

Marking

CAS

Characterization acc. ADR

Cylinder Marking

630-08-0
UN 1016 CARBON MONOXIDE
COMPRESSED, 2.3 (2.1), (B/D)



Shoulder color: yellow

Essential properties

compressed gas, lighter than air, colorless, odorless, flammable, toxic, toxic to reproduction, organ-damaging

Symbols of risks



Physical Properties

molecular weight	28,0104 kg/kmol
gas density at 0 °C and 1,013 bar	1,2506 kg/m ³
density ratio to air	0,9672

For additional safety information see safety data sheet *-CO-019

Valves / Manifolds

Valve connection

acc. to national regulations

Recommended Manifolds

Spectrolab FM 51 / FM 52exact
Spectrocem FE 51 / FE 52exact



Specification / receptacles						
		Carbon monoxide standard	Carbon monoxide 2.5	Carbon monoxide 3.7	Carbon monoxide 4.7	
Composition						
CO	≥	98	99.5	99.97	99.997	Vol.-%
Impurities						
Ar	≤	2,000	300	150	7	ppmv
CO ₂	≤	-	-	-	1	ppmv
O ₂	≤	20	20	10	5	ppmv
N ₂	≤	9,000	600	20	10	ppmv
H ₂	≤	8,000	100	5	1	ppmv
HC	≤	500	50	10	2	ppmv
H ₂ O	≤	-	5	5	3	ppmv
Cylinder / Contents						
F 10 150 bar		1.5	-	-	-	m ³
F 10 200 bar Alu		1.9	-	1.9	1.9	m ³
F 40 150 bar		5.9	-	-	-	m ³
F 40 200 bar Alu		7.6	-	-	-	m ³
F 50 150 bar		7.4	-	-	-	m ³
F 50 200 bar Alu		9.5	9.5	9.5	9.5	m ³
F 50*12 200 bar Alu		114.3	-	-	-	m ³

Remarks

Applications:

Important precursor in organic chemistry to form methanol, aldehydes and ketones, organic acid chlorides, acetic acid and others. CO is also used to clean metallic nickel by the Mond process.

Delivery only with end user statement!

No delivery to private person!

Content in m³ at 15 °C, 1 bar

MESSER 
Gases for Life

Messer Group GmbH

Messer-Platz 1

65812 Bad Soden

<https://www.messergroup.com>

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Description

Colourless, odorless, toxic, flammable gas. Flammability limit given at a humidity of at least 80 Vol.%, in dry air 13,7 - 70,2 Vol.%. No warning by odor. In air explosive atmospheres are possible. Metals like iron, nickel, cobalt, manganese form toxic, slightly volatile carbonyles at pressures of more than 35 bar (danger of corrosion!). Acc. to ISO 10298: LC50/1h = 3760 ppm.

Materials

Cylinders and Valves: aluminium, brass, copper, stainless steel.
Danger of stress corrosion cracking with steels with higher strength
Seals: PTFE, PCTFE, PVDF, PA, PP, NBR, CR, Q, EPDM

Physical Properties			
molecular weight	28,0104 kg/kmol	vapour pressure at 20 °C	
critical point		gas density at 0 °C and 1,013 bar	1,2506 kg/m ³
temperature	132,85 K	density ratio to air	0,9672
Pressure	34,935 bar	gas density at 15 °C and 1 bar	1,1705 kg/m ³
density	0,3039 kg/l	conversion factor	
triple point		liquid at Ts to m ³ gas (15 °C, 1 bar)	
temperature	68,127 K	virial coefficient	
Pressure	0,1540 bar	Bn at 0 °C	-066*10 ⁻³ bar ⁻¹
boiling point		B30 at 30 °C	-0,31*10 ⁻³ bar ⁻¹
temperature	81,638 K; -192 °C	gaseous state at 25 °C and 1 bar	
liquid density	0,79141 kg/l	specific heat capacity cp	1,04068 kJ/kg K
evaporation heat	214,84 kJ/kg	thermal conductivity	249*10 ⁻⁴ W/m K
		dynam. viscosity	17,7*10 ⁻⁶ Ns/m ²