Westfalen AG · Industrieweg 43
D-48155 Münster · Tel. 02 51/6 95-0
Fax 02 51/6 95-194 · www.westfalen-ag.de

Nitrogen 4.8

Product Designation	Nitrogen 4.8
Physical state	cryogenically liquefied
Chemical symbol	N_2
Purity	99,998 vol.%
Other names	Nitrogenium
	E 941

Impurities	Maximum value
Oxygen	5 vol. ppm
Hydrocarbons	1 vol. ppm
Moisture	5 vol. ppm

Delivery formats

For static and mobile tank installations as well as cryocontainers

Size, content and operating pressure are configured to individual requirements for both static and mobile tank installations.

Other delivery formats

on request
on request
Alumini® 12, 200 Nitrogen 5.0
Alumini® 12, 200 Nitrogen 5.0
in static and mobile tanks: Liquid nitrogen 4.8, 5.0, 6.0, Protadur® E 941 and Secudur® N
in static and mobile tanks: Liquid nitrogen 4.8, 5.0, 6.0, Protadur® E 941 and Secudur® N
in steel cylinders and bundles: Nitrogen 3.0, 4.0, 4.8, 5.0, 5.5, 6.0, ECD, Secudur® N and Protadur® E 941
in steel cylinders and bundles: Nitrogen 3.0, 4.0, 4.8, 5.0, 5.5, 6.0, ECD, Secudur® N and Protadur® E 941
in 300 bar technology: Nitrogen 3.0, 4.8, 5.0, Secudur® N, Protadur® E 941
in 300 bar technology: Nitrogen 3.0, 4.8, 5.0, Secudur® N, Protadur® E 941

Properties	asphyxiant
	asphyxiant
Valve connection	plant specific
Shoulder colour	

Typical applications

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as a refrigerant for superconductors (as liquid)

as a refrigerant for cryosaunas (as liquid)

in metrology as a purging and zero gas

in gas chromatography as a carrier gas

for inerting
of atmospheres

for laser cutting of aluminium

for laser cutting of austenitic steels

for laser cutting of duplex steels

for laser cutting of ferritic chromium steels

for laser cutting of fully austenitic steels

for plasma cutting of aluminium

for plasma cutting of austenitic steels

for plasma cutting of duplex steels

for plasma cutting of ferritic chromium steels

for plasma cutting of titanium

for plasma cutting of fully austenitic steels

for thermal expansion jointing

as a shield gas and reaction gas in continuous flow soldering

as a shield gas in reflow soldering systems

for inerting in chemical plants

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for inerting for bulk goods

in ammonia manufacture

for gas conditioning

for inerting for pressure testing

for inerting in cavern construction

for inerting for pipeline 'pigs'

for inerting in the purging of pipelines

in cryotherapy

for concrete cooling

in the automotive sector for tyre inflation

for testing of components in simulated environments

for deburring/ flash removal of rubber/rubber parts

for deburring/ flash removal of polymer/plastic parts

for rubber removal of moulded parts

for paint removal of polymer/plastic parts

for inerting in the manufacture of paints and lacquers

for cryogenic grinding of polymer/plastic parts

in recycling of scrap tyres

in recycling of scrap/waste cable

in recycling of plastic waste

in recycling of solvents

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in injection moulding of polymer/plastic parts

for setting of raw rubber (caoutchouc)

for cryogenic cooling for continuous casting

for inerting for protection of metal melt surfaces

for smelting for treatment of purge gas

for treatment of purge gas from smelting operations for homogenising metal melts

for treatment of purge gas from smelting operations for purging of metal melts

for heat treatment as a protective atmosphere

for freeze-drying

for waste treatment for pyrolysis

for wastewater treatment for inerting digester towers

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Conversions

1 m^3	at 288.15 K (15°C); 1 bar	=	1,171	kg
1 m^3		=	1,447	l liquid
1 kg		=	0,854	m^3
1 kg		=	1,236	l liquid
1 l liquid	at T boiling point; 1 bar	=	0,691	m^3
1 l liquid		=	0,809	kg

Physical data:

Molar Mass	Molar mass	28,01	g mol^{-1}
Liquid State	Boiling Point	77,35 (-195,8)	K (°C)
	Heat of Evaporation	198,70	kJ kg^{-1}
	Liquid Density	808,6	kg m^{-3}
Gaseous state	Density (at 273.15 K and 1.013 bar)	1,25	kg m^{-3}
	Density Ratio to Air (at 288.15 K and 1.013 bar)	0,97	
	Specific heat (at 298.15 K and 1.013 bar)	1,04	kJ kg^{-1} K^{-1}
	Thermal Conductivity (at 288.15 K and 1.013 bar)	0,0250	J s^{-1} m^{-1} K^{-1}
Critical Point	Temperature	126,2 (-147,0)	K (°C)
	Pressure	34,00	bar
	Density	314	kg m^{-3}
Triple Point	Temperature	63,2 (-210,0)	K (°C)
	Vapour Pressure	0,1253	bar
	Heat of Fusion	25,8	kJ kg^{-1}
Additional operating	Ignition Point	--	K (°C)
	Ignition Range in Air	--	vol.%
	Calorific Value to DIN 51850	--	kJ kg^{-3}

The provided data, values and information corresponds to the state of knowledge at the time of printing. They assert no claim for accuracy or completeness and in this respect do not absolve the user from their duty of verification.
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