

Marking**CAS-Number** 124-38-9**Characterization acc. ADR** UN 1013, Carbon dioxide, 2.2
Class 2, 2 A**Cylinder Marking**shoulder:
grey**Essential properties**

Colourless, odorless, asphyxiating gas, liquefied, heavier than air

Symbols of Risks

gas, compressed

Physical Properties

molecular weight:	44,0098 kg/kmol
gas density at 0°C and 1,013 bar:	1,9767 kg/m ³
density ratio to air:	1,5289
vapour pressure at 20°C:	57,258 bar

For additional safety information see Material-/safety data sheet No. *-CO2-018A

Valves / Manifolds**Valve connection** acc. to national standards
liquid withdrawal trough dip tube for any
SFC/SFE-products**Recommended Manifolds** Spectrolab FM 51 / FM 52exact
Spectrochem FE 51 / FE 52exact
For SFC/SFE-products: withdrawal
fittings (without pressure reduction)**Specifications / Forms of delivery**

		4.5	4.8	5.5 SFC/SFE	5.5 SFC/SFE with He-pressure head space	
Composition						
CO ₂	>	99,995	99,998	99,9995	99,9995 (125 bar He-pressure head space)	Vol.-%
Impurities*						
H ₂ O	<	5	3	-	-	ppmv
O ₂	<	10	2	1	1	ppmv
N ₂	<	25	8	2	2	ppmv
THC (as CH ₄)	<	1	1	0,5	0,5	ppmv
CO	<	1	1	0,5	0,5	ppmv
Cylinders / Contents						
F 10		7,5	-	-	-	kg
F 40		30,0	-	30,0	18,0	kg
F 50		37,5	37,5	-	-	kg
Bdl 12 * F 50		450,0	-	-	-	kg

RemarksApplications:
Active gas in CO₂-Lasers
Component in artificial biological atmospheres
Solvent for supercritical extraction and chromatography (SFE / SFC)

* Analysis from evaporated liquid phase.

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Description

Colourless, liquefied gas with slightly sourish smelling resp. taste. During expansion the carbondioxide can be cooled down below sublimation temperature. This results in CO₂-snow(dry ice).

detection test tubes

Safety data

TLV 5000 ml/m³

Materials

Cylinders and Valves: any usual materials
In the presence of humidity danger of corrosion of steel
Seals: PTFE, PCTFE, PVDF, PA, PP

Physical Properties

molecular weight	44,0098 kg/kmol	vapour pressure at 20°C	57,258 bar
Critical Point		gas density at 0°C and 1,013 bar	1,9767 kg/m ³
temperature	304,21 K	density ratio to air	1,5289
Pressure	73,825 bar	gas density at 15°C and 1 bar	1,8474 kg/m ³
density	0,466 kg/l	Conversion Factor	
Triple Point		liquid at Ts to m ³ gas (15°C, 1 bar)	
temperature	216,58 K	Virial Coefficient	
Pressure	5,185 bar	Bn at 0°C	-6,64*10 ⁻³ bar ⁻¹
Boiling Point		B30 at 30°C	-4,78*10 ⁻³ bar ⁻¹
temperature	194,674 K; -78,5 °C	Gaseous State at 25°C and 1 bar	
liquid density	(sublimation point)	specific heat capacity cp	0,8504 kJ/kg K
evaporation heat	573,02 kJ/kg	thermal conductivity	164*10 ⁻⁴ W/m K
		dynam. viscosity	14,833*10 ⁻⁶ Ns/m ²