Helium He

PURE GASES

Marking

CAS-Number 7440-59-7

Characterization acc. ADR UN 1046, Helium, compressed, 2.2 Class 2, 1A

Cylinder Marking  shoulder: brown

Essential properties

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

Symbols of Risks  gas, compressed

Physical Properties

molecular weight:	4,0026 kg/kmol
gas density at 0°C and 1,013 bar:	0,1785 kg/m³
density ratio to air:	0,1380

For additional safety information see Material-/safety data sheet No. 061 A (Helium)

Valves / Manifolds

Valve connection DIN 477 Nr. 6: W 21,8 x 1/14"
300 bar: CEN Nr. 1: W 30 x 2

Recommended Manifolds Spectrolab FM 61/FM 62
Spectrocem FE 61/FE 62

Specifications / Cylinders		4.6	5.0	5.6	ECD	6.0	
Composition							
He	>	99,996	99,999	99,9996	99,9996	99,9999	Vol.-%
Impurities							
H_2O	<	5	3	2	2	0,5	ppmv
O_2	<	5	1	1	1	0,5	ppmv
N_2	<	20	4	1	1	0,5	ppmv
THC (as CH_4)	<	1	0,2	0,1	0,1	0,1	ppmv
CO + CO_2	<	-	-	0,1	-	0,1	ppmv
hal. HC	<	-	-	-	1	-	ppbv
Cylinders / Contents							
F 02 200 bar		-	-	0,4	-	0,4	m³
F 05 200 bar		0,9	0,9	-	-	0,9	m³
F 10 200 bar		1,8	1,8	1,8	1,8	1,8	m³
F 20 200 bar		3,7	3,7	-	-	3,7	m³
F 20 300 bar		5,3	5,3	-	-	-	m³
F 50 200 bar		9,2	9,2	9,2	9,2	9,2	m³
F 50 300 bar		13,2	13,2	-	-	13,2	m³
B 12 * F 50 200 bar		110,4	110,4	-	-	110,4	m³
B 12 * F 50 300 bar		158,1	158,1	-	-	158,1	m³

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Description

Colourless, odorless rare gas. Very much lighter than air. In closed rooms the breathing air is displaced (danger of asphyxiation). The inhalation of the gas effects a rise in the frequency of voice (Mickey-Mouse-effect).

detection Helium-detector

Materials

Cylinders and Valves: any usual materials
Seals: PCTFE, PVDF, PA, PP, IIR, NBR, CR, FKM, EPDM

Physical Properties			
molecular weight	4,0026 kg/kmol	**vapour pressure at 20°C**	
Critical Point		**gas density at 0°C and 1,013 bar**	0,1785 kg/m³
temperature	5,2014 K	**density ratio to air**	0,1380
Pressure	2,2746 bar	**gas density at 15°C and 1 bar**	0,1673 kg/m³
density	0,06964 kg/l	**Conversion Factor**	
Triple Point		liquid at Ts to m³ gas (15°C, 1 bar)	
temperature	2,177 K	**Virial Coefficient**	
Pressure	0,05035 bar	Bn at 0°C	$0{,}53*10^{-3}$ bar^{-1}
Boiling Point		B30 at 30°C	$0{,}47*10^{-3}$ bar^{-1}
temperature	4,224 K, -269 °C	**Gaseous State at 25°C and 1 bar**	
liquid density	0,1250 kg/l	specific heat capacity cp	5,19412 kJ/kg K
evaporation heat	20,413 kJ/kg	thermal conductivity	$1500*10^{-4}$ W/m K
		dynam. viscosity	$19{,}68*10^{-6}$ Ns/m²

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Version: 1.0