DONIT®
Made in EU

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

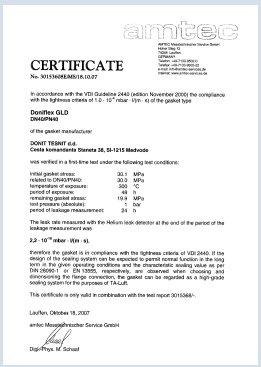
2% - Doctoral or equivalent

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.

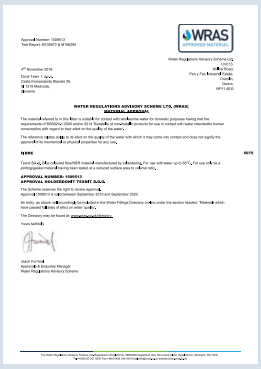
We also ensure that product quality and safety are in accordance with a number of widely recognized international standards such as:
DVGW (DIN 3535-6, VP 401), SVGW (DIN 3535-6), ELL, DVGW W270, BAM, WRAS, TA-Luft (VDI 2440), API 6FA / API 607, ISO 10497, ABS, DNV GL


DIN-DVGW type examination certificate
DIN-DVGW-Baumusterprüfzertifikat


CERTIFICATE


APPROVAL CERTIFICATE


Report
on Testing Spiral Wound Gaskets for Reactivity with Oxygen

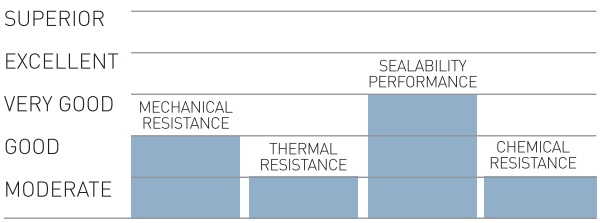

WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)


Certificate of
MANUFACTURING ASSESSMENT

TESNIT® BA-202

TESNIT® BA-202 is suitable for non-demanding applications in particular the water supply industry. As such, TESNIT® BA-202 has been designed with good mechanical and sealing properties.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- GENERAL PURPOSE
- WATER SUPPLY
- SHIPBUILDING

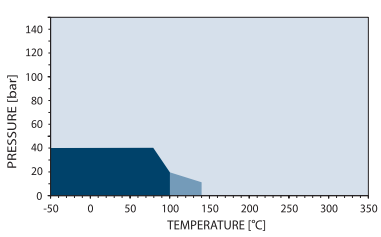
Composition	Cellulose fibers, inorganic fillers, NBR binder.
	Optional steel wire mesh insert on request.
Color	Pink / Red
Approvals	Please inquire.

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.8
Compressibility	ASTM F36J	%	9
Recovery	ASTM F36J	%	60
Tensile strength	ASTM F152	MPa	8
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	20
16 h, 50 MPa, 300 °C		MPa	/
Specific leak rate	DIN 3535-6	mg/(s·m)	0.04
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	10
ASTM Fuel B, 5 h, 23 °C		%	10
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	/
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	/
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	/
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	/
Max. operating conditions			
Peak temperature		°C/°F	180/356
Continuous temperature		°C/°F	140/284
- with steam		°C/°F	120/248
Pressure		bar/psi	40/580

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 2AS. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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)	?

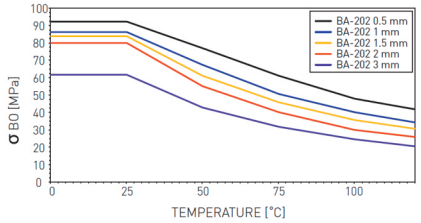
Dioxane	-
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	?
Ethyl chloride (gas)	-
Ethylene (gas)	+
Ethylene glycol	+
Formaldehyde (Formalin)	?
Formamide	?
Formic acid, 10%	?
Formic acid, 85%	-
Formic acid, 100%	-
Freon-12 (R-12)	+
Freon-134a (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	+

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.

σ_{B0} DIAGRAM

DIN 28090-1



σ_{B0} diagrams represent σ_{B0} 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.

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.

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.

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

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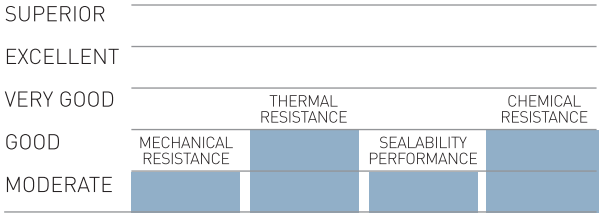
E-mail: info@donit.eu

Date of issue: 02.2018 / TDS-BA202-05-2015

DONIT® | TESNIT® BA-203

TESNIT® BA-203 is designed for less demanding applications particularly for shipbuilding. It also has good thermal resistance.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- GENERAL PURPOSE
- WATER SUPPLY
- SHIPBUILDING

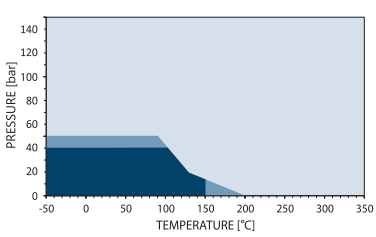
Composition	Aramid fibers, inorganic fillers, NBR binder.
	Optional steel wire mesh insert on request.
Color	Yellow
Approvals	Germanischer Lloyd

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.8
Compressibility	ASTM F36J	%	10
Recovery	ASTM F36J	%	60
Tensile strength	ASTM F152	MPa	8
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	25
16 h, 50 MPa, 300 °C		MPa	/
Specific leak rate	DIN 3535-6	mg/(s·m)	0.08
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	8
ASTM Fuel B, 5 h, 23 °C		%	10
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	/
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	/
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	/
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	/
Max. operating conditions			
Peak temperature		°C/°F	250/482
Continuous temperature		°C/°F	200/392
- with steam		°C/°F	160/320
Pressure		bar/psi	50/725

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 2AS. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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)	?

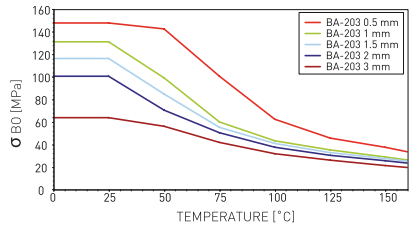
Dioxane	−
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	?
Ethyl chloride (gas)	−
Ethylene (gas)	+
Ethylene glycol	+
Formaldehyde (Formalin)	?
Formamide	?
Formic acid, 10%	+
Formic acid, 85%	?
Formic acid, 100%	−
Freon-12 (R-12)	+
Freon-134a (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	+

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.

σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} 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.

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.

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.

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

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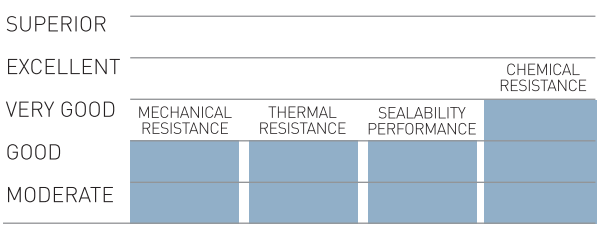
Date of issue: 02.2018 / TDS-BA203-05-2015

TESNIT® BA-50

TESNIT® BA-50 has good thermal and chemical resistance, which makes it appropriate for use in a wide range of applications. TESNIT® BA-50 is well suited for use with potable water supply and shipbuilding.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- GENERAL PURPOSE
- WATER SUPPLY
- POTABLE WATER SUPPLY
- GAS SUPPLY
- FOOD INDUSTRY
- AUTOMOTIVE AND ENGINE BUILDING INDUSTRY
- SHIPBUILDING

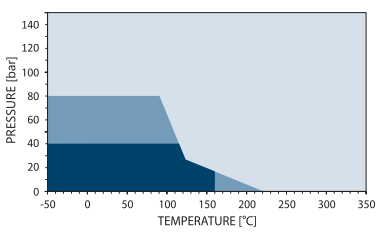
Composition	Aramid fibers, inorganic fillers, NBR binder.		
	Optional steel wire mesh insert on request.		
Color	Light green		
Approvals	DIN-DVGW DIN 3535-6	SVGW DIN 3535-6	DVGW W270
	TA-Luft (VDI 2440)	WRAS	Germanischer Lloyd
	TZW ELL	EC 1935/2004	

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.8
Compressibility	ASTM F36J	%	9
Recovery	ASTM F36J	%	55
Tensile strength	ASTM F152	MPa	11
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	25
16 h, 50 MPa, 300 °C		MPa	/
Specific leak rate	DIN 3535-6	mg/(s·m)	0.07
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	8
ASTM Fuel B, 5 h, 23 °C		%	10
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	8.5
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	25
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	5.1
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	1.2
Max. operating conditions			
Peak temperature		°C/°F	280/536
Continuous temperature		°C/°F	220/428
- with steam		°C/°F	180/356
Pressure		bar/psi	80/1160

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 4AS. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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)	?

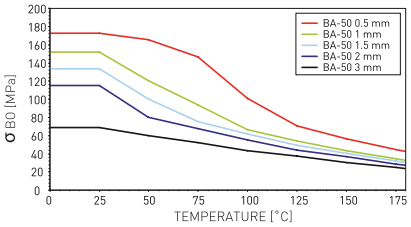
Dioxane	−
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	?
Ethyl chloride (gas)	−
Ethylene (gas)	+
Ethylene glycol	+
Formaldehyde (Formalin)	?
Formamide	?
Formic acid, 10%	+
Formic acid, 85%	?
Formic acid, 100%	−
Freon-12 (R-12)	+
Freon-134a (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	+

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.

σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} 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.

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.

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.

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

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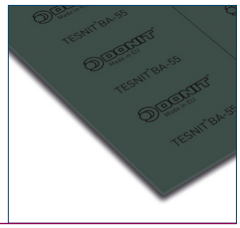
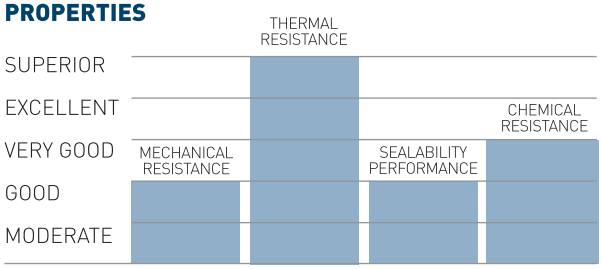
Date of issue: 02.2018 / TDS-BA50-05-2015

DONIT® | TESNIT® BA-55

TESNIT® BA-55 is specifically manufactured for heating systems that utilise steam or mineral oils, however it is also suitable for other applications. TESNIT® BA-55 has very good thermal and chemical resistance.



PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- GENERAL PURPOSE
- WATER SUPPLY
- POTABLE WATER SUPPLY
- STEAM SUPPLY
- GAS SUPPLY
- FOOD INDUSTRY
- SHIPBUILDING
- HEATING SYSTEMS

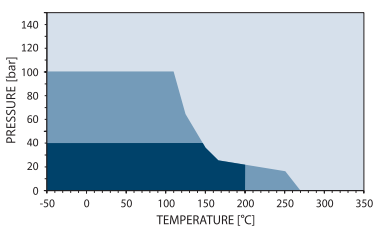
Composition	Engineered bio-soluble mineral fibers, aramid fibers, inorganic fillers, NBR binder.		
	Optional steel wire mesh insert on request.		
Color	Dark green		
Approvals	DIN-DVGW DIN 3535-6	SVGW DIN 3535-6	DVGW VP 401
	DVGW VP 401 (5 bar)	TZW ELL	DVGW W270
	BAM (Oxygen)	BS 7531 Grade X	EC 1935/2004

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.8
Compressibility	ASTM F36J	%	7
Recovery	ASTM F36J	%	55
Tensile strength	ASTM F152	MPa	7
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	35
16 h, 50 MPa, 300 °C		MPa	30
Specific leak rate	DIN 3535-6	mg/(s·m)	0.06
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	8
ASTM Fuel B, 5 h, 23 °C		%	10
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	7.6
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	11.4
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	3.2
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	0.8
Max. operating conditions			
Peak temperature		°C/°F	350/662
Continuous temperature		°C/°F	270/518
- with steam		°C/°F	230/446
Pressure		bar/psi	100/1450

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 4AS. Optional: graphite or PTFE.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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	+

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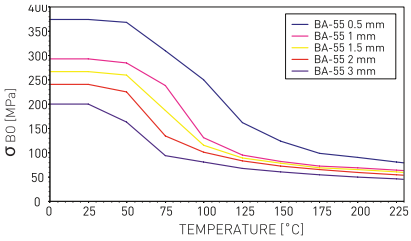
σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} 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.

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.

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.

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

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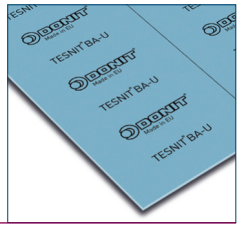
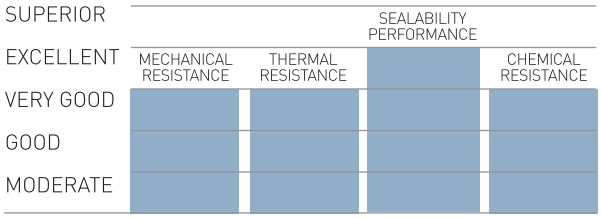
Date of issue: 02.2018 / TDS-BA55-05-2015

DONIT® | TESNIT® BA-U

TESNIT® BA-U combines very good thermal, chemical, and mechanical properties that makes TESNIT® BA-U as a general-purpose gasket material. It is well designed for gas and potable water supplies.



PROPERTIES



APROPIRIATE INDUSTRIES & APPLICATIONS

- GENERAL PURPOSE
- WATER SUPPLY
- POTABLE WATER SUPPLY
- GAS SUPPLY
- PETROCHEMICAL INDUSTRY
- FOOD INDUSTRY
- AUTOMOTIVE AND ENGINE BUILDING INDUSTRY
- SHIPBUILDING
- REFRIGERATION AND COOLING
- HEATING SYSTEMS
- COMPRESSORS AND PUMPS
- VALVES

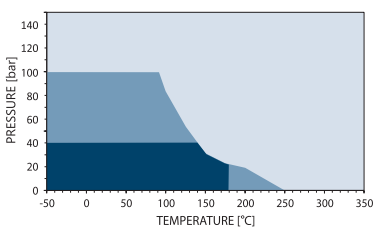
Composition	Aramid fibers, inorganic fillers, NBR binder.		
	Optional steel wire mesh or expanded steel insert on request.		
Color	Blue		
Approvals	DIN-DVGW DIN 3535-6	SVGW DIN 3535-6	DVGW VP 401
	DVGW W270	TZW ELL	TA-Luft (VDI 2440)
	BAM (Oxygen)	WRAS	Germanischer Lloyd
	ABS	AGA AS 4623	EC 1935/2004

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.7
Compressibility	ASTM F36J	%	11
Recovery	ASTM F36J	%	60
Tensile strength	ASTM F152	MPa	10
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	27
16 h, 50 MPa, 300 °C		MPa	23
Specific leak rate	DIN 3535-6	mg/(s·m)	0.02
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	2
ASTM Fuel B, 5 h, 23 °C		%	5
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	9.5
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	16.1
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	4.7
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	0.8
Max. operating conditions			
Peak temperature		°C/°F	350/662
Continuous temperature		°C/°F	250/482
- with steam		°C/°F	200/392
Pressure		bar/psi	100/1450

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 4AS. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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)	?

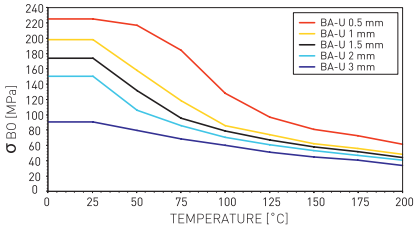
Dioxane	-
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	?
Ethyl chloride (gas)	-
Ethylene (gas)	+
Ethylene glycol	+
Formaldehyde (Formalin)	?
Formamide	?
Formic acid, 10%	+
Formic acid, 85%	?
Formic acid, 100%	-
Freon-12 (R-12)	+
Freon-134a (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	+

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.

σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} 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.

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.

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.

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

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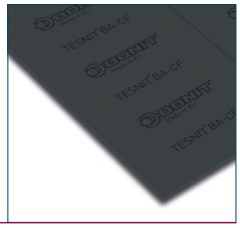
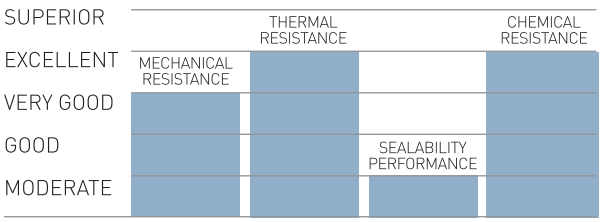
Date of issue: 02.2018 / TDS-BAU-05-2015

TESNIT® BA-CF

TESNIT® BA-CF has excellent thermal and chemical resistance to strong alkaline media. It is suitable for high temperature applications, petrochemicals and for the paper and cellulose industries.



PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- POTABLE WATER SUPPLY
- STEAM SUPPLY
- GAS SUPPLY
- CHEMICAL INDUSTRY
- PETROCHEMICAL INDUSTRY
- PAPER MILLS AND CELULOSE INDUSTRY
- SHIPBUILDING
- HIGH TEMP. APPLICATIONS

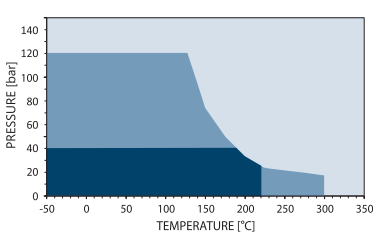
Composition	Carbon fibers, inorganic fillers, NBR binder.		
	Optional steel wire mesh or expanded steel insert on request.		
Color	Black		
Approvals	DIN-DVGW DIN 3535-6	DVGW VP 401	BAM (Oxygen)
	Germanischer Lloyd	BS 7531 Grade X	

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.7
Compressibility	ASTM F36J	%	9
Recovery	ASTM F36J	%	60
Tensile strength	ASTM F152	MPa	12
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	35
16 h, 50 MPa, 300 °C		MPa	30
Specific leak rate	DIN 3535-6	mg/(s·m)	0.09
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	5
ASTM Fuel B, 5 h, 23 °C		%	5
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	7.3
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	8.3
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	3.6
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	1.0
Max. operating conditions			
Peak temperature		°C/°F	400/752
Continuous temperature		°C/°F	300/572
- with steam		°C/°F	280/536
Pressure		bar/psi	120/1740

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 4AS. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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)	?

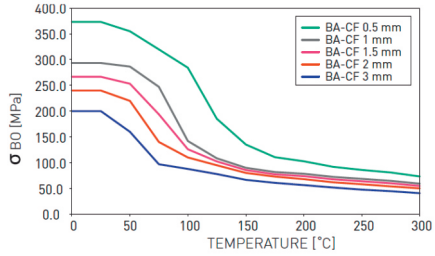
Dioxane	-
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	?
Ethyl chloride (gas)	-
Ethylene (gas)	+
Ethylene glycol	+
Formaldehyde (Formalin)	?
Formamide	?
Formic acid, 10%	+
Formic acid, 85%	?
Formic acid, 100%	-
Freon-12 (R-12)	+
Freon-134a (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	+

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.

σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} 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.

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.

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.

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

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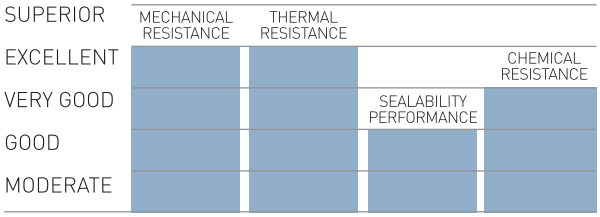
Date of issue: 02.2018 / TDS-BACF-05-2015

DONIT® | TESNIT® BA-M

TESNIT® BA-M possesses excellent thermal resistance and mechanical properties (especially bolt torque retention), which allows TESNIT® BA-M to be utilised in a very wide range of applications, particularly steam supply, heating and cooling systems.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

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

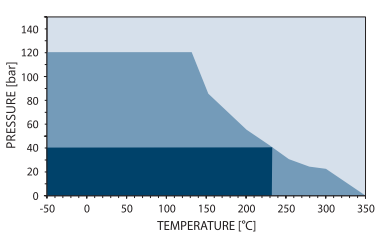
Composition	Engineered bio-soluble mineral fibers, aramid fibers, inorganic fillers, NBR binder.		
	Optional steel wire mesh or expanded steel insert on request.		
Color	Grey / Green		
Approvals	BAM (Oxygen)	TA-Luft (VDI 2440)	BS 7531 Grade X
	EC 1935/2004		

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.7
Compressibility	ASTM F36J	%	10
Recovery	ASTM F36J	%	60
Tensile strength	ASTM F152	MPa	13
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	35
16 h, 50 MPa, 300 °C		MPa	27
Specific leak rate	DIN 3535-6	mg/(s·m)	0.05
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	5
ASTM Fuel B, 5 h, 23 °C		%	6
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	10.8
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	11.0
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	4.1
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	0.8
Max. operating conditions			
Peak temperature		°C/°F	440/824
Continuous temperature		°C/°F	350/662
- with steam		°C/°F	300/572
Pressure		bar/psi	120/1740

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 4AS. Optional: graphite or PTFE.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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	+

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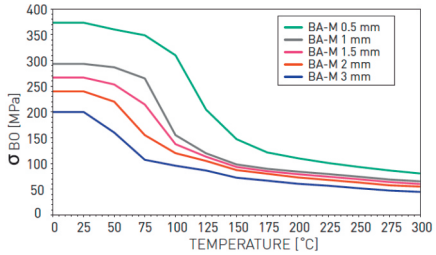
σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} 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.

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.

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.

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

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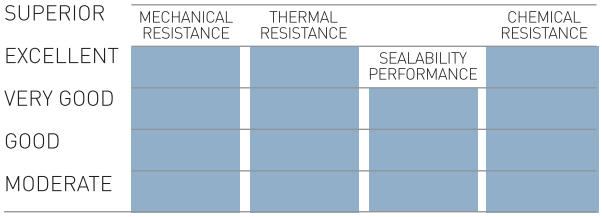
Date of issue: 02.2018 / TDS-BAM-05-2015

DONIT® | TESNIT® BA-GL

TESNIT® BA-GL combines excellent thermal and chemical resistance with outstanding mechanical properties, especially bolt torque retention. Thus, TESNIT® BA-GL is particularly suited for gas and steam supplies, heating systems, pumps and compressors.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

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

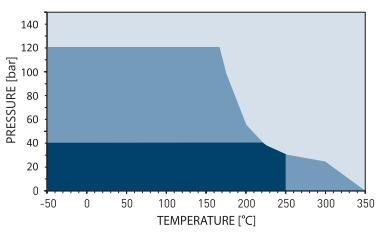
Composition	Glass fibers, aramid fibers, inorganic fillers, NBR binder.		
	Optional steel wire mesh or expanded steel insert on request.		
Color	Greenish-blue		
Approvals	DIN-DVGW DIN 3535-6	DVGW VP 401	BAM (Oxygen)
	TA-Luft (VDI 2440)	API 607	Germanischer Lloyd
	WRAS	ISO 10497	BS 7531 Grade X
	ABS	TZW ELL	EC 1935/2004

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	1.8
Compressibility	ASTM F36J	%	7
Recovery	ASTM F36J	%	55
Tensile strength	ASTM F152	MPa	11
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	38
16 h, 50 MPa, 300 °C		MPa	33
Specific leak rate	DIN 3535-6	mg/(s·m)	0.03
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	3
ASTM Fuel B, 5 h, 23 °C		%	5
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	6.9
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	7.9
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	3.3
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	1.2
Max. operating conditions			
Peak temperature		°C/°F	440/824
Continuous temperature		°C/°F	350/662
- with steam		°C/°F	250/482
Pressure		bar/psi	120/1740

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 4AS. Optional: graphite or PTFE.
Standard dimension of sheets	Size (mm): 1500 x 1500 | 3000 x 1500 | 4500 x 1500 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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	+

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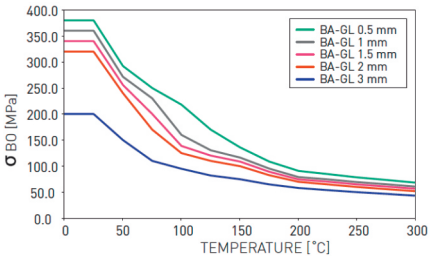
σ_{BO} DIAGRAM

DIN 28090-1



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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.

\+ Recommended
? Recommendation depends on operating conditions
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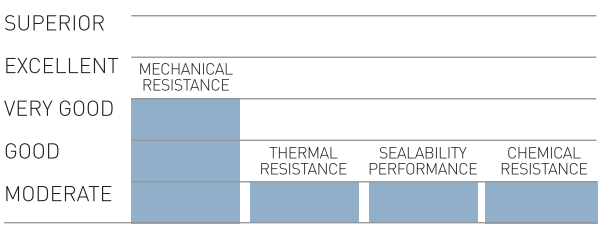
Date of issue: 02.2018 / TDS-BAGL-05-2015

DONIT® | TESNIT® BA-R

TESNIT® BA-R has very good mechanical properties (resistance to high internal and surface pressure). TESNIT® BA-R is designed for the automotive and engine-building industries.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- AUTOMOTIVE AND ENGINE BUILDING INDUSTRY
- SHIPBUILDING

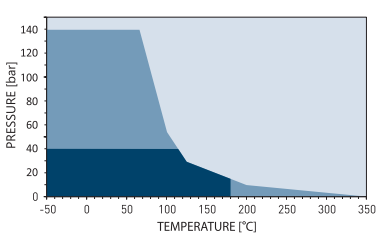
Composition	Aramid fibres, inorganic fillers, NBR binder, carbon steel wire mesh insert.
Colour	Black
Approvals	BAM (Oxygen) Germanischer Lloyd

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	2.0
Compressibility	ASTM F36J	%	8
Recovery	ASTM F36J	%	55
Tensile strength	ASTM F152	MPa	17
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	30
16 h, 50 MPa, 300 °C		MPa	25
Specific leak rate	DIN 3535-6	mg/(s·m)	/
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	8
ASTM Fuel B, 5 h, 23 °C		%	/
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	8.5
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	15.8
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	4.2
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	0.7
Max. operating conditions			
Peak temperature		°C/°F	400/752
Continuous temperature		°C/°F	350/662
- with steam		°C/°F	/
Pressure		bar/psi	140/2030

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 2G. Optional: graphite or PTFE.
Standard dimension of sheets	Size (mm): 1000 x 1500 | 1500 x 1500 Thickness (mm): 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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	−

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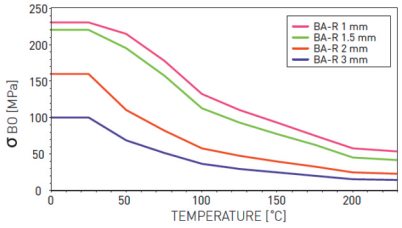
σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} 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.

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.

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.

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

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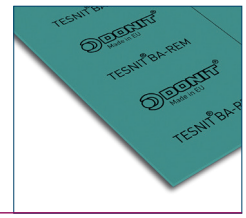
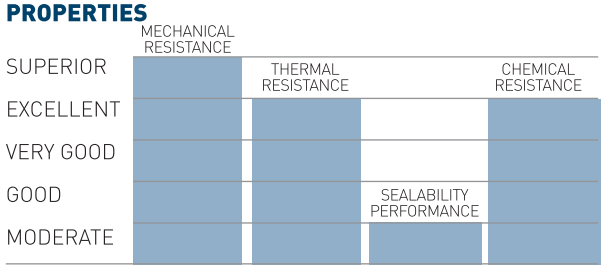
Date of issue: 02.2018 / TDS-BAR-05-2015

TESNIT® BA-REM

TESNIT® BA-REM has excellent mechanical properties (resistance to high internal and surface pressure and blowout safety), which make it suitable for the highly demanding industries of steam supply and shipbuilding.



PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- STEAM SUPPLY
- POWER PLANT
- PETROCHEMICAL INDUSTRY
- HIGH TEMP. APPLICATIONS
- SHIPBUILDING

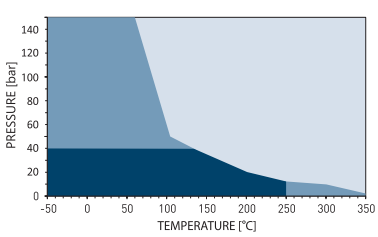
Composition	Glass fibers, aramid fibers, inorganic fillers, NBR binder, expanded galvanized steel sheet insert.
Color	Green
Approvals	Please inquire.

TECHNICAL DATA Typical values for a thickness of 1.5 mm

Density	DIN 28090-2	g/cm³	2.2
Compressibility	ASTM F36J	%	7
Recovery	ASTM F36J	%	50
Tensile strength	ASTM F152	MPa	35
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	43
16 h, 50 MPa, 300 °C		MPa	38
Specific leak rate	DIN 3535-6	mg/(s·m)	/
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	5
ASTM Fuel B, 5 h, 23 °C		%	8
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	6.5
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	5.8
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	3.2
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	0.5
Max. operating conditions			
Peak temperature		°C/°F	460/860
Continuous temperature		°C/°F	370/698
- with steam		°C/°F	250/482
Pressure		bar/psi	150/2175

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- 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.

Surface finish	Standard: 4AS. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 1000 x 1500 | 1500 x 1500 Thickness (mm): 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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	−

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.

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.

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.

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

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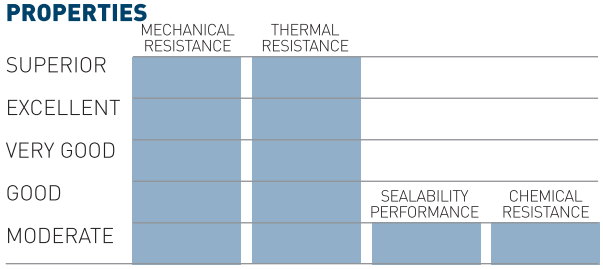
Date of issue: 02.2018 / TDS-BAREM-05-2015

DONIT® | TESNIT® BA-R300

TESNIT® BA-R300 has outstanding dynamic and thermal resistance. TESNIT® BA-R300 is designed for use in high temperature applications, like those within ships engines.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- STEAM SUPPLY
- AUTOMOTIVE AND ENGINE BUILDING INDUSTRY
- SHIPBUILDING
- POWER PLANT
- HIGH TEMP. APPLICATIONS

Composition	Engineered bio-soluble mineral fibers, inorganic fillers, NBR binder, tough carbon steel wire mesh insert.
Color	Black
Approvals	Germanischer Lloyd

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	3.2
Compressibility	ASTM F36J	%	10
Recovery	ASTM F36J	%	40
Tensile strength	ASTM F152	MPa	/
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	46
16 h, 50 MPa, 300 °C		MPa	40
Specific leak rate	DIN 3535-6	mg/(s·m)	/
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	5
ASTM Fuel B, 5 h, 23 °C		%	/
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	11.1
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	6.9
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	3.4
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	0.4
Max. operating conditions			
Peak temperature		°C/°F	550/1022
Continuous temperature		°C/°F	450/842
- with steam		°C/°F	/
Pressure		bar/psi	/

Surface finish	Standard: 2G. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 1500 x 1400 | Rolls Thickness (mm): 0.7 | 1.0 | 1.2 | 1.4 | 2.0 | 2.5 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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	-

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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.

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

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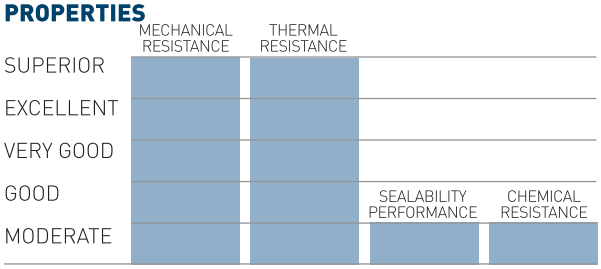
Date of issue: 02.2018 / TDS-BAR300-05-2015

TESNIT® BA-R302

TESNIT® BA-R302 has superior thermal resistance coupled with excellent mechanical properties and blowout safety. TESNIT® BA-R302 is designed for the most demanding high temperature applications like those within ships engines.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- STEAM SUPPLY
- AUTOMOTIVE AND ENGINE BUILDING INDUSTRY
- SHIPBUILDING
- POWER PLANT
- HIGH TEMP. APPLICATIONS

Composition	Tanged carbon steel sheet sandwiched with BA-R300.
Colour	Black
Approvals	Germanischer Lloyd

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	3.7
Compressibility	ASTM F36J	%	8
Recovery	ASTM F36J	%	45
Tensile strength	ASTM F152	MPa	/
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	48
16 h, 50 MPa, 300 °C		MPa	45
Specific leak rate	DIN 3535-6	mg/(s·m)	/
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	5
ASTM Fuel B, 5 h, 23 °C		%	/
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	7.1
At elevated temperature: $\varepsilon_{WSW/200\ °C}$		%	6.3
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	2.2
At elevated temperature: $\varepsilon_{WRW/200\ °C}$		%	0.5
Max. operating conditions			
Peak temperature		°C/°F	650/1202
Continuous temperature		°C/°F	600/1112
- with steam		°C/°F	/
Pressure		bar/psi	/

Surface finish	Standard: 2G. Optional: graphite or PTFE on request.
Standard dimension of sheets	Size (mm): 500 x 1400 Thickness (mm): 1.4 | 1.6 Other dimensions and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

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	-

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.

CHEMICAL RESISTANCE CHART

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

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Date of issue: 02.2018 / TDS-BAR302-05-2015


A perfect fit
of TRUST
COMMITMENT
POSSIBILITIES
Customer and challenge
driven innovation
High level of flexibility
Adapt to new changes
Broad portfolio of gasket materials and products
BEST PRACTICE
SOLUTIONS

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Date of issue: 02.2018 / CB-05-2015

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