VR 100

Technical Data Sheet US/344
Edition: 07/2009

Material	**VR 100** is an asbestos- free gasket material. It is composed of carbon fibres and further asbestos substitutes which are resistant to high temperatures. These are firmly bonded to high- grade elastomers under elevated pressure and temperature.
Properties	**VR 100** is characterized by very high thermal and mechanical resistance. The material has excellent tensile strength and residual stress values. It is very well suited for sealing off gases and fluids and is highly resistant to chemicals such as lyes.
Application	• oil processing industry and chemical industry • for DIN and ANSI flanged joints, apparatus, pumps, heat exchangers, fittings and pipelines in industrial plants • for sealing joints in transmissions and hydraulic components as well as sealing refrigerants, engine oils and fuels • for sealing mixtures of water/ anti- freeze and corrosion inhibitors • for sealing lyes and solvents
Surfaces	The standard version of **VR 100** has a non- stick top and bottom layer. Additional surface treatment is unnecessary in most cases.

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Technical Data Nominal thickness 0.08" (2.00 mm) unless otherwise specified	**Density**	109 - 122 lb/ ft^3 (1.75 - 1.95 g/ cm^3)
	Ignition loss DIN 52 911	< 34 %
	Tensile strength	> 2180 psi (> 15 N/ mm^2)
	ASTM F 152, across grain	
	Creep Relaxation ASTM F 38 B (1/32")	15 %
	Residual stress DIN 52 913	
	16 h, 570°F (300 °C)	≈ 3626 psi (≈ 25 N/ mm^2)
	16 h, 350 °F (175 °C)	≈ 5220 psi (≈ 36 N/ mm^2)
	VR- Hot compression test (@7250 psi)	
	Thickness decrease 68 °F (20 °C)	9 %
	Thickness decrease additional, at maximum continuous application temperature	11 % (520 °F / 270 °C)
	Compressibility and recovery ASTM F 36, procedure J	
	compressibility	6 - 10 %
	recovery	> 60 %
	Sealability against nitrogen	
	ASTM F 37 B (1/32")	0.25 ml/ h
	DIN 3535, part 6 FA	≈ 0.1 mg/ (s·m)
	Swelling ASTM F 146	
	in IRM 903 Oil (replaces ASTM Oil No. 3) 5 h, 300 °F (150 °C)	
	increase in thickness	0 - 10 %
	increase in weight	10 % maximum
	in ASTM Fuel B 5 h, ambient temperature	
	increase in thickness	0 - 10 %
	increase in weight	10 % maximum
	in water / antifreeze (50:50) 5 h, 210 °F (100 °C)	
	increase in thickness	0 - 7 %
	increase in weight	7 % maximum
	Temporary **peak temperature**	825 °F (440 °C)
	Maximum **continuous temperature**	520 °F (270 °C)
	Maximum **operating pressure**	1880 psi (130 bar)
	ASTM F 104 "line call- out"	F711110A9B2E12M6

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Maximum continuous temperature and maximum pressure must not occur simultaneously, please refer to the table entitled "Max. operating pressures at various temperatures and with various media"!

Sealing parameters see table: "Sealing parameters"

The data quoted above are valid for the material "as delivered" without any additional treatment. In view of the multiplicity of possible installation and operating conditions, definitive conclusions cannot be drawn for all applications regarding the behavior in a sealing joint. For this reason, we do not give any warranty for technical data. They do not represent warranted properties. If you have any doubt, please contact us and specify exact operating conditions.

Form of delivery

Sheets 1500 x 1500 mm

Nominal thicknesses and tolerances
acc. to ASTM F 104 **(inch)**
Limits of size within a delivery

1/64	+ 0.005/- 0.002
1/32	±0.005
3/64	±0.005
1/16	±0.008
3/32	±0.008
1/8	±0.008

More exact tolerances by arrangement.