



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 thermo-mechanical properties and very good sealing characteristics. Therefore material is particularly suitable for petrochemicals, high temperature applications and valves.

## PROPERTIES

	THERMAL RESISTANCE		SEALABILITY PERFORMANCE		CHEMICAL RESISTANCE
	MECHANICAL RESISTANCE				
SUPERIOR	■	■	■	■	■
EXCELLENT	■	■	■	■	■
VERY GOOD	■	■	■	■	■
GOOD	■	■	■	■	■
MODERATE	■	■	■	■	■

## 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

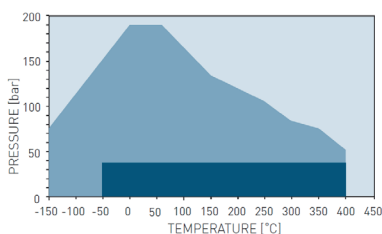
Composition	Aramid fibers, natural graphite, inorganic fillers, NBR binder. Expanded galvanized steel sheet insert (0.4 mm).
Color	Grey
Approvals	Please inquire.

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

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

Standard dimensions of sheets

Size (mm): 1500 x 1480  
 Thickness (mm): 1.0 | 1.5 | 2.0 | 3.0 | 4.0  
 Other sizes and thicknesses available on request.

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

**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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