GRAFILIT® SP Graphite gasketsheet



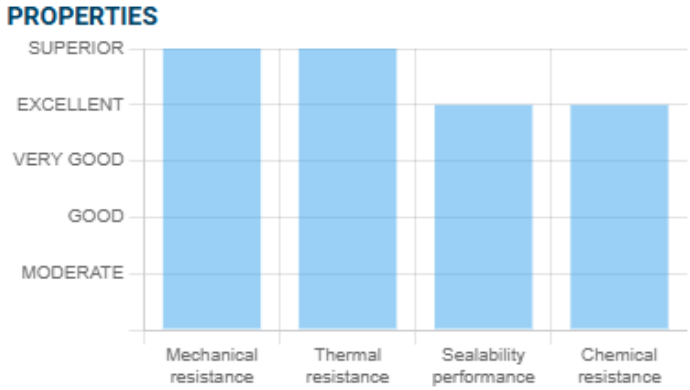
GRAFILIT® SP is an expanded graphite-based material with a tanged stainless steel insert, thus enhancing the surface load and blowout safety. GRAFILIT® SP has excellent chemical, thermal, and mechanical resistance. GRAFILIT® SP is a gasket material used in a wide range of industries, such as gas and steam supply, chemical and petrochemical industries.

COMPOSITION
Expanded graphite, Tanged stainless steel (AISI 316; 0,1mm)

APPROVALS AND COMPLIANCES

- API 607
- BAM (oxygen)
- DNV
- DVGW DIN 30653 HTB (5bar)
- DVGW DIN 3535-6

SHEET DIMENSIONS
Size (mm): 1000 x 1000 | 1500 x 1500
Thickness (mm): 1.0 | 1.5 | 2.0 | 3.0
Other sizes and thicknesses available on request



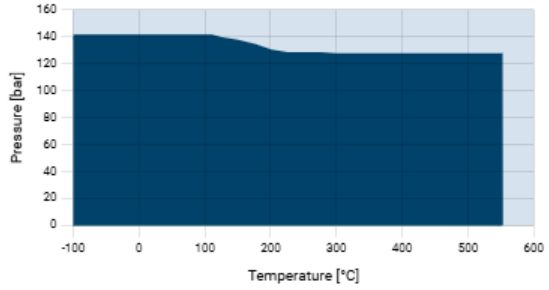
GRAFILIT SP

TECHNICAL DATA for 2 mm

Density	DIN 28090-2	g/cm3	1.5
Density (plain graphite)	DIN 28090-2	g/cm3	1.0
Carbon content	DIN 51903	%	>99
Total sulfur content	ASTM D5016	ppm	/
Leachable chloride content	FSA NMG 202	ppm	20
Leachable fluoride content	FSA NMG 203	ppm	20
Leachable halogen content			/
Ash content	DIN 51903	%	/
Weight loss (air, 670°C, 4 h)	DIN 28090-2	%/h	/
Compressibility	ASTM F36A	%	35
Recovery	ASTM F36A	%	17
Tensile strength	ASTM F152		
Longitudinal		MPa	/
Transversal		MPa	/
Residual stress	DIN 52913		
50 MPa, 300°C, 16 h		MPa	49
Specific leak rate	DIN 3535-6	mg/(s·m)	0.05
Thickness increase	ASTM F146		
Oil IRM 903, 150°C, 5 h		%	/
ASTM Fuel B, 23°C, 5 h		%	/
Compression modulus	DIN 28090-2		
At room temperature: εKSW		%	34
At elevated temperature: εWSW/300°C		%	1.2
Creep relaxation	DIN 28090-2		
At room temperature: εKRW		%	4.2
At elevated temperature: εWRW/300°C		%	3.3
Operating conditions			
Minimum temperature		°C/°F	-200/-328
Maximum continuous temperature			
– under oxidizing atmosphere		°C/°F	550/1022
– under reducing or inert atmosphere		°C/°F	700/1292
Maximum pressure			200/2900

GRAFILIT® SP

Steam or gasses

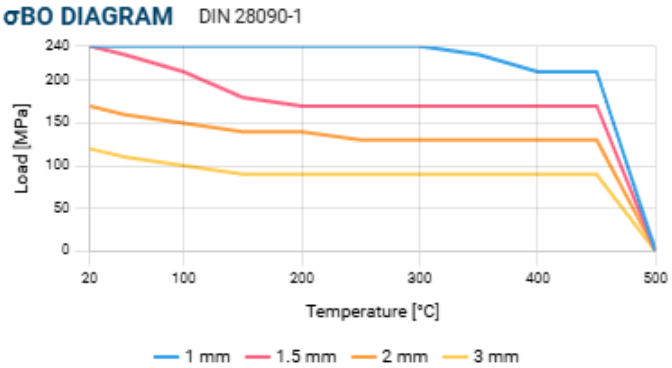


Legend:

- General suitability - Under common installation practices and chemical compatibility.
- Conditional suitability - Appropriate measures ensure maximum performance for joint design and gasket installation. Technical consultation is recommended.
- Limited suitability - Technical consultation is mandatory.

P-T diagrams indicate the maximum permissible combination of internal pressure and service temperature which can be simultaneously applied to a given gaskets thickness, size and tightness class. Given the wide variety of gasket applications and service conditions, these values should only be regarded as a guidance for the proper gasket assembly. In general, thinner gaskets exhibit better P-T properties.

Temperature [°C]



σBO diagrams represent σBO values for different gasket material thicknesses. These values indicate the maximum in-service compressive pressures which can be applied on the gasket area involved without destructing or damaging the gasket material.

All information and data quoted are based upon decades of experience in the production and operation of sealing elements. This data may not be used to support any warranty claims. With its publication this latest edition supersedes all previous issues and is subject to change without further notice.

APPROPRIATE INDUSTRIES & APPLICATIONS

- AUTOMOTIVE AND ENGINE BUILDING INDUSTRIES
- CHEMICAL INDUSTRY
- COMPRESSORS & PUMPS
- GAS SUPPLY
- GENERAL PURPOSE
- HEATING SYSTEMS
- HIGH-TEMPERATURE APP.
- PAPER & CELLULOSE INDUSTRIES
- PETROCHEMICAL INDUSTRY
- POTABLE WATER SUPPLY
- POWER PLANT
- REFRIGERATION & COOLING
- SHIPBUILDING
- STEAM SUPPLY
- VALVES
- WATER SUPPLY

CHEMICAL RESISTANCE CHART

The recommendations made here are intended as a guideline for the selection of a suitable gasket type. As the function and durability of products are dependent upon a number of factors, the data may not be used to support any warranty claims. If there are specific type-approval regulations, these have to be complied with.

Legend: + Recommended ○ Recommendation depends on operating conditions, − Not recommended

Acetamide		Calcium chloride	○	Freon-12 (R-12)	+	Motor oil	+	Sodium bisulfite	+
Acetic acid 10%	+	Calcium hydroxide	+	Freon-134a (R-134a)	+	Naphtha	+	Sodium carbonate	+
Acetic acid 100% (Glacial)	○	Carbon dioxide (gas)	+	Freon-22 (R-22)	+	Nitric acid 10%	○	Sodium chloride	+
Acetone	+	Carbon monoxide (gas)	+	Fruit juices	+	Nitric acid 65%	○	Sodium cyanide	+
Acetonitrile	+	Cellosolve	+	Fuel oil	+	Nitrobenzene	+	Sodium hydroxide	+
Acetylene (gas)	+	Chlorine (gas)	○	Gasoline	+	Nitrogen (Gas)	+	Sodium hypochlorite (Bleach)	−
Acid chlorides	○	Chlorine (in water)		Gelatin	+	Nitrous gases (NOx)	○	Sodium silicate (Water glass)	+
Acrylic acid	+	Chlorobenzene	+	Glycerine (Glycerol)	+	Octane	+	Sodium sulfate	+
Acrylonitrile	+	Chloroform	+	Glycols	+	Oils (Essential)	+	Sodium sulfide	○
Adipic acid	+	Chloroprene	+	Helium (gas)	+	Oils (Vegetable)	+	Starch	+
Air (gas)	+	Chlorosilanes	○	Heptane	+	Oleic acid	+	Steam	+
Alcohols	+	Chromic acid	−	Hydraulic oil (Glycol based)	+	Oleum (Sulfuric acid, fuming)	−	Stearic acid	+
Aldehydes	+	Citric acid	○	Hydraulic oil (Mineral)	+	Oxalic acid	○	Styrene	+
Alum	○	Copper acetate	+	Hydraulic oil (Phosphate ester-based)	+	Oxygen (gas)	+	Sugars	+
Aluminium acetate	○	Copper sulfate	+	Hydrazine	+	Palmitic acid	+	Sulfur	+
Aluminium chlorate	○	Creosote	+	Hydrocarbons	+	Paraffin oil	+	Sulfur dioxide (Gas)	+
Aluminium chloride	−	Cresols (Cresylic acid)	+	Hydrochloric acid 10%	−	Pentane	+	Sulfuric acid 20%	−
Aluminium sulfate	+	Cyclohexane	+	Hydrochloric acid 37%	−	Perchloroethylene	+	Sulfuric acid 98%	−
Amines	+	Cyclohexanol	+	Hydrofluoric acid 10%	−	Petroleum (Crude oil)	+	Sulfuryl chloride	−
Ammonia (Gas)	+	Cyclohexanone	+	Hydrofluoric acid 48%	−	Phenol (Carbolic acid)	+	Tar	+
Ammonium bicarbonate	+	Decalin	+	Hydrogen (gas)	+	Phosphoric acid, 40%	○	Tartaric acid	○
Ammonium chloride	○	Dextrin	+	Iron sulfate	+	Phosphoric acid, 85%	○	Tetrahydrofuran (THF)	+
Ammonium hydroxide	+	Dibenzyl ether	+	Isobutane (Gas)	+	Phthalic acid	+	Titanium tetrachloride	−
Amyl acetate	+	Dibutyl phthalate	+	Isooctane	+	Potassium acetate	+	Toluene	+
Anhydrides	+	Dimethylacetamide (DMA)	+	Isoprene	+	Potassium bicarbonate	+	2,4-Toluenediisocyanate	+
Aniline	+	Dimethylformamide (DMF)	+	Isopropyl alcohol (Isopropanol)	+	Potassium carbonate	+	Transformer oil (Mineral type)	+
Anisole	+	Dioxane	+	Kerosene	+	Potassium chloride	+	Trichloroethylene	+
Argon (gas)	+	Diphyl (Dowtherm A)	+	Ketones	+	Potassium cyanide	+	Vinegar	+
Asphalt	+	Esters	+	Lactic acid	○	Potassium dichromate	○	Vinyl chloride (gas)	+
Barium chloride	○	Ethane (Gas)	+	Lead acetate	+	Potassium hydroxide	+	Vinylidene chloride	+
Benzaldehyde	+	Ethers	+	Lead arsenate	+	Potassium iodide	+	Water	+
Benzene	+	Ethyl acetate	+	Magnesium sulfate	+	Potassium nitrate	+	White spirits	+
Benzoic acid	+	Ethyl alcohol (Ethanol)	+	Maleic acid	+	Potassium permanganate	○	Xylenes	+
Bio-diesel	+	Ethyl cellulose	+	Malic acid	○	Propane (gas)	+	Xylenol	+
Bio-ethanol	+	Ethyl chloride (gas)	+	Methane (Gas)	+	Propylene (gas)	+	Zinc sulfate	+
Black liquor	○	Ethylene (gas)	+	Methyl alcohol (Methanol)	+	Pyridine	+		
Borax	+	Ethylene glycol	+	Methyl chloride (Gas)	+	Salicylic acid	+		
Boric acid	+	Formaldehyde (Formalin)	+	Methylene dichloride	+	Seawater/brine	○		
Butadiene (gas)	+	Formamide	+	Methyl ethyl ketone (MEK)	+	Silicones (oil/grease)	+		
Butane (gas)	+	Formic acid 10%		N-Methyl-pyrrolidone (NMP)	+	Soaps	+		
Butyl alcohol (Butanol)	+	Formic acid 85%	○	Milk	+	Sodium aluminate	+		
Butyric acid	+	Formic acid 100%	○	Mineral oil type ASTM 1	+	Sodium bicarbonate	+		

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