

Klinger® Graphite Laminate MLX - the multilayer graphite laminate

Klinger MLX is a multilayer graphite laminate with impregnated graphite layers and smooth stainless steel inserts. It has excellent leakage performance and excellent mechanical stability. It is suitable for high internal pressures, high surface pressures and gaskets with narrow cross-sections. It has a durable, anti-stick surface.



Basic composition	Layers of impregnated graphite and stainless steel inserts bonded together without adhesive
--------------------------	---

Colour	grey
---------------	------

Certificates	DIN-DVGW, Oxygen Test Report, TA-Luft, Fire Safe acc. to DIN EN ISO 10497, ASTM WK26064, DNV GL
---------------------	---

Sheet size	1500 x 1500 mm
-------------------	----------------

Thickness	1.5 mm, 2.0 mm, 3.0 mm
------------------	------------------------

Tolerances	
Thickness	± 5 %
Length	± 5 mm
Width	± 5 mm

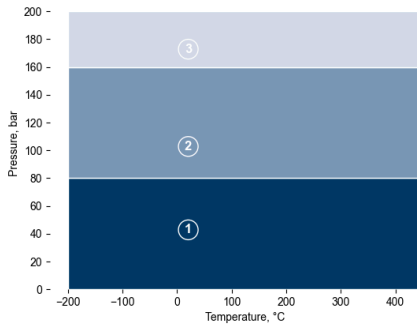
Industries

General industry | Chemical | Oil&Gas | Energy | Pulp&Paper | Marine

Technical data - Typical values for a thickness of 2.0 mm

Density of the graphite layer	DIN 28090-2	g/cm ³	1.0
Purity of graphite	DIN 51903	%	≥ 99.85
Oxidation rate	DIN 28090-2	%/h	≤ 4
Chloride content of graphite layer	EN 15408	ppm	≤ 20
Fluoride content of graphite layer	EN 15408	ppm	≤ 20
Sulphur content of graphite layer	EN 15408	ppm	≤ 200
Reinforcement	Smooth		AISI 316 (L)
	Thickness	mm	0.05
	Number of inserts		3
Compressibility	ASTM F36A	%	30 - 45
Recovery	ASTM F36A	%	10 - 25
Maximum gasket stress Q_{Smax} at RT	EN 13555	MPa	> 220
Maximum gasket stress Q_{Smax} at 300°C	EN 13555	MPa	220
Minimum required gasket stress in assembly $Q_{min(0.1)}$ at RT and 40 bar	EN 13555	MPa	15
Cold compressibility	DIN 28090-2	%	30 - 45
Cold recovery	DIN 28090-2	%	3 - 6
Hot creep	DIN 28090-2	%	0.5 - 3
Hot recovery	DIN 28090-2	%	2 - 4

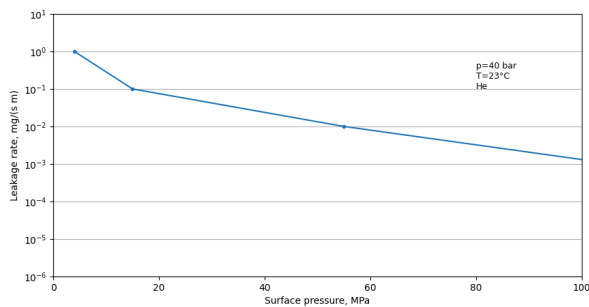
P-T diagram



The area of the P-T diagram

In area one, the gasket material is normally suitable subject to chemical compatibility.
In area two, the gasket material may be suitable but a technical evaluation is recommended.
In area three, do not install the gasket without a technical evaluation.
Always confirm the chemical resistance of the gasket to the media.

Tightness performance



The tightness performance of graphite

The graph shows the required stress at assembly to seal a certain tightness class. The determination of the graph is based on the EN13555 test procedure which applies 40 bar 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:

						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	B	B

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.