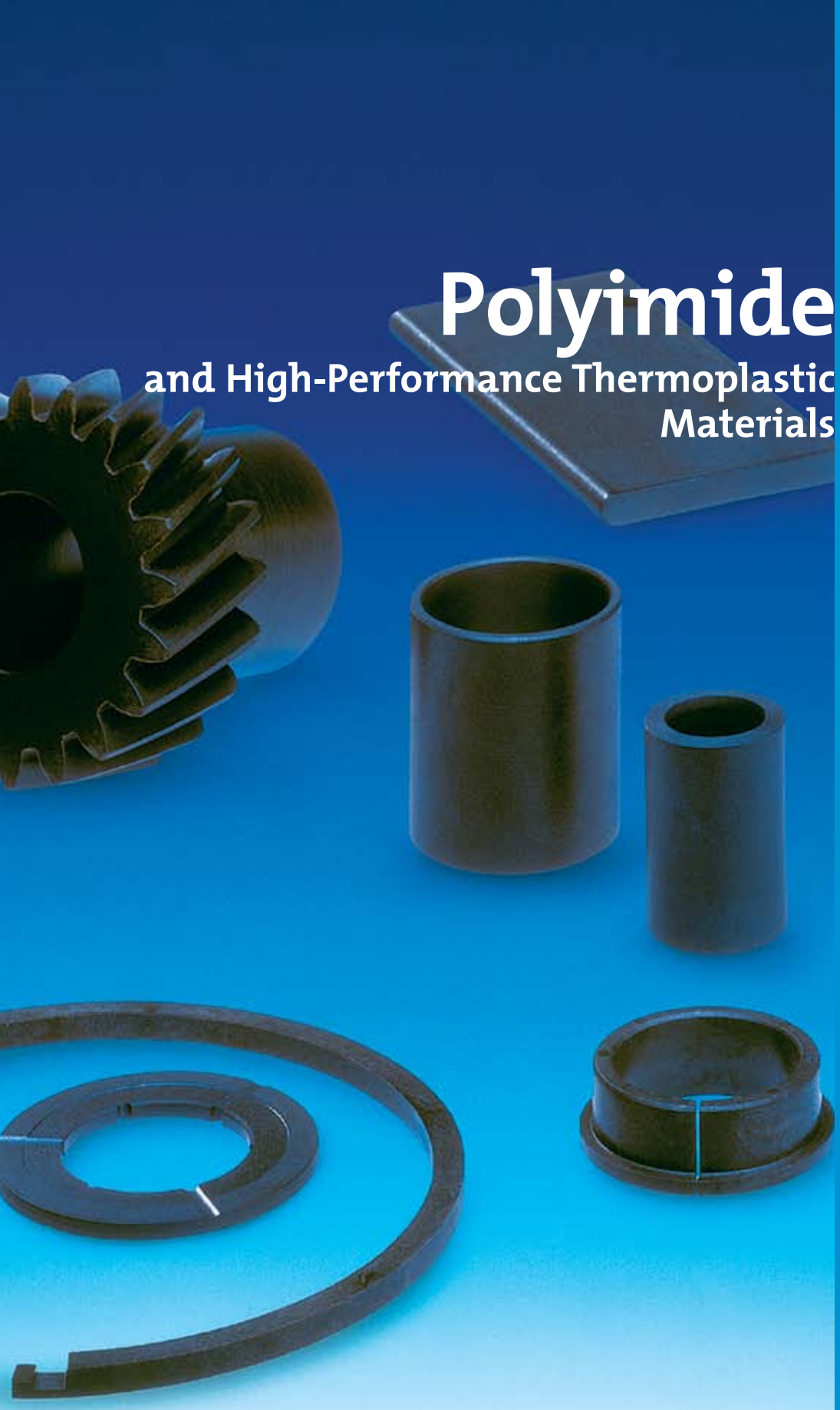

Polyimide and High-Performance Thermoplastic Materials

MELDIN®

- Temperature from Cryogenic to 600°F (315°C)
- Intermittently up to 900°F (482°C)
- Self-lubricating properties

Available as:

- Machined part
- Stock shape
- Custom molded

SAINT-GOBAIN
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MELDIN® 5000 Compounds

MELDIN® 5001

MELDIN® 5001 components offer superior strength in structural applications when electrical insulation combined with intricate part design is required. The melt characteristics of MELDIN® 5001 material allow for fine detail, regardless of part complexity.

MELDIN® 5320

Meldin® 5320 components supply substantial strength and rigidity. They maintain high tensile, flexural, and compressive properties, even at elevated temperatures.

MELDIN® 5055

Low-friction, wear-resistant bearings custom molded from MELDIN® 5055 compound perform at high loads and high temperatures with minimal deformation. MELDIN® 5055 is self-lubricating, operates quietly, and is resistant to most chemicals and fluids.

MELDIN® 5330

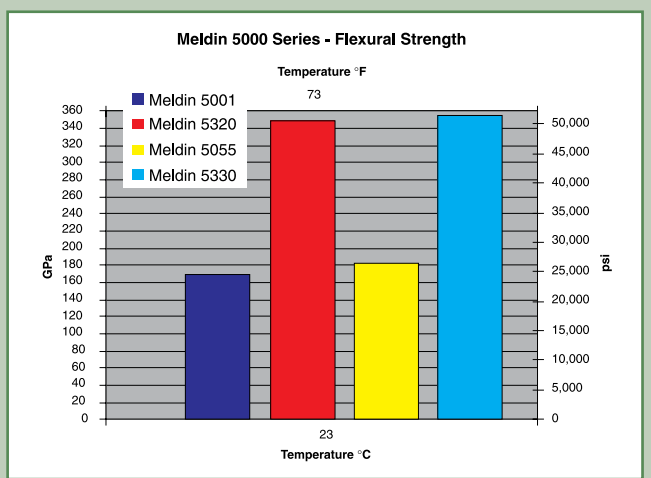
Specify MELDIN® 5330 when part requirements include structural integrity and high resistance to thermal expansion. This material exhibits good wear properties and dimensional stability, making it an excellent candidate for bearing applications.

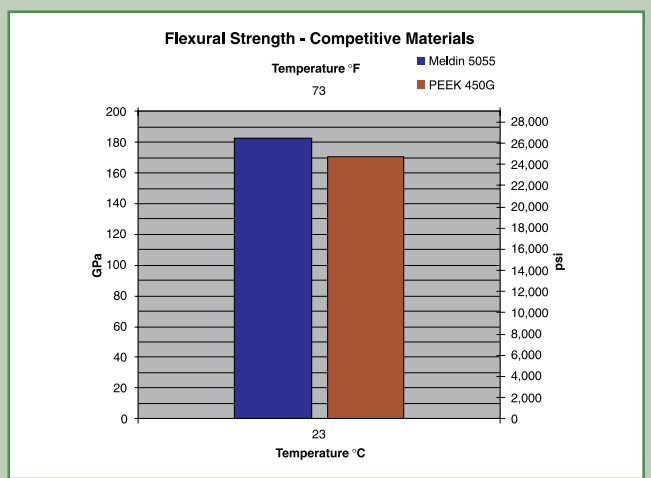
Product availability:

Basic shapes	☐
Finished parts	☑

Manufacturing processes:

Compression molding	☑
Injection molding	☐
Direct forming	☐
Machined parts	☑





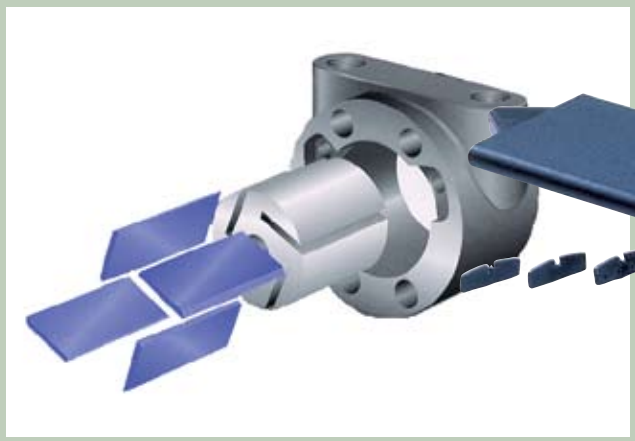
Applications of MELDIN® 5000

Transmission Thrust Washers and Rings

Potential applications for MELDIN® 5000 series materials are numerous in the transmissions of heavy and light vehicles. Mainly used as thrust washers or piston rings, the MELDIN® 5000 series offers high wear resistance and excellent self-lubrication characteristics for dry-running applications.

Compressor Valve Plates and Valve Rings

For compressor valve component applications, Meldin® 5000 series materials provide some parts with superior chemical compatibility, excellent deformation under load properties, superior wear resistance over those of other thermoplastic parts, and superior chemical resistance over those of some metallic parts.



Vanes for Air Motors and Pumps

Different MELDIN® grades are available depending on the temperatures, speeds, and housing materials of various applications. The MELDIN® vane out-performs carbon or phenolic vanes in terms of wear resistance and does not require any external lubricants.

Typical Properties of MELDIN® 5000

PROPERTY	TEST METHOD	ENGLISH (METRIC)	MELDIN® 5001	MELDIN® 5055	MELDIN® 5320	MELDIN® 5330
MECHANICAL @ RT						
Tensile Strength	ASTM D638	psi (MPa)	16,000 (110)	16.300	22,600 (156)	32.000 (220,5)
Tensile Modulus	ASTM D638	psi x 10^5 (GPa)	7.0 (4.8)	23.0 (15.9)		
Elongation	ASTM D638	%	2.8	1.2	2.7	1.5
Flexural Strength	ASTM D790	psi (MPa)	24,500 (169)	26,400 (182)	36,200 (250)	51,300 (354)
Flexural Modulus	ASTM D790	psi x 10^5 (GPa)	8.15 (5.6)	21.2 (14.5)	14.0 (9.6)	29 (20)
Compressive Strength	ASTM D695	psi (MPa)	30,000 (206.8)	18,000 (124)	31,000 (214)	34,500 (238)
Compressive Modulus	ASTM D695	psi x 10^5 (GPa)	4.3 (2.9)	4.55 (3.1)		
THERMAL						
Coefficient of Thermal Expansion						
75°F to 300°F (24°C to 149°C)	ASTM E831-93	in/in/°F (m/m/°C) x 10^{-5}	1.91 (3.4)	1.47 (2.6)	1.2 (2.15)	0.8 (1,44)
390°F to 570°F (199°C to 2999°C)	ASTM E831-93	in/in/°F (m/m/°C) x 10^{-5}	3.94 (7.1)	5.12 (9.2)		
Heat Deflection Temperature @ 264 psi (1.8 MPa)	ASTM D648	°F (°C)	491 (255)	600 (316)	600 (316)	600 (316)
Thermal Conductivity	ASTM F433	BTU in/hr ft^2 °F (W/m°C)		5.3 (.76)	2.95 (.42)	6.35 (.91)
ELECTRICAL						
Volume Resistivity	ASTM D257	Ohm-cm	2			
Dielectric Constant at 1 kHz	ASTM D150	—	3.4			
Dielectric Constant at 10 kHz	ASTM D150	—	3.4			
Dielectric Strength	ASTM D149	V/mil (MV/m)	433 (17)			
Dissipation Factor at 1 kHz	ASTM D150	—	0			
Dissipation Factor at 10 kHz	ASTM D150	—	.001			
Arc Resistance	ASTM D495	Seconds	135			
GENERAL						
Specific Gravity	ASTM D792	—	1.30	1.40	1.51	1.41
Hardness Rockwell A	ASTM D785	—				
Hardness Rockwell K	ASTM D785	—	50	24,9		
Hardness Rockwell M	ASTM D785	—			103	107
Water Absorption	ASTM D570	%	0.23	0.20	.11	0.6
Poisson's Ratio	—	—	0.36	0.42		
550°F (288°C)						
Flexural Strength	ASTM D790	psi (MPa)		2,100 (14.5)		
Flexural Modulus	ASTM D790	psi x10w^5 (GPa)		125,000 (.86)		

Customized Engineering Support and Solutions

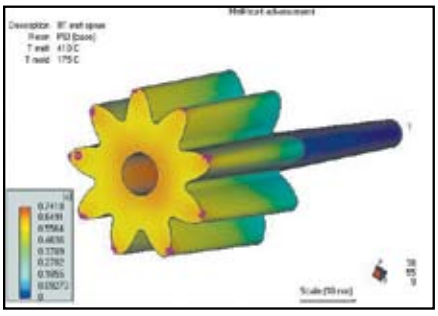
Saint-Gobain Performance Plastics uses its state-of-the-art testing and engineering equipment to support you in your most challenging applications.

Tribology Test Rigs

Tribology test rigs continuously measure material wear, coefficient of friction, and mating surface temperature over time. A wide range of mating surface materials, surface finishes, and surface hardnesses are available for testing. Test rig options include submerged (wet) testing, as well as externally heated mating surfaces to simulate hot environments.

Tribological Test Room

Tribology test room can operate 24 hours a day with continuous computer data acquisition.



Mold flow analysis is used for both engineering and process studies.

Saint-Gobain Performance Plastics Plants for MELDIN® Products

Bristol/USA

Kontich/Belgium

Logroño/Spain

Chemical Resistance of MELDIN®

	MELDIN® 2001	MELDIN® 2021	MELDIN® 2030	MELDIN® 2211	MELDIN® 3110	MELDIN® 3120
2-Butanene	●	●	●	●	●	●
Acetic Acid	●	●	●	●	●	●
Acetylene	●	●	●	●	●	●
Alkalines						
Ammonia						
Amyl Chloride	●	●	●	●	●	●
Analine	●	●	●	●	●	●
Aqua Regia	●	●	●	●	●	●
Benzaldehyde	●	●	●	●	●	●
Benzonitrile	●	●	●	●	●	●
Benzenesulfonic Acid	●	●	●	●	●	●
Bromine	●	●	●	●	●	●
Calcium Hypochlorite	●	●	●	●	●	●
Camphor Oil	●	●	●	●	●	●
Carbon Sulfide	●	●	●	●	●	●
Carbon Tetrachloride	●	●	●	●	●	●
Chloral Hydrate	●	●	●	●	●	●
Chloroacetic Acid	●	●	●	●	●	●
Chlorine or Bleaching Agents						
Chloroform	●	●	●	●		
Chlorosulfonic Acid	●	●	●	●		
Chromic Acid	●	●	●	●	●	●
Concentrated Oxidizing Acids	●	●	●	●	●	●
Creosote	●	●	●	●	●	●
Cresol	●	●	●	●	●	●
Decalin	●	●	●	●	●	●
Dichlorobenzene	●	●	●	●	●	●
Diethyl Ether	●	●	●	●	●	●
Dimethylamine	●	●	●	●	●	●
Dimethyl Sulfoxide	●	●	●	●	●	●
Ethyl Acetate	●	●	●	●	●	●
Ethylene & Propylene Dichloride	●	●	●	●	●	●
Ferric Chloride	●	●	●	●	●	●
Ferric Nitrate	●	●	●	●	●	●
Ferric Sulfate	●	●	●	●	●	●
Ferrous Sulfate	●	●	●	●	●	●
Fluoboric Acid	●	●	●	●	●	●
Flourinating Agents, strong	●	●				
Flourine >140˚F & Dry Gas >250˚F	●	●				
Fluosilicic Acid	●	●	●	●		
Hydrobromic Acid	●	●	●	●	●	●
Hydrochloric Acid					●	●
Hydrocyanic Acid	●	●	●	●	●	●
Hydrofluoric Acid					●	●
Hydrofluosilicic Acid	●	●	●	●	●	●
Hydrogen Fluoride, Dry >250˚F	●	●	●	●	●	●
Hydrogen Peroxide	●	●	●	●	●	●
Hydroxides						
Mercury of Silver salts	●	●	●	●	●	●
Methylene Chloride	●	●	●	●	●	●
MEK	●	●	●	●	●	●
Molten Alkali metals	●	●			●	●
Molten Anhydrous bases						
Nitric Acid (30%)					●	●
Nitrobenzene	●	●	●	●	●	●
Oleum	●	●	●	●	●	●
P-Dioxane	●	●	●	●	●	●
Partly Halogenated Hydrocarbons	●	●	●	●	●	●
Phenol (Diluted)	●	●	●	●	●	●
Phosphoric Acid	●		●	●	●	●
Potassium Chlorate	●	●	●	●	●	●
Potassium Cyanide	●	●	●	●	●	●
Potassium Dichromate	●	●	●	●	●	●
Potassium Hydroxide					●	●
Potassium Nitrate	●	●	●	●	●	●
Sodium Chlorate	●	●	●	●	●	●
Sodium Cyanide	●	●	●	●	●	●
Sodium Hydroxide					●	●
Sodium Nitrate	●	●	●	●	●	●
Stannous Chloride	●	●	●	●	●	●
Steam						
Sulfur Dioxide 5% + H2O	●	●	●	●	●	●
Sulfur, Molten	●	●	●	●	●	●
Sulfuric Acid (40%)	●	●	●	●	●	●
Tetralin	●	●	●	●		
Trichloroethylene	●	●	●	●		
Toluene	●	●	●	●	●	●
Trifluoroacetic Acid	●	●	●	●	●	●
Xylene	●	●	●	●	●	●
Zinc Chloride	●	●	●	●	●	●

MELDIN® 3130	MELDIN® 3140	MELDIN® 5001	MELDIN® 5320	MELDIN® 5055	MELDIN® 5330
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SAINT-GOBAIN
PERFORMANCE PLASTICS

Saint-Gobain Performance Plastics
386 Metacom Avenue
Bristol, RI 02809
Tel: 401-253-2000
Toll Free: 800-223-4966
Fax: 401-253-8211
www.plastics.saint-gobain.com

MELDIN® APPLICATION INQUIRY FORM

NOTE: Please attach any helpful comments/sketches

CUSTOMER INFORMATION

COMPANY:

STREET:

CITY, STATE. ZIP:

ENGINEERING CONTACT

TELEPHONE No. FAX No.

PURCHASING CONTACT:

TELEPHONE No. FAX No.

ACTION REQUIRED	DATE NEEDED	QUOTATION GENERALITIES
MATERIAL RECOMMENDATION ❑		QUOTE PRODUCTION QUANTITIES OF:
PROVIDE TECH DATA ON MATERIAL ❑		
PART DESIGN RECOMMENDATION ❑		SEND QUOTE TO:
PRODUCE PROTOTYPES ❑		QUOTE DUE DATE:

PRODUCT INFORMATION (ATTACH DRAWING OR SKETCH IF AVAILABLE)

DESIGN: NEW ❑ EXISTING ❑ **BEARING* SIZE:** UNITS: IN ❑ MM ❑
*For non-bearing application, attach drawing

IF EXISTING:

TYPE/BRAND: ID: OD:

MATERIAL: LENGTH: FLANGE OD:

PART/DRAWING No: FLANGE THICKNESS:

DESCRIBE END USES: OTHER DIMENSIONS:

DESIRED CHARACTERISTICS:

OTHER COMMENTS:

MELDIN® APPLICATION INQUIRY FORM

APPLICATION PARAMETERS

PART INSTALLATION

PRESS FIT ON OD:

SHRINK FIT ON ID:

MECHANICAL MEANS:

SLIP FIT:

BONDING:

OTHER (LIST):

SHAFT SPECIFICATIONS

DIAMETER (& TOLERANCE):

MATERIAL TYPE:

SURFACE FINISH:

HARDNESS:

HOUSING SPECIFICATIONS

DIAMETER (& TOLERANCE):

MATERIAL TYPE:

LENGTH (& TOLERANCE):

TEMPERATURE

TYPICAL: °F ❑ °C ❑

MAXIMUM: °F ❑ °C ❑

DURATION: Min. ❑ Hrs. ❑

MINIMUM: °F ❑ °C ❑

DURATION: Min. ❑ Hrs. ❑

MAXIMUM:

LOAD

RADIAL ❑ THRUST ❑

UNITS: LB ❑ PSI ❑ N/MM² ❑ OTHER:

CANTILEVERED ❑ IMPACT ❑

CONSTANT ❑ MISALIGNMENT ❑

TYPICAL:

MAXIMUM:

Duration:

MINIMUM:

Duration:

VELOCITY

UNITS: RPM ❑ FT/MIN ❑ M/SEC ❑

LINEAR/STROKE LENGTH:

NUMBER OF STROKES/MIN:

ROTARY:

DEGREE OF OSCILLATION:

NUMBER OF CYCLES/MIN:

OTHER:

RUNNING SURFACE: ID ❑ OD ❑ FACE ❑

ENVIRONMENT

DRY ❑ WATER ❑ LUBRICATED ❑

CLEAN ❑ DIRT ❑ VACUUM ❑

CHEMICALS (SPECIFY):

GASES (SPECIFY):

OIL (TYPE):

SERVICE LIFE

CURRENT:

DESIRED:

PRODUCT VALIDATION

BENCH: ❑

FIELD: ❑

BOTH: ❑

PRODUCT TESTING

TEST START DATE:

TEST DURATION:

		INJECTION MOLDING	NORGLIDE® BEARINGS	NORSLIDE®	OMNILIP™	OMNISEAL®	MELDIN®	RULON®	RAM EXTRUSION	HIGH PURITY PRODUCTS	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 Garden Grove, California • USA	Phone: (1) 714-630-5818 Fax: (1) 714-688-2614				•	•				•	•
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 Charnay-les-Macon • France	Phone: (33) 3 85 20 27 00 Fax: (33) 3 85 29 18 48									•	
*Saint-Gobain Performance Plastics Asti Nanterre • France	Phone: (33) 1 55 68 59 59 Fax: (33) 1 55 68 59 68		•	•						•	
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 Ceramicas Industrias Ltda. Vinhedo-SP • Brazil	Phone: (55) 19 3876 8153 Fax: (55) 19 3876 8077	•	•	•	•	•	•	•			
ASIA											
*Saint-Gobain KK-Performance Plastics Tokyo • Japan	Phone: (81) 33 26 30 285 Fax: (81) 33 26 30 286		•	•	•	•	•	•		•	•
*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 54 72 15 68 Fax: (86) 21 54 72 60 35	•	•	•	•	•	•	•		•	•
*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*

SAINT-GOBAIN
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