Hydrogen chloride HCl

Marking

CAS 7647-01-0

Characterization acc. ADR UN 1050 HYDROGEN CHLORIDE, ANHYDROUS, 2.3 (8),(C/D)

Cylinder Marking

Shoulder color: yellow

Essential properties

liquified gas, heavier than air, colorless, pungent, corrosive, toxic

Symbols of risks

For additional safety information see safety data sheet *-HCL-069

Description

Colourless, toxic, strongly hygroscopic, liquified gas with sticking odor. Very corrosive to skin, eyes and respiratory system. In moisty air HCl-gas forms mist from hydrochloric acid droplets. Violent reaction with unsaturated hydrocarbons, ammonia, organic amines and ignoble metals. Acc. to ISO 10298: LC50/1h = 3120 ppm.

Materials

Cylinders and Valves: Steel, stainless steel, Monel, nickel; no brass or copper(-alloys), no aluminium(-alloys)
Normalized / annealed steel only under observance of the demanded max. strength properties if pmax > TP/5; danger of hydrogen embrittling
Seals: PTFE, PCTFE, PVDF, PE, PVC

Physical Properties			
molecular weight	36,461 kg/kmol	**vapour pressure at 20°C**	
critical point		**gas density at 0°C and 1,013 bar**	1,6423 kg/m³
temperature	324,6 K	**density ratio to air**	1,2702
Pressure	83,1 bar	**gas density at 15°C and 1 bar**	1,534 kg/m³
density	0,45 kg/l	**conversion factor**	
triple point		liquid at Ts to m³ gas (15°C, 1 bar)	
temperature	158,96 K	**virial coefficient**	
Pressure	0,138bar	Bn at 0°C	$-9{,}3*10^{-3}$ bar^{-1}
boiling point		B30 at 30°C	$-6{,}4*10^{-3}$ bar^{-1}
temperature	188,12 K; -85,0 °C	**gaseous state at 25°C and 1 bar**	
liquid density	1,1906 kg/l	specific heat capacity cp	0,7987 kJ/kg K
evaporation heat	443 kJ/kg	thermal conductivity	$139*10^{-4}$ W/m K
		dynam. viscosity	$14{,}60*10^{-6}$ Ns/m²