

OmniFlex™

Fluoroelastomer Material

TYPICAL APPLICATIONS

- Pumps and Valves for Critical Liquids and Gases
- Robotic Equipment
- Analytical Instrumentation
- Adhesive and Epoxy Dispensing Equipment
- Semiconductor, Wafer Processing
- Hydraulic Systems
- Swivels and Booms

Custom designed shapes and component parts are our specialty. Standard O-rings in metrics, JIS, AS568 Standard or unique sizes can also be manufactured.

OmniFlex™

Fluoroelastomer Material

OmniFlex™ is a new proprietary fluoroelastomer material developed by Saint-Gobain Performance Plastics. This new low temperature material is nearly equivalent in performance to perfluoroelastomer material in chemical resistance and inertness, yet has a softer durometer and improved compression set. OmniFlex™ has outstanding low temperature performance at -57°C (-70°F) which outperforms most other elastomers, with a maximum temperature of 218°C (424°F). With its softer durometer, OmniFlex™ is an excellent choice for low friction hydraulic seals and standard o-rings. Special shapes can easily be manufactured to typical dimensional tolerances.

Features/Benefits

- Excellent chemical resistance and inertness
- Good compression set
- Excellent low temperature performance



The following tables list the typical physical property values measured on -0214 O-rings.

OmniFlex™ R10

Property (Metric)	ASTM Method	Units (Metric)	Value (Metric)
Specific Gravity	D297	—	1.85
Hardness	D2240	Shore A	70
Tensile Strength @ 72°F (22°C)	D412	PSI (MPa)	1000 (6.9)
Modulus	D412		
M ₅₀		PSI (MPa)	400 (2.8)
M ₁₀₀		PSI (MPa)	760 (5.2)
Elongation	D412	%	130
Retraction @ Low Temperature (TR10)	D1329	°F (°C)	-58 (-50)
Compression Set 70 hr @ 392°F (200°C)	D395	%	35

OmniFlex™ R11

Property (Metric)	ASTM Method	Units (Metric)	Value (Metric)
Specific Gravity	D297	—	1.85
Hardness	D2240	Shore A	70
Tensile Strength @ 72°F (22°C)	D412	PSI (MPa)	900 (6.2)
Modulus	D412		
M ₅₀		PSI (MPa)	370 (2.55)
M ₁₀₀		PSI (MPa)	660 (4.55)
Elongation	D412	%	130
Retraction @ Low Temperature (TR10)	D1329	°F (°C)	-58 (-50)
Compression Set 70 hr @ 392°F (200°C)	D395	%	12

OmniFlex™ Physical Characteristics Range

Durometer	Appearance	Tensile	Strength	Elongation
40	White	60 kgf/cm ²	(5.9 MPa) 833 psi	350%
70	Black	92 kgf/cm ²	(9.0 MPa) 1310 psi	200%

Sizes: -000, -100, -200 Series O-rings per AS568 std. to maximum ID 1.25" (3.175 cm) Metrics, custom size O-rings and shapes are available contact the factory for details.

OmniFlex™ Chemical Resistance Chart *(Ratings are based on fluid exposure @ room temperature for 3 days)*

KEY

A: Swell <10% — Acceptable

B: Swell >10% & <20% — Generally suitable

C: Swell >20% & <40% — Maybe suitable in some cases

D: Swell >40% — Not acceptable

FLUID	RATING	FLUID	RATING	FLUID	RATING	FLUID	RATING
Acetaldehyde	A	Dibutyl Phthalate	A	Lubricating Oil, Petroleum Base	A	Propylene Oxide	B
Acetic Acid	A	Dichlorobenzene	B	Magnesium Hydroxide	A	Pyridine	A
Acetic Anhydride	A	Diesel Oil	A	Magnesium Sulfate	A	Quenching Oil	A
Acetone	A	Diethanolamine	A	Maleic Acid	A	Rapeseed Oil	A
Acetyl Chloride	A	Diethylamine	B	Maleic Anhydride	A	Silver Nitrate	A
Acetylene Gas	A	Diethyl Carbonate	A	Malic Acid	A	Soda Ash	A
Acrylonitrile	A	Diethylenetriamine	A	Manganous Chloride	A	Sodium Acetate	A
Alcohol, Denatured	A	Diethyl Phthalate	A	Melamine Resin	A	Sodium Bicarbonate	A
Alkyl Benzene	A	Diisobutyl Ketone	A	Mercuric Chloride	A	Sodium Bisulfate	A
Alkyl-Arylsulphonic Acid	A	Dimethylamine	A	Mercury	A	Sodium Bisulfite <200°F	A
Amines, Mixed	A	Dimethyl Formamide	A	Mesityl Oxide	A	Sodium Carbonate >200°F	A
Ammonia, Gas, Cold	A	Dimethyl Phthalate	A	Methane	B	Sodium Chloride >200°F	A
Ammonium Acetate	A	Dimethyl Terephthalate	A	Methyl Acetate	A	Sodium Cyanide, Aqueous	A
Ammonium Bromide	A	Dinitrochlorobenzene	A	Methyl Alcohol	A	Sodium Dichromate	A
Ammonium Carbonate	A	Diphenyl	A	Methyl Benzoate	A	Sodium Dithionite	A
Ammonium Chloride	A	Epichlorohydrin	A	Methyl Bromide	B	Sodium Hydroxide, Diluted	A
Ammonium Hydroxide	A	Ethanethiol	A	Methyl Chloride	B	Sodium Hypochlorite, 20%	A
Ammonium Nitrate	A	Ethanolamine	A	Methylene Bromide	B	Sodium Nitrate	A
Ammonium Phosphate	A	Ethyl Acetate	A	Methylene Chloride	B	Sodium Peroxide	A
Ammonium Stearate	A	Ethyl Alcohol	A	Methyl Ethyl Ketone	A	Sodium Phosphate,	A
Amyl Acetate	A	Ethylamine	B	Methyl Formate	A	Sodium Silicate	A
Amyl Alcohol	A	Ethylbenzene	A	Methyl Isobutyl Ketone	A	Sodium Sulfate	A
Amyl Nitrate	A	Ethylene	A	Methyl Methacrylate	A	Sodium Sulfide	A
Barium Nitrate	A	Ethylene Dibromide	B	Methyl Propionate	A	Sodium Sulfite	A
Benzaldehyde	A	Dethylene Dichloride	B	Methyl Tertiary Butyl Ether	B	Sodium Thiocyanate	A
Benzene	A	Ethylene Glycol	A	Naphtha, Crude	B	Sodium Thiosulfate	A
Benzyl Chloride	A	Ethylene Oxide	B	Naphthalene	A	Soybean Oil	A
Benzoic Acid	A	Ethyl Ether	B	Natural Gas, Sour	B	Steam, < 350° F	A
Benzotrifluoride	C	Ethyl Formate	A	Nickel Chloride	A	Steam, > 350° F - 500° F	A
Boric Acid	A	Fatty Acids	A	Nickel Sulfate	A	Stearic Acid	A
Butadiene	A	Ferric Sulfate, Aqueous	A	Nitric Acid, Concentrated	A	Styrene	A
Butyl Acetate	A	Ferrous Sulfate, Aqueous	A	Nitrobenzene	A	Sulfite Waste Liquor	A
Butyl Alcohol	A	Fluorine, Gas, Dry <300°F	D	Nitrogen Gas	A	Sulfur	A
Butylamine	A	Formaldehyde	A	Nitromethane	A	Sulfur Chloride	A
Butylene	A	Formic Acid < 600° F	A	Oleic Acid	A	Sulfur Dioxide	A
Butylene Glycol	A	Freon	D	Olive Oil	A	Sulfuric Acid, Dilute	A
Butyl Ether	B	Fruit Juices	A	Oxalic Acid	A	Sulfuric Acid, Concentrated	A
Calcium Cyanide	A	Fumaric Acid	A	Oxygen, Gas -10 to 400°F	A	Sulfuric Acid, Fuming	D
Calcium Hydrogen Sulfite	A	Furfural	B	Ozone	A	Sulfurous Acid	A
Calcium Hydrosulfide	A	Gasoline	A	Palmitic Acid	A	Tall Oil <450°F	A
Calcium Hydroxide, Aqueous	A	Gelatin	A	Perchloric Acid	A	Tartaric Acid, Aqueous	A
Calcium Hypochlorite	A	Glucose	A	Perchloroethylene	B	Terephthalic Acid	A
Calcium Nitrate	A	Glycerol	A	Phenol, 10%	A	Tetrachloroethane	B
Calcium Phosphatel	A	Glycine	A	Phenylacetic Acid	A	Tetrahydrofuran	B
Calcium Sulfate, Aqueous	A	Heptane	A	Phosphoric Acid, Concentrated	A	Thiols	A
Carbon Disulfide	A	Hexyl Alcohol	A	Phthalic Anhydride	A	Toluene	A
Carbon Tetrachloride	B	Hydraulic Oil, Petroleum Based	A	Picoline, Alpha	A	Trichloroethane	B
Carbonic Acid	A	Hydrazine	A	Picric Acid H ₂ O Solution	A	Trichloroethylene	B
Chloroacetic Acid	B	Hydrobromic Acid	A	Polyethylene Glycol	A	Tricresyl Phosphate	A
Chloroacetone	B	Hydrocarbons (except Methane)	A	Polypropylene Slurry	A	Triethanolamine	A
Chlorobenzene	A	Hydrochloric Acid, Concentrated	A	Polyvinyl Acetate Emulsion	A	Triethylamine	A
Chloroform	B	Hydrochloric Acid, Dilute	A	Polyvinyl Alcohol	A	Tung Oil	A
Chlorosulfonic Acid	A	Hydrocyanic Acid	A	Potassium Bromide	A	Turpentine (Oil)	A
Chromic Oxide	A	Hydrofluoric Acid, Cold, <65%	C	Potassium Carbonate	A	Urea	A
Citric Acid	A	Hydrogen	A	Potassium Chlorate	A	Urea-formaldehyde Resin	A
Coal-Tar	A	Hydrogen Chloride, Gas, Dry	A	Potassium Chloride	A	Varnish	A
Corn Oil	A	Hydrogen Peroxide	A	Potassium Cyanide	A	Vinyl Acetate	A
Cottonseed Oil	A	Hydrogen Sulfide	A	Potassium Dichromate	A	Vinyl Chloride	B
Creosote, Coal-tar	A	Hypochlorous Acid	A	Potassium Hydroxide, Diluted	A	Vinylidene Chloride	B
Cresol	A	Isopropyl Acetate	A	Potassium Nitrate	A	Water	A
Crude Oil - Sour	A	Isopropyl Alcohol	A	Potassium Permanganate	A	White Liquor	A
Cyanogen	A	Isopropyl Ether	B	Potassium Phosphate,	A	Wort	A
Cyclohexane	A	Jet Fuel	A	Potassium Sulfate	A	Xylene	A
Decahydronaphthalene	A	Lacquer	A	Propane	A	Zinc Chloride	A
Diacetone Alcohol	A	Lactic Acid	A	Propionic Acid, <150° F	A	Zinc Nitrate	A
Diallyl Phthalate	A	Lard	A	Propyl Acetate	A	Zinc Sulfate	A
Dibutylamine	A	Linoleic Acid	A	Propyl Alcohol	A		
Dibutyl Cellosolve Adipate	A	Linseed Oil	A	Propylene	A		

		INJECTION MOLDING	AGRICULTURAL PLASTICS	NORGLIDE® BEARINGS	NORSIDE®	OMNIFLEX™ & XT & OMNIFLEX™	OMNISEAL® & XT	MELDIN®	RULON®	RAM EXTRUSION	MACHINED & MOLDED COMPONENTS
NORTH AMERICA											
* Saint-Gobain Performance Plastics Corporation Wayne, New Jersey • USA	Phone: (1) 973-696-4700 Fax: (1) 973-696-4056			•	•					•	
* Saint-Gobain Performance Plastics Corporation Bristol, Rhode Island • USA	Phone: (1) 401-253-2000 Fax: (1) 401-253-1755	•						•	•	•	•
* Saint-Gobain Performance Plastics Corporation Mundelein, Illinois • USA	Phone: (1) 847-949-0850 Fax: (1) 847-949-0198							•			•
* Saint-Gobain Performance Plastics Corporation Garden Grove, California • USA	Phone: (1) 714-995-1818 Fax: (1) 714-688-2701					•	•				•
Saint-Gobain Performance Plastics Corporation Iztapalapa • Mexico	Phone: (5) 256-132-814	•		•	•			•	•		
EUROPE											
* Saint-Gobain Performance Plastics Pampus Gmbh Willich • Germany	Phone: (49) 2154 600 Fax: (49) 2154 60310			•	•				•	•	
* Saint-Gobain Performance Plastics N.V. Kontich • Belgium	Phone: (32) 34 58 28 28 Fax: (32) 34 58 26 69	•				•	•	•	•	•	•
Saint-Gobain Performance Plastics Asti Nanterre • France	Phone: (33) 1490 70205 Fax: (33) 1490 69762			•	•						
Saint-Gobain Performance Plastics Agrate Brianza (Mi) • Italy	Phone: (39) 03 96 50 070 Fax: (39) 03 96 52 736	•		•	•	•	•	•	•		
Saint-Gobain Performance Plastics Espana, S.A. Barcelona • Spain	Phone: (34) 93 682 8138 Fax: (34) 93 682 8143			•	•						
* Saint-Gobain Performance Plastics Espana, S.A. Logrono • Spain	Phone: (34) 94 14 86 035 Fax: (34) 94 14 37 095	•				•	•	•	•		•
SOUTH AMERICA											
* Saint-Gobain (Bearing & Wear Technology) Ceramicas Industrias Ltda. (Agricultural Plastics) Vinhedo-SP • Brazil	Phone: (55) 19 3876 8153 Phone: (55) 19 3876 8070 Fax: (55) 19 3876 8077	•	•	•	•	•	•	•	•		
ASIA											
* Saint-Gobain Norton KK Nagano • Japan	Phone: (81) 266 79 6400 Fax: (81) 266 70 1001	•	•	•	•	•	•	•	•		
* Saint-Gobain Performance Plastics Korea Co., Ltd. Seoul • South Korea	Phone: (82) 25 08 82 00 Fax: (82) 25 54 15 50	•	•	•	•	•	•	•	•		
* Saint-Gobain Performance Plastics Shanghai Co., Ltd. Shanghai • China	Phone: (86) 21 64 62 2800 Fax: (86) 21 64 62 27 81	•	•	•	•	•	•	•	•		
* Saint-Gobain Advanced Materials (Taiwan) Co., Ltd. Taipei • Taiwan	Phone: (886) 22 50 34 201 Fax: (886) 22 50 34 202	•	•	•	•	•	•	•	•		
* Grindwell Norton Ltd. Bangalore • India	Phone: (91) 80 847 2900 Fax: (91) 80 847 2905	•	•	•	•	•	•	•	•		
Saint-Gobain Advanced Materials (M) Sdn.Bhd Selangor Darul Ehsan • Malaysia	Phone: (60) 37 36 40 82/81 Fax: (60) 37 36 40 99	•	•	•	•	•	•	•	•		

* Manufacturing Facilities

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