KLINGER Dichtungstechnik

KLINGER® Gaja

From nature to gasket

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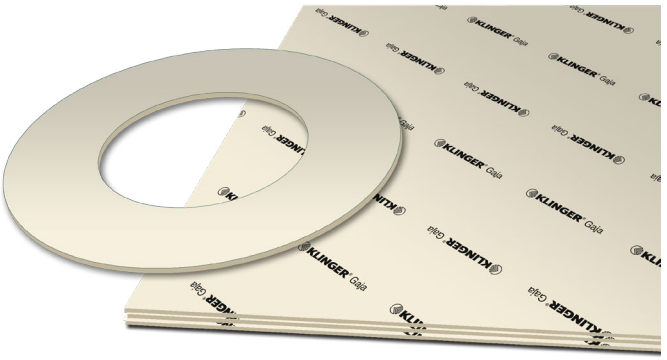


From nature to gasket

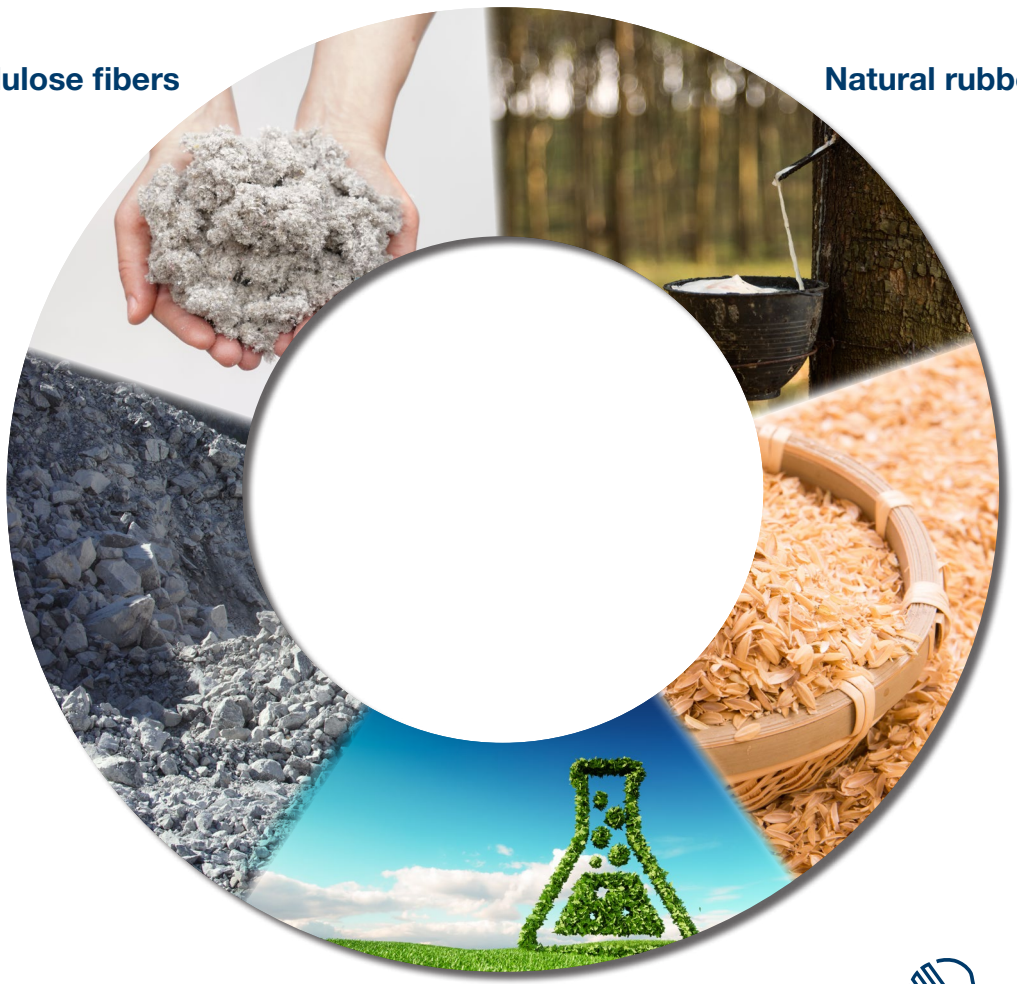
KLINGER® Gaja is the first gasket for which the raw materials were selected primarily with regards to their sustainable properties.
At KLINGER, we are continuously committed to environmentally friendly solutions. KLINGER® Gaja is our way of intensifying this dedication even further and taking our commitment to sustainability to a new level. In addition to a strong focus on the sustainability of our processes, we have now taken a further step and directly realized our responsibility towards the environment in a product.

Follow us through these pages and discover which raw materials make our gasket that much more sustainable.

KLINGER® Gaja is composed of the following raw materials, among others:

Cellulose fibers

Natural rubber



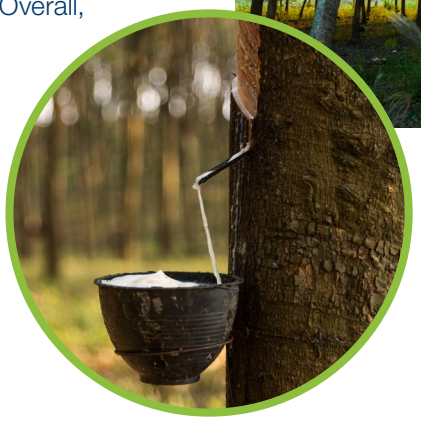
Mineral fillers

Bio-circular silica

Additives

NATURAL RUBBER

The raw material is obtained from the latex of the rubber tree (Hevea brasiliensis). The extraction of natural rubber begins with the tapping of the rubber tree, where the latex flows out of the tree and is collected. This process does not harm the tree and a sustainable harvest of the raw material for KLINGER® Gaja without affecting the tree's life cycle. Natural rubber has several advantages over synthetically produced rubber, as no petroleum is used. Overall, natural rubber is an outstanding example of sustainable raw materials that protect the environment and are renewable. In addition to natural rubber, a small amount of nitrile rubber is also used.



CELLULOSE FIBERS

Cellulose fibers are environmentally friendly products that are derived from renewable resources.
To be precise, cellulose is obtained from plants, primarily from wood and cotton. Trees, for example, can be cultivated sustainably and responsibly.
This ensures that the resources for the manufacture of cellulose fibers for KLINGER® Gaja are not exhausted.
The production process of cellulose fibers often requires less energy and chemicals compared to synthetic fibers. This means a reduction in the ecological footprint, as fewer resources are consumed and fewer pollutants are released into the environment.
In addition, the manufacturing processes are often more efficient, which leads to lower greenhouse gas emissions.
By using these sustainable fibers in the production of KLINGER® Gaja we support the preservation of ecosystems and the health of our planet for future generations.

BIO-CIRCULAR SILICA

The primary product of this raw material is rice husks. With the help of an innovative silicate process, they are given a new lease of life. Bio-circular silica from rice husks is a fascinating example of sustainable resource utilization and the circular economy. This innovative technology enables the reuse of waste products from food production, namely rice husks, to produce valuable silica for KLINGER® Gaja. Rice husks consist largely of silicon dioxide, the main component of silica. The use of bio-circular silica from rice husks for KLINGER® Gaja is therefore a groundbreaking example of a sustainable and resource-efficient circular economy that minimizes waste and the CO_2 footprint while utilizing renewable resources.

MINERAL FILLERS

Some mineral fillers are treated by heating them to temperatures above 1000 °C. This results in very high energy consumption and CO_2 emissions. For KLINGER® Gaja only non-heat-treated natural mineral fillers are used to reduce energy-related GHG emissions. The extraction areas of the mineral fillers used for KLINGER® Gaja are being revitalized. A project dedicated to the restoration of land creates habitats for flora and fauna. Through this project an area of great biodiversity has emerged.

ADDITIVES

The additives used in the manufacture of our gaskets are listed on the most important positive lists for articles in contact with food and drinking water.

Furthermore, we can say:
KLINGER® Gaja contains

- no platicizers
- no waxes
- no antioxidants
- no mineral oils
- no color pigments

PRODUCTION AIDS

Part of the solvents required for production is also based on renewable raw materials rather than fossil feedstocks!

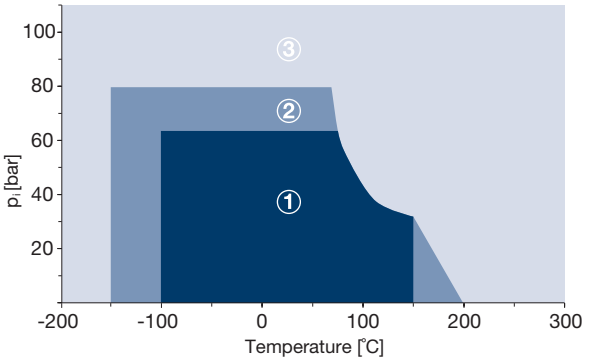
Application in non-critical media such as water, oils, fuels, hydrocarbons, inert gases, alcohols.

Certificates	DIN DVGW, TA-Luft, DNV GL approval
Sheet size	2000 x 1500 mm
Thickness	0.8 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm
Tolerances	Thickness according to DIN 28091-1 Length: ± 50 mm Width: ± 50 mm

TECHNICAL DATA - Typical values for a thickness of 2.0 mm

Compressibility	ASTM F 36 J	%	9
Recovery	ASTM F 36 J	%	45
Stress relaxation DIN 52913	50 MPa, 16 h/175°C	MPa	28
KLINGER cold/hot compression	thickness decrease at 23°C	%	12
50 MPa	thickness decrease at 200°C	%	20
Tightness	DIN 28090-2	mg/(s x m)	0.02
Thickness increase after fluid immersion	oil IRM 903: 5 h/150°C	%	12
ASTM F 146	fuel B: 5 h/23°C	%	12
Density		g/cm³	1.8

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 refer to the chemical resistance of the gasket to the media.

Chemical resistance chart

Simplified overview of the chemical resistance depending on the most important groups of raw materials:

KLINGER® Gaja — **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	B	C	C	A	B	A	C	C	A	C	C

For more information on chemical resistance please visit www.klinger.co.at.

Certified acc. to DIN EN ISO 9001:2015 Subject to technical alterations. Status: February 2024
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