Product sheet Protadur® E 290 (Carbon dioxide)

Product name	Protadur® E 290 (Carbon dioxide)
Physical state	liquefied under pressure
Chemical sign	CO_2
Chemical designation	CO2
Purity	99,9 %
Standard	is not subject to any standard
Properties	see safety data sheet
Shoulder color	dusty grey (RAL 7037)

Minor components	Maximum values
Carbon monoxide	10,0 vol. ppm
Moisture	20,0 vol. ppm
Oil	5,0 mg kg^{-1}
Acidity	corresponds to (*)
Reducing substances, phosphine, sulphite	corresponds to (*)

Name	Material number	Bottle type	Bottle container volume	Vapour/filling pressure	Content	Valve	Properties
Protadur E 290 T20 RCyl: 15,0 kg	S02000120	steel	20,0 l	51,0 bar	15,0 kg	DIN 477 No. 6	
Protadur E 290 T50 RCyl: 37,5 kg	S02000150	steel	50,0 l	51,0 bar	37,5 kg	DIN 477 No. 6	
Protadur E 290 RBundle12: 450 kg	S02000312	steel	600,0 l	51,0 bar	450,0 kg	DIN 477 No. 6	
Protadur E 290 T08 C: 6,0 kg Deposit	S020012084	steel	8,0 l	51,0 bar	6,0 kg	DIN 477 No. 6	Cage
Protadur E 290 T10 C: 7,5 kg Deposit	S020012104	steel	10,0 l	51,0 bar	7,5 kg	DIN 477 No. 6	Cage
Protadur E 290 T13 TC: 10,0 kg Deposit	S0200121314	steel	13,0 l	51,0 bar	10,0 kg	DIN 477 No. 6	
Protadur E 290 T13 C: 10,0 kg Deposit	S020012134	steel	13,0 l	51,0 bar	10,0 kg	DIN 477 No. 6	Cage

Name	Material number	Bottle type	Bottle container volume	Vapour/filling pressure	Content	Valve	Properties

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

Manufacture complies with the requirements of EC Regulation 178/2002/EC and corresponds to the purity requirements for food additives according to regulation (EU) 231/2012, and also of EIGA/ISBT\ stand 2011.

Typical applications

- in wine production (controlling the fermentation process)
- for cryogenic grinding of spices
- for cold pressing (e.g. in oil mills)
- for carbonating drinks
- for packaging under protective atmosphere

Physical data

(*) Analysis methods and limiting values according to EU ordinance 231/2012.

operating figures	Molar mass	44,01 g mol^{-1}
Sublimation Point	Heat of sublimation	571,08 kJ kg^{-1}
	Sublimation temperature	194,65 (-78,5) K (°C)
	Density	1562 kg m^{-3}
Gas State	Thermal Conductivity (at 288.15 K and 1.013 bar)	0,0157 kg m^{-3}
	Density Ratio to Air (at 288.15 K and 1.013 bar)	1,53
	Specific heat (at 298.15 K and 1.013 bar)	0,83 kg m^{-3}
	Density (at 273.15 K and 1.013 bar)	1,98 kg m^{-3}
Critical Point	Temperature	304,21 (31,1) K (°C)
	density	464 kg m^{-3}
	Pressure	73,83 bar
Triple Point	Temperature	216,6 (-56,6) K (°C)
	Vapour Pressure	5,185 bar
	Heat of Fusion	196,7 kJ kg^{-1}

All mentioned data, values and notes correspond to actual state of knowledge on the date of printing. They make no claim to be correct or complete and therefore do not release the user from his obligation to check them.

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Westfalen Gas Schweiz GmbH • Sisslerstr. 11 • 5074 Eiken AG • www.westfalen.ch