The following guidelines are designed to ensure the optimum performance of a reliable flange connection.

1. Choosing the gasket

There are many factors which must be taken into account when choosing a gasket material for a given application including temperature, pressure and chemical compatibility. Please refer to the information given in our data sheets or, for advice to our gasket calculation software program KLINGER®expert. If you have any questions regarding the suitability of a material for a given application please contact KLINGER Technical Department.

2. Gasket thickness

The gasket chosen should be as thin as technically possible. To ensure optimum performance a minimum thickness/width ratio of 1/5 is required (ideally 1/10).

3. Flange connection

Ensure all remains of old gasket materials have been removed and the flanges are clean, in good condition and parallel.

4. Gasket dimension

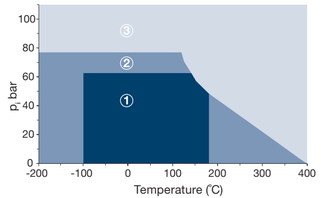
Ensure gasket dimensions are correct. The gasket should not intrude into the bore of the pipework and should be installed centrally.

5. Gasket compounds

Ensure all gaskets are installed in a dry state. The use of gasket compounds is not recommended as this has a detrimental effect on the stability and load bearing characteristics of the material. In its uncompressed form the gasket can absorb liquid and this may lead to failure of the gasket in service. To aid gasket removal, KLINGER materials are furnished with a non-sticking finish.

Selecting gaskets with pT diagrams

Maximum temperature and pressure values alone cannot define a material's suitability for an application. These limits are dependent upon a multiplicity of factors like flanges, bolts, installation, process control, fluctuating loads etc. The pT-diagram therefore provides only guidelines.



The areas of the pT-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.

KLINGER®expert – our versatile gasket calculation software

For technical evaluation we recommend our gasket calculation program KLINGER®expert. This versatile software assists users in the selection of non-metallic gasket materials. Please register directly on our website www.klinger.co.at/en/services for free download.

MATERIAL FINDER – Safe and reliable selection of suitable gasket materials

The KLINGER Dichtungstechnik material finder enables a fast definition of the required material for almost any need. The selection is based on the requirements from the industrial application considering:
» Certifications
» Pressure x temperature
» Medium
» Chemical resistance
» Sealing performance

For more information please visit our website www.klinger.co.at/en/services.

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01/2026

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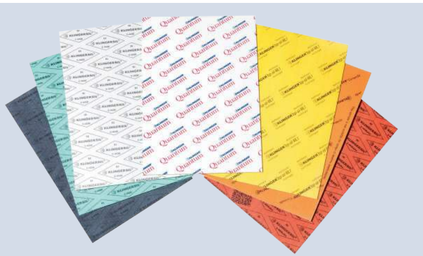
KLINGER Dichtungstechnik

PRODUCT PORTFOLIO

Soft sealing materials based on fibers / PTFE

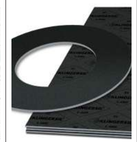
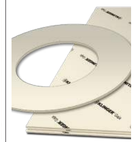
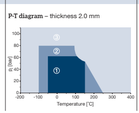
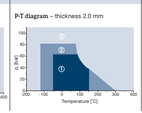
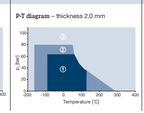
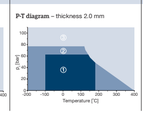
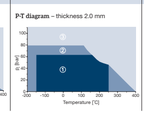
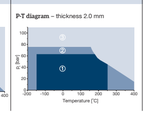
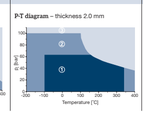
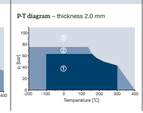
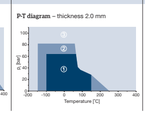
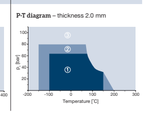


www.klinger.co.at

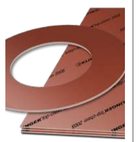
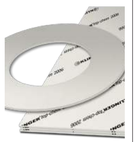
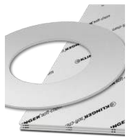
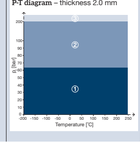
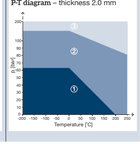
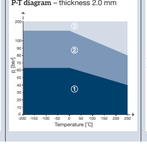
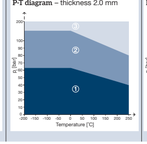
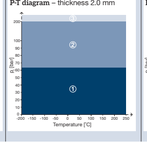
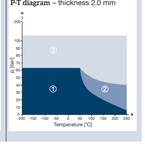
GASKET MATERIALS

for various industrial applications

BASIS FIBERS

KLINGERSIL® KLINGER®Quantum KLINGER®CompenSil KLINGER®top-sil ML1 KLINGER®Gaja **Gaskets on basis of fibers** (Typical values for 2 mm thickness)	C-4240	C-4300	C-4324	C-4400	C-4430	C-4500	Quantum	Top-sil ML1	CompenSil	Gaja
										
Fibers	Cellulose	Aramid	Aramid/Glass	Aramid	Glass/Aramid	Carbon/Aramid	Glass/Aramid	Glass/Aramid	Aramid/Mineral	Cellulose
Binder	NBR	NBR	NBR	NBR	NBR	NBR	HNBR	HNBR/NBR	NBR	NR
Density	1.75 g/cm³	1.6 g/cm³	1.85 g/cm³	1.6 g/cm³	1.8 g/cm³	1.6 g/cm³	1.7 g/cm³	1.7 g/cm³	1.5 g/cm³	1.8 g/cm³
Compressibility ASTM F 36 J	10 %	14 %	10 %	11 %	9 %	11 %	10 %	9 %	22 %	9 %
Recovery ASTM F 36 J	45 %	50 %	55 %	55 %	55 %	60 %	50 %	50 %	45 %	45 %
Stress relaxation DIN 52913 50 MPa/300°C	35 MPa (50 MPa/175°C)	20 MPa	20 MPa	25 MPa	35 MPa	30 MPa	30 MPa	28 MPa	18 MPa	28 MPa (50 MPa/175°C)
Tightness DIN 28090-2	0.01 mg (s*m)	0.03 mg (s*m)	0.03 mg (s*m)	0.02 mg (s*m)	0.05 mg (s*m)	0.05 mg (s*m)	0.02 mg (s*m)	0.05 mg (s*m)	0.01 mg (s*m)	0.02 mg (s*m)
Typical applications	**Drinking water,** oils, fuels, hydrocarbons, inert gases	Hot water, steam, hydrocarbons, oils	Water, oils, hydrocarbons	Universal quality, gas, water, oils	Universal quality, hot water, **steam**	Hot water, **steam, alkalis**	High universal quality, steam, **hot oils, food**	Oils, water, **steam,** gases, salt solutions	Oils, **refrigerants, gases,** hydrocarbons	Water, oils, fuels, hydrocarbons, inert gases, alcohols
Certificates and approvals	DIN-DVGW, DVGW H2-ready (ZP 5123), DIN 16421 (W 270), DIN 30653 (VP 401), KTW-BWGL, WRAS, ACS, SVGW	DIN-DVGW, DIN 16421 (W 270), Elastomer-Guideline, DNV, SVGW	DIN-DVGW, Elastomer-Guideline, WRAS, DNV, SVGW	Oxygen-tested, DIN-DVGW, DVGW H2-ready (ZP 5123), DIN 16421 (W 270), DIN 30653 (VP 401), KTW-BWGL, ÖVGW Reg.No. G 1.912, TA-Luft (Clean air), DNV, SVGW, Fire-Safe	Oxygen-tested, DIN-DVGW, DVGW H2-ready (ZP 5123), DIN 16421 (W 270), DIN 30653 (VP 401), KTW-BWGL, WRAS, TA-Luft (Clean air), DNV, SVGW, Fire-Safe	Oxygen-tested, DIN-DVGW, DIN 16421 (W 270), ÖVGW Reg.No. G 2.143, TA-Luft (Clean air), DNV, Fire-Safe	Oxygen-tested, DIN-DVGW, TA-Luft (Clean air), Fire-Safe, FDA conformity	Oxygen-tested, DIN-DVGW, TA-Luft (Clean air), DNV, Fire-Safe	DIN-DVGW, DVGW H2-ready (ZP 5123), DIN 30653 (VP 401), TA-Luft (Clean air), DNV	DIN-DVGW, TA-Luft (Clean air), DNV
pT-diagram										

BASIS PTFE

KLINGER®top-chem KLINGER®soft-chem **Gaskets on basis of PTFE**	Top-chem 2000	Top-chem 2003	Top-chem 2005	Top-chem 2006	Top-chem 2000 soft	Soft-chem
						
Filler	Silicon carbide	Hollow glass-microspheres	Silicon dioxide	Barium sulfate	Silicon carbide	–
Density	2.5 g/cm³	1.7 g/cm³	2.2 g/cm³	3.0 g/cm³	2.1 g/cm³	0.9 g/cm³
Compressibility ASTM F 36 M	4 %	18 %	4 %	4 %	15 %	55 %
Recovery ASTM F 36 M	50 %	35 %	40 %	40 %	20 %	15 %
Stress relaxation DIN 52913 50 MPa/260°C 30 MPa/150°C	36 MPa 28 MPa	13 MPa	25 MPa	18 MPa	30 MPa 25 MPa	15 MPa
Tightness DIN 28090-2	0.08 mg (s*m)	0.01 mg (s*m)	0.02 mg (s*m)	0.01 mg (s*m)	0.05 mg (s*m)	0.01 mg (s*m)
Typical applications	Pipeline flanges, narrow screw joints, extremely stable, almost all media	At low surface loads, apparatus- and container flanges, plastic-, glass- and enamel flanges	Pipeline flanges, optimized for acid applications (except hydrofluoric acid)	Pipeline flanges, optimized for alkaline applications, as well as hydrofluoric acid	Pipeline flanges, optimized for acid and alkaline applications	Expanded PTFE, at low surface loads, plastic-, glass- and enamel flanges
Certificates and approvals	Oxygen-tested, DIN-DVGW, DVGW H2-ready (ZP 5123), DIN 16421 (W 270), KTW-BWGL, WRAS, TA-Luft (Clean air), DNV, Fire-Safe, FDA compliant (PTFE), compliant with regulation (EU) 10/2011, VDI 2200 blowout	Oxygen-tested, DIN-DVGW, DVGW H2-ready (ZP 5123), DIN 16421 (W 270), KTW-BWGL, TA-Luft (Clean air), DNV, FDA conformity (components comply with the FDA requirements), compliant with regulation (EU) 10/2011, VDI 2200 blowout	Oxygen-tested, DIN-DVGW, KTW-BWGL, WRAS, TA-Luft (Clean air), DNV, FDA conformity (components comply with the FDA requirements), compliant with regulation (EU) 10/2011, VDI 2200 blowout	Oxygen-tested, DIN-DVGW, TA-Luft (Clean air), DNV, FDA conformity (components comply with the FDA requirements), VDI 2200 blowout	TA-Luft (Clean air), FDA compliant (PTFE), compliant with regulation (EU) 10/2011, VDI 2200 blowout	FDA conformity (components comply with the FDA requirements), compliant with regulation (EU) 10/2011
pT-diagram