The British Gaskets Group

Best Under Pressure

BGRubber Mouldings

Product Catalogue

ISO9001:2000
Cert No: Q05299

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Cert No: FM87398

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BS/ISO 9001:2000 Approved

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Contents

SECTION 1

Material property and application data

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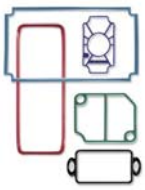
Material	Properties	Applications	Temperature Range	Hardness Range (Shore A)
Natural Rubber 	High resilience, good tensile strength and abrasion resistance. low compression set and high tear properties	Where there is no contact with oils and greases and is not subject to constant air changes. Good for mechanical applications	-40° to +80° C	40° to 80°
Neoprene 	Better oil and ozone resistance than natural rubber. Good resistance to heat and weathering.	Mechanical applications where fuel is not present. Typically for marine applications due to good ozone resistance. Can also be compounded to posses flame retardant properties.	-20° to +100° C	40° to 80°
Nitrile 	Resistance to water, oils and other petroleum products. Superior compression set and abrasion resistance.	In enclosed spaces where part is likely to come into contact with petroleum based fluids. Generally used for sealing in automotive type applications.	-20° to +110° C	40° to 80°

Material	Properties	Applications	Temperature Range	Hardness Range (Shore A)
EPDM 	Outstanding resistance to ageing, weathering, ozone and many chemicals	Suitable for general engineering applications providing petroleum based products are not present. Can carry WRC approval for potable water uses.	-40° to +120° C	40° to 70°
Butyl 	Very low gas and moisture permeability. Good resistance to ester based hydraulic fluids.	In applications where heat, ageing, weathering and chemical resistance is required.	-50° to +120° C	40° to 80°
Hypalon 	Resistance to oils, water and weathering and good flame resistant properties	Where adverse weather conditions are likely or exposure to hot liquids and gasses.	-50° to +120° C	40° to 80°
Silicone 	Good resistance to weathering and oils combined with good electrical properties and a wide temperature range	In electrical applications where total resistance to weathering and fluids is required.	-60° to +250° C	40° to 80°
Viton 	Excellent material for resistance to hostile chemical and oil environments at normal and elevated temperatures	In applications where resistance to hostile fluids at high temperature is required. Low gas permeability.	-20° to +250° C	50° to 95°

Material	Properties	Applications	Temperature Range	Hardness Range (Shore A)
Polyurethane 	Outstanding abrasion resistance and high tensile strength. Resistant to oils	Being hard wearing, it is particularly suited to applications where high durability is required, such as scraper blades and press tools.	-40° to +60°C	30° to 90°
Perfluoroelastomer 	Offers the outstanding chemical resistance of a material such as PTFE with the elastomeric properties of Fluoroelastomers	Petrochemical, aerospace and automotive applications that require resistance to high temperatures aggressive chemicals and gasses.	-35° to +300° C	65° to 90°

SECTION 2

Chemical resistance data

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CHEMICAL RESISTANCE OF POLYMERS

Because of variations in compounding of the polymers used in Rubber, maximum temperature recommendations will vary with the type and concentration of the chemicals handled. Please consult the British Gaskets Sales Department for specific recommendations. The code used to indicate the type of service to be expected from each polymer is as follows:

- **G** = Good service. Suitable for continuous use.
- **F** = Fair service. Usually suitable for continuous service and suitable for intermittent service.
- **C** = Conditional service. Suitable if exposure is limited or infrequent.
- **X** = Not recommended.
- **Blank (-)** = Insufficient information at time of publication.

Chemical	Natural Rubber	SBR	Neoprene	Nitrile	Butyl	Hypalon®	EPDM	Viton®	XLPE	Silicone
Acetic acid, dilute, 10%	F	C	C	C	G	C	G	X	G	G
Acetic acid, glacial	C	X	X	X	F	C	F	X	G	F
Acetic anhydride	C	C	F	F	F	G	X	G	G	C
Acetone	G	G	F	X	G	F	G	X	G	C
Acetylene	G	G	F	G	G	F	G	G	-	F
Air, 150ºF	G	G	G	G	G	G	G	G	-	G
Aluminum chloride, 150ºF	G	G	G	G	G	G	G	G	G	F
Aluminum fluoride 150ºF	G	G	G	G	G	G	G	-	-	F
Aluminum sulfate 150ºF	G	G	G	G	G	G	G	G	-	G
Alums 150ºF	G	G	G	G	G	G	G	G	-	-
Ammonia gas	G	G	G	G	G	G	G	X	G	G
Ammonium chloride	G	G	G	G	G	G	G	G	-	-
Ammonium hydroxide	C	F	F	F	G	G	G	G	-	G
Ammonium nitrate	G	G	G	G	G	G	G	G	-	F
Ammonium phosphate, monobasic	G	G	G	G	G	G	G	G	-	-
Ammonium phosphate, dibasic	G	G	G	G	G	G	G	G	-	G
Ammonium phosphate, tribasic	G	G	G	G	G	G	G	G	-	-

Chemical	Natural Rubber	SBR	Neoprene	Nitrile	Butyl	Hypalon®	EPDM	Viton®	XLPE	Silicone
Ammonium sulfate	G	G	G	G	G	G	G	G	-	-
Amyl acetate	F	X	X	X	F	X	G	X	G	X
Amyl alcohol	G	G	G	G	G	G	G	G	G	X
Aniline, aniline oil	X	X	C	X	G	X	C	G	G	X
Aniline dyes	F	F	F	F	G	F	C	-	-	C
Animal fats	X	X	F	G	X	F	F	G	G	F
Animal oils	X	X	X	G	F	X	G	G	-	X
Asphalt	X	X	F	F	X	F	X	G	X	X
Barium chloride	G	G	G	G	G	G	G	G	-	G
Barium hydroxide	G	G	G	G	G	G	G	G	-	G
Barium sulfide	G	G	G	G	G	G	G	G	-	G
Beer	G	G	G	G	G	G	G	G	-	-
Beet sugar liquors	G	G	G	G	G	G	G	G	-	-
Benzene (benzol)	X	X	X	C	X	X	X	G	G	X
Benzine, petroleum ether	X	X	C	F	X	F	X	G	-	-
Benzine, petroleum naptha	X	X	C	F	X	F	X	G	-	-
Black sulfate liquor	G	G	G	G	G	G	G	G	-	
Blast furnace gas	C	C	G	C	C	C	C	G	-	-
Borax	G	G	G	G	G	G	G	G	-	F
Boric acid	G	G	G	G	G	G	G	G	-	G
Brine	G	G	G	G	G	G	G	G	-	G
Bromine	X	X	X	X	X	C	X	G	F	X
Butane	X	X	F	G	X	G	X	G	-	X
Butyl acetate	C	X	X	X	F	X	F	X	G	X
Butyl alcohol (butanol)	G	G	G	G	G	G	G	G	G	F
Calcium bisulfate	C	C	G	G	F	G	F	G	-	C
Calcium chloride	G	G	G	G	G	G	G	G	-	G
Calcium hydroxide	G	G	G	G	G	G	G	G	-	G
Calcium hypochlorite	X	X	X	X	G	F	G	F	-	F
Caliche liquors	G	G	G	G	G	G	G	G	-	F
Cane sugar liquors	G	G	G	G	G	G	G	G	-	G
Carbolic acid (phenol)	C	C	C	C	C	C	G	G	-	F
Carbon dioxide dry	G	G	G	G	G	G	G	G	-	F
Carbon disulfide	X	X	X	X	X	X	X	G	C	X
Carbon monoxide 150ºF	C	C	C	C	C	F	C	G	-	G
Carbon tetrachloride	X	X	X	C	X	X	X	G	G	X
Castor oil	G	G	G	G	G	G	G	G	-	G
Cellusolve acetate	F	F	X	X	G	G	C	G	-	X
China wood oil (tung oil)	X	X	F	G	G	F	G	C	G	-
Chlorine, wet or dry	X	X	X	X	X	X	X	G	F	X
Chlorinated solvents	X	X	X	X	X	X	X	G	-	X
Chloroacetic acid	X	C	C	C	X	G	X	G	-	-

Chemical	Natural Rubber	SBR	Neoprene	Nitrile	Butyl	Hypalon®	EPDM	Viton®	XLPE	Silicone
Chlorosulfonic acid	X	X	C	C	X	X	X	X	F	X
Chromic acid	X	X	X	X	C	G	F	-	-	C
Critic acid	G	G	G	F	G	G	G	G	-	G
Coke oven gas	C	C	C	C	C	G	X	C	-	F
Copper chloride 150ºF	C	G	F	G	G	F	G	G	-	G
Copper sulfate 150ºF	C	G	G	G	F	G	G	G	-	G
Corn oil	X	C	F	G	G	F	C	C	-	G
Cottonseed oil	X	C	F	G	G	F	C	G	G	G
Creosols (cresylic acid)	C	X	X	C	C	F	X	G	-	-
Creosote, coal tar	X	X	F	G	X	F	X	F	G	
Creosote, wood	X	X	F	G	X	F	X	F	G	X
Ethers	C	C	C	C	C	F	X	X	G	X
Ethyl acetate	F	X	X	X	F	X	F	X	G	F
Ethyl alcohol (ethanol)	G	G	G	G	G	G	G	G	G	G
Ethyl cellulose	F	F	F	F	F	F	G	-	-	C
Ethyl chloride	G	F	F	X	G	F	G	F	F	X
Ethylene glycol	G	G	G	G	G	G	G	G	G	G
Ferric chloride 150ºF	G	G	G	G	G	G	G	G	-	F
Ferric sulfate 150ºF	G	G	G	G	G	G	G	G	-	F
Formaldehyde	G	G	C	G	G	G	G	G	-	F
Formic acid	G	G	C	F	G	G	G	X	F	F
Freon #12, liquid	X	X	G	F	F	F	G	-	-	-
Fuel oil	X	X	F	G	X	F	X	G	-	X
Furfural	X	C	C	X	G	F	C	X	G	X
Gasoline, unleaded	X	X	X	G	X	X	X	G	F	X
Gasoline, regular leaded	X	X	X	C	X	X	X	G	F	X
Gasoline, hi-test leaded	X	X	X	G	X	X	X	G	F	X
Gelatin	G	G	G	G	G	G	G	G	-	-
Glucose	G	G	G	G	G	G	G	G	-	G
Glue	F	F	G	G	F	G	G	G	-	-
Glycerine (glycerol)	G	G	G	G	G	G	G	G	G	G
Green sulfate liquor	G	G	G	G	G	G	G	G	-	G
Hydraulic fluids:	-	-	-	-	-	-	-	-	-	F
Petroleum	X	X	G	G	X	F	X	-	-	C
Phosphate ester alkyl	X	X	C	G	X	G	-	-		-
Phosphate ester aryl	X	X	X	X	C	X	C	-	-	-
Phosphate ester blends	X	X	X	X	X	X	C	-	-	-
Silicate ester	X	X	C	C	X	C	X	-	-	X
Water-glycol	G	G	G	G	G	G	G	-	-	G

Chemical	Natural Rubber	SBR	Neoprene	Nitrile	Butyl	Hypalon®	EPDM	Viton®	XLPE	Silicone
Hydrochloric acid	G	X	X	X	C	C	C	G	G	C
Hydrocyanic acid	F	F	C	F	C	G	C	G	-	C
Hydrofluoric acid	X	X	X	X	C	G	C	G	G	X
Hydrofluosilicic acid	G	F	F	F	G	G	-	-	-	X
Hydrogen gas	F	F	G	G	G	G	G	-	-	C
Hydrogen peroxide	X	X	C	C	C	C	C	G	-	F
Hydrogen sulfide, dry	C	C	F	X	G	G	G	-	-	-
Hydrogen sulfide, wet	C	C	F	C	G	G	G	G	-	-
Jet fuels	X	X	F	G	X	C	X	G	G	X
Kerosene	X	X	F	G	X	C	X	G	G	X
Lacquers	X	X	X	X	C	X	X	F	-	X
Lacquer solvents	X	X	X	X	C	X	X	X	F	X
Lactic acid	C	C	C	C	C	G	C	G	-	C
Linseed oil	C	X	F	G	G	G	G	G	G	G
Lubricating oils, crude	X	X	F	G	X	C	X	G	G	X
Lubricating oils, refined	X	X	F	G	X	C	X	G	-	X
Magnesium chloride 150ºF	G	G	G	G	G	G	G	G	-	-
Magnesium hydroxide 150ºF	G	F	F	F	G	G	G	G	-	-
Magnesium sulfate 150ºF	G	G	G	G	G	G	G	G	-	-
Mercuric chloride	F	F	C	F	G	G	G	G	-	-
Mercury	G	G	G	G	G	G	G	G	-	-
Methyl alcohol	G	G	G	G	G	G	G	C	G	G
Methyl chloride	C	C	C	C	C	X	C	F	-	-
Methyl ethyl ketone	X	X	X	X	F	-	G	X	G	X
Methyl isopropyl ketone	X	X	X	X	F	C	C	X	G	X
Milk	C	C	F	F	G	G	G	G	-	G
Mineral oils	X	C	F	G	X	F	X	G	-	F
Natural gas	C	C	G	G	C	G	X	G	-	F
Nickel chloride 150ºF	G	G	G	G	G	G	G	G	G	G
Nickel sulfate 150ºF	G	G	G	G	G	G	G	G	-	G
Nitric acid, concentrated, 70%	X	X	X	X	C	C	X	C	F	X
Nitric acid, diluted, 10%	X	X	C	X	C	G	C	C	-	F
Nitric acid, crude	X	X	X	X	C	C	X	-	-	C
Nitrobenzene	X	X	X	X	X	X	F	G	-	X
Oleic acid	X	F	C	F	F	X	F	G	-	X
Oleum spirits	X	C	C	C	F	C	-	-	-	-
Oxalic acid	F	C	F	F	G	G	G	G	-	F
Oxygen	F	C	G	C	G	G	G	-	-	C
Palmitic acid	X	F	G	G	F	F	F	G	-	X

Chemical	Natural Rubber	SBR	Neoprene	Nitrile	Butyl	Hypalon®	EPDM	Viton®	XLPE	Silicone
Petroleum, crude 200ºF	X	X	F	G	X	C	X	G	-	C
Petroleum oils 200ºF	X	X	F	C	C	G	C	G	-	C
Phosphoric acid, crude	G	C	C	C	C	G	C	G	-	X
Phosphoric acid, pure, 45%	G	C	C	C	C	C	G	G	-	C
Picric acid, molten	C	C	C	C	G	G	-	-	-	X
Picric acid, water solution	G	C	F	F	G	G	-	-	-	-
Potassium chloride	G	G	G	G	G	G	G	G	-	G
Potassium cyanide	G	G	G	G	G	G	G	G	-	G
Potassium hydroxide	F	F	C	C	G	G	G	G	-	C
Potassium sulfate	G	G	G	G	G	G	G	G	-	G
Propane	X	X	F	G	X	F	X	G	-	X
Sea water	G	G	G	G	G	G	G	G	G	G
Sewage	C	C	F	G	C	G	C	G	-	G
Soap solutions	G	G	F	G	G	G	G	G	-	G
Soda ash (sodium carbonate)	G	G	G	G	G	G	G	G	-	G
Sodium bicarbonate (baking soda)	G	G	G	G	G	G	G	G	-	G
Sodium bisulfate	G	G	G	G	G	G	G	G	-	G
Sodium chloride	G	G	G	G	G	G	G	G	-	G
Sodium cyanide	G	G	G	G	G	G	G	G	-	G
Sodium hydroxide (caustic soda)	F	F	C	C	G	C	G	G	G	F
Sodium hypochlorite	X	X	X	X	G	F	G	G	-	F
Sodium metaphosphate	G	G	C	G	G	F	G	G	-	-
Sodium nitrate	C	C	C	C	G	G	G	G	-	X
Sodium perborate	C	C	C	C	G	G	G	G	-	F
Sodium peroxide	C	C	C	C	G	G	G	G	-	X
Sodium phosphate, monobasic	G	F	C	F	G	G	G	G	-	-
Sodium phosphate, dibasic	G	F	C	F	G	G	G	G	-	X
Sodium phosphate, tribasic	G	F	C	F	G	G	G	G	-	-
Sodium silicate	G	G	G	G	G	G	G	G	-	-
Sodium sulfate	G	G	G	G	G	G	G	G	-	-
Sodium sulfide	G	G	G	G	G	G	G	G	-	-
Sodium thiosulfate (hypo)	G	G	G	G	G	G	G	G	-	G
Soybean oil	X	C	F	G	G	G	G	G	G	G
Stannic chloride	G	G	G	G	F	G	F	G	-	F
Steam 450ºF	C	C	C	C	C	C	F	X	-	X
Stearic acid	X	X	C	F	F	C	F	G	-	F
Sulfur	F	F	G	F	G	G	G	C	-	F

Chemical	Natural Rubber	SBR	Neoprene	Nitrile	Butyl	Hypalon®	EPDM	Viton®	XLPE	Silicone
Sulfur dioxide, dry	C	C	C	C	C	G	C	-	-	F
Sulfur trioxide, dry	X	C	C	C	C	F	C	-	-	F
Sulfuric acid, 10%	G	G	G	G	G	G	G	G	G	G
Sulfuric acid, 11-75%	C	C	C	C	F	G	C	G	-	F
Sulfuric acid, 76-95%	X	X	X	X	C	G	X	G	G	X
Sulfuric acid, fuming	X	X	X	X	X	X	X	G	X	-
Sulfurous acid	C	C	C	C	C	G	C	G	-	X
Tannic acid	G	C	G	C	G	G	G	G	-	F
Tar	X	X	C	C	X	C	X	X	-	F
Tartaric acid	G	C	C	C	F	G	F	G	-	G
Toluene (toluol)	X	X	X	C	X	X	X	G	G	X
Trichloroethylene	X	X	X	X	X	X	X	G	G	X
Turpentine	X	X	X	F	X	X	X	G	G	X
Vegetable oil, non-edible	X	X	F	F	G	G	-	-	-	G
Vinegar	C	C	C	C	G	G	G	T	-	C
Water, acid mine	G	G	C	G	G	G	G	G	G	G
Water, distilled	G	G	C	G	G	G	G	G	-	G
Water, fresh	G	G	C	G	G	G	G	G	-	G
Water, sea	G	G	G	G	G	G	F	G	G	G
Whiskey and wines	G	G	G	C	G	G	G	G	-	G
Xylene (xylol)	X	X	X	C	X	X	X	G	G	X
Zinc	C	C	C	C	G	G	G	G	-	-
Zinc sulfate	G	G	G	G	G	G	G	G	-	G