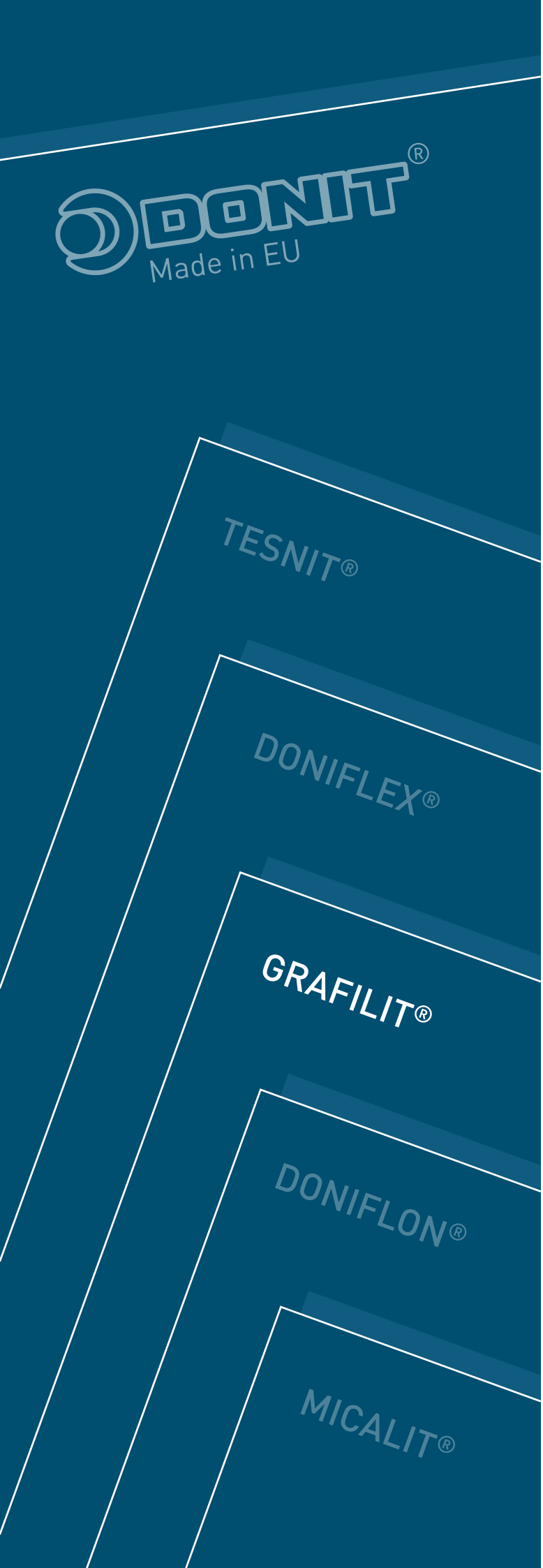


DONIT®
A perfect fit

WE ARE A TRUE PARTNER FOR YOUR SUCCESS

DONIT® Sealing technologies

As a leader in gaskets, gasket sheets, and advanced sealing technologies, we offer the optimum solution with a perfect fit for your most challenging sealing requirements. Backed by decades of excellence in understanding of sealing problems, extensive know-how in application engineering, and consistent manufacturing of reliable high quality products, we are in position to respond quickly and efficiently to your inquiry.

WE ARE A TRUE PARTNER FOR YOUR SUCCESS

With a wide experience in problem-solving and unshaken commitment to high quality standards, we are dedicated to provide you the best service and products. In addition, through customer-driven innovation, our strong R&D team is qualified to successfully design the adequate sealing solution.

Our customer satisfaction rests upon four pillars:

- Complete production chain and international sales network
- Quality assurance and safety
- Application engineering
- Technical training courses and seminars

THE DONIT® PHILOSOPHY

Our philosophy is based on building long-term business relationship with our customers that extends across many sectors of industries. Customer satisfaction is our driving-force which is attained through the constant supply of reliable and high quality products embracing product improvement and support.

DONIT® gasket sheets and sealing solutions are high quality products which have received several industrial quality approvals. Our products support the environmental legislation without compromising their sealing performance.

EMPLOYEES

Over 200 employees dedicated to you:
We strive for permanent professional and personal growth. We promote teamwork and diversity.

Our international team supports you regardless of your geographical location.

80% - Secondary school / technical school or lower

18% - Bachelor or equivalent

2% - Doctoral or equivalent

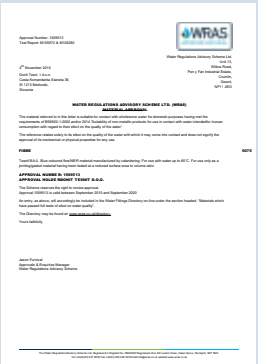
CERTIFIED QUALITY

We assure high quality, environmentally friendly products to our customers. Quality and care for the environment is embedded in both our minds and our organization.

Care for the environment is embedded in our tradition. DONIT TESNIT d.o.o. is certified by international ISO 9001 and ISO 14001 standards.

We also ensure that product quality and safety are in accordance with a number of widely recognized international standards such as:

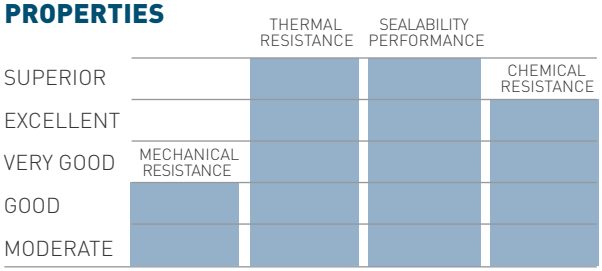
DVGW (DIN 3535-6, VP 401), SVGW (DIN 3535-6), ELL, DVGW W270, BAM, WRAS, TA-Luft (VDI 2440), API 6FA / API 607, ISO 10497, ABS, DNV GL



DONIT® | GRAFILIT® SF

GRAFILIT® SF is an expanded graphite based material that has excellent chemical and thermal resistance. Its high creep resistance and high compressibility make it suitable for highly demanding conditions in the chemical and petrochemical industries, gas supply, compressors and pumps.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- WATER SUPPLY
- POTABLE WATER SUPPLY
- STEAM SUPPLY
- GAS SUPPLY
- CHEMICAL INDUSTRY
- PETROCHEMICAL INDUSTRY
- SHIPBUILDING
- POWER PLANT
- REFRIGERATION AND COOLING
- HEATING SYSTEMS
- HIGH TEMP. APPLICATIONS
- VALVES

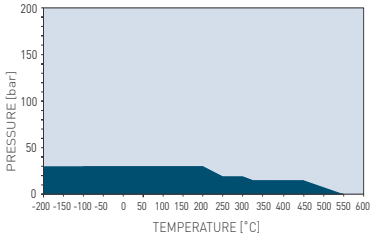
Composition	Expanded natural graphite (>99% graphite purity)		
Color	Black		
Approvals	DIN-DVGW DIN 3535-6	DVGW VP 401 (5 bar)	BAM (Oxygen)
	Germanischer Lloyd		

TECHNICAL DATA Typical values for a thickness of 1.5 mm

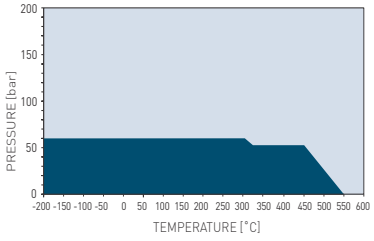
Density	DIN 28090-2	g/cm³	1.0
Compressibility	ASTM F36A	%	45
Recovery	ASTM F36A	%	13
Stress resistance	DIN 52913		
16 h, 50 MPa, 300 °C		MPa	49
Specific leak rate	DIN 3535-6	mg/(s·m)	0.05
Leachable chloride content	FSA NMG 202	ppm	20
Leachable fluoride content	FSA NMG 203	ppm	20
Ash content of graphite	DIN 51903	%	<1
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	41
At elevated temperature: $\varepsilon_{WSW/300\ °C}$		%	0.9
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	5.0
At elevated temperature: $\varepsilon_{WRW/300\ °C}$		%	4.0
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			
- Demanding gasses		bar/psi	30/435
- Steam, gasses		bar/psi	60/870
- Liquids		bar/psi	100/1450

P-T DIAGRAMS

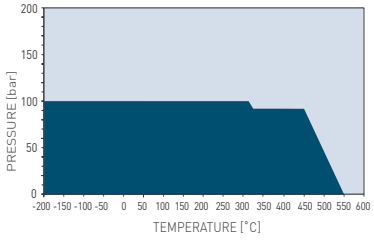
Demanding gasses



Steam, gasses



Liquids



Turn the page

P-T DIAGRAMS

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

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

- General suitability - Under common installation practices and chemical compatibility.
- Limited suitability - Technical consultation is mandatory.

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.

Legend: + Recommended, ? Recommendation depends on operating conditions, - Not recommended.

Acetamide	+	Butyric acid	+	Formic acid, 85%	+	N-Methyl-pyrrolidone (NMP)	+	Silicones (oil/grease)	+
Acetic acid, 10%	+	Calcium chloride	+	Formic acid, 100%	+	Milk	+	Soaps	+
Acetic acid, 100% (Glacial)	+	Calcium hydroxide	+	Freon-12 (R-12)	+	Mineral oil (ASTM no.1)	+	Sodium aluminate	+
Acetone	+	Carbon dioxide (gas)	+	Freon-134a (R-134a)	+	Motor oil	+	Sodium bicarbonate	+
Acetonitrile	+	Carbon monoxide (gas)	+	Freon-22 (R-22)	+	Naphtha	+	Sodium bisulfite	+
Acetylene (gas)	+	Cellosolve	+	Fruit juices	+	Nitric acid, 10%	+	Sodium carbonate	+
Acid chlorides	+	Chlorine (gas)	?	Fuel oil	+	Nitric acid, 65%	?	Sodium chloride	+
Acrylic acid	+	Chlorine (in water)	?	Gasoline	+	Nitrobenzene	+	Sodium cyanide	+
Acrylonitrile	+	Chlorobenzene	+	Gelatin	+	Nitrogen (gas)	+	Sodium hydroxide	+
Adipic acid	+	Chloroform	+	Glycerine (Glycerol)	+	Nitrous gases (NOx)	?	Sodium hypochlorite (Bleach)	+
Air (gas)	+	Chloroprene	+	Glycols	+	Octane	+	Sodium silicate (Water glass)	+
Alcohols	+	Chlorosilanes	+	Helium (gas)	+	Oils (Essential)	+	Sodium sulfate	+
Aldehydes	+	Chromic acid	+	Heptane	+	Oils (Vegetable)	+	Sodium sulfide	+
Alum	+	Citric acid	+	Hydraulic oil (Glycol based)	+	Oleic acid	+	Starch	+
Aluminium acetate	+	Copper acetate	+	Hydraulic oil (Mineral type)	+	Oleum (Sulfuric acid, fuming)	-	Steam	+
Aluminium chlorate	+	Copper sulfate	+	Hydraulic oil (Phosphate ester based)	+	Oxalic acid	+	Stearic acid	+
Aluminium chloride	+	Creosote	+	Hydrazine	+	Oxygen (gas)	+	Styrene	+
Aluminium sulfate	+	Cresols (Cresylic acid)	+	Hydrocarbons	+	Palmitic acid	+	Sugars	+
Amines	+	Cyclohexane	+	Hydrochloric acid, 10%	+	Paraffin oil	+	Sulfur	+
Ammonia (gas)	+	Cyclohexanol	+	Hydrochloric acid, 37%	+	Pentane	+	Sulfur dioxide (gas)	+
Ammonium bicarbonate	+	Cyclohexanone	+	Hydrofluoric acid, 10%	+	Perchloroethylene	+	Sulfuric acid, 20%	+
Ammonium chloride	+	Decalin	+	Hydrofluoric acid, 48%	+	Petroleum (Crude oil)	+	Sulfuric acid, 98%	-
Ammonium hydroxide	+	Dextrin	+	Hydrogen (gas)	+	Phenol (Carbolic acid)	+	Sulfuryl chloride	+
Amyl acetate	+	Dibenzyl ether	+	Iron sulfate	+	Phosphoric acid, 40%	+	Tar	+
Anhydrides	+	Dibutyl phthalate	+	Isobutane (gas)	+	Phosphoric acid, 85%	+	Tartaric acid	+
Aniline	+	Dimethylacetamide (DMA)	+	Isooctane	+	Phthalic acid	+	Tetrahydrofuran (THF)	+
Anisole	+	Dimethylformamide (DMF)	+	Isoprene	+	Potassium acetate	+	Titanium tetrachloride	+
Argon (gas)	+	Dioxane	+	Isopropyl alcohol (Isopropanol)	+	Potassium bicarbonate	+	Toluene	+
Asphalt	+	Diphyl (Dowtherm A)	+	Kerosene	+	Potassium carbonate	+	2,4-Toluenediisocyanate	+
Barium chloride	+	Esters	+	Ketones	+	Potassium chloride	+	Transformer oil (Mineral type)	+
Benzaldehyde	+	Ethane (gas)	+	Lactic acid	+	Potassium cyanide	+	Trichloroethylene	+
Benzene	+	Ethers	+	Lead acetate	+	Potassium dichromate	?	Vinegar	+
Benzoic acid	+	Ethyl acetate	+	Lead arsenate	+	Potassium hydroxide	+	Vinyl chloride (gas)	+
Bio-diesel	+	Ethyl alcohol (Ethanol)	+	Magnesium sulfate	+	Potassium iodide	+	Vinylidene chloride	+
Bio-ethanol	+	Ethyl cellulose	+	Maleic acid	+	Potassium nitrate	+	Water	+
Black liquor	+	Ethyl chloride (gas)	+	Malic acid	+	Potassium permanganate	?	White spirits	+
Borax	+	Ethylene (gas)	+	Methane (gas)	+	Propane (gas)	+	Xylenes	+
Boric acid	+	Ethylene glycol	+	Methyl alcohol (Methanol)	+	Propylene (gas)	+	Xylenol	+
Butadiene (gas)	+	Formaldehyde (Formalin)	+	Methyl chloride (gas)	+	Pyridine	+	Zinc sulfate	+
Butane (gas)	+	Formamide	+	Methylene dichloride	+	Salicylic acid	+		
Butyl alcohol (Butanol)	+	Formic acid, 10%	+	Methyl ethyl ketone (MEK)	+	Seawater/brine	+		

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.

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

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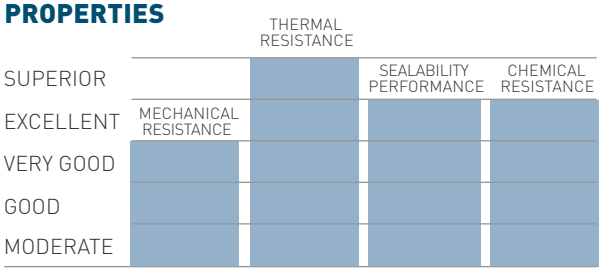
Date of issue: 05.2018 / TDS-GSF-05-2018

DONIT® | GRAFILIT® SL

GRAFILIT® SL is an expanded graphite based material with stainless steel foil insert, thus facilitating its handling and enhances the surface load. GRAFILIT® SL has excellent chemical and thermal resistance. Its high creep resistance and high compressibility make it suitable for highly demanding conditions in the chemical and petrochemical industries.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- WATER SUPPLY
- POTABLE WATER SUPPLY
- STEAM SUPPLY
- GAS SUPPLY
- CHEMICAL INDUSTRY
- PETROCHEMICAL INDUSTRY
- POWER PLANT
- REFRIGERATION AND COOLING
- HEATING SYSTEMS
- HIGH TEMP. APPLICATIONS
- COMPRESSORS AND PUMPS
- VALVES

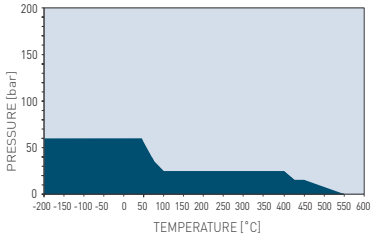
Composition	Expanded natural graphite (>99% graphite purity), stainless steel foil insert (AISI 316; 0.05 mm)
Color	Black
Approvals	BAM (Oxygen)

TECHNICAL DATA Typical values for a thickness of 1.5 mm

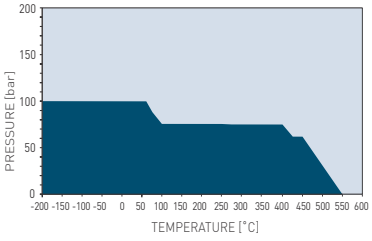
Density	DIN 28090-2	g/cm³	1.3
Compressibility	ASTM F36A	%	42
Recovery	ASTM F36A	%	15
Stress resistance	DIN 52913		
16 h, 50 MPa, 300 °C		MPa	49
Specific leak rate	DIN 3535-6	mg/(s·m)	0.05
Leachable chloride content	FSA NMG 202	ppm	20
Leachable fluoride content	FSA NMG 203	ppm	20
Ash content of graphite	DIN 51903	%	<1
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	38
At elevated temperature: $\varepsilon_{WSW/300\ °C}$		%	1.2
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	4.3
At elevated temperature: $\varepsilon_{WRW/300\ °C}$		%	3.6
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			
- Demanding gasses		bar/psi	60/870
- Steam, gasses		bar/psi	100/1450
- Liquids		bar/psi	140/2030

P-T DIAGRAMS

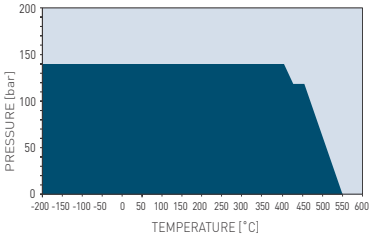
Demanding gasses



Steam, gasses



Liquids



Turn the page

P-T DIAGRAMS

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

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

- General suitability - Under common installation practices and chemical compatibility.
- Limited suitability - Technical consultation is mandatory.

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.

Legend: + Recommended, ? Recommendation depends on operating conditions, - Not recommended.

Acetamide	+	Butyric acid	+	Formic acid, 85%	?	N-Methyl-pyrrolidone (NMP)	+	Silicones (oil/grease)	+
Acetic acid, 10%	+	Calcium chloride	?	Formic acid, 100%	?	Milk	+	Soaps	+
Acetic acid, 100% (Glacial)	?	Calcium hydroxide	+	Freon-12 (R-12)	+	Mineral oil (ASTM no.1)	+	Sodium aluminate	+
Acetone	+	Carbon dioxide (gas)	+	Freon-134a (R-134a)	+	Motor oil	+	Sodium bicarbonate	+
Acetonitrile	+	Carbon monoxide (gas)	+	Freon-22 (R-22)	+	Naphtha	+	Sodium bisulfite	+
Acetylene (gas)	+	Cellosolve	+	Fruit juices	+	Nitric acid, 10%	?	Sodium carbonate	+
Acid chlorides	?	Chlorine (gas)	?	Fuel oil	+	Nitric acid, 65%	?	Sodium chloride	+
Acrylic acid	+	Chlorine (in water)	-	Gasoline	+	Nitrobenzene	+	Sodium cyanide	+
Acrylonitrile	+	Chlorobenzene	+	Gelatin	+	Nitrogen (gas)	+	Sodium hydroxide	+
Adipic acid	+	Chloroform	+	Glycerine (Glycerol)	+	Nitrous gases (NOx)	?	Sodium hypochlorite (Bleach)	-
Air (gas)	+	Chloroprene	+	Glycols	+	Octane	+	Sodium silicate (Water glass)	+
Alcohols	+	Chlorosilanes	+	Helium (gas)	+	Oils (Essential)	+	Sodium sulfate	+
Aldehydes	+	Chromic acid	+	Heptane	+	Oils (Vegetable)	+	Sodium sulfide	?
Alum	?	Citric acid	+	Hydraulic oil (Glycol based)	+	Oleic acid	+	Starch	+
Aluminium acetate	?	Copper acetate	+	Hydraulic oil (Mineral type)	+	Oleum (Sulfuric acid, fuming)	-	Steam	+
Aluminium chlorate	?	Copper sulfate	+	Hydraulic oil (Phosphate ester based)	+	Oxalic acid	?	Stearic acid	+
Aluminium chloride	-	Creosote	+	Hydrazine	+	Oxygen (gas)	+	Styrene	+
Aluminium sulfate	+	Cresols (Cresylic acid)	+	Hydrocarbons	+	Palmitic acid	+	Sugars	+
Amines	+	Cyclohexane	+	Hydrochloric acid, 10%	-	Paraffin oil	+	Sulfur	+
Ammonia (gas)	+	Cyclohexanol	+	Hydrochloric acid, 37%	-	Pentane	+	Sulfur dioxide (gas)	+
Ammonium bicarbonate	+	Cyclohexanone	+	Hydrofluoric acid, 10%	-	Perchloroethylene	+	Sulfuric acid, 20%	-
Ammonium chloride	?	Decalin	+	Hydrofluoric acid, 48%	-	Petroleum (Crude oil)	+	Sulfuric acid, 98%	-
Ammonium hydroxide	+	Dextrin	+	Hydrogen (gas)	+	Phenol (Carbolic acid)	+	Sulfuryl chloride	-
Amyl acetate	+	Dibenzyl ether	+	Iron sulfate	+	Phosphoric acid, 40%	?	Tar	+
Anhydrides	+	Dibutyl phthalate	+	Isobutane (gas)	+	Phosphoric acid, 85%	?	Tartaric acid	?
Aniline	+	Dimethylacetamide (DMA)	+	Isooctane	+	Phthalic acid	+	Tetrahydrofuran (THF)	+
Anisole	+	Dimethylformamide (DMF)	+	Isoprene	+	Potassium acetate	+	Titanium tetrachloride	-
Argon (gas)	+	Dioxane	+	Isopropyl alcohol (Isopropanol)	+	Potassium bicarbonate	+	Toluene	+
Asphalt	+	Diphyl (Dowtherm A)	+	Kerosene	+	Potassium carbonate	+	2,4-Toluenediisocyanate	+
Barium chloride	?	Esters	+	Ketones	+	Potassium chloride	+	Transformer oil (Mineral type)	+
Benzaldehyde	+	Ethane (gas)	+	Lactic acid	?	Potassium cyanide	+	Trichloroethylene	+
Benzene	+	Ethers	+	Lead acetate	+	Potassium dichromate	?	Vinegar	+
Benzoic acid	+	Ethyl acetate	+	Lead arsenate	+	Potassium hydroxide	+	Vinyl chloride (gas)	+
Bio-diesel	+	Ethyl alcohol (Ethanol)	+	Magnesium sulfate	+	Potassium iodide	+	Vinylidene chloride	+
Bio-ethanol	+	Ethyl cellulose	+	Maleic acid	+	Potassium nitrate	+	Water	+
Black liquor	?	Ethyl chloride (gas)	+	Malic acid	?	Potassium permanganate	?	White spirits	+
Borax	+	Ethylene (gas)	+	Methane (gas)	+	Propane (gas)	+	Xylenes	+
Boric acid	+	Ethylene glycol	+	Methyl alcohol (Methanol)	+	Propylene (gas)	+	Xylenol	+
Butadiene (gas)	+	Formaldehyde (Formalin)	+	Methyl chloride (gas)	+	Pyridine	+	Zinc sulfate	+
Butane (gas)	+	Formamide	+	Methylene dichloride	+	Salicylic acid	+		
Butyl alcohol (Butanol)	+	Formic acid, 10%	?	Methyl ethyl ketone (MEK)	+	Seawater/brine	?		

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.

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

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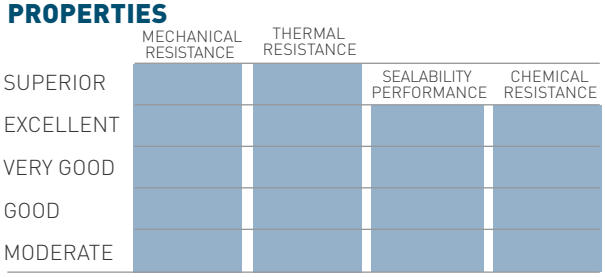
Date of issue: 05.2018 / TDS-GSL-05-2018

DONIT® | 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

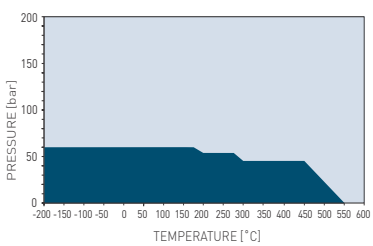
Composition	Expanded natural graphite (>99% graphite purity), tanged stainless steel sheet insert (AISI 316; 0.1 mm)		
Color	Black		
Approvals	DIN-DVGW DIN 3535-6	DVGW VP 401 (5 bar)	API 607
	BAM (Oxygen)	Germanischer Lloyd	

TECHNICAL DATA Typical values for a thickness of 1.5 mm

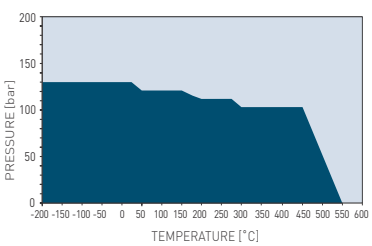
Density	DIN 28090-2	g/cm³	1.5
Compressibility	ASTM F36A	%	35
Recovery	ASTM F36A	%	17
Stress resistance	DIN 52913		
16 h, 50 MPa, 300 °C		MPa	49
Specific leak rate	DIN 3535-6	mg/(s m)	0.05
Leachable chloride content	FSA NMG 202	ppm	20
Leachable fluoride content	FSA NMG 203	ppm	20
Ash content of graphite	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			
- Demanding gasses		bar/psi	60/870
- Steam, gasses		bar/psi	130/1885
- Liquids		bar/psi	160/2320

P-T DIAGRAMS

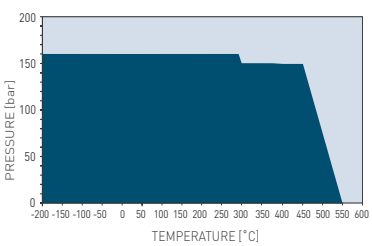
Demanding gasses



Steam, gasses



Liquids



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P-T DIAGRAMS

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

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

- General suitability - Under common installation practices and chemical compatibility.
- Limited suitability - Technical consultation is mandatory.

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.

Legend: + Recommended, ? Recommendation depends on operating conditions, - Not recommended.

Acetamide	?	Butyric acid	+	Formic acid, 85%	?	N-Methyl-pyrrolidone (NMP)	+	Silicones (oil/grease)	+
Acetic acid, 10%	+	Calcium chloride	?	Formic acid, 100%	?	Milk	+	Soaps	+
Acetic acid, 100% (Glacial)	?	Calcium hydroxide	+	Freon-12 (R-12)	+	Mineral oil (ASTM no.1)	+	Sodium aluminate	+
Acetone	+	Carbon dioxide (gas)	+	Freon-134a (R-134a)	+	Motor oil	+	Sodium bicarbonate	+
Acetonitrile	+	Carbon monoxide (gas)	+	Freon-22 (R-22)	+	Naphtha	+	Sodium bisulfite	+
Acetylene (gas)	+	Cellosolve	+	Fruit juices	+	Nitric acid, 10%	?	Sodium carbonate	+
Acid chlorides	?	Chlorine (gas)	?	Fuel oil	+	Nitric acid, 65%	?	Sodium chloride	+
Acrylic acid	+	Chlorine (in water)	-	Gasoline	+	Nitrobenzene	+	Sodium cyanide	+
Acrylonitrile	+	Chlorobenzene	+	Gelatin	+	Nitrogen (gas)	+	Sodium hydroxide	+
Adipic acid	+	Chloroform	+	Glycerine (Glycerol)	+	Nitrous gases (NOx)	?	Sodium hypochlorite (Bleach)	-
Air (gas)	+	Chloroprene	+	Glycols	+	Octane	+	Sodium silicate (Water glass)	+
Alcohols	+	Chlorosilanes	?	Helium (gas)	+	Oils (Essential)	+	Sodium sulfate	+
Aldehydes	+	Chromic acid	-	Heptane	+	Oils (Vegetable)	+	Sodium sulfide	?
Alum	?	Citric acid	?	Hydraulic oil (Glycol based)	+	Oleic acid	+	Starch	+
Aluminium acetate	?	Copper acetate	+	Hydraulic oil (Mineral type)	+	Oleum (Sulfuric acid, fuming)	-	Steam	+
Aluminium chlorate	?	Copper sulfate	+	Hydraulic oil (Phosphate ester based)	+	Oxalic acid	?	Stearic acid	+
Aluminium chloride	-	Creosote	+	Hydrazine	+	Oxygen (gas)	+	Styrene	+
Aluminium sulfate	+	Cresols (Cresylic acid)	+	Hydrocarbons	+	Palmitic acid	+	Sugars	+
Amines	+	Cyclohexane	+	Hydrochloric acid, 10%	-	Paraffin oil	+	Sulfur	+
Ammonia (gas)	+	Cyclohexanol	+	Hydrochloric acid, 37%	-	Pentane	+	Sulfur dioxide (gas)	+
Ammonium bicarbonate	+	Cyclohexanone	+	Hydrofluoric acid, 10%	-	Perchloroethylene	+	Sulfuric acid, 20%	-
Ammonium chloride	?	Decalin	+	Hydrofluoric acid, 48%	-	Petroleum (Crude oil)	+	Sulfuric acid, 98%	-
Ammonium hydroxide	+	Dextrin	+	Hydrogen (gas)	+	Phenol (Carbolic acid)	+	Sulfuryl chloride	-
Amyl acetate	+	Dibenzyl ether	+	Iron sulfate	+	Phosphoric acid, 40%	?	Tar	+
Anhydrides	+	Dibutyl phthalate	+	Isobutane (gas)	+	Phosphoric acid, 85%	?	Tartaric acid	?
Aniline	+	Dimethylacetamide (DMA)	+	Isooctane	+	Phthalic acid	+	Tetrahydrofuran (THF)	+
Anisole	+	Dimethylformamide (DMF)	+	Isoprene	+	Potassium acetate	+	Titanium tetrachloride	-
Argon (gas)	+	Dioxane	+	Isopropyl alcohol (Isopropanol)	+	Potassium bicarbonate	+	Toluene	+
Asphalt	+	Diphyl (Dowtherm A)	+	Kerosene	+	Potassium carbonate	+	2,4-Toluenediisocyanate	+
Barium chloride	?	Esters	+	Ketones	+	Potassium chloride	+	Transformer oil (Mineral type)	+
Benzaldehyde	+	Ethane (gas)	+	Lactic acid	?	Potassium cyanide	+	Trichloroethylene	+
Benzene	+	Ethers	+	Lead acetate	+	Potassium dichromate	?	Vinegar	+
Benzoic acid	+	Ethyl acetate	+	Lead arsenate	+	Potassium hydroxide	+	Vinyl chloride (gas)	+
Bio-diesel	+	Ethyl alcohol (Ethanol)	+	Magnesium sulfate	+	Potassium iodide	+	Vinylidene chloride	+
Bio-ethanol	+	Ethyl cellulose	+	Maleic acid	+	Potassium nitrate	+	Water	+
Black liquor	?	Ethyl chloride (gas)	+	Malic acid	?	Potassium permanganate	?	White spirits	+
Borax	+	Ethylene (gas)	+	Methane (gas)	+	Propane (gas)	+	Xylenes	+
Boric acid	+	Ethylene glycol	+	Methyl alcohol (Methanol)	+	Propylene (gas)	+	Xylenol	+
Butadiene (gas)	+	Formaldehyde (Formalin)	+	Methyl chloride (gas)	+	Pyridine	+	Zinc sulfate	+
Butane (gas)	+	Formamide	+	Methylene dichloride	+	Salicylic acid	+		
Butyl alcohol (Butanol)	+	Formic acid, 10%	?	Methyl ethyl ketone (MEK)	+	Seawater/brine	?		

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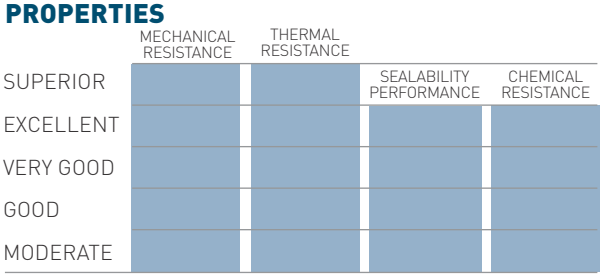
Date of issue: 05.2018 / TDS-GSP-05-2018

GRAFILIT® EM

GRAFILIT® EM is an expanded graphite based material with expanded stainless steel insert, which enables applications with high operation pressures, including cycling operations. Even surface pressure distribution on gasket provides excellent thermomechanical properties and sealing characteristics, and increase blowout resistance. Therefore material is particularly suitable for high temperature applications in petrochemical industry and steam supply.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- GENERAL PURPOSE
- 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

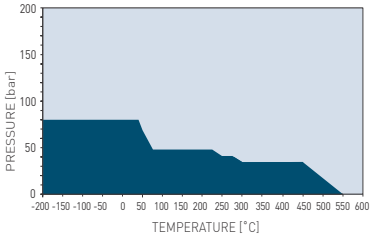
Composition	Expanded natural graphite (>99% graphite purity), expanded stainless steel sheet insert (AISI 316L; 0.15 mm).		
Color	Black		
Approvals	ISO 10497 (fire safe test)	TA-Luft (VDI 2440)	DIN-DVGW DIN 3535-6

TECHNICAL DATA Typical values for a thickness of 1.5 mm

Density	DIN 28090-2	g/cm³	1.4
Compressibility	ASTM F36A	%	35
Recovery	ASTM F36A	%	20
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}		%	32
At elevated temperature: $\varepsilon_{WSW/300\ °C}$		%	2.5
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	4.5
At elevated temperature: $\varepsilon_{WRW/300\ °C}$		%	3.5
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			
- Demanding gasses		bar/psi	80/1160
- Steam, gasses		bar/psi	150/2175
- Liquids		bar/psi	180/2610

P-T DIAGRAMS

Demanding gasses



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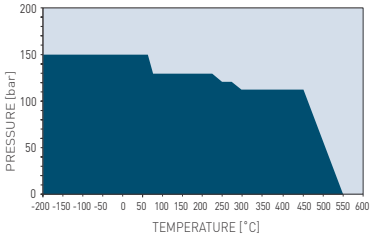
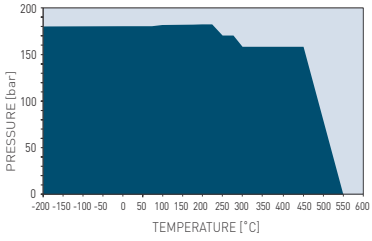


Liquids



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Acetic acid, 100% (Glacial)	?	Calcium hydroxide	+	Freon-12 (R-12)	+	Mineral oil (ASTM no.1)	+	Sodium aluminate	+
Acetone	+	Carbon dioxide (gas)	+	Freon-134a (R-134a)	+	Motor oil	+	Sodium bicarbonate	+
Acetonitrile	+	Carbon monoxide (gas)	+	Freon-22 (R-22)	+	Naphtha	+	Sodium bisulite	+
Acetylene (gas)	+	Cellosolve	+	Fruit juices	+	Nitric acid, 10%	?	Sodium carbonate	+
Acid chlorides	?	Chlorine (gas)	?	Fuel oil	+	Nitric acid, 65%	?	Sodium chloride	+
Acrylic acid	+	Chlorine (in water)	?	Gasoline	+	Nitrobenzene	+	Sodium cyanide	+
Acrylonitrile	+	Chlorobenzene	+	Gelatin	+	Nitrogen (gas)	+	Sodium hydroxide	+
Adipic acid	+	Chloroform	+	Glycerine (Glycerol)	+	Nitrous gases (NOx)	?	Sodium hypochlorite (Bleach)	-
Air (gas)	+	Chloroprene	+	Glycols	+	Octane	+	Sodium silicate (Water glass)	+
Alcohols	+	Chlorosilanes	?	Helium (gas)	+	Oils (Essential)	+	Sodium sulfate	+
Aldehydes	+	Chromic acid	-	Heptane	+	Oils (Vegetable)	+	Sodium sulide	?
Alum	?	Citric acid	?	Hydraulic oil (Glycol based)	+	Oleic acid	+	Starch	+
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Anhydrides	+	Dibutyl phthalate	+	Isobutane (gas)	+	Phosphoric acid, 85%	?	Tartaric acid	?
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Bio-ethanol	+	Ethyl cellulose	+	Maleic acid	+	Potassium nitrate	+	Water	+
Black liquor	?	Ethyl chloride (gas)	+	Malic acid	?	Potassium permanganate	?	White spirits	+
Borax	+	Ethylene (gas)	+	Methane (gas)	+	Propane (gas)	+	Xylenes	+
Boric acid	+	Ethylene glycol	+	Methyl alcohol (Methanol)	+	Propylene (gas)	+	Xylenol	+
Butadiene (gas)	+	Formaldehyde (Formalin)	+	Methyl chloride (gas)	+	Pyridine	+	Zinc sulfate	+
Butane (gas)	+	Formamide	+	Methylene dichloride	+	Salicylic acid	+		
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A perfect fit
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driven innovation
High level of flexibility
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Broad portfolio of gasket materials and products
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