

Evonik is one of the world's leading specialty chemicals companies. The central elements of our strategy for sustained value creation are profitable growth, efficiency and values. Around 80 percent of sales come from market-leading positions, which we are systematically expanding. We concentrate on high-growth megatrends, especially health, nutrition, resource efficiency and globalization. For more information visit [www.evonik.com](http://www.evonik.com).

At Evonik, safety is our #1 priority. We believe safety is no accident, so we monitor our facilities 24-7. Evonik has established safety standards that meet and/or exceed regulatory requirements.

#### IN THE EVENT OF A SUSPECTED GAS EMERGENCY:

**Isolate the area and restrict entry.** Only trained emergency response personnel and designated Evonik employees should be in the vicinity.

**Establish isolation zones.** Based upon measurements from combustible gas indicator instruments, seal off the area to any persons other than trained personnel and designated AP employees. Gas clouds, odor or lack thereof is not sufficient to establish safe zones.

**Avoid creating sparks.** Potential ignition sources for Hydrogen includes static electricity, electrical motors, firearms, non-explosion-proof flashlights or tools, and any open flame or sparks. Do not light a match, start an engine, use a cellular/mobile/telephone, switch lights on and off or do ANYTHING that may create even the slightest spark.

**Make the operator aware of the situation, immediately.** Check the posted right-of-way or station signs to find out what company operates the pipeline and how to contact the operator and any other operators in the area.

**Let the escaping gas burn if it is on fire.** Attempting to extinguish a gas fire may result in a secondary explosion. If necessary, provide cooling for nearby exposures that are threatened by the fire.

**Let Evonik personnel cut off the fuel supply.** DO NOT operate the valves yourself.

**Avoid forced ventilation of structures and excavations.** Forced ventilation can actually increase the possibility of a flammable atmosphere.

#### PHYSICAL AND CHEMICAL PROPERTIES OF HYDROGEN

**Form :** Compressed gas

**Color :** Colorless gas

**Odor :** None

**Molecular Weight :** 2.02 g/mol

**Relative vapor density :** 0.07 (air = 1)

**Relative density :** 0.07 (water = 1)

**Density :** 0.006 lb/ft<sup>3</sup> (0.0001 g/cm<sup>3</sup>) at 70 °F (21 °C)

**Specific Volume :** 191.97 ft<sup>3</sup>/lb (11.9830 m<sup>3</sup>/kg) at 70 °F (21 °C)

**Boiling point/range :** -423 °F (-252.9 °C)

**Critical temperature :** -400 °F (-240 °C)

**Melting point/range :** -435 °F (-259.2 °C)

**Autoignition temperature :** 1,040 °F (560 °C)

**Upper flammability limit :** 75 %(V)

**Lower flammability limit :** 4 %(V)

**Water solubility :** 0.0016 g/l

#### 24-Hour Emergency Contact: 1-316-522-8181

**PRODUCTS/DOT GUIDEBOOK ID#/GUIDE#:**  
Hydrogen 1049 115

#### KANSAS COUNTIES OF OPERATION:

Sedgwick

*Changes may occur. Contact the operator to discuss their pipeline systems and areas of operation.*

#### EMERGENCY OVERVIEW OF HYDROGEN

- Burns with an invisible flame.
- High pressure gas.
- Can cause rapid suffocation.
- Extremely flammable.
- May form explosive mixtures in air.
- Immediate fire and explosion hazard exists when mixed with air at concentrations exceeding the lower flammability limit (LFL).
- High concentrations that can cause rapid suffocation are within the flammable range and should not be entered.
- Avoid breathing gas.
- Self contained breathing apparatus (SCBA) may be required.

