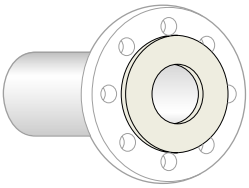
KLINGER®

KLINGERSIL® C-8200

Greater security for concentrated acids



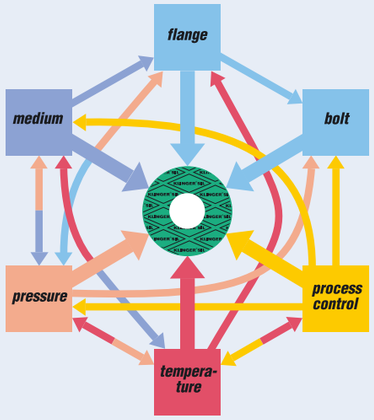
KLINGERSIL® C-8200
Glass fibres bonded with special acid-resistant elastomeres.
Premium high-pressure gasket for use with acids. Resistant to a wide variety of media.

KLINGER – The global leader in static sealing

KLINGERSIL® C-8200
Information for your safety

The many and varied demands made on gaskets

The successful operation of a gasket depends upon a multiplicity of factors.
Many who use static gaskets believe that the values quoted for maximum admissible temperature and maximum operating pressure are inherent properties or characteristics of gaskets and gasket materials.



Unfortunately, this is not the case.
The maximum temperatures and pressures at which gaskets may be used are influenced by a large number of factors.

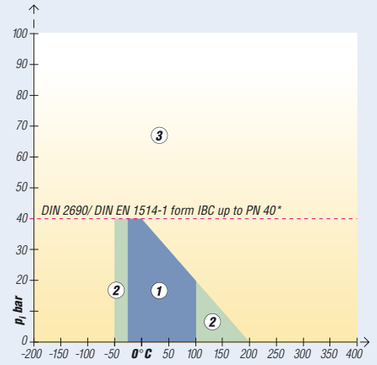
Therefore a definite statement of these values for gasket material is not possible.

So why does Klinger provide pT diagrams?

For the reasons given the pT diagram is not infallible: it serves as a rough guide for the end user who often has only the operating temperatures and pressures to go on.

Additional stresses such as greatly fluctuating load may significantly affect whether a gasket is suitable for the application.

Resistance to media must be taken into account in every case.



*Gaskets according to DIN 2690 are only standardised up to PN 40 and gasket thickness 2 mm.

The fields of decision

① If your operating temperatures and pressures fall within this field, a technical examination is normally unnecessary.
② If your operating temperatures and pressures are within this field, a technical examination is recommended.
③ If your operating temperatures and pressures are within this "open" field, a technical examination is always necessary.

Important points to be observed

The selection of gaskets requires expertise and know-how since ever greater reliability coupled with the lowest possible leakage rates are demanded of gasket materials.

The exacting demands made on the tightness of gasket materials (e.g. Tightness class $L_{0.01}$) mean that with increasing internal pressure higher surface pressures must be applied to the gasket.

It must be shown that the flange joint will tolerate the demands made on it without being mechanically overloaded. Furthermore, the surface pressure applied to create the seal should never fall below the required minimum value since this will reduce the life of the gasket. Highly stressed, but not overstressed gaskets have a longer life than understressed gaskets.

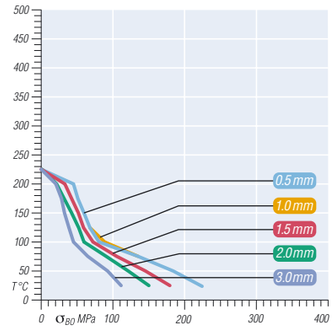
If the gasket fitted will be subjected to non-static loading, or will suffer stress fluctuations during discontinuous operation, it is advisable to choose a gasket which is not prone to embrittlement with increasing temperature (e.g. KLINGERgraphite laminate or KLINGERtop-chem), especially for steam and/or water applications.
For discontinuous operations in water and/or steam applications, we recommend as a general guide a surface pressure of about 30 MPa. In such cases the gasket should be as thin as is practicable.

For reasons of safety, we advise against the re-use of gaskets.

KLINGER EXPERT®
Powerful sealing calculation with online help on CD-ROM

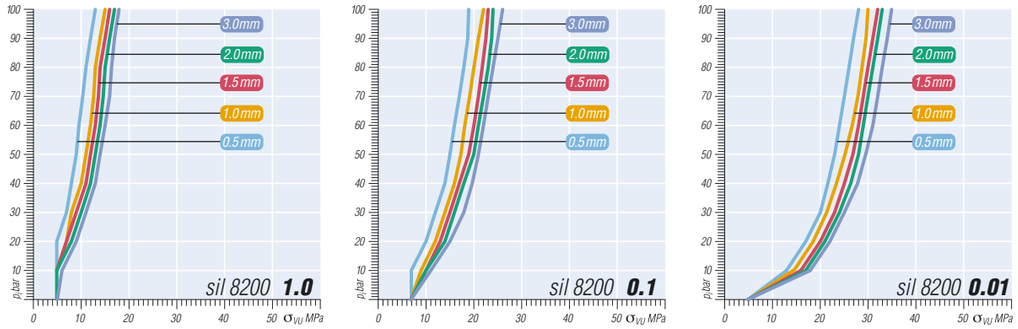
Maximum gasket pressure in operating condition σ_{BO} in accordance with DIN 28090

This diagram shows the max. permissible gasket pressure in MPa to be applied as a function of the service temperature. The values apply to the stated gasket thicknesses.



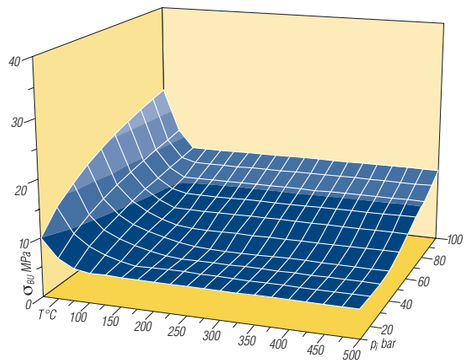
Min. gasket pressure σ_{VU} for tightness classes L = 1.0, L = 0.1 and L = 0.01 in accordance with DIN 28090

This diagram shows the min. gasket pressure necessary to achieve the tightness for the above tightness classes at room temperature. Tightness class L= 0.1 allows a max. leakage of 1 mg nitrogen per second per meter of gasket length (mg/s·m).
The curves are shown for the standard thickness material.

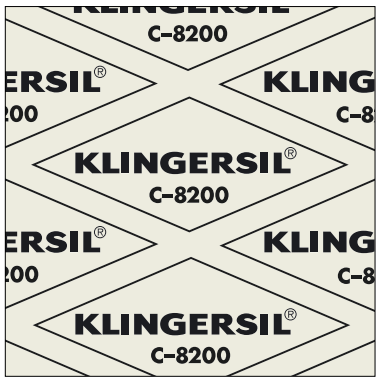


Minimum gasket pressure σ_{BU} for tightness class L = 0.1

This three-dimensional diagram describes the behaviour of the gasket material with respect to the required minimum gasket pressure for a complete temperature range at 2 mm thickness. It clearly shows that the required minimum load decreases at medium and higher temperatures – the gasket will seal at lower surface loads under these conditions.



KLINGERSIL® C-8200
Technical data



Typical values for 2 mm thickness				
Compressibility ASTM F 36 J		%		9
Recovery ASTM F 36 J	min	%		55
Klinger cold/hot compression	thickness decrease at 23°C	%		7
25 MPa	thickness decrease at 200°C	%		17
Density		g/cm^3		1.7
Acid tests				
Thickness increase	HNO_3 , 96%, 18h/23 °C	%		unsuitable
	H_2SO_4, 96%, 18h/23 °C	%		10
	H_2SO_4, 65%, 48h/23 °C	%		8
Average surface resistance	R_{OA}	Ω		8.3x10E9
Average specific volume resistance	ρ_D	Ω cm		1.2x10E10
Average dielectric strength		kV/mm		17.5
Average power factor	1 kHz, ca.3 mm thickness	tan δ		0.27
Average dielectric coefficient	1 kHz, ca.3 mm thickness	εr		8.4
ASME-Code sealing factors				
for gasket thickness 2,0 mm	tightness class 1.0 mg/s x m	MPa	y	15
and tightness classes		MPa	m	3
DIN 28090	tightness class 0.1 mg/s x m	MPa	y	22.5
		MPa	m	4
	tightness class 0.01 mg/s x m	MPa	y	27.5
		MPa	m	4

Klinger cold/hot compression

With this test method developed by Klinger you can evaluate the cold/hot compression of a gasket in cold and hot condition.

Unlike the method acc. to DIN 52913 and BS 7531, the surface load is kept constant during the complete test so that the gasket is exposed to much tougher conditions.

The thickness decrease at an ambient temperature of 23°C and at heating up to 200°C is measured.

The indicated thickness decrease at 200°C refers to the thickness obtained after loading at 23°C.

Dimensions of the standard sheets

Sizes:
1,000 x 1,500 mm, 1,500 x 2,000 mm.
Thicknesses:
0.5 mm, 1.0 mm, 1.5 mm,
2.0 mm, 3.0 mm;
other thicknesses on request.
Tolerances:
thickness ± 10%, length ± 50 mm,
width ± 50 mm

KLINGER EXPERT®
Powerful sealing calculation with online help on CD-ROM

Rings and other finished gaskets

These gaskets are available in any size and corresponding sheet thicknesses, also edged and PTFE-covered.

Surfaces

The standard surface finish of the material is such that the surface has an extremely low adhesion. On request, graphite facings and other surface finishes on one or both sides are also available.

Function and durability

The performance and life of KLINGER gaskets depend in large measure on proper storage and fitting, factors beyond the manufactor's control. We can, however, vouch for the excellent quality of our products.

With this in mind, please also observe our installation instructions.

Tests and approvals

TÜV Poland.

Certified according to DIN EN ISO 9001:2000

Subject to technical alterations.
Issue: December 2007

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
http://www.klinger.co.at