KLINGER® top-chem 2003

KLINGER India

KLINGER®top-chem 2003 - PTFE material filled with hollow glass-microspheres.

Consisting of PTFE filled with hollow glass-microspheres, this gasket material provides high adaptability and tightness even at low surface loads. Its chemical properties make it the ideal choice for strongly acidic and alkaline applications as well as for medium temperatures and loads.

Basis composition	PTFE filled with hollow glass-microspheres.
Color	White
Certificates	BAM tested, DIN-DVGW, DIN-DVGW W 270, KTW-Guideline, DNV GL approval, TA-Luft (Clean air), FDA conformity (components of KLINGER®topchem 2003 comply with the FDA requirements), Regulation (EU) No. 1935/2004 (incl. 10/2011)

Sheet size	1500 x 1500 mm
Thickness	1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm

Tolerances

Thickness according to DIN 28091-1
Length: ± 50 mm
Width: ± 50 mm

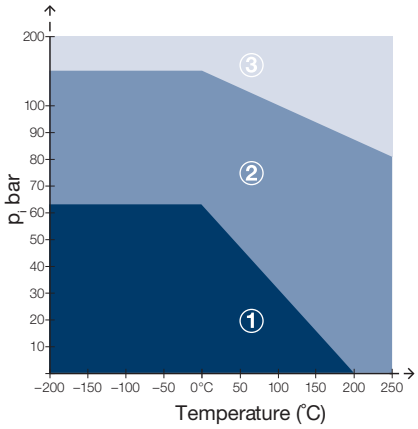
Industry

General industry / Chemical / Oil & Gas / Energy / Infrastructure / Pulp & Paper / Marine / Automotive / Food & Beverage / Pharma

TECHNICAL DATA - Typical values for a thickness of 2.0 mm

Compressibility	ASTM F 36 M	%	18
Recovery	ASTM F 36 M	%	35
Stress relaxation DIN 52913	30 MPa, 16 h/150°C	MPa	13
KLINGER cold/hot compression	thickness decrease at 23°C	%	10
25 MPa	thickness decrease at 260°C	%	39
Tightness	DIN 28090-2	mg/(s x m)	0.01
Specific leakrate	VDI 2440	mbar x l/(s x m)	3.29E-06
Thickness/weight increase	H_2SO_4, 100%: 18 h/23°C	%	1/1
	HNO_3, 100%: 18 h/23°C	%	0/5
	NaOH, 33%: 72 h/110°C	%	1/5
Density		g/cm³	1.7
Average surface resistance	ρO	Ω	9x10E12
Average specific volume resistance	ρD	Ω cm	2.6x10E12
Average dielectric strength	Ed	kV/mm	16.7
Average power factor	50 Hz	tan δ	0.085
Average dielectric coefficient	50 Hz	εr	2.8
Thermal conductivity	λ	W/mK	0.18
ASME-Code sealing factors			
for gasket thickness 2.0 mm	tightness class 0.1mg/s x m	MPa	y 8
			m 2.7

P-T diagram - thickness 2.0 mm



The area of the P-T diagram

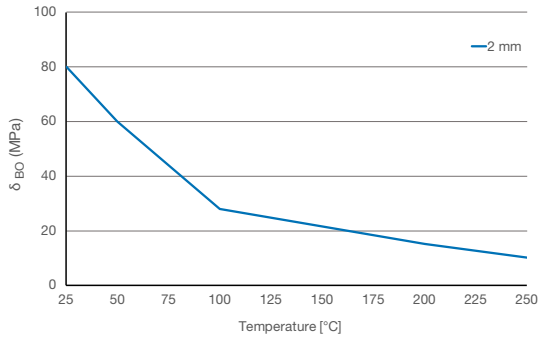
① In area one, the gasket material is normally suitable subject to chemical compatibility.

② In area two, the gasket material may be suitable but a technical evaluation is recommended.

③ In area three, do not install the gasket without a technical evaluation.

Always refer to the chemical resistance of the gasket to the media.

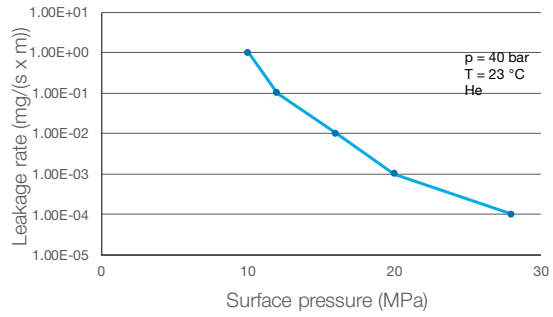
Sigma BO



Maximum surface pressure in operating conditions of Sigma BO

This diagram shows the maximum surface pressure in MPa with which the sealing material may be loaded, depending on the operating temperature. The characteristic curves apply to the specified sealing thicknesses. In contrast to Qsmax according to EN 13555, the surface pressures specified here are based on a maximum permissible reduction in thickness.

Tightness performance



The tightness performance graph

The graph shows the required stress at assembling to seal a certain tightness class. The determination of the graph is based on EN13555 test procedure which applies 40bar Helium at room temperature. The sloping curve indicates the ability of the gasket to increase tightness with raising gasket stress.

Chemical resistance chart

Simplified overview of the chemical resistance depending on the most important groups of raw materials:

KLINGER®top-chem 2003 — **A**: small or no attack — **B**: weak till moderate attack — **C**: strong attack

Paraffinic hydrocarbon	Motor fuel	Aromates	Chlorinated hydrocarbon fluids	Motor oil	Mineral lubricants	Alcohol	Ketone	Ester	Water	Acid (diluted)	Base (diluted)
A	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**

For more information on chemical resistance please visit www.klinger.in

All information is based on years of experience in production and operation of sealing elements. However, in view of the wide variety of possible installation and operating conditions one cannot draw final conclusions in all application cases regarding the behaviour in gasket joint. The data may not, therefore, be used to support any warranty claims. This edition cancels all previous issues. Subject to change without notice.

Certified acc. to DIN EN ISO 9001:2015 Subject to technical alterations.
KLINGER Industrial Products India Pvt. Ltd. #6 Tarana, 1st Floor, GoodEarth Malhar, Kambipura, Kengeri, Bengaluru 560074, Karnataka, India. Tel +91 8618523021 / +91 80 2990 9572 / e-mail: info@klinger.in

www.klinger.in