

KLINGER®top-sil ML1

KLINGER®top-sil ML1 is a special multi-layer sealing material with extended service life and improved flexibility at higher temperatures.

Revolutionary combination of synthetic fibres and different elastomers, bonded in a multi-layer structure. This material is suitable for use with oils, water, steam, gases, salt solutions, fuels, alcohols, moderate organic and inorganic acids, hydrocarbons, lubricants and refrigerants.



Key features:

- » Unique multi-layer structure
- » Utilization of HNBR and NBR rubber
- » Resistant to creep and cold flow
- » Dimensionally stable

Benefits:

- » Extended service life time
- » Improved flexibility at higher temperatures

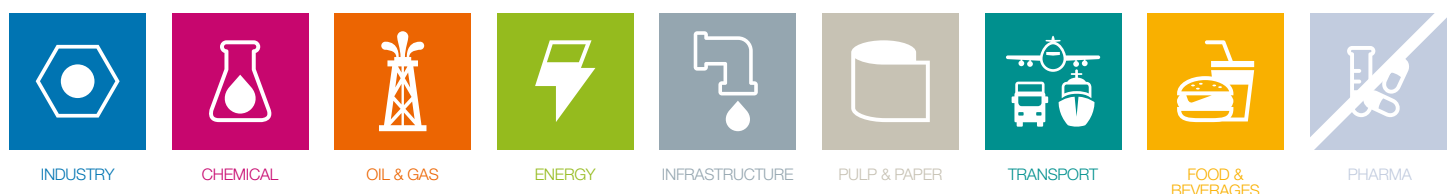
Certificates and approvals:

- » BAM-tested
- » DIN-DVGW
- » WRAS approval
- » German Lloyd
- » TA-Luft (Clean air)
- » Fire-Safe acc. DIN EN ISO 10497

Properties: referring to KLINGERSIL® product range

SUPERIOR	_____			
EXCELLENT	████████████████████			
VERY GOOD	██████████	██████████	██████████	██████████
GOOD	██████████	██████████	██████████	██████████
MODERATE	██████████	██████████	██████████	██████████
	MECHANICAL RESISTANCE	THERMAL RESISTANCE	SEALABILITY	CHEMICAL RESISTANCE

Industries:



Typical technical data for thickness 2.0 mm:

Compressibility ASTM F 36 J		%	9
Recovery ASTM F 36 J		%	50
Stress relaxation DIN 52913	50 MPa, 16 h/175°C	MPa	34
	50 MPa, 16 h/300°C	MPa	28
Stress relaxation BS 7531	40 MPa, 16 h/300°C	MPa	29
KLINGER cold/hot compression	thickness decrease at 23°C	%	8
50 MPa	thickness decrease at 300°C	%	15
Tightness	DIN 28090-2	mg/s x m	0.05
Specific leakrate λ	VDI 2440	mbar x l/s x m	3.51E-06
Thickness increase after fluid	oil IRM 903: 5 h/150°C	%	4
immersion ASTM F 146	fuel B: 5 h/23°C	%	8
Density		g/cm ³	1.7
Average surface resistance	ρO	Ω	9.3x10E12
Average specific volume resistance	ρD	Ω cm	3.8x10E12
Average dielectric strength	E_d	kV/mm	18.8
Average power factor	50 Hz	$\tan \delta$	0.048
Average dielectric coefficient	50 Hz	ϵ_r	7.3
Thermal conductivity	λ	W/mK	0.36
Classification acc. to BS 7531:2006	Grade AX		
ASME-Code sealing factors			
for gasket thickness 1.0 mm	tightness class 0.1 mg/s x m		y 15 m 1.5
for gasket thickness 2.0 mm	tightness class 0.1 mg/s x m		y 15 m 2.2
for gasket thickness 3.0 mm	tightness class 0.1 mg/s x m		y 15 m 4.0

Dimensions of the standard sheets:

Sizes:

2000 x 1500 mm

Thicknesses:

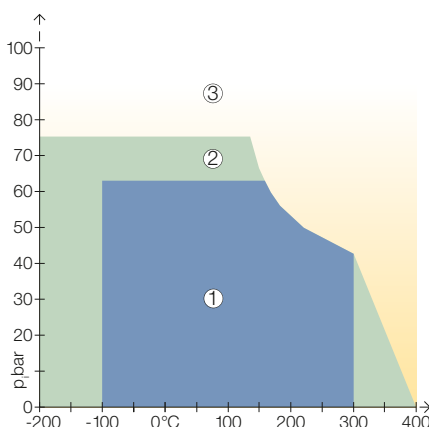
0.8 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm

Tolerances:

Thickness acc. DIN 28091-1
 Length ± 50 mm, width ± 50 mm

Other thicknesses, sizes and tolerances on request.

pT diagram for thickness 2.0 mm:



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.

Certified acc. to DIN EN ISO 9001:2008 Subject to technical alterations. Status: March 2016

Rich. Klinger Dichtungstechnik GmbH & Co KG » Am Kanal 8-10 » A-2352 Gumpoldskirchen, Austria
 Tel +43 (0) 2252/62599-137 » Fax +43 (0) 2252/62599-296 » e-mail: marketing@klinger.co.at



www.klinger.co.at