic meters a year with an accident rate that is no different from that of any other gas transported. Unfortunately, there are still misperceptions that spring from the absence of knowledge that hydrogen is already on the market and a promising energy carrier that could help decarbonise industry and transport.

You can find further information here:

- The International Association for Hydrogen Safety hysafe.info
- Hydrogen compared to other fuels h2tools.org/bestpractices/hydrogen-compared-other-fuels
- Hydrogen vs fossil fuel safety blog.ballard.com/hydrogen-safety-myths
- European Hydrogen Safety Panel www.fch.europa.eu/page/european-hydrogen-safety-panel
- Just how safe are hydrogen cars? www.youtube.com/watch?v=6cMCO37A1jY
- Hydrogen Energy - The firefighters of Manche transported by hydrogen (in FR) www.youtube.com/watch?time_continue=6&v=QNqtGkVm8w8

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SAFETY OF HYDROGEN VS OTHER FUELS

REFUELING STATIONS

More than a century of gasoline reliance has bred a natural public familiarity and comfort with this fuel. Yet gasoline is far more flammable and dangerous than hydrogen fuel.

When petrol or diesel fuels leak, these fuels pool close to the ground, increasing ignition likelihood. When ignition does occur, it can result in a dangerous and long-lasting fire. Between 2004 and 2008, 1 in every 13 conventional service stations experienced a fire.

In contrast, between 2007 and 2010, the US Department of Energy has only recorded one hydrogen fueling station incident resulting in an ignition (the Emeryville incident) and no injuries or fatalities have been recorded.

If a leak in a hydrogen tank or fuel cell were to occur, the gas disperses rapidly, rising upwards at a speed of 72 km/hr, minimizing the likelihood for ignition. In the event that hydrogen does ignite, hydrogen flames generate a low radiant heat due to the absence of carbon and the fire will quickly burn out.

VEHICLES

Concerning vehicles, for the first time since its creation in 1997, the Euro NCAP independent organism tested a FCEV, using the same crash-tests than for the thermic vehicles. The new Hyundai NEXO got the maximum rating of 5 stars.

A safe car, simply put.