Westfalen AG · Industrieweg 43
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Protadur® E 948 (Oxygen)

Product Designation	Protadur® E 948 (Oxygen)
Physical state	gaseous, compressed
Chemical symbol	O_2
Purity	99 vol.%
Other names	Oxygenium
	E 948

Impurities	**Maximum value**
Moisture	500 vol. ppm
Hydrocarbons	100 vol. ppm

Delivery formats

In steel cylinders and 12-cylinder bundles

Descriptions	cylinders/container volumes	Filling pressure	Content
Protadur E 948 T50 RCyl.	50 l	200 bar	10,60 m^3
Protadur E 948 RBundle12	12 x 50 l	200 bar	127,20 m^3

Unless otherwise stated, these refer to filling pressure at 288,15K (15°C) and to content at 288,15K (15°C) and 1,013 bar.

Other delivery formats

on request

Alumini® 12, 200 Oxygen 5.0

in static and mobile tanks: Liquid oxygen 2.5, 3.5, 4.5, 5.0, 5.5, 6.0, for medical purposes (LOXMED Respadur®), Protadur® E948

in steel cylinders and bundles: Oxygen 2.5, 3.5, 4.5, 5.0, 5.5, 6.0, for medical purposes, for aviation, Protadur® E948, Secudur® O

in 300 bar technology: Oxygen 2.5 and 3.5, Protadur® E 948

Manufacture complies with the requirements of EC Regulation 178/2002/EC and corresponds to purity requirements for food additives according to regulation (EU) 231/2012.

Properties	oxidising
Valve connection	DIN 477 No. 9 | (G3/4)
Shoulder colour	pure white (RAL 9010)
Suitable pressure regulators	Manufacturers' gas outlet fittings introduced in line with EC Regulation 1935/2004/EC.

Typical applications

for foaming foodstuffs such as desserts and cream

for packaging under protective atmosphere

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Conversions

1 m^3	at 288.15 K (15°C); 1 bar	=	1,337 kg
1 m^3		=	1,172 l $_{liquid}$
1 kg		=	0,748 m^3
1 kg		=	0,876 l $_{liquid}$
1 l $_{liquid}$	at T $_{boiling\ point}$; 1 bar	=	0,853 m^3
1 l $_{liquid}$		=	1,141 kg

Physical data:

Molar Mass	Molar mass	32,00 g mol^{-1}
Liquid State	Boiling Point	90,28 (-182,9) K (°C)
	Heat of Evaporation	212,98 kJ kg^{-1}
	Liquid Density	1141,0 kg m^{-3}
Gaseous state	Density (at 273.15 K and 1.013 bar)	1,43 kg m^{-3}
	Density Ratio to Air (at 288.15 K and 1.013 bar)	1,11
	Specific heat (at 298.15 K and 1.013 bar)	0,92 kJ kg^{-1} K^{-1}
	Thermal Conductivity (at 288.15 K and 1.013 bar)	0,0254 J s^{-1} m^{-1} K^{-1}
Critical Point	Temperature	154,57 (-118,6) K (°C)
	Pressure	50,43 bar
	Density	436,1 kg m^{-3}
Triple Point	Temperature	54,4 (-218,8) K (°C)
	Vapour Pressure	0,0015 bar
	Heat of Fusion	13,9 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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