

**Typical technical data for KLINGER® MULTILAYER XTREME** for thickness 2.0 mm

Compressibility ASTM F 36 A	ASTM F 36 A	%	30 - 40
Recovery ASTM F 36 A	ASTM F 36 A	%	15 - 25
Density of the graphite layer	DIN 28090-2	g/cm³	1.1 ± 5 %
Total sulphur content of graphite layer	DIN 28090-2	ppm	< 300
Total chloride content of graphite layer	DIN 28090-2	ppm	< 25
Total fluoride content of graphite layer	DIN 28090-2	ppm	< 10
Insert: 1-7 layers	AISI 316(L)	mm	0.05
Purity of graphite	DIN 51903	%	> 99
Stress relaxation 50 MPa, 16h/300 °C	DIN 52913	MPa	> 45
Continuous service temperature (in oxidizing atmosphere)		°C	< 450
Thermogravimetric analysis (TGA) 4 h/670 °C	DIN 28090-2	%/h	< 3
Qsmax (maximum gasket stress)			
Ambient temperature	EN13555	MPa	>200
Oxidation Test	FSA-G-604-07 / B	%	4

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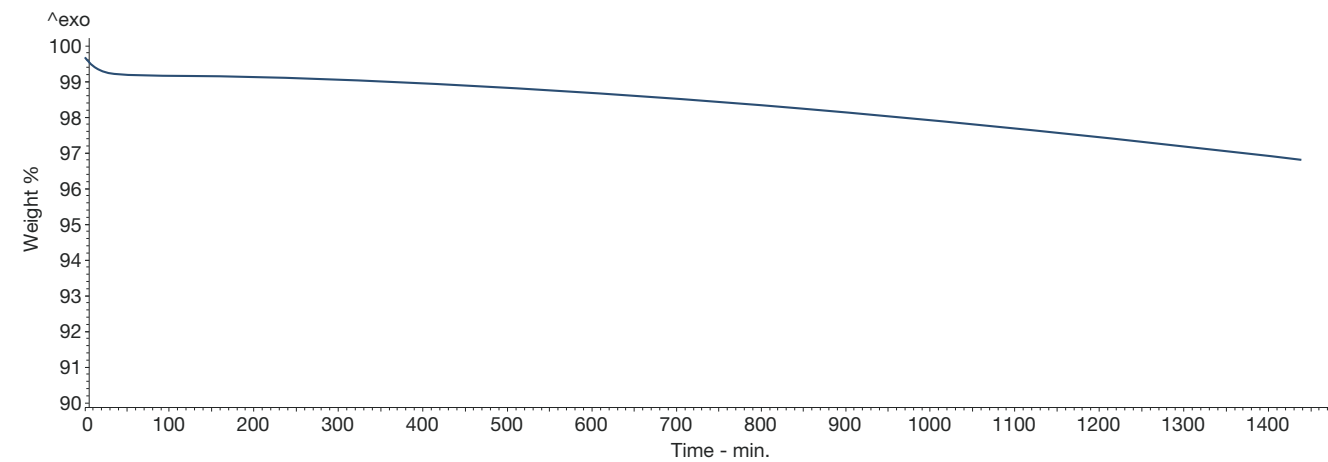
All information data are based on years of experience in production and operation of sealing elements. However, in view of the wide variety of possible installation and operating conditions one cannot draw final conclusions in all application cases regarding the behaviour in gasket joint. The data may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



**KLINGER® MLX**  
**MULTILAYER XTREME**  
 FOR HEAVY-DUTY CONDITIONS

FSA-G-604-07 / B:

This TGA test method measures the weight changes of flexible graphite during heating under controlled atmosphere.



**Dimensions of the standard sheets**

Sizes: 1000 x 1000 mm, 1500 x 1500 mm  
 Thicknesses: 1.0, 1.5, 2.0, 3.0, 4.0 mm  
 Tolerances: Thickness ± 5 %; Length ± 4 mm  
 Other thicknesses, sizes and inserts on request.

**Key features**

- Stainless steel foil as insert
- Excellent chemical resistance
- Excellent high temperature resistance
- Special impregnation
- No adhesive

**Anti-stick flexible graphite grades**

KLINGER® MULTILAYER XTREME is supplied with a special anti-stick (A/S) coating which remains stable even at high temperatures.

**Benefits**

- Provides excellent adaptability to any sealing surface
- Seals irregular flanges
- Conforms easily
- Stable physical properties over the whole temperature range
- Excellent for high pressure applications





# TIGHT + STABLE = SAFE UNIQUE MATERIAL STRUCTURE

## Premium multilayer structure



KLINGER® MULTILAYER XTREME is suitable for extreme conditions, especially for high pressure applications and high temperatures.

This gasket has a multilayer structure consisting of 0.5 mm thick high-purity graphite foils (> 99 %) and 0.05 mm stainless steel foils.

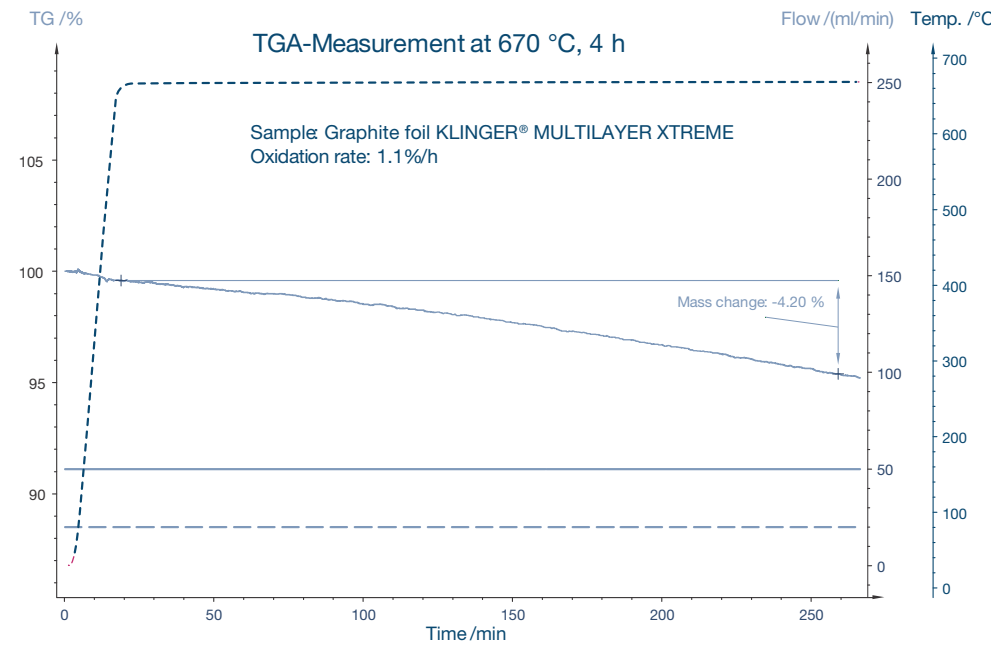
In a special process several layers of graphite and stainless steel foils are joined together, without using any adhesives. A special impregnation ensures the improved sealing performance and excellent handling.

## Properties

- Operating temperatures from -250 °C up to 550 °C
- Operating pressures from vacuum up to 250 bar
- Outstanding oxidation resistance
- Superior adaptability at any sealing surface
- Resistant to creep and cold flow
- Resistant to ageing and embrittlement, as no binders and adhesives are used
- Excellent resistance against blow-outs
- Outstanding mechanical strength properties
- Outstanding maximum surface pressure
- Stable physical properties over the whole temperature range
- Good chemical resistance

# TIGHT + STABLE = SAFE FOR HIGH PRESSURE APPLICATIONS

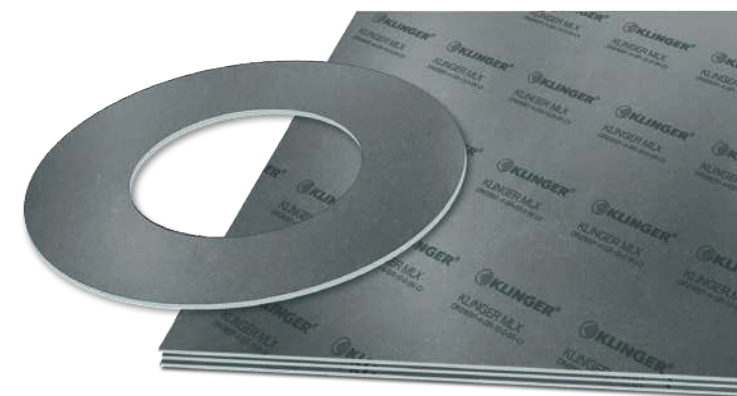
## Oxidation diagram



## Applications

KLINGER® MULTILAYER XTREME can be used in a wide range of applications:

- Chemical and petrochemical industries
- Nuclear industries
- Refineries
- Power plants
- Shipbuilding industry
- Inspection glasses
- Valves
- Fittings
- Heat exchangers
- Corrosive media
- etc.



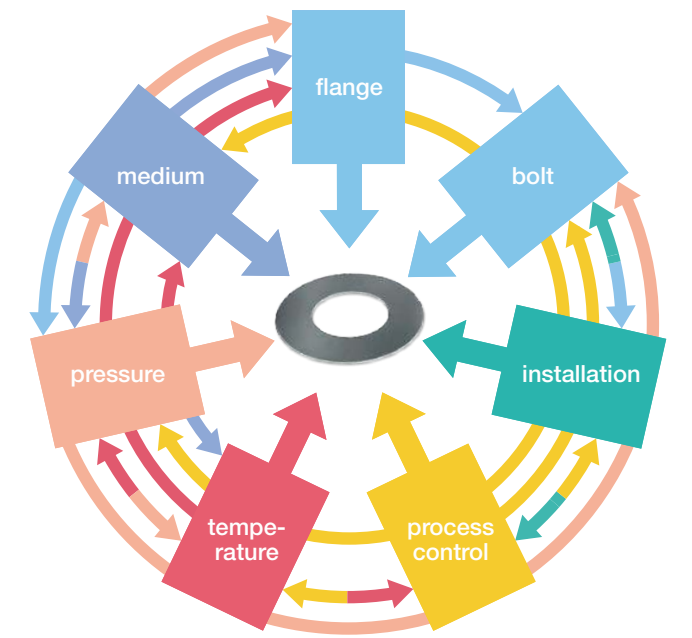
# TIGHT + STABLE = SAFE ENSURES HIGH PROCESS SAFETY

## The many and varied demands made on gaskets

A common perception is that the suitability and tightness of a gasket for any given application depends upon the maximum temperature and pressure conditions. This is not the case.

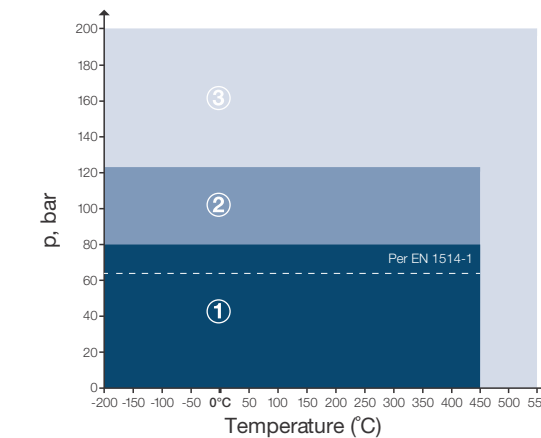
Maximum temperature and pressure values alone cannot define a material's suitability for an application. These limits are dependent upon a multiplicity of factors as shown in the picture. It is always advisable to consider these factors when selecting a material for a given application.

KLINGER® MULTILAYER XTREME is API 6FB Fire-Safe approved.



## pT-diagram for thickness 2.0 mm:

The KLINGER pT diagram provides guidelines for determining the suitability of a particular gasket material for a specific application based on the operating temperature and pressure only.



### 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.  
Technical evaluation with the manufacturer is required above 450°C