



WE ARE
A TRUE
PARTNER
FOR YOUR
SUCCESS

# **DONIT Tesnit®** Sealing technologies

As a leader in gaskets, gasket sheets, and advanced sealing technologies, DONIT Tesnit® offers 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 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 support 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 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® is certified by international ISO 9001 and ISO 14001 standards.



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

DVGW (DIN 3535-6, VP 401), SVGW (DIN 3535-6), DVGW KTW, DVGW W270, BAM, WRAS, TA-Luft (VDI 2440), API 6FA / API 607, ABS, Germanischer Lloyd











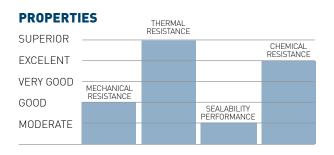




# DONIFLEX® G-LD



DONIFLEX® G-LD is an advanced composite material based on graphite and aramid manufactured under organic solvent-free conditions. DONIFLEX® G-LD combines the advantages of the chemical and thermal resistance of graphite with the strength of aramid. This "low density" material has high compressibility, good stress resistance and is highly flexible in adapting to uneven flanges. It has wide application range in particular for steam supply, chemicals, and heating systems.



## **APPROPRIATE INDUSTRIES & APPLICATIONS**

GENERAL PURPOSE

PAPER AND CELLULOSE INDUSTRY

AUTOMOTIVE AND ENGINE BUILDING INDUSTRY

POTABLE WATER SUPPLY

POWER PLANT

STEAM SUPPLY HEATING SYSTEMS

CHEMICAL INDUSTRY HIGH TEMP. APPLIC

PETROCHEMICAL INDUSTRY

	HIGH TEMP. APPLICATIONS
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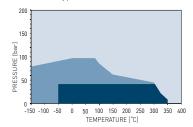
Composition	Aramid fibres, natural graphite, inorganic fillers, NBR binder.		
Colour	Grey		
Approvals	WRAS, TA-Luft (VDI 2440), DVGW W270		

# **TECHNICAL DATA** Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm <sup>3</sup>	1.2
Compressibility	ASTM F36J	%	35
Recovery	ASTM F36J	%	17
Tensile strength	ASTM F152	MPa	4.5
Stress resistance	DIN 52913		
50 MPa, 16 h, 175 °C		MPa	40
50 MPa, 16 h, 300 °C		MPa	35
Specific leak rate	DIN 3535-6	mg/(s·m)	0.5
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	3
ASTM Fuel B, 5 h, 23 °C		%	2
Weight increase			
Oil IRM 903, 5 h, 150 °C		%	30
ASTM Fuel B, 5 h, 23 °C		%	25
Compression modulus	DIN 28090-2		
At room temperature: $\epsilon_{\text{\tiny KSW}}$		%	26
At elevated temperature: $\epsilon_{WSW/200^{\circ}C}$		%	5
Percentage creep relaxation	DIN 28090-2		
At room temperature: $\epsilon_{\mbox{\tiny KRW}}$		%	3.0
At elevated temperature: $\epsilon_{WRW/200^{\circ}C}$		%	0.5
Creep deformation			
Change in thickness at 20 °C, 50 MPa		%	33
Change in thickness at 300 °C, 50 MPa		%	8
Change in thickness at 400 °C, 50 MPa		%	17

## **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.

Sheet size (mm): 1500 x 1480 | 2000 x 1480 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0

Other dimensions and thicknesses are available on request.

Acetamide	+	Dioxane
Acetic acid, 10%	+	Diphyl (Dowtherm A)
Acetic acid, 100% (Glacial)	?	Esters
Acetone		Ethane (gas)
Acetonitrile		Ethers
Acetylene (gas)	+	Ethyl acetate
Acid chlorides		Ethyl alcohol (Ethanol
Acrylic acid Acrylonitrile	+	Ethyl cellulose  Ethyl chloride (gas)
Adipic acid	<del>-   -  </del>	
Air (gas)	+	Ethylene (gas) Ethylene glycol
Alcohols	+	Formaldehyde (Forma
Aldehydes	?	Formamide
Alum	+	Formic acid, 10%
Aluminium acetate	+	Formic acid, 85%
Aluminium chlorate	+	Formic acid, 100%
Aluminium chloride	+	Freon-12 (R-12)
Aluminium sulfate	+	Freon-134a (R-134a)
Amines	-	Freon-22 (R-22)
Ammonia (gas)	?	Fruit juices
Ammonium bicarbonate	+	Fuel oil
Ammonium chloride	+	Gasoline
Ammonium hydroxide	?	Gelatin
Amyl acetate	?	Glycerine (Glycerol)
Anhydrides	?	Glycols
Aniline	-	Helium (gas)
Anisole	+	Heptane
Argon (gas)	+	Hydraulic oil (Glycol b
Asphalt	+	Hydraulic oil (Mineral
Barium chloride	+	Hydraulic oil (Phosph
Benzaldehyde	?	Hydrazine
Benzene	+	Hydrocarbons
Benzoic acid	+	Hydrochloric acid, 109
Bio-diesel	+	Hydrochloric acid, 379
Bio-ethanol	+	Hydrofluoric acid, 10%
Black liquor	+	Hydrofluoric acid, 48%
Borax	+	Hydrogen (gas)
Boric acid	+	Iron sulfate
Butadiene (gas)	+	Isobutane (gas)
Butane (gas)	+	Isooctane
Butyl alcohol (Butanol) Butyric acid	+	Isoprene Isopropyl alcohol (Isop
Calcium chloride	+	Kerosene
Calcium hydroxide	+	Ketones
Carbon dioxide (gas)	+	Lactic acid
Carbon monoxide (gas)	+	Lead acetate
Cellosolve	?	Lead arsenate
Chlorine (gas)	?	Magnesium sulfate
Chlorine (in water)	?	Maleic acid
Chlorobenzene	?	Malic acid
Chloroform	?	Methane (gas)
Chloroprene	?	Methyl alcohol (Metha
Chlorosilanes	?	Methyl chloride (gas)
Chromic acid	-	Methylene dichloride
Citric acid	+	Methyl ethyl ketone (N
Copper acetate	+	N-Methyl-pyrrolidone
Copper sulfate	+	Milk
Creosote	?	Mineral oil (ASTM no.
Cresols (Cresylic acid)	?	Motor oil
Cyclohexane	+	Naphtha
Cyclohexanol	+	Nitric acid, 10%
Cyclohexanone	?	Nitric acid, 65%
Decalin	+	Nitrobenzene
Dextrin	+	Nitrogen (gas)
Dibenzyl ether	?	Nitrous gases (NOx)
Dibutyl phthalate	?	Octane
Dimethylacetamide (DMA)	?	Oils (Essential)
Dimethylformamide (DMF)	7	I LUIS IVenetahlal

Dimethylformamide (DMF)

Dioxane	2
Diphyl (Dowtherm A)	
Esters	2
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	-
Ethyl cellulose	?
Ethyl chloride (gas)	?
	+
Ethylene (gas)	-
Ethylene glycol Formaldehyde (Formalin)	?
Formamide (Formatili)	÷
Formic acid, 10%	+
	2
Formic acid, 85%	?
Formic acid, 100%	-
Freon-12 (R-12)	+
Freon-134a (R-134a)	+
Freon-22 (R-22)	7
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)	2
N-Methyl-pyrrolidone (NMP)	?
Milk	$\vdash$
	+
Mineral oil (ASTM no.1)	+
Motor oil	*
Naphtha Nikais and 100/	?
Nitric acid, 10%	1
Nitric acid, 65%	-
Nitrobenzene	1
Nitrogen (gas)	+
Nitrous nases (NO <sub>Y</sub> )	. 🦅 📗

	'
Oleum (Sulfuric acid, fuming)	
Oxalic acid	
Oxygen (gas)	_
Palmitic acid	
Paraffin oil	+
Pentane	
Perchloroethylene Petroleum (Crude oil)	+
Phenol (Carbolic acid)	
Phosphoric acid, 40%	$\dagger$
Phosphoric acid, 85%	+
Phthalic acid	
Potassium acetate	
Potassium bicarbonate	1
Potassium carbonate	
Potassium chloride	
Potassium cyanide	
Potassium dichromate	
Potassium hydroxide	
Potassium iodide	
Potassium nitrate	
Potassium permanganate	
Propane (gas)	
Propylene (gas)	
Pyridine	4
Salicylic acid	$\perp$
Seawater/brine	-
Silicones (oil/grease)	4
Soaps	+
Sodium aluminate	+
Sodium bicarbonate Sodium bisulfite	+
Sodium carbonate	
Sodium chloride	
Sodium cyanide	+
Sodium hydroxide	
Sodium hypochlorite (Bleach)	1
Sodium silicate (Water glass)	1
Sodium sulfate	
Sodium sulfide	
Starch	
Steam	
Stearic acid	
Styrene	_
Sugars	4
Sulfur	+
Sulfur dioxide (gas)	+
Sulfuric acid, 20%	+
Sulfuric acid, 98%	+
Sulfuryl chloride Tar	+
Tartaric acid	+
Tetrahydrofuran (THF)	+
Titanium tetrachloride	+
Toluene	1
2,4-Toluenediisocyanate	$\top$
Transformer oil (Mineral type)	1
Trichloroethylene	十
Vinegar	Τ,
	1
Vinyl chloride (gas)	
Vinyl chloride (gas) Vinylidene chloride	1
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## **CHEMICAL RESISTANCE CHART**

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

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



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Date of issue: 01.06.2015 / TDS-DGLD-05-2015

Oils (Vegetable)

Xylenol

+



# DONIFLEX® G-MD



DONIFLEX® G-MD is an advanced composite material based on graphite and aramid manufactured under organic solvent-free conditions. DONIFLEX® G-MD combines the advantages of the chemical and thermal resistance of graphite with the strength of aramid. This "medium density" material has good stress resistance for gaskets with narrow-width. It is particularly suitable for steam and hot water supplies as well as for boilers or radiators.

## **PROPERTIES**

# SUPERIOR EXCELENT VERY GOOD GOOD MODERATE THERMAL RESISTANCE RESISTANCE SEALABILITY PERFORMANCE SEALABILITY PERFORMANCE

# **APPROPRIATE INDUSTRIES & APPLICATIONS**

GENERAL PURPOSE

AUTOMOTIVE AND ENGINE BUILDING INDUSTRY

WATER SUPPLY

SHIPBUILDING

STEAM SUPPLY

POWER PLANT

PETROCHEMICAL INDUSTRY

PAPER AND
CELLULOSE INDUSTRY

HEATING SYSTEMS

HIGH TEMP. APPLICATIONS

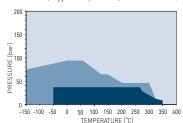
Composition	Aramid fibres, natural graphite, inorganic fillers, NBR binder.	
Colour	Grey	
Approvals	Please inquire.	

# **TECHNICAL DATA** Typical values for a thickness of 1 mm

Density	DIN 28090-2	g/cm <sup>3</sup>	1.4
Compressibility	ASTM F36J	%	20
Recovery	ASTM F36J	%	32
Tensile strength	ASTM F152	MPa	9
Stress resistance	DIN 52913		
50 MPa, 16 h, 175 °C		MPa	45
50 MPa, 16 h, 300 °C		MPa	40
Specific leak rate	DIN 3535-6	mg/(s·m)	0.5
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	5
ASTM Fuel B, 5 h, 23 °C		%	5
Weight increase			
Oil IRM 903, 5 h, 150 °C		%	20
ASTM Fuel B, 5 h, 23 °C		%	17
Compression modulus	DIN 28090-2		
At room temperature: $\epsilon_{\text{KSW}}$		%	17
At elevated temperature: $\epsilon_{WSW/200^{\circ}C}$		%	5
Percentage creep relaxation	DIN 28090-2		
At room temperature: $\epsilon_{\text{KRW}}$		%	2.6
At elevated temperature: $\epsilon_{WRW/200^{\circ}C}$		%	0.2
Creep deformation			
Change in thickness at 20 °C, 50 MPa		%	18
Change in thickness at 300 °C, 50 MPa		%	10
Change in thickness at 400 °C, 50 MPa		%	15

## **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.

Sheet size (mm): 1500 x 1480 | 2000 x 1480 Thickness (mm): 0.5 | 1.0 | 1.5 | 2.0 | 3.0

Other dimensions and thicknesses are available on request.

Acetamide	+	Dioxane
Acetic acid, 10%	+	Diphyl (Dowther
Acetic acid, 100% (Glacial)	?	Esters
Acetone	?	Ethane (gas)
Acetonitrile		Ethers
Acetylene (gas) Acid chlorides	+	Ethyl acetate Ethyl alcohol (Et
Acrylic acid	+	Ethyl cellulose
Acrylonitrile	-	Ethyl chloride (c
Adipic acid	+	Ethylene (gas)
Air (gas)	+	Ethylene glycol
Alcohols	+	Formaldehyde (
Aldehydes	?	Formamide
Alum	+	Formic acid, 10°
Aluminium acetate Aluminium chlorate	+	Formic acid, 859 Formic acid, 100
Aluminium chloride	+	Freon-12 (R-12)
Aluminium sulfate	+	Freon-134a (R-1
Amines	-	Freon-22 [R-22]
Ammonia (gas)	?	Fruit juices
Ammonium bicarbonate	+	Fuel oil
Ammonium chloride	+	Gasoline
Ammonium hydroxide	?	Gelatin
Amyl acetate	?	Glycerine (Glyce
Anhydrides	?	Glycols
Aniline		Helium (gas)
Anisole Argon (gas)	+	Heptane Hydraulic oil (Gl
Asphalt	+	Hydraulic oil (M
Barium chloride	+	Hydraulic oil (Ph
Benzaldehyde	?	Hydrazine
Benzene	+	Hydrocarbons
Benzoic acid	+	Hydrochloric ac
Bio-diesel	+	Hydrochloric ac
Bio-ethanol	+	Hydrofluoric aci
Black liquor	+	Hydrofluoric aci
Borax Boric acid	+	Hydrogen (gas) Iron sulfate
Butadiene (gas)	+	Isobutane (gas)
Butane (gas)	+	Isooctane
Butyl alcohol (Butanol)	+	Isoprene
Butyric acid	+	Isopropyl alcoho
Calcium chloride	+	Kerosene
Calcium hydroxide	+	Ketones
Carbon dioxide (gas)	+	Lactic acid
Carbon monoxide (gas)	+	Lead acetate
Cellosolve	?	Lead arsenate
Chlorine (gas) Chlorine (in water)	?	Magnesium sulf Maleic acid
Chlorobenzene	?	Malic acid
Chloroform	?	Methane (gas)
Chloroprene	?	Methyl alcohol (
Chlorosilanes	?	Methyl chloride
Chromic acid	-	Methylene dichl
Citric acid	+	Methyl ethyl ket
Copper acetate	+	N-Methyl-pyrro
Copper sulfate	+	Milk
Creosote	?	Mineral oil (AST
Cresols (Cresylic acid)	?	Motor oil
Cyclohexane Cyclohexanol	+	Naphtha Nitric acid, 10%
Cyclohexanone	?	Nitric acid, 10%
Decalin	+	Nitrobenzene
Dextrin	+	Nitrogen (gas)
Dibenzyl ether	?	Nitrous gases (1
Dibutyl phthalate	?	Octane
Dimethylacetamide (DMA)	?	Oils (Essential)
Dimethylformamide (DMF)	2	(aldetanal)

Dimethylformamide (DMF)

<u>'</u>	
e.	
Dioxane	?
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	-
Ethers	2
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%	$\Box$
	H
Hydrofluoric acid, 48%	-
Hydrogen (gas)	+
Iron sulfate	+
Isobutane (gas)	+ + + + +
	-
Isooctane	+
Isoprene	+
Isopropyl alcohol (Isopropanol)	+
Kerosene	-
Ketones	?
	$\vdash$
Lactic acid	+
Lead acetate	+
Lead arsenate	+
Magnesium sulfate	
-	H
Maleic acid	+
Malic acid	+
Methane (gas)	+
Methyl alcohol (Methanol)	+
	2
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)	+
	2
Nitrous gases (NOx)	
Octane	+ L

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%	T
Phthalic acid	
Potassium acetate	
Potassium bicarbonate	
Potassium carbonate	
Potassium chloride	
Potassium cyanide	
Potassium dichromate	4
Potassium hydroxide	
Potassium iodide	+
Potassium nitrate	+
Propane (gas)	1
Propylene (gas)	+
Pyridine	+
Salicylic acid	
Seawater/brine	1
Silicones (oil/grease)	
Soaps	
Sodium aluminate	
Sodium bicarbonate	
Sodium bisulfite	
Sodium carbonate	4
Sodium chloride	4
Sodium cyanide	+
Sodium hydroxide Sodium hypochlorite (Bleach)	+
Sodium silicate (Water glass)	
Sodium sulfate	+
Sodium sulfide	
Starch	1
Steam	
Stearic acid	
Styrene	
Sugars	
Sulfur	
Sulfur dioxide (gas)	4
Sulfuric acid, 20%	4
Sulfuric acid, 98%	4
Sulfuryl chloride	+
Tar	+
Tartaric acid	
Tetrahydrofuran (THF)	+
Titanium tetrachloride Toluene	+
2,4-Toluenediisocyanate	+
Transformer oil (Mineral type)	+
Trichloroethylene	+
Vinegar	+
Vinyl chloride (gas)	T
Vinylidene chloride	
Water	

## **CHEMICAL RESISTANCE CHART**

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

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



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Date of issue: 01.06.2015 / TDS-DGMD-05-2015

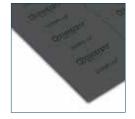
Oils (Vegetable)

Xylenol

+



# DONIFLEX® G-HD



DONIFLEX® G-HD is an advanced composite material based on graphite and aramid manufactured under organic solvent-free conditions. DONIFLEX® G-HD combines the advantages of the chemical and thermal resistance of graphite with the strength of aramid. This "high density" material has very good stress resistance and sealability at elevated temperatures under continuous load. It is ideal in particular for petrochemicals and power plants.

## **PROPERTIES**

# SUPERIOR EXCELENT VERY GOOD GOOD MODERATE THERMAL RESISTANCE RESISTANCE SEALABILITY PERFORMANCE ON PERFORMANCE

## **APPROPRIATE INDUSTRIES & APPLICATIONS**

0	GENERAL PURPOSE		PAPER AND CELLULOSE INDUSTRY
	STEAM SUPPLY	L	SHIPBUILDING
A	GAS SLIPPLY	7	POWER PLANT

<b>(1)</b>	GAS SUPPLY	7	POWER PLANT
B	CHEMICAL INDUSTRY	-;0;-	HEATING SYSTEMS
D	PETROCHEMICAL INDUSTRY		HIGH TEMP. APPLICATIONS

Composition	Aramid fibres, natural graphite, inorganic fillers, NBR binder.
Colour	Grey
Approvals	Please inquire.

# **TECHNICAL DATA** Typical values for a thickness of 1.5 mm

Density	DIN 28090-2	g/cm <sup>3</sup>	1.5
Compressibility	ASTM F36J	%	15
Recovery	ASTM F36J	%	45
Tensile strength	ASTM F152	MPa	8
Stress resistance	DIN 52913		
50 MPa, 16 h, 175 °C		MPa	42
50 MPa, 16 h, 300 °C		MPa	38
Specific leak rate	DIN 3535-6	mg/(s·m)	0.1
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	5
ASTM Fuel B, 5 h, 23 °C		%	5
Weight increase			
Oil IRM 903, 5 h, 150 °C		%	15
ASTM Fuel B, 5 h, 23 °C		%	15
Compression modulus	DIN 28090-2		
At room temperature: $\epsilon_{\mbox{\tiny KSW}}$		%	6
At elevated temperature: ε <sub>WSW/200°C</sub>		%	6
Percentage creep relaxation	DIN 28090-2		
At room temperature: $\epsilon_{\text{KRW}}$		%	4.0
At elevated temperature: $\epsilon_{WRW/200^{\circ}C}$		%	0.5
Creep deformation			
Change in thickness at 20 °C, 50 MPa		%	15
Change in thickness at 300 °C, 50 MPa		%	7
Change in thickness at 400 °C, 50 MPa		%	/

Sheet size (mm): 1500 x 1480 | 2000 x 1480 Thickness (mm): 1.0 | 1.5 | 2.0 | 3.0

Other dimensions and thicknesses are available on request.

Acetamide	+	Dioxane
Acetic acid, 10%	+	Diphyl (C
Acetic acid, 100% (Glacial)	?	Esters
Acetone	?	Ethane (
Acetonitrile	-	Ethers
Acetylene (gas)	+	Ethyl ace
Acid chlorides	-	Ethyl alc
Acrylic acid	+	Ethyl cel
Acrylonitrile	-	Ethyl chl
Adipic acid Air (gas)	+	Ethylene
Alcohols	+	Formald
Aldehydes	?	Formam
Alum	+	Formic a
Aluminium acetate	+	Formic a
Aluminium chlorate	+	Formic a
Aluminium chloride	+	Freon-12
Aluminium sulfate	+	Freon-10
Amines	-	Freon-22
Ammonia (gas)	?	Fruit juic
Ammonium bicarbonate	+	Fuel oil
Ammonium chloride	+	Gasoline
Ammonium hydroxide	?	Gelatin
Amyl acetate	?	Glycerin
Anhydrides	?	Glycols
Aniline	1-1	Helium (
Anisole	+	Heptane
Argon (gas)	+	Hydrauli
Asphalt	+	Hydrauli
Barium chloride	+	Hydrauli
Benzaldehyde	?	Hydrazir
Benzene	+	Hydroca
Benzoic acid	+	Hydroch
Bio-diesel	+	Hydroch
Bio-ethanol	+	Hydroflu
Black liquor	+	Hydroflu
Borax	+	Hydroge
Boric acid	+	Iron sulf
Butadiene (gas)	+	Isobutan
Butane (gas)	+	Isooctan
Butyl alcohol (Butanol)	+	Isoprene
Butyric acid	+	Isopropy
Calcium chloride	+	Kerosen
Calcium hydroxide	+	Ketones
Carbon dioxide (gas)	+	Lactic ad
Carbon monoxide (gas)	+	Lead ace
Cellosolve	?	Lead are
Chlorine (gas)	7	Magnesi
Chlorine (in water)	?	Maleic a
Chlorobenzene	?	Malic ac
Chloroform	?	Methane
Chloroprene	?	Methyl a
Chlorosilanes Chromic acid		Methyl c
	<del>-   -  </del>	Methyl e
Citric acid	+	N-Methy
Copper acetate	+	Milk
Copper sulfate Creosote	?	
Cresols (Cresylic acid)	?	Mineral Motor oi
	-	Naphtha
Cyclohexane Cyclohexanol	+	-
Cyclohexanone	?	Nitric ac
Decalin	+	Nitrober
Dextrin	+	Nitroger
	?	Nitrous
Dinenzyl etner		
Dibenzyl ether Dibutyl phthalate	?	Octane

Dimethylacetamide (DMA)

Dimethylformamide (DMF)

0:	2
Dioxane Diphyl (Dowtherm A)	-
Esters	2
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)	2
Methylene dichloride	2
Methyl ethyl ketone (MEK)	2
N-Methyl-pyrrolidone (NMP)	2
Milk	+
Mineral oil (ASTM no.1)	+
Motor oil	-
Naphtha	*
Nitric acid, 10%	?
Nitric acid, 65%	
Nitrobenzene	?
	-
Nitrogen (gas)	
Nitrogen (gas) Nitrous gases (NOx)	?

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	$\top$
Potassium acetate	
Potassium bicarbonate	
Potassium carbonate	
Potassium chloride	
Potassium cyanide	
Potassium dichromate	
Potassium hydroxide	
Potassium iodide	_
Potassium nitrate	$\dashv$
Propane (gas)	
Propylene (gas)	+
Pyridine	-
Salicylic acid	1
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	1
Starch	
Steam	$\top$
Stearic acid	
Styrene	
Sugars	
Sulfur	
Sulfur dioxide (gas)	
Sulfuric acid, 20%	
Sulfuric acid, 98%	
Sulfuryl chloride	_
Tar Tartania anid	$\dashv$
Tartaric acid Tetrahydrofuran (THF)	$\perp$
Titanium tetrachloride	
Toluene	+
2,4-Toluenediisocyanate	+
Transformer oil (Mineral type)	
Trichloroethylene	$\top$
Vinegar	
Vinyl chloride (gas)	
Vinylidene chloride	1

## **CHEMICAL RESISTANCE CHART**

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

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



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Date of issue: 01.06.2015 / TDS-DGHD-05-2015

Oils (Essential)

Oils (Vegetable)

Xylenol

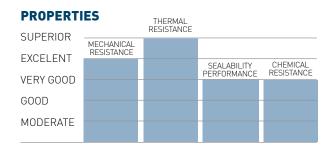
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# DONIFLEX® G-EM



DONIFLEX® G-EM is an advanced composite material based on graphite and aramid manufactured under organic solvent-free conditions. DONIFLEX® G-EM is reinforced with expanded galvanized steel sheet insert. Even surface pressure distribution on gasket provides excellent thermomechanical properties and very good sealing characteristics. Therefore material is particularly suitable for petrochemicals, high temperature applications, and valves.



# **APPROPRIATE INDUSTRIES & APPLICATIONS**

STEAM SUPPLY

POWER PLANT

PETROCHEMICAL INDUSTRY

HEATING SYSTEMS

PAPER AND CELLULOSE INDUSTRY

HIGH TEMP. APPLICATIONS

AUTOMOTIVE AND ENGINE BUILDING INDUSTRY

VALVES

SHIPBUILDING

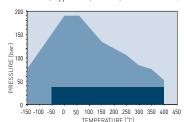
Composition	Aramid fibres, natural graphite, inorganic fillers, NBR binder. Expanded galvanized steel sheet insert (0.4 mm).
Colour	Grey
Approvals	Please inquire.

# **TECHNICAL DATA** Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm <sup>3</sup>	1.7
Compressibility	ASTM F36J	%	20
Recovery	ASTM F36J	%	30
Tensile strength	ASTM F152	MPa	15
Stress resistance	DIN 52913		
50 MPa, 16 h, 175 °C		MPa	40
50 MPa, 16 h, 300 °C		MPa	35
Specific leak rate	DIN 3535-6	mg/(s·m)	0.1
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	8
ASTM Fuel B, 5 h, 23 °C		%	8
Weight increase			
Oil IRM 903, 5 h, 150 °C		%	18
ASTM Fuel B, 5 h, 23 °C		%	18
Compression modulus	DIN 28090-2		
At room temperature: $\epsilon_{\text{KSW}}$		%	7
At elevated temperature: $\epsilon_{WSW/200^{\circ}C}$		%	7
Percentage creep relaxation	DIN 28090-2		
At room temperature: $\epsilon_{\text{KRW}}$		%	3.5
At elevated temperature: $\epsilon_{WRW/200^{\circ}C}$		%	0.7
Creep deformation			
Change in thickness at 20 °C, 50 MPa		%	18
Change in thickness at 300 °C, 50 MPa		%	8
Change in thickness at 400 °C, 50 MPa		%	10

## **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.

Sheet size (mm): 1500 x 1480

Thickness (mm): 1.0 | 1.5 | 2.0 | 3.0 | 4.0

Other dimensions and thicknesses are available on request.

Acetamide	+	Dioxane
Acetic acid, 10%	-	Diphyl (Dowther
Acetic acid, 100% (Glacial)	-	Esters
Acetone	?	Ethane (gas)
Acetonitrile	-	Ethers
Acetylene (gas)	+	Ethyl acetate
Acid chlorides	-	Ethyl alcohol (Et
Acrylic acid	-	Ethyl cellulose
Acrylonitrile Adipic acid	-	Ethyl chloride (g Ethylene (gas)
Air (gas)	+	Ethylene glycol
Alcohols	+	Formaldehyde (
Aldehydes	?	Formamide
Alum		Formic acid, 10 <sup>o</sup>
Aluminium acetate	-	Formic acid, 85°
Aluminium chlorate	-	Formic acid, 100
Aluminium chloride	-	Freon-12 (R-12)
Aluminium sulfate	-	Freon-134a (R-1
Amines	-	Freon-22 (R-22)
Ammonia (gas)	?	Fruit juices
Ammonium bicarbonate	+	Fuel oil
Ammonium chloride	-	Gasoline
Ammonium hydroxide	?	Gelatin
Amyl acetate	?	Glycerine (Glyce
Anhydrides		Glycols
Aniline	-	Helium (gas)
Anisole	+	Heptane
Argon (gas) Asphalt	+	Hydraulic oil (Gl Hydraulic oil (M
Barium chloride	+	Hydraulic oil (Ph
Benzaldehyde	?	Hydrazine
Benzene	+	Hydrocarbons
Benzoic acid	+	Hydrochloric ac
Bio-diesel	+	Hydrochloric ac
Bio-ethanol	+	Hydrofluoric aci
Black liquor		Hydrofluoric aci
Borax	+	Hydrogen (gas)
Boric acid		Iron sulfate
Butadiene (gas)	+	Isobutane (gas)
Butane (gas)	+	Isooctane
Butyl alcohol (Butanol)	+	Isoprene
Butyric acid	-	Isopropyl alcoho
Calcium chloride		Kerosene
Calcium hydroxide	+	Ketones
Carbon dioxide (gas)  Carbon monoxide (gas)	+	Lactic acid Lead acetate
Cellosolve	?	Lead arsenate
Chlorine (gas)		Magnesium sulf
Chlorine (in water)	-	Maleic acid
Chlorobenzene	?	Malic acid
Chloroform	?	Methane (gas)
Chloroprene	?	Methyl alcohol (
Chlorosilanes	?	Methyl chloride
Chromic acid	-	Methylene dichl
Citric acid	-	Methyl ethyl ket
Copper acetate	-	N-Methyl-pyrro
Copper sulfate	_	Milk
Creosote	?	Mineral oil (AST
Cresols (Cresylic acid)	?	Motor oil
Cyclohexane	+	Naphtha
Cyclohexanol	+	Nitric acid, 10%
Cyclohexanone	?	Nitric acid, 65%
Decalin Dextrin	+	Nitrobenzene
	?	Nitrogen (gas)
Dibenzyl ether Dibutyl phthalate	?	Nitrous gases (1 Octane
Dimethylacetamide (DMA)	2	Oils (Essential)

Dimethylformamide (DMF)

Di-	2
Dioxane	
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	?
Ethyl chloride (gas)	?
Ethylene (gas)	+
Ethylene glycol	+
	2
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)	H
Hydrazine	$\vdash$
	-
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)	2
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	+

Oleic acid	$\perp$
Oleum (Sulfuric acid, fuming)	4
Oxalic acid	4
Oxygen (gas)	4
Palmitic acid	+
Paraffin oil	-
Pentane Perchloroethylene	
Petroleum (Crude oil)	١.
Phenol (Carbolic acid)	
Phosphoric acid, 40%	$\top$
Phosphoric acid, 85%	十
Phthalic acid	
Potassium acetate	
Potassium bicarbonate	
Potassium carbonate	
Potassium chloride	4
Potassium cyanide	_
Potassium dichromate	+
Potassium hydroxide	4
Potassium iodide	+
Potassium nitrate Potassium permanganate	-
Propane (gas)	
Propylene (gas)	
Pyridine	+
Salicylic acid	$\top$
Seawater/brine	$\top$
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	$\pm$
Tetrahydrofuran (THF)	
Titanium tetrachloride	十
Toluene	$\top$
2,4-Toluenediisocyanate	
Transformer oil (Mineral type)	
Trichloroethylene	
Vinegar	
Vinyl chloride (gas)	1
AP PER LEE ST	- 1
Vinylidene chloride Water	+

## **CHEMICAL RESISTANCE CHART**

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Oils (Vegetable)

Xylenol

+



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