

Marking

CAS-Number	1333-74-0
Characterization acc. ADR	UN 1049, Hydrogen, compressed, 2.1 Class 2, 1F

Cylinder Marking



shoulder:
red

Essential properties

Colourless, odorless, flammable gas, compressed, very much lighter than air

Symbols of Risks



highly flammable



gas, compressed

Physical Properties

molecular weight:	2,0158 kg/kmol
gas density at 0°C and 1,013 bar:	0,0899 kg/m ³
density ratio to air:	0,0695

For additional safety information see Material-/safety data sheet No. 067 A (Wasserstoff)

Valves / Manifolds

Valve connection	DIN 477 Nr. 1: W 21,8 x 1/14" LH 300 bar CEN Nr. 4: W 30 x 2 LH
Recommended Manifolds	Spectrotec



Specifications / Cylinders				
		technical	4.0	
Composition				
H ₂	>	99,5	99,99	Vol.-%
Impurities				
H ₂ O	<	-	20	ppmv
O ₂	<	-	2	ppmv
N ₂	<	-	50	ppmv
Cylinders / Contents				
F 10 200 bar		1,8	1,8	m ³
F 20 200 bar		3,6	3,6	m ³
F 50 200 bar		8,9	8,9	m ³
F 50 300 bar		12,6	12,6	m ³
B 12* F 50 200 bar		107,0	107,0	m ³
B 12* F 50 300 bar		151,3	151,3	m ³

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Description

Farbloses, brennbares, geruchloses Gas. Sehr viel leichter als Luft. Bildet mit Sauerstoff oder Chlor sehr brisant explodierende Gemische (Knallgas!). Bei hohen Ausströmgeschwindigkeiten besteht die Gefahr der Selbstentzündung. Die dabei entstehende Flamme ist kaum sichtbar.

detection Detektor für brennbare Gase

Safety data

Explosion Range	4,0 - 77 Vol. %
Ignition Temperature	560 °C

Materials

Flaschen u. Ventile: alle üblichen Werkstoffe
Normalisierte / vergütete Stähle nur unter Beachtung der geforderten max. Festigkeitswerte; Gefahr von Wasserstoffversprödung
Dichtungen: PCTFE, PVDF, PA PE

Physical Properties			
molecular weight	2,0158 kg/kmol	vapour pressure at 20°C	
Critical Point		gas density at 0°C and 1,013 bar	0,0899 kg/m ³
temperature	33,19 K	density ratio to air	0,0695
Pressure	13,15 bar	gas density at 15°C and 1 bar	0,08409 kg/m ³
density	0,03012 kg/l	Conversion Factor	
Triple Point		liquid at Ts to m ³ gas (15°C, 1 bar)	
temperature	13,957 K	Virial Coefficient	
Pressure	0,072 bar	Bn at 0°C	0,6*10 ⁻³ bar ⁻¹
Boiling Point		B30 at 30°C	0,58*10 ⁻³ bar ⁻¹
temperature	20,39 K	Gaseous State at 25°C and 1 bar	
liquid density	0,07079 kg/l	specific heat capacity cp	14,3 kJ/kg K
evaporation heat	445,6 kJ/kg	thermal conductivity	1861 10 ⁻⁴ W/m K
		dynam. viscosity	8,92*10 ⁻⁶ Ns/m ²