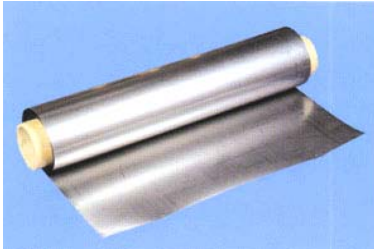


Material profile:

The raw material of 5 STAR is purified, expanded natural graphite flake with well-ordered crystalline structures. We select a high-quality raw material to produce 5 STAR. The resulting alignment of the graphite particles and their planar structures produces a high degree of anisotropic properties. The high purity of 5 STAR derives from the raw materials used, as well as from the quality of the mechanical, chemical and thermal purification processes.

Characteristic properties:

- Impermeability to gases and liquids, flexibility and soft texture.
- Resistant to inorganic and organic acids and bases, solvents, waxes and oils, but not to agents with a powerful oxidizing action, such as highly concentrated nitric acid, highly concentrated sulphuric acid (oleum), nitrating acid and chloric acid, or molten salts with a powerful oxidizing action.
- Absence of health hazard; 5 STAR is asbestos-free
- Environmental compatibility
- Suitability for use at temperatures ranging from cryogenic up to approx. 3000°C depending on installation and service conditions:
 1. In an inert atmosphere up to approx. 3000°C
 2. In steam up to approx. 500°C (without oxygen ingress)
 3. For applications in air up to approx. 300°C
- Absence of binders means no ageing or embrittlement.
- Long-term stability of compressibility and recovery over a wide temperature range. This enables the material to adapt well to the sealing surface, for instance. Over long service periods 5 STAR displays no notable changes in its properties compared with other sealing materials.
- No cold or warm flow up to maximum permissible gasket stress.
- High creep strength under compressive stress
- Properties highly anisotropy, particularly in respect of electrical and thermal conductivity
- Resistance to radiation
- Very good resistance to thermal shock
- Ease of cutting or punching.
- Compared with other sealing materials, 5 STAR is soft and easy to compress,
- Anti-stick coating

Typical application:

1. Sealing material for gaskets, used in valve, pump, automotive industry etc
2. Material for seals, such as stuffing box ring, spiral wound gasket and etc.
3. Other applications in fuel cell, insulating parts and so on.

Characteristic data for a graphite bulk density of 1.0g/cm³, 1.00mm thickness:

Property	Standard	Unit	Value
Tolerance of thickness		mm	±0.04
Tolerance of density		%	±3
Compressibility	ASTM F36A	%	40—55
Recovery	ASTM F36A	%	≥10
Tensile strength	JB/T 9141.2	Mpa	>4.5
Leakage rate	DIN3535-6	Mg/m/s	<0.10
Creep strength under compressive stress	DIN52913	%	≤10
Elongation at break		%	≥1%
Tensile strength	JB/T 9141.2	Mpa	4.5
Carbon content	JB/T 9141.6	%	>99.0
Ash content	ASTM C561	%	≤0.95
Sulfur content	ASTM C816	ppm	≤1000
Chloride content	ASTM F 1277	ppm	≤35
Fluoride content		ppm	≤30
Oxidation rate (670°C, 1h)		%	≤10

Note: This information is based on our present state of knowledge, It should therefore not be constructed as guaranteeing specific properties of the products described or their suitability for a particular application,

Supply data:

Production	Thickness (mm)	Width (mm)	Length (m)	Graphite bulk density (g/cm ³)
5 Star foil	0.20 to 1.00	500/1000/1500	50 / 75	0.7/0.9/1.0/1.1
5 Star sheet	0.20 to 2.00*	500/1000/1500	0.5/1.0/1.5	0.7/1.0
	Homogeneous, free of adhesives and binders.			
5 Star sheet	2.00 – 3.00	500/1000/1500	0.5/1.0/1.5	1.0
	With adhesive.			

*Sheets differ from flexible, thin foils in their greater thickness and rigidity.