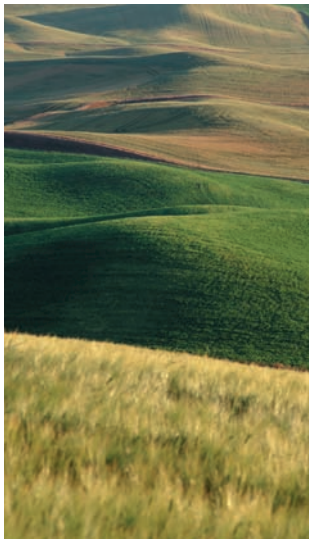
COMPRESSION PACKINGS

Flexitallic®

05.07

Flexitallic Ltd is an international market leader committed to providing high quality, high value sealing products, backed by outstanding customer service and technical support.

Flexitallic Ltd has the resources to maintain a network of manufacturing sites, joint ventures and licensees across the world's major industrialised regions - combining global expertise with local availability. Furthermore in an age when industry is increasingly focused on international environmental standards and emission regulations Flexitallic products make a significant contribution to achieving a clean, safe environment.



For the industrial buyer the name Flexitallic is a guarantee of high standards, consistent quality and a comprehensive product portfolio. The Flexitallic product range can be single sourced from any of its sales operations and distributors around the world and is composed of four primary product groups, usually referred to as: Semi Metallic Gaskets, Sheet Gasket Materials, Compression Packings and Metallic Gaskets.

Each business throughout the world is able to provide a highly professional level of technical expertise and customer support. Most important of all every Flexitallic company is proud to proclaim its ability to supply both standard and special products - the result of local market knowledge and awareness of customer needs.

SEALING SOLUTIONS -
THE ANSWER IS ALWAYS FLEXITALLIC

WORLDWIDE REPUTATION

Flexitallic Ltd has been at the forefront of sealing technology for over 100 years. During this time the company has gained an unrivalled reputation as a global supplier of quality products and services.

An ethos of continuous development and improvement of products and services coupled with close attention to local market needs will ensure the company's status as a worldwide market leader well into the next millennium.

PRODUCT RANGE

The ability of a product to meet the requirements of a dynamic market place is key to the success of any company. The Flexitallic Group has the ability to supply the world's industries with an unparalleled range of products and services - 'The Total Sealing Solution'.

Flexitallic Ltd manufactures a comprehensive range of asbestos-free compression packings:
BRAIDED PACKINGS - manufactured from a range of asbestos replacement yarns.

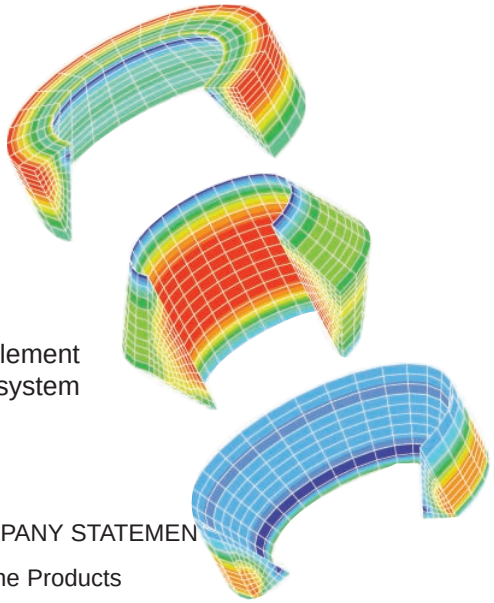
PRE-FORMED GRAPHITE RINGS - high temperature sealing elements formed from high purity exfoliated graphite foil. Including Enviroflex™ 500, Flexitallic's high integrity valve stem sealing system.
SYNTRON PACKINGS - Extruded packings formed from a fibre reinforced, rubber bound composite, used in domestic and industrial applications.

All Flexitallic's products are manufactured to the highest quality standards ensuring fitness for purpose with the added convenience of a single source manufacturer and supplier.

RESEARCH AND DEVELOPMENT

The dynamic needs of the market place can only be satisfied by manufacturers who are prepared to invest in research and development and Flexitallic works continuously with highly respected and dedicated research centres worldwide. This is supported with specialist development work undertaken at both UK manufacturing sites, by product teams aided by the latest technology such as Finite Element Analysis (FEA).

FEA is now being applied to the development of compression packings and flange sealing materials, proving a powerful new tool in the advancement of sealing science.



Finite Element Analysis of sealing element components of Enviroflex system

TECHNICAL SUPPORT AND CUSTOMER SERVICE

The company's command of its technology provides a sound basis for technical and commercial customer support. Qualified engineers are always available for technical audits, advice on specifications or troubleshooting, whilst every sales office has a full team of staff to deal with technical or sales enquires by telephone, fax, e-mail or letter.

The 'customer ethic' is central to Flexitallic's philosophy and this is a further part of the global strategy which is apparent in every Flexitallic business throughout the world.

PRODUCT SELECTION

Increasing environmental and economic pressures require that the most suitable product be used in every application. This brochure is intended to aid the process of product selection.

If you require more detailed information to ensure compatibility, please consult Flexitallic's Technical Department who will be pleased to assist.

COMPANY STATEMEN

The Products

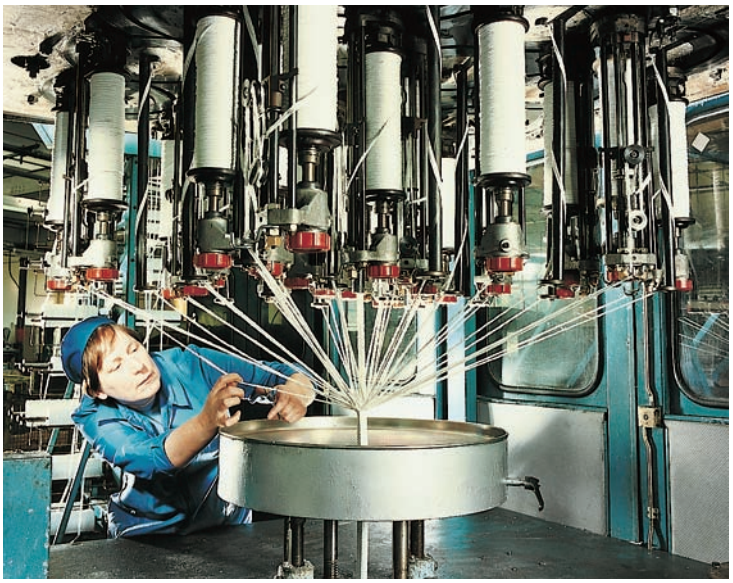
Flexitallic Ltd designs and manufactures all its products under a quality system which is accredited to BS EN ISO 9001. The operating mission is to produce an unrivalled level of excellence in product specification, performance and availability.

The People

The company is committed to meeting customer needs and to the development, rights and equal opportunities of all its employees. Its track record includes the prestigious IIP (Investor in People) award.

The Environment

In the design and manufacture of its products Flexitallic Ltd gives full consideration to environmental concerns. By supplying cost-effective and proven sealing products to industry the company contributes not only to greater productivity and reduced downtime, but also to the control and prevention of fugitive emissions.



PUMP PACKINGS

KEY TO ICONS USED

- X-BRAID
- SQUARE BRAID
- BLOCKED RINGS
- STATIC SEALS
- PUMP PACKINGS
- VALVE STEM SEALS

	TYPICAL USES	TEMP °C (°F)	MAX PRESSURE MPa (psi)	MAX SHAFT SPEED m/s (fpm)	pH LIMITS	TYPICAL APPLICATIONS	DESCRIPTION	COMMENTS	CONSTRUCTION	PRODUCT
305		**- 200/460†† (-328/860)**	**18 (2610)**	**20 (3940)**	**0-14†**	**petrochemical, chemical and power generation industries**	**high purity exfoliated graphite gland packing**	**suitable for use in steam up to 650°C**		 FLEXITALLIC 305
774		**-85/480 (-120/896)**	**14 (2030)**	**15 (2950)**	**3-12**	**petrochemical industry and general industrial use**	**continuous filament FORTAGLAS** packing, impregnated with PTFE dispersion and lubricated with mineral oil and graphite**			 FLEXITALLIC 774
713L		**-85/290 (-120/554)**	**14 (2030)**	**10 (1970)**	**3-12**	**petrochemical, chemical, food, pharmaceutical, paint and brewing industries**	**continuous filament FORTAGLAS** packing, impregnated with PTFE dispersion and additional lubricants**			 FLEXITALLIC 713L
1065		**-85/260 (-120/500)**	**20 (2900)**	**20 (3940)**	**0-14†**	**petrochemical, chemical, brewing, paper and pulp industries**	**high quality packing made from lubricated and graphite impregnated PTFE yarn (GFO)***	**virtually all fluids can be handled with the exception of molten alkali metals, and strong oxidising agents such as oleum, aqua regia and fuming nitric acid. Non GFO alternative: Flexitallic 900**		 FLEXITALLIC 1065
2001		**-85/260 (-120/500)**	**25 (3635)**	**15 (2950)**	**2-12**	**steel, chemical, paper, pulp and cement industries; particularly recommended for pumping abrasive slurries**	**PTFE impregnated aramid packing treated with a high temperature lubricant**			 FLEXITALLIC 2001
803		**150 (302)**	**14 (2030)**	**10 (1970)**	**3-12**	**for sealing water and mild chemicals in general industrial applications; suitable for applications involving food or drinking water**	**acrylic yarn impregnated with PTFE and containing additional lubricants**	**approved for use in contact with potable (drinking) water**		 FLEXITALLIC 803
26L		**-85/260 (-120/500)**	**7 (1050)**	**8 (1575)**	**0-14**	**petrochemical, chemical, food, pharmaceutical, brewing industries, particularly suitable where extremes of pH or contamination is a factor**	**pure PTFE yarn impregnated with PTFE dispersion and additional lubricants**			 FLEXITALLIC 26L
43		**150 (302)**	**8 (1160)**	**5 (980)**	**5-10**		**high quality lubricated flax packing impregnated with PTFE dispersion**			 FLEXITALLIC 43
30		**120 (248)**	**8 (1160)**	**5 (980)**	**6-9**		**a traditional hemp packing, heavily greased**			 FLEXITALLIC 30
45		**120 (248)**	**7 (1015)**	**5 (980)**	**5-10**		**cotton packing heavily greased and graphited**			 FLEXITALLIC 45

† not recommended for use with strong oxidising agents

†† in general applications; suitable for higher temperature in non-oxidsing media; 650°C in steam

* GFO is a trademark of W. L. Gore & Associates Inc.

** FORTAGLAS is a trademark of TBA Texiles Ltd.

VALVE STEM SEALS

	CAL	TYPI-USES	TEMP °C (°F)	MAX PRESSURE MPa (psi)	MAX SHAFT SPEED m/s (fpm)	pH LIMITS	TYPICAL APPLICATIONS	DESCRIPTION	COMMENTS	CONSTRUCTION	PRODUCT
ENVIROFLEX™ 500	ENVI-ROFLEX™ 500		**550†† (1022)**	**86 (12470)**		**0-14†**	**high integrity valve stem sealing to reduce fugitive emissions in the petrochemical and chemical industry**	**high purity graphite tape formed into sealing elements of unique geometry with dissimilar densities; the specially designed header rings are braided from graphite filament yarn**	**a high performance sealing system, capable of attaining long term emission levels of less than 100ppm in a wide range of applications**		FLEXITALLIC ENVIROFLEX™ 500
GRAPHITE RINGS & VALVE PACKERS	GR160		**-200/550** (-328/1022)**	**30 (4350)**	**10 (1970)**	**0-14†**	**high temperature, high pressure valve applications**	**die-formed rings from 99.85% pure exfoliated graphite tape; free chloride content less than 50ppm; ash content 0.1% maximum**			FLEXITALLIC GR160
	GR163		**-200/300 (-328/572)**	**30 (4350)**	**15 (2950)**	**0-14†**	**high temperature, high pressure valve applications**	**die-formed rings from 99.85% min pure exfoliated graphite, with pockets of PTFE on the inner bore**			FLEXITALLIC GR163
	SS6AR		**400 (752)**	**7 (1015)**	**15 (2950)**	**4-10**	**for all types of equipment including pumps, agitators and valves handling steam, water, mild chemicals, oils and distillates**	**semi-plastic packing constructed of aramid fibre, high temperature binders and flake graphite**	**approved for use in contact with potable (drinking) water**		FLEXITALLIC SS6AR
BRAIDED PACKINGS	306		**-200/460†† (-328/860)**	**30 (4350)**	**2 (395)**	**0-14†**	**petrochemical, chemical and power generation industries**	**high purity exfoliated graphite gland packing reinforced with inconel wire**			FLEXITALLIC 306
	304		**-85/430†† (-120/806)**	**21 (3045)**	**20 (3940)**	**0-14†**	**power generation, chemical and petrochemical industries**	**top quality carbon yarn packing treated with high performance lubricant, corrosion inhibitors and sacrifical zinc, reinforced with inconel wire to aid extraction**			FLEXITALLIC 304
	26D		**-85/260 (-120/500)**	**14 (2030)**	**3 (590)**	**0-14**	**chemical, food, pharmaceutical, oxygen, paint, petrochemical and brewing industries; recommended for aggressive chemicals, powerful oxidants or vacuum/gas sealing**	**flexible pure PTFE packing**			FLEXITALLIC 26D

† not recommended for use with strong oxidising agents

†† in general applications; suitable for higher temperature in non-oxidsing media; 650°C in steam

** FORTAGLAS is a trademark of TBA Texiles Ltd.

PRODUCT TYPE	TEMP °C (°F)	pH LIMITS	DESCRIPTION	PRODUCT NAME
THERMICULITE PACK-ING	**1050 (1900)**	**0-14**	**Critical service packing made from expanded vermiculite foil and Inconel wire**	**THERMI-CULITE 894**
 **for high temperature, high pressure sealing**				
GLASS PACKINGS	**600 (1112)**	**5-11**	**high density packing made from continous filament 'E' glass yarns**	**FLEXITALLIC GP1**
 **for metal processing, boil-er doors, furnace doors, coal and wood burning stove door seals**	**600 (1112)**	**5-11**	**medium density packing made from knitted 'E' glass yarns**	**FLEXITALLIC GP2**
	600 (1112)	**5-11**	**low density packing from 'E' glass yarn**	**FLEXITALLIC GP125**
CERAMIC PACKINGS	**1260 (2300)**	**3-9**	**packing made from a ceramic fibre yarn reinforced with inconel wire**	**FLEXITALLIC CFP1**
 **for high-temperature crucible lid and furnace door seals**	**1260 (2300)**	**3-9**	**Packing made from a ceramic yarn reinforced with glass carrier thread**	**FLEXITALLIC CFP2**

ENVIROFLEX™ 500

The Flexitallic answer to fugitive emissions

Investigation of all potential sources of fugitive emissions from a petrochemical plant (flanges, pumps, heat exchangers, etc.) has revealed the majority, estimated to be around 65%, emanate from the stems of control and isolation valves.

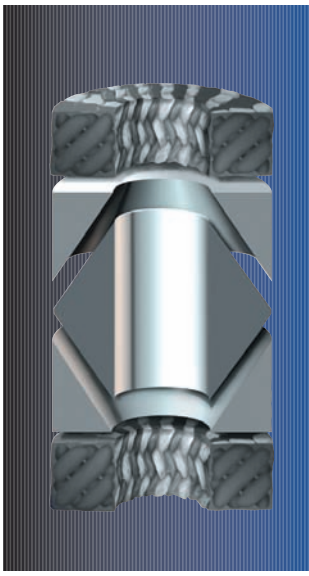
In response, Flexitallic has developed an ultra-high performance, valve stem sealing system, Enviroflex™ 500*.

Enviroflex™ 500 is a five component system. Two header rings are braided from high quality graphite filament yarn, impregnated with a high temperature blocking agent and a high temperature/ high viscosity lubricant. Between these are positioned three sealing elements, die-formed from very high purity exfoliated graphite.

The unique geometry of these sealing elements ensures a much more efficient conversion of compressive load to sealing stress than is achievable with traditional square section rings. This feature is complemented by the low density construction of the central olive which conforms easily to the stem surface.

Where stiction may be anticipated or experienced in control valves, Flexitallic offers Enviroflex 503, a specialist product developed with PTFE pockets on the inside diameter of the central olive to further reduce the effects of friction on valve operation.

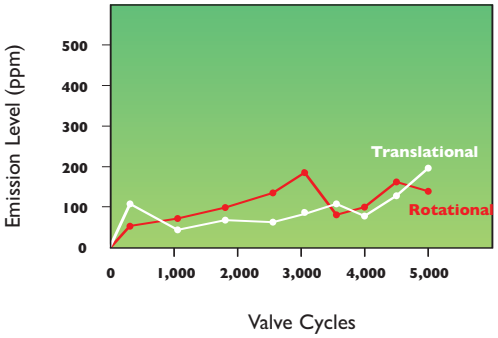
* Results from recent testing at BP chemicals confirm its superior performance compared with other available valve packing systems. (further details on request)



COMPARATIVE PERFORMANCE WITH ROTARY AND TRANSLATIONAL STEM MOVEMENT*

Further testing has been undertaken to compare performance of Enviroflex™ 500 in conjunction with both modes of stem movement commonly encountered by a valve packing, i.e. rotational and translational. Results of testing up to 5000 cycles are illustrated. The contained medium was helium at 200°C and 40 bar.

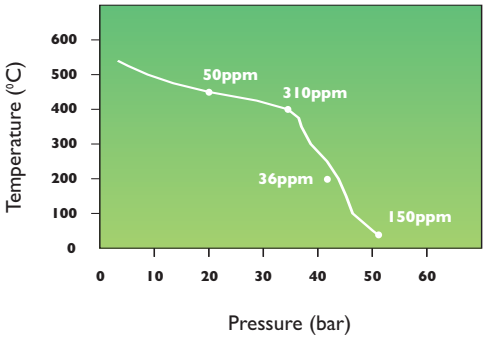
*Data generated at University of Leeds Industrial Services.



PERFORMANCE OF ENVIROFLEX™ 500 ON CARBON STEEL CLASS 300 PxT CURVE*

To illustrate the performance of Enviroflex™ 500 across a range of temperatures and pressures, independent test data was obtained showing emission levels of helium after 1000 valve cycles in conditions replicating points on, or close to, the PxT curve for a Class 300 carbon steel valve. Stem movement was translational.

*Data generated at University of Leeds Industrial Services.



INSTALLATION AND SUPPLY

To ensure long and trouble-free sealing with Flexitallic Compression Packings, check the following points periodically;

CONDITION OF PLANT

- The clearance between shaft and neckbush at bottom end of stuffing box. Excessive clearance means greater pressure on bottom packing rings and greater chance of packing extrusion. Normal clearance 0.25mm (0.010” maximum).
- Concentricity of shaft with stuffing box bore.
- The straightness of shaft (run-out) - should not exceed 0.05mm (0.002”) clock gauge reading.
- Condition of shaft surface in packing area - no excessive grooves, scores or pitting.
- Pump bearings - wear can induce shaft “whip” which is detrimental to packing sealing performance.

CALCULATION OF PACKING LENGTH (L)

L = 3.3 (d + c) (mm)

PACKING SECTION (c) = $\frac{D - d}{2}$

D = stuffing box diameter (mm)

d = shaft or spindle diameter (mm)

PACKING THE GLAND

- Ensure that all the old packing has been removed and that the stuffing box is clean and free from foreign matter.
- Select the correct size of packing for the particular shaft/stuffing box dimensions.
- Wrap the packing around the shaft (slightly more than one turn) or on a round mandrel of the specified diameter. Cut both ends simultaneously at an angle of 45° to form a scarf joint. No gap is left between the ends.
- Using this piece as a template cut the remainder of the rings to the same length.
- Fit each packing ring individually and ensure that it is correctly seated (i.e. firmly bedded) by tamping or by the use of split sleeves in conjunction with the gland follower. Stagger the joints by 90° or 120°.
- If a lantern ring is fitted it should be positioned below the inlet connection, but slightly offset from the central position to allow for compression of the bottom packing rings.
- When the correct number of rings has been fitted, allowing for sufficient entry of the gland follower, check that the shaft still rotates reasonably freely.
- Tighten the gland nuts evenly until the packing “drags” when turning the shaft by hand.
- Valves - Pressurise the stuffing box and if necessary re-adjust the gland nuts evenly until a leak-free seal is obtained.

  Pumps - Slacken the gland nuts back after last stage and re-tighten to finger tight. Ensure shaft still rotates fairly freely and prime the pump.

RUNNING - IN

Pumps and rotating equipment

After starting the pump, allow it to run with steady leakage for the first 15 minutes. Then begin to adjust the gland nuts equally, one or two flats at a time, with about 10 minutes between adjustments, until the leakage is reduced to an acceptable level. If, during this procedure the gland begins to overheat, slacken off the gland nuts slightly to increase the leakage rate, thus reducing the gland temperature. Commence re-tightening again after a further 5-10 minutes.

N.B. - Some leakage from the gland should always be maintained (approx. 10 drops/minute) to ensure adequate lubrication and cool running of the packing.

Valves

Valve packings do not need to be “run-in”, but after the first hour or two at full temperature and pressure it is advisable to re-tighten the gland follower to compensate for the initial slight loss of lubricant and bedding in of the packing.

PACKAGING

Valve and pump packings are supplied on flanged spools and individually boxed. The label indicates product number, size and maximum operating parameters. The standard coil length for sizes below 6mm is 20m; for 6mm and over, the standard length is 8m.

Bulk coils and non standard coil lengths are available on request.

Dry Glass Packings are supplied in coils as below.

- 5mm and below 200m
- 6.5 and 8mm 100m
- 9.5mm 60m
- 12.5, 14 and 16mm 30m
- 18, 20, 22mm 15m
- 25mm 10m

EX-STOCK
AVAILABILITY

APPLICATION/ COMPATIBILITY GUIDE

	ARAMID	GRAPHITE LOADED PTFE	PTFE	GLASS	GRAPHITE	VEGETABLE	ACRYLIC
Acetic Acid Glacial	✗	✓	✓	✗	✓	✗	✗
Acetone	✓	✓	✓	✓	✓	✗	✓
Acetylene	✓	✓	✓	✓	✓	✓	✓
Acrylic Acid	✓	✓	✓	✗	✓	✗	✗
Acrylonitrile	✓	✓	✓	✓	✓	✗	O
Air	✓	✓	✓	✓	✓	✓	✓
Alkaline Lye	O	✓	✓	✗	✓	✗	✗
Aluminium Chloride	O	✓	✓	✓	✓	✗	✓
Ammonia Gas	✓	✓	✓	✓	✓	O	✓
Ammonia	✓	✓	✓	✓	✓	✗	✓
Amyl Acetate	✓	✓	✓	✓	✓	✓	✓
Amyl Alcohol	✓	✓	✓	✓	✓	✓	✓
Aniline	✓	✓	✓	✓	✓	✗	✗
Aqua-Regia	✗	✗	✓	✗	✗	✗	✗
Aviation Fuel	✓	✓	✓	✓	✓	✓	✓
Beer	✓	✓	✓	✓	✓	✓	✓
Benzene	✓	✓	✓	✓	✓	O	✓
Benzoyl Chloride	✓	✓	✓	✓	✓	✗	✗
Biphenyl	✓	✓	✓	✓	✓	✗	✗
Blast Furnace Gas	✓	✓	✓	✓	✓	✗	✗
Bleach (Solution)	✓	✓	✓	O	✓	O	✓
Boiler Feed Water	✓	✓	✓	✓	✓	✓	✓
Brine	✓	✓	✓	✓	✓	✓	✓
Bromine	✗	✗	✓	✗	✗	✗	✗
n-Butyl Acetate	✓	✓	✓	✓	✓	✓	✓
Calcium Chlorate	O	✓	✓	✓	✓	✗	✗
Caprolactam	✓	✓	✓	✓	✓	✗	✓
Carbolic Acid	✓	✓	✓	✓	✓	✗	✗
Carbon Dioxide	✓	✓	✓	✓	✓	✓	✓
Carbon Disulphide	✗	✓	✓	✓	✓	✗	✗
Carbon Monoxide	✓	✓	✓	✓	✓	✓	✓
Carbon Tetrachloride	✓	✓	✓	✓	✓	✗	✓
Chile Saltpetre	✓	✓	✓	✓	✓	✓	✓
Chlorine Dry	✗	✓	✓	✓	✓	✗	✓
Chlorine Wet	✗	✓	✓	✓	✓	✗	O
Chlorinated Hydrocarbons	✓	✓	✓	✓	✓	O	✓
Chloroacetic Acid	O	✓	✓	✗	✓	✗	✗
Chlorobenzene	✓	✓	✓	✓	✓	✗	✓
Chromic Acid	✗	O	✓	✗	O	✗	✗
Copper Sulphate	✓	✓	✓	✓	✓	✓	✓
Creosote	✓	✓	✓	✓	✓	✗	✗
Cresol	✓	✓	✓	✓	✓	✗	✗
Crude Oil	✓	✓	✓	✓	✓	O	✓
Cyclohexanol	✓	✓	✓	✓	✓	✓	✓
1,4 Dichlorobenzene	✓	✓	✓	✓	✓	✗	O
Diesel Oil	✓	✓	✓	✓	✓	O	✓
Dowtherm	✓	✓	✓	✓	✓	✗	✗
Dye Liquor	O	✓	✓	✗	✓	✗	✓
Ethyl Acetate	✓	✓	✓	✓	✓	✗	✓
Ethyl Alcohol	✓	✓	✓	✓	✓	✓	✓
Ethylene Glycol	✓	✓	✓	✓	✓	✓	✓
Ethylene Oxide	✓	✓	✓	✓	✓	✗	O
Ethyl Ether	✓	✓	✓	✓	✓	✓	✓
Ethylene	✓	✓	✓	✓	✓	✓	✓
Ethylene Chloride	✓	✓	✓	✓	✓	✗	✓
Fatty Acids	✓	✓	✓	✓	✓	✓	✓
Ferric Chloride	✓	✓	✓	✓	✓	O	✓
Fluorine	✗	✗	✗	✗	O	✗	✗
Fluorosilicic Acid	✓	✓	✓	✗	✓	✗	✗
Formaldehyde	✓	✓	✓	✓	✓	O	O
Formic Acid (85%)	O	✓	✓	✗	✓	✗	✗
Formic Acid (10%)	✓	✓	✓	✓	✓	O	✓
Gas Oil	✓	✓	✓	✓	✓	O	✓
Gasoline	✓	✓	✓	✓	✓	✓	✓
Glucose	✓	✓	✓	✓	✓	✓	✓
Heating Oil	✓	✓	✓	✓	✓	✓	✓
Hydraulic Oil (Glycol)	✓	✓	✓	✓	✓	✓	✓
Hydraulic Oil (Mineral)	✓	✓	✓	✓	✓	✓	✓
Hydraulic Oil (Ester)	✓	✓	✓	✓	✓	O	✓
Hydrazine	✓	✓	✓	✓	✓	✗	O
Hydrocarbons (Aromatic)	✓	✓	✓	✓	✓	✗	✓
Hydrocarbons (Aliphatic S)	✓	✓	✓	✓	✓	O	✓
Hydrocarbons (Aliphatic U)	✓	✓	✓	✓	✓	O	✓
Hydrochloric Acid (37%)	✗	✓	✓	✓	✓	✗	✗
Hydrofluoric Acid	✗	✓	✓	✗	✓	✗	✗
Hydrogen	✓	✓	✓	✓	✓	✓	✓
Hydrogen Chloride	✗	✓	✓	✓	✓	✗	O
Hydrogen Fluoride	✗	✓	✓	✗	✓	✗	✗
Hydrogen Peroxide	✗	✓	✓	✓	O	✗	✗
Hydrogen Sulphide	✗	✓	✓	✓	✓	✗	O
Isopropyl Acetate	✓	✓	✓	✓	✓	✓	✓
Isopropyl Alcohol	✓	✓	✓	✓	✓	✓	✓
Kerosene	✓	✓	✓	✓	✓	✓	✓
Lime (Quick)	✓	✓	✓	✓	✓	✗	✓
Lubricating Oil	✓	✓	✓	✓	✓	O	✓
Machine Oil	✓	✓	✓	✓	✓	O	✓
Magnesium Sulphate	✓	✓	✓	✓	✓	✓	✓
Malic Acid	✓	✓	✓	✓	✓	O	✓
Methane	✓	✓	✓	✓	✓	✓	✓
Methyl Acrylate	✓	✓	✓	✓	✓	✗	✗
Methyl Alcohol	✓	✓	✓	✓	✓	✓	✓
Methyl Isobutyl Ketone	✓	✓	✓	✓	✓	O	✓
Methyl Methacrylate	✓	✓	✓	✓	✓	O	✗
Methylene Chloride	✗	✓	✓	✓	✓	✗	✓
Mineral Oil	✓	✓	✓	✓	✓	O	✓
Mobiltherm	✓	✓	✓	✓	✓	✗	✗
Naphthalene	✓	✓	✓	✓	✓	O	O
Natural Gas	✓	✓	✓	✓	✓	✓	✓
Nitric Acid (50%)	✗	✗	✓	✗	✗	✗	✗
Nitric Acid (95%)	✗	✗	✓	✗	✗	✗	✗
Nitrogen	✓	✓	✓	✓	✓	✓	✓
Oleum	✗	✗	✓	✗	✗	✗	✗
Oxygen	✓	✓	✓	✓	✓	✗	✗
Paraffin	✓	✓	✓	✓	✓	✓	✓
Pentachlorophenol	✗	✓	✓	O	✓	✗	✗
Perchloric Acid	✗	✗	✓	✗	✗	✗	✗
Petrol	✓	✓	✓	✓	✓	✓	✓
Phenol	✗	✓	✓	O	✓	✓	✗
Phosgene	✓	✓	✓	✓	✓	✗	✗
Phosphoric Acid (Conc)	✗	✓	✓	✗	✓	✗	✗
Phosphoric Acid (Dil)	O	✓	✓	O	✓	✗	O
Phosphorous	✗	✓	✓	✓	O	✗	✗
Phthalic Anhydride	✓	✓	✓	✓	✓	✗	O
Potassium Hydroxide	O	✓	✓	✗	✓	✗	O
Potassium Nitrate	✓	✓	✓	✓	✓	✓	✓
Potassium Permanganate	O	✓	✓	✓	✓	✗	✓
Producer Gas	✓	✓	✓	✓	✓	✓	✓
Pyridine	✓	✓	✓	✓	✓	✗	✗
Rape Seed Oil	✓	✓	✓	✓	✓	✓	✓
Silicone Oil	✓	✓	✓	✓	✓	✓	✓
Soda Ash	✓	✓	✓	✗	✓	✓	O
Sodium Bicarbonate	✓	✓	✓	✓	✓	✓	✓
Sodium Carbonate	✓	✓	✓	✗	✓	✓	✓
Sodium Cyanide	✓	✓	✓	✓	✓	✓	✓
Sodium Hydroxide (90%)	✗	✓	✓	✗	✓	✗	✗
Sodium Hydroxide (Dil)	O	✓	✓	O	✓	✗	✓
Sodium Hypochlorite	✓	✓	✓	O	✓	O	O
Sodium Nitrate	✓	✓	✓	✓	✓	✓	✓
Starch	✓	✓	✓	✓	✓	✓	✓
Steam	O	✓	✓	O	✓	✗	✓
Steam Condensate	✓	✓	✓	✓	✓	✓	✓
Styrene	✓	✓	✓	✓	✓	✗	✓
Sulphur	✓	✓	✓	✓	✓	O	O
Sulphur Dioxide	✗	✓	✓	✓	✓	O	O
Sulphur Trioxide	✗	✗	✓	✗	✗	✗	✗
Sulphuric Acid (Conc)	✗	O	✓	✗	O	✗	✗
Sulphuric Acid (Fuming)	✗	✗	✓	✗	✗	✗	✗
Tar	✓	✓	✓	✓	✓	✗	✗
Turpentine	✓	✓	✓	✓	✓	✓	✓
Toluene	✓	✓	✓	✓	✓	✗	✓
Towns Gas	✓	✓	✓	✓	✓	✓	✓
Transformer Oil	✓	✓	✓	✓	✓	O	✓
Tributyl Phosphate	✓	✓	✓	✓	✓	✓	✓
Triethanolamine	✓	✓	✓	✓	✓	✓	✓
Urea	✓	✓	✓	✓	✓	✓	✓
Vegetable Oil	✓	✓	✓	✓	✓	✓	✓
Vinyl Acetate	✓	✓	✓	✓	✓	O	✓
Vinyl Chloride	✓	✓	✓	✓	✓	O	✓
Vinylidene Chloride	✓	✓	✓	✓	✓	O	✓
Water	✓	✓	✓	✓	✓	✓	✓
Water Condensate	✓	✓	✓	✓	✓	✓	✓
Water Distilled	✓	✓	✓	✓	✓	✗	✓
Whisky	✓	✓	✓	✓	✓	✓	✓
Wine	✓	✓	✓	✓	✓	✓	✓
White Spirit	✓	✓	✓	✓	✓	✓	✓
Xylene	✓	✓	✓	✓	✓	✓	✓

✓ **Suitable** O **Application Dependent** ✗ **Not Suitable**

Aramid = 2001, SS6AR
PTFE = 26D, 26L
Graphite = Enviroflex, GR160, GR163, 304, 305, 306
Vegetable = 30, 43, 45
Glass = 713L, 774
Graphite Loaded PTFE = 900, 1065
Acrylic = 803