

Marking

CAS-Number 10024-97-2

Characterization acc. ADR UN 1070, Nitrous oxide, 2.2 (5.1)
Class 2, 2 O

Cylinder Marking

shoulder:
blue

Essential properties

Colourless, odorless, oxidizing, narcotic gas, liquified, heavier than air

Symbols of Risks

oxidizing



gas, liquified

Physical Properties

molecular weight: 44,013 kg/kmol
 gas density at 0°C and 1,013 bar: 1,9781 kg/m³
 density ratio to air: 1,5299
 vapour pressure at 20°C: 50,599 bar

For additional safety information see Material-/safety data sheet No. *-N2O-093A

Valves / Manifolds

Valve connection acc. to national standards

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

**Specifications / Forms of delivery**

		2.0	UHP	
Composition				
N ₂ O	>	99,0	99,999	Vol.-%
Impurities				
CO ₂	<	-	1	ppmv
CO	<	-	1	ppmv
O ₂ / N ₂ / Ar	<	-	-	ppmv
H ₂ O	<	-	1	ppmv
CH ₄	<	-	0,1	ppmv
O ₂ + Ar	<	-	1	ppmv
N ₂	<	-	5	ppmv
NO	<	-	1	ppmv
NO ₂	<	-	1	ppmv
NH ₃	<	-	5	ppmv
Cylinders / Contents				
F 10		8,0	7,0	kg
F 50		37,5	37,5	kg

Remarks

Applications:
 oxidizing agent in atomic absorption spectrometry (AAS)
 oxidizer in rocket propellants
 anaesthesia in medical fields
 propellant for whipped cream (food industries)

UHP: oxidizing and etching gas in semiconductor industries

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Description

Colourless, oxidizing, liquified gas slightly sweet taste and pleasant smell. In a mixture with air-Oxygen intoxicant and narcotic. Forms explosive mixtures with hydrocarbons, ammonia, carbon monoxide, carbon disulphide, fluorine, phosphine, sulphur dioxide, hydrogen sulphide. No contact to oil, grease, glycerine, carbon and flammable organic substances!

Safety data

TLV 100 ml/m³ (recommendation)

Materials

Cylinders and Valves: any usual materials
danger of stress corrosion cracking caused by humidity at brass or copper(-alloys). Keep fittings and pipes free from oil and grease!
Seals: PTFE, PCTFE

Physical Properties

molecular weight	44,013 kg/kmol	vapour pressure at 20°C	50,599 bar
Critical Point		gas density at 0°C and 1,013 bar	1,9781 kg/m ³
temperature	309,56 K	density ratio to air	1,5299
Pressure	72,4 bar	gas density at 15°C and 1 bar	1,848 kg/m ³
density	0,452 kg/l	Conversion Factor	
Triple Point		liquid at Ts to m ³ gas (15°C, 1 bar)	
temperature	182,34 K	Virial Coefficient	
Pressure	0,8784 bar	Bn at 0°C	-7,18*10 ⁻³ bar ⁻¹
Boiling Point		B30 at 30°C	-5,08*10 ⁻³ bar ⁻¹
temperature	184,69 K; -88,5 °C	Gaseous State at 25°C and 1 bar	
liquid density	1,281 kg/l	specific heat capacity cp	0,8795 kJ/kg K
evaporation heat	376 kJ/kg	thermal conductivity	173*10 ⁻⁴ W/m K
		dynam. viscosity	14,98*10 ⁻⁶ Ns/m ²