Westfalen AG · Industrieweg 43
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Protadur® E 938 (Argon)

Product Designation	Protadur® E 938 (Argon)
Physical state	cryogenically liquefied
Chemical symbol	Ar
Purity	99 vol.%
Other names	E 938

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

Delivery formats

For static and mobile tank installations

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

Other delivery formats

on request

Alumini® 12, 200 Argon 5.0

in static and mobile tanks: Liquid argon 4.6, 4.8, 5.0, 6.0, Protadur® E 938

in steel cylinders and bundles: Argon 4.6, 4.8 Spektro, 5.0, 5.5, 6.0, Protadur® E 938, Secudur® Ar

in 300 bar technology: Argon 4.6, 4.8 Spektro and 5.0

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	asphyxiant
Valve connection	plant specific
Shoulder colour	none, proper transport marking in accordance with ADR

Typical applications

for packaging under protective atmosphere for the preservation of (oxygen-sensitive) flavours

for packaging under protective atmosphere of milk products

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Conversions

1 m^3	at 288.15 K (15°C); 1 bar	=	1,668 kg
1 m^3		=	1,197 l $_{liquid}$
1 kg		=	0,599 m^3
1 kg		=	0,718 l $_{liquid}$
1 l $_{liquid}$	at T $_{boiling\ point}$; 1 bar	=	0,835 m^3
1 l $_{liquid}$		=	1,393 kg

Physical data:

Molar Mass	Molar mass	39,95 g mol^{-1}
Liquid State	Boiling Point	87,29 (-185,9) K (°C)
	Heat of Evaporation	160,81 kJ kg^{-1}
	Liquid Density	1392,8 kg m^{-3}
Gaseous state	Density (at 273.15 K and 1.013 bar)	1,78 kg m^{-3}
	Density Ratio to Air (at 288.15 K and 1.013 bar)	1,38
	Specific heat (at 298.15 K and 1.013 bar)	0,52 kJ kg^{-1} K^{-1}
	Thermal Conductivity (at 288.15 K and 1.013 bar)	0,0160 J s^{-1} m^{-1} K^{-1}
Critical Point	Temperature	150,86 (-122,3) K (°C)
	Pressure	48,98 bar
	Density	537,7 kg m^{-3}
Triple Point	Temperature	83,8 (-189,4) K (°C)
	Vapour Pressure	0,687 bar
	Heat of Fusion	29,3 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.
Status: 01.2013