# KLINGER®
# Graphite Laminate XSM

KLINGER India

**KLINGER®Graphite Laminate XSM - offers stable physical properties over the whole temperature range.**

An adhesive-free gasket material comprising a flexible graphite foil and a stainless steel tang insert, this product is mainly used in the automotive industry as a result of its outstanding oxidation resistance. Suited for continuous high-temperature operation up-to 550°C, it is easy to handle, displays good scratch resistance as well as excellent chemical resistance.



| | |
|---|---|
| **Basis composition** | Flexible graphite foil with a tanged stainless steel insert. |
| **Color** | Grey |
| **Certificates** | Per request |

| | |
|---|---|
| **Sheet size** | 1000 x 1000 mm, 2000 x 1000 mm |
| **Thickness** | 1.0 mm, 1.5 mm, 2.0 mm |

**Tolerances**

| | |
|---|---|
| Thickness: | ± 5 % |
| Length: | ± 5 mm |
| Width: | ± 5 mm |

**Industry**

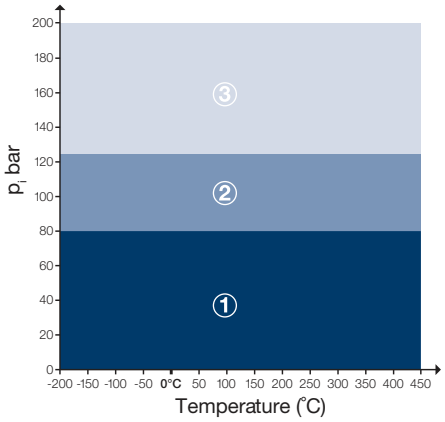
General industry / Chemical / Oil & Gas / Energy / Pulp & Paper / Marine / Automotive

**TECHNICAL DATA** - Typical values for a thickness of 2.0 mm

| | | | |
|---|---|---|---|
| Density of the graphite layer | DIN 28090-2 | g/cm³ | 1.0 |
| Purity of graphite[1)] | DIN 51903 | % | ≥ 99.0 |
| Metallic reinforcement | Tanged metal | | AISI 316 (L) |
| | Thickness | mm | 0.10 |
| | Number of sheets | | 1 |
| Compressibility | ASTM F36 A | % | 35 - 45 |
| Recovery | ASTM F36 A | % | 12 - 18 |
| Compression creep DIN 52913 | 16 h/ 50 MPa/ 300°C | MPa | ≥ 46 |
| Klinger cold/hot compression 50 MPa | Thickness decrease at 23°C | % | 35 - 45 |
| | Thickness decrease at 300°C | % | 1 - 3 |
| Specific leak rate | DIN 28090-2 | mg/ s x m | < 0.10 |
| Chloride content of graphite layer[2)] | DIN 28090-2 | ppm | ≤ 40 |

1) Detailed specifications of the used graphite foils are found in our Graphite vade mecum, which will be sent to you on request with pleasure

## P-T diagram - thickness 2.0 mm




### The area of the P-T diagram

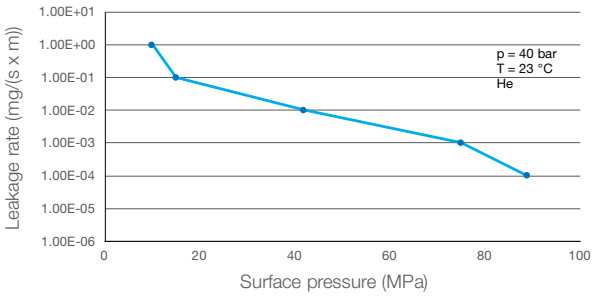
① In area one, the gasket material is normally suitable subject to chemical compatibility.

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 confirm the chemical resistance of the gasket to the media.

## Tightness performance




### The tightness performance graph

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

**KLINGER® Graphite Laminate XSM** — **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** |

For more information on chemical resistance please visit www.klinger.in

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.

Subject to technical alterations.
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