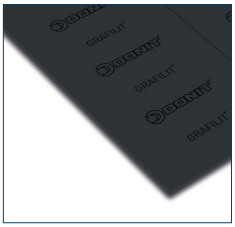
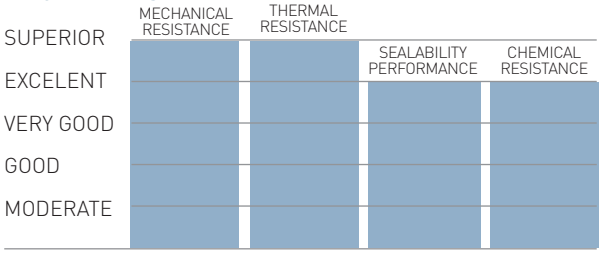
GRAFILIT® SP



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

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

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

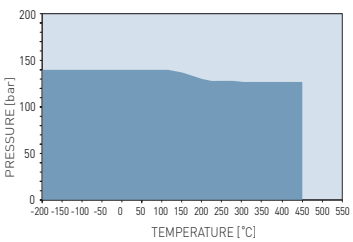
Composition	Expanded natural graphite (>99% graphite purity), tanged stainless steel sheet insert (AISI 316; 0.1 mm).
Colour	Black
Approvals	DIN-DVGW DIN 3535-6, DVGW KTW, DVGW VP 401, API 607, BAM (Oxygen), Germanischer Lloyd

TECHNICAL DATA Typical values for a thickness of 1.5 mm

Density	DIN 28090-2	g/cm³	1.5
Compressibility	ASTM F36A	%	35
Recovery	ASTM F36A	%	17
Stress resistance	DIN 52913		
16 h, 50 MPa, 300 °C		MPa	49
Specific leak rate	DIN 3535-6	mg/(s·m)	0.05
Leachable chloride content	FSA NMG 202	ppm	20
Leachable fluoride content	FSA NMG 203	ppm	20
Ash content of graphite	DIN 51903	%	<1
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	34
At elevated temperature: $\varepsilon_{WSW/300\ °C}$		%	1.2
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	4.2
At elevated temperature: $\varepsilon_{WRW/300\ °C}$		%	3.3
Operating conditions			
Minimum temperature		°C/°F	-200/-328
Continuous temperature			
- oxidizing atmosphere		°C/°F	550/1022
- reducing or inert atmosphere		°C/°F	700/1292
Pressure		bar/psi	200/2900

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 1.5 mm



- General suitability - Appropriate measures ensure maximum performance for joint design and gasket installation.
- Limited suitability - Technical consultation is mandatory.

Dimensions of standard sheets	Sheet size (mm): 1000 x 1000 | 1500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other dimensions and thicknesses are available on request.

Acetamide	
Acetic acid, 10%	+
Acetic acid, 100% (Glacial)	?
Acetone	+
Acetonitrile	+
Acetylene (gas)	+
Acid chlorides	?
Acrylic acid	+
Acrylonitrile	+
Adipic acid	+
Air (gas)	+
Alcohols	+
Aldehydes	+
Alum	?
Aluminium acetate	?
Aluminium chlorate	?
Aluminium chloride	-
Aluminium sulfate	+
Amines	+
Ammonia (gas)	+
Ammonium bicarbonate	+
Ammonium chloride	?
Ammonium hydroxide	+
Amyl acetate	+
Anhydrides	+
Aniline	+
Anisole	+
Argon (gas)	+
Asphalt	+
Barium chloride	?
Benzaldehyde	+
Benzene	+
Benzoic acid	+
Bio-diesel	+
Bio-ethanol	+
Black liquor	?
Borax	+
Boric acid	+
Butadiene (gas)	+
Butane (gas)	+
Butyl alcohol (Butanol)	+
Butyric acid	+
Calcium chloride	?
Calcium hydroxide	+
Carbon dioxide (gas)	+
Carbon monoxide (gas)	+
Cellosolve	+
Chlorine (gas)	?
Chlorine (in water)	
Chlorobenzene	+
Chloroform	+
Chloroprene	+
Chlorosilanes	?
Chromic acid	-
Citric acid	?
Copper acetate	+
Copper sulfate	+
Creosote	+
Cresols (Cresylic acid)	+
Cyclohexane	+
Cyclohexanol	+
Cyclohexanone	+
Decalin	+
Dextrin	+
Dibenzyl ether	+
Dibutyl phthalate	+
Dimethylacetamide (DMA)	+
Dimethylformamide (DMF)	+

Dioxane	+
Diphyl (Dowtherm A)	+
Esters	+
Ethane (gas)	+
Ethers	+
Ethyl acetate	+
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	+
Ethyl chloride (gas)	+
Ethylene (gas)	+
Ethylene glycol	+
Formaldehyde (Formalin)	+
Formamide	+
Formic acid, 10%	
Formic acid, 85%	?
Formic acid, 100%	?
Freon-12 (R-12)	+
Freon-134a (R-134a)	+
Freon-22 (R-22)	+
Fruit juices	+
Fuel oil	+
Gasoline	+
Gelatin	+
Glycerine (Glycerol)	+
Glycols	+
Helium (gas)	+
Heptane	+
Hydraulic oil (Glycol based)	+
Hydraulic oil (Mineral type)	+
Hydraulic oil (Phosphate ester based)	+
Hydrazine	+
Hydrocarbons	+
Hydrochloric acid, 10%	-
Hydrochloric acid, 37%	-
Hydrofluoric acid, 10%	-
Hydrofluoric acid, 48%	-
Hydrogen (gas)	+
Iron sulfate	+
Isobutane (gas)	+
Isooctane	+
Isoprene	+
Isopropyl alcohol (Isopropanol)	+
Kerosene	+
Ketones	+
Lactic acid	?
Lead acetate	+
Lead arsenate	+
Magnesium sulfate	+
Maleic acid	+
Malic acid	?
Methane (gas)	+
Methyl alcohol (Methanol)	+
Methyl chloride (gas)	+
Methylene dichloride	+
Methyl ethyl ketone (MEK)	+
N-Methyl-pyrrolidone (NMP)	+
Milk	+
Mineral oil (ASTM no.1)	+
Motor oil	+
Naphtha	+
Nitric acid, 10%	?
Nitric acid, 65%	?
Nitrobenzene	+
Nitrogen (gas)	+
Nitrous gases (NOx)	?
Octane	+
Oils (Essential)	+
Oils (Vegetable)	+

Oleic acid	+
Oleum (Sulfuric acid, fuming)	-
Oxalic acid	?
Oxygen (gas)	+
Palmitic acid	+
Paraffin oil	+
Pentane	+
Perchloroethylene	+
Petroleum (Crude oil)	+
Phenol (Carbolic acid)	+
Phosphoric acid, 40%	?
Phosphoric acid, 85%	?
Phthalic acid	+
Potassium acetate	+
Potassium bicarbonate	+
Potassium carbonate	+
Potassium chloride	+
Potassium cyanide	+
Potassium dichromate	?
Potassium hydroxide	+
Potassium iodide	+
Potassium nitrate	+
Potassium permanganate	?
Propane (gas)	+
Propylene (gas)	+
Pyridine	+
Salicylic acid	+
Seawater/brine	?
Silicones (oil/grease)	+
Soaps	+
Sodium aluminate	+
Sodium bicarbonate	+
Sodium bisulfite	+
Sodium carbonate	+
Sodium chloride	+
Sodium cyanide	+
Sodium hydroxide	+
Sodium hypochlorite (Bleach)	-
Sodium silicate (Water glass)	+
Sodium sulfate	+
Sodium sulfide	?
Starch	+
Steam	+
Stearic acid	+
Styrene	+
Sugars	+
Sulfur	+
Sulfur dioxide (gas)	+
Sulfuric acid, 20%	-
Sulfuric acid, 98%	-
Sulfuryl chloride	-
Tar	+
Tartaric acid	?
Tetrahydrofuran (THF)	+
Titanium tetrachloride	-
Toluene	+
2,4-Toluenediisocyanate	+
Transformer oil (Mineral type)	+
Trichloroethylene	+
Vinegar	+
Vinyl chloride (gas)	+
Vinylidene chloride	+
Water	+
White spirits	+
Xylenes	+
Xylenol	+
Zinc sulfate	+

CHEMICAL RESISTANCE CHART

The recommendations made here are intended to be a guideline for the selection of the suitable gasket quality. Because the function and durability of the products depend upon a number of factors, the data may not be used to support any warranty claims.

\+ Recommended
? Recommendation depends on operating conditions
\- Not recommended

All information and data quoted are based upon years 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.

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