



# RÖCHLING

Engineering Plastics

## Engineering Plastics and High Performance Materials



**Innovation.**



**Competence.**



**Quality.**

Semi-Finished Thermoplastics

## Competence. Quality. Innovation.

Röchling Engineering Plastics is a leading global manufacturer of engineering and high-performance plastics. From acetals and nylons to a full range of high-performance and specialty materials, we provide stock shapes for machining into parts that are used in almost every major industry and segment.

### Quality Assurance

Quality through consistency and performance is critical to us, especially due to the nature of the applications that our products are used in. We are certified to ISO 9001: 2008 and with a strong quality program in place, we follow detailed procedures throughout each department to ensure that our products meet all of the necessary industry requirements.

- lot and batch traceability
- ultra sonic testing
- ASTM specifications
- material certifications
- thickness, diameter and flatness tolerance requirements
- physical properties testing and validation

### Customer Support

Choosing the best material for a specific application can be a challenge. Our experienced staff can guide you in this process by determining various criteria including: continuous operating temperature, wear or structural requirements, dimensional stability and specification or regulatory compliance.



Selection Table		
Tradename	Color / Grade	Description
Sustarin® C	Natural, Black, Custom Colors	Acetal Copolymer
Sustarin® H	Natural, Black, Custom Colors	Acetal Homopolymer (Delrin®)
Sustarin® H AF	Brown , AF Blend (13% PTFE)	Acetal Homopolymer
Sustarin® H AF DE588	Meets military specifications (NAVSEA)	Acetal Homopolymer
Sustamid® 6G	Natural, MD, Blue, Oil-filled	Cast Nylon
Sustamid® 66	Natural, Black, MD, 30% Glass-filled	Extruded Nylon
SustaPEEK	Natural, Black, Glass-filled, Carbon-filled	Polyetheretherketone
SustaPEI	Natural, Black, Glass-filled	Polyetherimide (Ultem®)
Sustanat PC	Natural, Black, 20% Glass- filled	Polycarbonate, Machine Grade
Sustatron PPS	Natural	Polyphenylene Sulfide
SustaABS	Natural, Black	Acrylonitrile Butadiene, Styrene
Sustadur PET	Natural	Polyethylene Terephthalate
Sustadur PBT	Natural	Polybutylene Terephthalate
SustaPVDF	Natural	Polyvinylidene Fluoride
Sustatron PSU	Natural	Polysulfone
Sustason PPSU	Natural	Polyphenylsulfone (Radel®)
SustaPPO	Black	Noryl®



#### Sheets

##### extruded

3/8" – 6" x 24" x 48"  
1/2" – 2" x 48" x 96"  
1/2" – 2" x 48" x 120"

##### calandered

1/8" – 1/2" x 48" x 96"  
1/8" – 1/2" x 48" x 120"

##### cast

1/4" – 4" x 24" x 48"  
1/4" – 4" x 48" x 96"



#### Rods

##### extruded

1/4" – 6" dia, 10 ft lengths  
7" – 12" dia, 3 ft lengths

##### cast

2" – 4-1/2" dia, 10 ft lengths  
5" – 12-1/4" dia, 4 ft lengths  
13" – 23-1/2" dia, 2 ft lengths



#### Tubes

##### extruded

3/4" OD x 7/16" ID up to  
20-1/2" OD x 13-1/2" ID

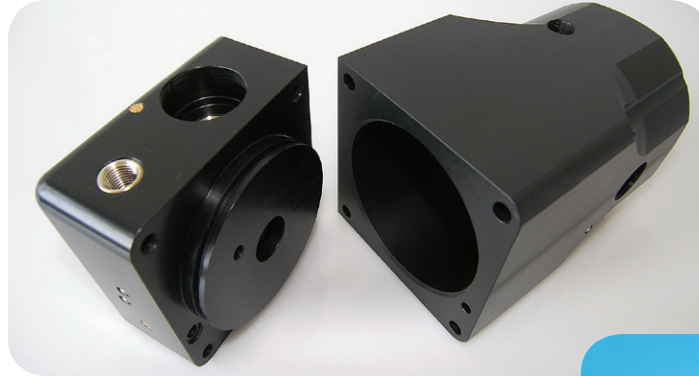
##### cast

4" OD x 2" ID up to  
42" OD x 37" ID

**Sustarin® Acetal provides outstanding strength and stiffness in copolymer, homopolymer and specialty grades.**

Excellent mechanical and electrical properties, particularly strength and dimensional stability provide solutions to most wear and structural component applications.

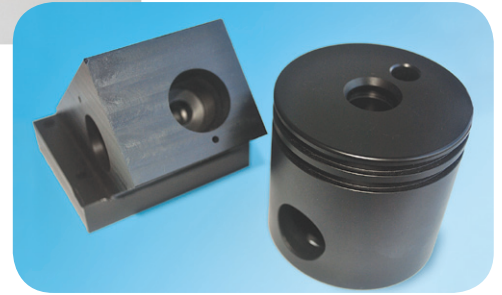
- bushings and bearings
- rollers and gears
- valves and manifolds
- scraper blades
- electrical components



Electrical component machined from Sustarin® C Black



Sustarin® C Natural bushings



Sustarin® C Black pump valves

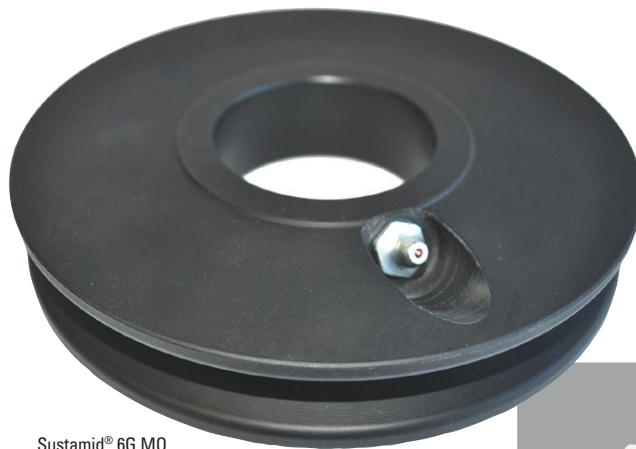


Valves and seals machined from Sustarin® H AF

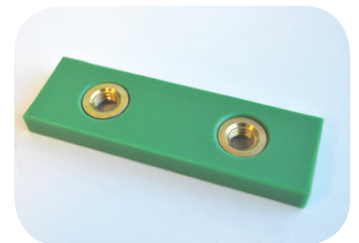
**Sustamid® Nylon, available in cast and extruded stock shapes, is often the first material of choice for bearing and wear applications.**

The unique combination of physical properties such as sliding, toughness and abrasion is ideal for parts used in construction, material handling and food processing.

- wear pads and sheaves
- gears and sprockets
- sliding pads
- bushings and bearings
- rollers



Sustamid® 6G M0 sheaves for cranes and lifts



Sliding pad for heavy equipment machined from Sustaglide



Split bearing block machined from Sustamid® 6G OL



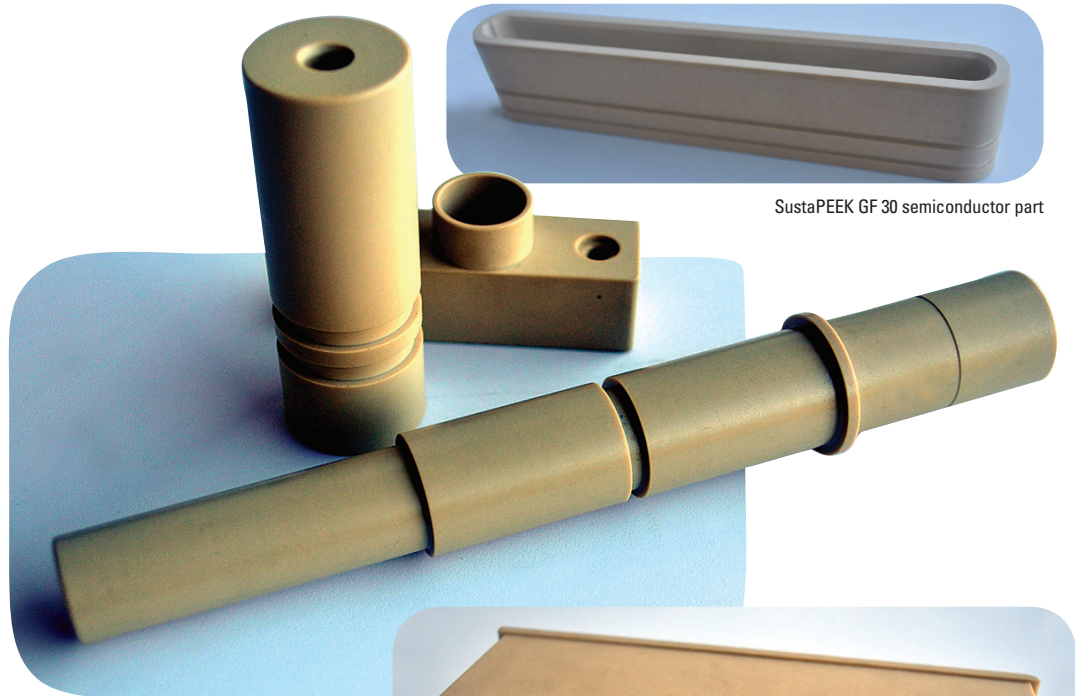
Sustamid® 6G Natural for gears and sprockets

**High Performance Materials and Specialty Products exhibit superior properties and resilience in the most demanding applications.**

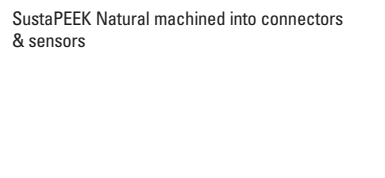
Our High Performance Plastics are generally defined by their ability to maintain their physical properties under thermal, chemical or electrical stress, while operating at elevated temperatures above 300° F. These materials typically feature high strength and dimensional stability as well as outstanding chemical resistance and electrical properties. They include PEEK, PEI, PSU, PPSU, PPS and PVDF.

We also offer Specialty Plastics such as PC, PET and PBT that provide unique properties for specific applications and industries.

- down hole oil well parts
- semiconductor processing
- medical devices and component parts
- fluid handling manifold and connectors
- aircraft components
- electronic insulators
- valves and seals



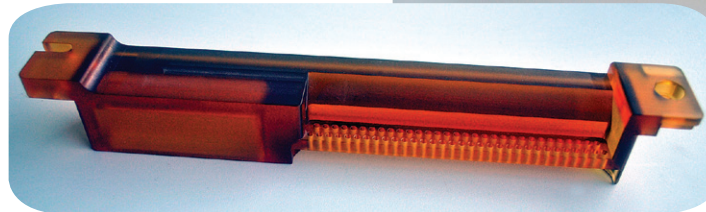
SustaPEEK GF 30 semiconductor part



SustaPEEK Natural machined into connectors & sensors



Manifold block machined from SustaPEI GF 30



SustaPEI Natural electrical component



Sustanat PC optical part

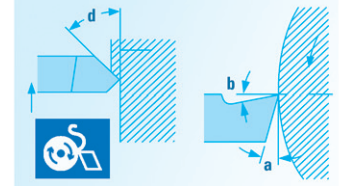
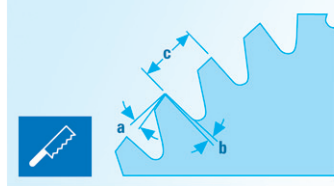


SustaPVDF pump parts



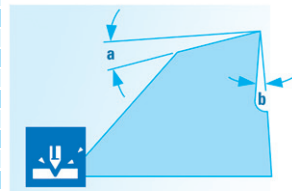
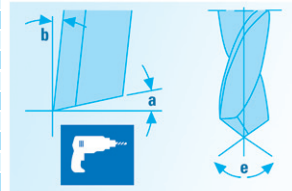
Sustadur PET machined into food processing components

# Machining Guidelines



		Sawing								Turning									
		a clearance angle (°)		b rake angle (°)		cutting speed (ft/min)		tooth pitch (in)		a clearance angle (°)		b rake angle (°)		d setting angle (°)		cutting speed (ft/min)		feed (in/rev)	
		min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
POM C	Sustarin C	20	30	0	5	131	328	.079	.197	6	8	0	5	45	60	984	1969	.004	.157
	Sustarin C ESD 90	20	30	0	5	131	328	.079	.197	6	8	0	5	45	60	984	1969	.004	.157
	Sustarin C ESD 60	20	30	0	5	131	328	.079	.197	6	8	0	5	45	60	984	1969	.004	.157
	Sustarin C TF	20	30	0	5	131	328	.079	.197	6	8	0	5	45	60	984	1969	.004	.157
POM H	Sustarin H	20	30	0	5	131	328	.079	.197	6	8	0	5	45	60	984	1969	.004	.157
	Sustarin H AF	20	30	0	5	131	328	.079	.197	6	8	0	5	45	60	984	1969	.004	.157
	Sustarin H AF - DE588	20	30	0	5	131	328	.079	.197	6	8	0	5	45	60	984	1969	.004	.157
PA 6G	Sustamid 6G	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
	Sustamid 6G Blue	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
	Sustamid 6G MoS2	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
	Sustamid 6G OL	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
	Sustaglide	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
PA 66	Sustaglide Plus	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
	Sustamid 66	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
	Sustamid 66 GF 30	15	30	10	15	98	328	.118	.197	6	8	2	8	45	60	492	656	.004	.020
ABS	Sustamid 66 MO	20	30	2	5	131	328	.118	.315	6	10	0	5	45	60	820	1640	.004	.020
	SustaABS	15	30	0	5	98	328	.079	.315	5	15	25	30	45	60	656	1640	.008	.020
PPO	SustaPPO	15	30	0	5	98	328	.079	.315	5	15	25	30	45	60	656	1640	.008	.020
	SustaPEI	15	30	0	4	98	262	.079	.315	6	8	2	8	45	60	1148	1312	.004	.012
PEI	SustaPEI GF 30	15	30	10	15	98	328	.118	.315	6	8	2	8	45	60	492	656	.004	.020
	Sustason PSU	15	30	0	4	98	262	.079	.197	6	8	2	8	45	60	1148	1312	.004	.012
PSU	Sustason PPSU	15	30	0	4	98	262	.079	.197	6	8	2	8	45	60	1148	1312	.004	.012
	Sustatron PPS	15	30	0	5	1640	2625	.118	.197	6	8	0	5	45	60	131	1148	.004	.012
PPS	SustaPEEK	15	30	0	5	98	328	.118	.197	6	8	0	5	45	60	820	1640	.004	.197
	SustaPEEK GF 30	15	30	10	15	98	328	.118	.197	6	8	2	8	45	60	492	656	.004	.197
PEEK	SustaPEEK CF 30	15	30	10	15	98	328	.118	.197	6	8	2	8	45	60	492	656	.004	.197
	SustaPVDF	20	30	5	8	131	328	.079	.197	6	8	5	8	45	60	492	1640	.004	.197
PVDF	Sustadur PBT	15	30	5	8	131	328	.118	.315	5	10	0	5	45	60	984	1312	.008	.016
	Sustadur PET	15	30	5	8	131	328	.118	.315	5	10	0	5	45	60	984	1312	.008	.016
PET	Sustadur PET TF	15	30	5	8	131	328	.118	.315	5	10	0	5	45	60	984	1312	.008	.016
	Sustanat PC	15	30	5	80	98	262	.118	.315	5	10	6	8	45	60	820	984	.004	.020
PC	Sustanat PC GF 20	15	30	5	80	98	262	.118	.315	5	10	6	8	45	60	820	984	.004	.020

		Drilling								Milling						
		a clearance angle (°)		b rake angle (°)		e acute angle (°)	cutting speed (ft/min)		feed (in/rev)		a clearance angle (°)		b rake angle (°)		cutting speed (ft/min)	
		min	max	min	max		min	max	min	max	min	max	min	max	min	max
POM C	Sustarin C	5	10	15	30	90	164	656	.004	.012	5	15	5	15	820	1640
	Sustarin C ESD 90	5	10	15	30	90	164	656	.004	.012	5	15	5	15	820	1640
	Sustarin C ESD 60	5	10	15	30	90	164	656	.004	.012	5	15	5	15	820	1640
	Sustarin C TF	5	10	15	30	90	164	656	.004	.012	5	15	5	15	820	1640
POM H	Sustarin H	5	10	15	30	90	164	656	.004	.012	5	15	5	15	820	1640
	Sustarin H AF	5	10	15	30	90	164	656	.004	.012	5	15	5	15	820	1640
	Sustarin H AF - DE588	5	10	15	30	90	164	656	.004	.012	5	15	5	15	820	1640
PA 6G	Sustamid 6G	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
	Sustamid 6G Blue	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
	Sustamid 6G MoS2	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
	Sustamid 6G OL	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
	Sustaglide	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
PA 66	Sustaglide Plus	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
	Sustamid 66	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
	Sustamid 66 GF 30	6	6	5	10	120	262	328	.004	.012	15	30	6	10	262	1640
ABS	Sustamid 66 MO	5	15	10	20	90	164	492	.004	.012	10	20	5	15	820	1640
	SustaABS	8	12	10	30	90	164	656	.008	.012	5	10	0	10	984	1640
PPO	SustaPPO	8	12	10	30	90	164	656	.008	.012	5	10	0	10	984	1640
	SustaPEI	3	10	10	20	90	66	262	.004	.012	2	10	1	5	820	1640
PEI	SustaPEI GF 30	6	6	5	10	120	262	328	.004	.012	15	30	6	10	262	1640
	Sustason PSU	3	10	10	20	90	66	262	.004	.012	2	10	1	5	820	1640
PSU	Sustason PPSU	3	10	10	20	90	66	262	.004	.012	2	10	1	5	820	1640
	Sustatron PPS	5	10	10	30	90	65	191	.004	.012	5	15	6	10	820	1640
PPS	SustaPEEK	5	10	10	30	90	164	656	.004	.012	5	15	6	10	820	1640
	SustaPEEK GF 30	6	6	5	10	120	262	328	.004	.012	15	30	6	10	262	1640
PEEK	SustaPEEK CF 30	6	6	5	10	120	262	328	.004	.012	15	30	6	10	262	1640
	SustaPVDF	10	16	5	20	130	492	656	.004	.012	5	15	5	15	820	1640
PVDF	Sustadur PBT	5	10	10	20	90	164	328	.008	.012	5	15	5	15	984	1640
	Sustadur PET	5	10	10	20	90	164	328	.008	.012	5	15	5	15	984	1640
PET	Sustadur PET TF	5	10	10	20	90	164	328	.008	.012	5	15	5	15	984	1640
	Sustanat PC	8	10	10	20	90	164	328	.008	.012	10	20	5	15	984	1640
PC	Sustanat PC GF 20	8	10	10	20	90	164	328	.008	.012	10	20	5	15	984	1640



# Material Selection and Properties

	Trade Name	Common Name	Chemical Reference	Specific Gravity	Tensile Strength	Tensile Modulus	Tensile Elongation	Flexural Strength	Flexural Modulus	Shear Strength	Compressive Strength
				D792	D638	D638	D638	D790	D790	D732	D695
				–	PSI	PSI	%	PSI	PSI	PSI	PSI
POM C	Sustarin C	Acetal Copolymer	POM C	1.41	9,500	400,000	40	12,000	400,000	8,000	15,000
	Sustarin C ESD 90	Acetal Copolymer Static Dissipative	POM C	1.33	11,000	425,000	30	18,000	450,000	6,000	8,000
	Sustarin C ESD 60	Acetal Copolymer Conductive	POM C	1.44	11,400	425,000	5	16,000	1,050,000	8,000	15,000
POM H	Sustarin H	Acetal Homopolymer "Delrin"	POM H	1.42	10,500	420,000	40	12,000	400,000	9,000	16,000
	Sustarin H AF	Delrin AF Blend	POM H + 13% PTFE Fiber	1.50	8,000	410,000	20	12,500	450,000	–	15,000
	Sustarin H AF – DE588	Delrin AF –DE588	POM H + PTFE	1.54	6,630	540,000	30	12,500	405,000	–	12,600
PA 6G	Sustamid 6G	Cast Nylon	PA 6	1.14	12,000	550,000	25	15,000	420,000	10,500	15,500
	Sustamid 6G Blue	Cast Nylon Blue	PA 6 Blue	1.14	12,000	400,000	25	15,000	420,000	10,500	15,500
	Sustamid 6G MO	Cast Nylon MoS <sub>2</sub> Filled	PA 6 + MoS <sub>2</sub>	1.15	12,500	460,000	35	16,000	450,000	11,000	13,000
	Sustamid 6G OL	Cast Nylon Oil Filled	PA 6 + Oil	1.15	11,000	370,000	30	14,000	380,000	8,000	13,500
PA 66	Sustamid 66	Extruded Nylon	PA 66	1.14	12,000	400,000	40	15,000	420,000	10,000	12,500
	Sustamid 66 GF 30	Extruded Nylon Glass Filled 30%	30% Glass Filled PA 66	1.34	22,500	1,200,000	6	26,000	1,100,000	–	19,000
	Sustamid 66 MO	Extruded Nylon MoS <sub>2</sub> Filled	PA 66 + MoS <sub>2</sub>	1.15	12,000	450,000	25	17,000	460,000	10,500	16,000
ABS	SustaABS	ABS	ABS	1.04	6,100	310,000	40	10,500	340,000	–	7,600
PPO	SustaPPO	Noryl EN 265	PPO Modified	1.08	9,400	350,000	30	13,400	360,000	–	–
PEI	SustaPEI	Ultem 1000	PEI	1.27	16,700	480,000	80	20,000	500,000	15,000	22,000
	SustaPEI GF 30	Ultem Glass-Filled 30%	30% Glass Filled PEI	1.51	20,000	900,000	3	33,000	950,000	–	31,000
PSU	Sustason PSU	Polysulfone	PSU	1.24	10,200	360,000	30	15,400	390,000	9,000	13,900
PPSU	Sustason PPSU	Radel R	PPSU	1.29	11,000	390,000	30	15,500	350,000	9,000	14,000
PPS	Sustatron PPS	PPS	PPS	1.35	13,000	480,000	15	21,000	575,000	9,000	21,000
PEEK	SustaPEEK	PEEK	PEEK	1.32	16,000	500,000	20	25,000	600,000	7,700	18,000
	SustaPEEK GF 30	PEEK Glass Filled 30%	30% Glass Filled PEEK	1.51	24,000	1,300,000	3	28,000	1,350,000	14,000	26,000
	SustaPEEK CF 30	PEEK Carbon Filled 30%	30% Carbon Fiber Filled PEEK	1.41	20,000	1,100,000	5	25,000	1,300,000	–	29,000
PVDF	SustaPVDF	Kynar 740	PVDF	1.78	7,000	250,000	100	8,000	290,000	–	10,500
PBT	Sustadur PBT	PBT	PBT	1.31	8,000	425,000	30	14,000	425,000	–	–
PET	Sustadur PET	PET	PET	1.41	12,000	460,000	30	17,000	480,000	8,000	15,000
	Sustadur PET TF	PET + PTFE	PET + PTFE	1.44	10,500	377,000	5	14,000	360,000	8,500	15,000
PC	Sustanat PC	Polycarbonate	PC	1.20	10,000	320,000	75	13,000	340,000	9,000	11,500
	Sustanat PC GF 20	Polycarbonate Glass Filled 20%	20% Glass Filled PC	1.35	16,000	860,000	6	19,000	800,000	–	16,000

Test state: Dry. The specified electrical characteristic values were measured on the natural-colored, dry material. In the case of other colorings (particularly black) or moist material, significant changes in the electrical characteristic values can occur.

The short-term max. service temperature applies only to applications with extremely low loading over a few hours. The long-term max. service temperature is based on the

thermal aging of the plastics due to oxidation, which results in a decrease in the mechanical properties.

Temperatures are specified which, after a minimum period of 5000 hours, cause a decrease in the tensile strength (measured at room temperature) by 50% compared with the initial value. This value does not provide any information about the mechanical strength of the material at high application

temperatures. In the case of thick-walled parts, oxidation at high temperatures only affects the surface layer, which can be better protected by adding antioxidants. The core area of the parts always remains intact. The minimum service temperature is determined decisively by a possible shock or impact load during use.

The specified values refer to low impact loading. The specified values have been

calculated as average values on the basis of numerous individual measurements and correspond to our present state of knowledge. They merely serve as information about our products and as guidance values when choosing materials. They are by no means to be construed as a legally binding promise of any specific properties or suitability for specific purposes.

Since the properties are also governed by

Rockwell Hardness	Rockwell Hardness	Durometer Shore D	Izod Impact Notched	Coefficient of Friction	Coefficient of Linear Thermal Expansion	Heat Deflection Temperature @ 66 psi	Heat Deflection Temperature @ 264 psi	Melting Point	Continuous Use	Thermal Conductivity	Volume Resistivity	Dielectric Strength	Dielectric Constant	Flammability	Dissipation Factor	Water Absorption 24 hours	Water Absorption Saturation	FDA Compliance
D785	D785	D2240	D256		D696	D648	D648				D257	D149	D150	UL 94	D150	D570	D570	
M	R	–	ft. lb/in	(dry vs. steel) Dynamic	in/in/°F	°F	°F	°F	°F	BTU in/hr/ft <sup>2</sup> /°F	ohm-cm	volts /mil	1 MHz		1 MHz	% by weight	% by weight	
M88	R120	D85	1.2	0.21	5.5 x 10 <sup>-5</sup>	320	225	330	180	1.6	10 <sup>6</sup>	450	3.8	HB	0.004	0.2	0.9	Yes
M86	R120	D86	1	0.2	4.8 x 10 <sup>-5</sup>	–	250	330	180	1.7	10 <sup>6</sup> –10 <sup>11</sup>	400	3.7	HB	0.005	1	2	No
M86	R120	D86	1	0.2	4.4 x 10 <sup>-5</sup>	–	300	330	200	1.7	10 <sup>4</sup>	400	3.7	HB	0.005	0.5	1	No
M89	R121	D83	1.2	0.12	6.7 x 10 <sup>-5</sup>	290	242	347	185	2	10 <sup>6</sup>	400	3.1	HB	–	0.2	0.7	Yes
M85	R115	D85	.7	–	5.1 x 10 <sup>-5</sup>	334	248	347	185	2	10 <sup>6</sup>	450	3.7	HB	0.009	0.2	0.8	No
M50	R110	D76	–	–	4.4 x 10 <sup>-5</sup>	334	244	350	185	2	10 <sup>6</sup>	400	3.1	HB	0.009	0.2	0.8	No
M85	R115	D78	0.6	0.22	4.5 x 10 <sup>-5</sup>	370	195	450	200	1.7	>10 <sup>13</sup>	500	3.8	HB	–	1	8.5	Yes
M85	R115	D78	0.6	0.22	4.5 x 10 <sup>-5</sup>	370	195	450	230	1.7	>10 <sup>13</sup>	500	3.8	HB	–	1	8.5	No
M80	R117	D80	0.6	0.22	4.0 x 10 <sup>-5</sup>	370	200	430	200	1.7	>10 <sup>12</sup>	410	3.8	HB	–	0.7	7	No
M85	R115	D74	1.2	0.12	5.0 x 10 <sup>-5</sup>	380	200	430	210	1.7	>10 <sup>13</sup>	500	3.7	HB	–	1	5	No
M85	R121	D80	0.6	0.25	4.5 x 10 <sup>-5</sup>	390	195	500	220	1.7	>10 <sup>13</sup>	350	3.8	HB	0.02	1	8.5	Yes
M101	R122	–	1.5	0.31	1.7 x 10 <sup>-5</sup>	485	380	500	220	2	>10 <sup>13</sup>	350	3.5	HB	0.018	0.7	5.5	No
M85	R115	D85	0.6	0.23	4.0 x 10 <sup>-5</sup>	470	195	495	220	1.7	>10 <sup>13</sup>	350	3.8	HB	0.02	1	8.5	No
–	R102	–	4.03	0.35	4.89 x 10 <sup>-5</sup>	230	203	–	170	1.2	10 <sup>6</sup>	450	3.2	HB	0.015	0.45	0.7	No
–	R119	–	3.5	0.39	3.3 x 10 <sup>-5</sup>	289	260	–	220	1.6	10 <sup>7</sup>	500	2.7	V-1	0.001	0.07	0.2	No
M114	R123	D86	0.6	0.2	3.1 x 10 <sup>-5</sup>	405	395	460	340	1	10 <sup>6</sup>	830	3.2	V-0	0.001	0.25	1.25	Yes
M115	R127	D86	1	0.24	1.1 x 10 <sup>-5</sup>	414	410	442	340	1.8	10 <sup>6</sup>	770	3.7	V-0	0.0016	0.2	0.9	No
M75	R125	D80	1.3	0.36	3.1 x 10 <sup>-5</sup>	359	345	–	300	1.7	5.0 x 10 <sup>16</sup>	425	3.06	V-0	0.005	0.3	0.6	Yes
M80	R120	D80	13	–	3.1 x 10 <sup>-5</sup>	417	420	424	320	2.42	10 <sup>6</sup>	400	3.4	V-0	0.002	0.37	1.1	Yes
M95	R125	D85	0.5	–	2.8 x 10 <sup>-5</sup>	400	230	535	425	2	4.5 x 10 <sup>16</sup>	540	3	V-0	0.001	0.01	0.03	–
M105	R126	D85	1.2	0.4	2.6 x 10 <sup>-5</sup>	360	320	630	480	1.73	10 <sup>5</sup>	480	3.3	V-0	0.003	0.1	0.5	Yes
M105	R126	D86	1.4	–	1.2 x 10 <sup>-5</sup>	–	500	645	510	2.98	10 <sup>6</sup>	500	–	V-0	–	0.1	0.3	No
M102	R124	D93	1	0.2	1.0 x 10 <sup>-5</sup>	–	520	645	480	6.3	<10 <sup>5</sup>	32	3.3	V-0	–	0.06	0.3	–
M75	R84	D77	3	0.58	6.6 x 10 <sup>-5</sup>	270	230	335	300	0.75	10 <sup>4</sup>	1600	8.5	V-0	0.06	0.03	0.05	Yes
M72	–	–	0.6	–	4.0 x 10 <sup>-5</sup>	320	175	430	230	1.4	>10 <sup>13</sup>	400	3	HB	–	0.25	0.4	Yes
M93	R125	D87	0.5	0.2	3.3 x 10 <sup>-5</sup>	338	240	490	230	1.8	10 <sup>6</sup>	385	3.1	HB	0.02	0.07	0.7	Yes
M94	–	D80	0.4	0.19	4.5 x 10 <sup>-5</sup>	338	180	491	210	1.9	10 <sup>6</sup>	400	3.2	HB	0.02	0.06	0.47	–
M75	R126	D80	10	0.38	3.8 x 10 <sup>-5</sup>	295	280	310	250	1.3	>10 <sup>13</sup>	380	3.2	V-0	0.006	0.15	0.35	No
M91	R122	D87	2	0.22	1.5 x 10 <sup>-5</sup>	298	295	330	260	1.47	10 <sup>7</sup>	490	3.13	V-1	0.0009	0.16	0.29	No

the dimensions of the semi-finished products and the degree of crystallization (e.g. nucleation through pigments), the actual values of the properties of a specific product can differ slightly from the information specified.

The following applies for polyamides: As a result of the absorption of moisture, the mechanical properties change, the material becomes tougher, more shock-resistant, the

modulus of elasticity diminishes. Depending on the ambient atmosphere, temperature and time for the moisture to be absorbed, only one specific surface layer is however affected by the changes in properties. In the case of thick-walled parts, the core area remains unchanged.

The mechanical properties of fiber-reinforced materials have been calculated on injection-molded test specimens in grain direction. For

the design of structures and the definition of material specifications, we are happy to supply you with appropriate information for your application upon request.

FDA Compliance based upon unfilled resins. Any special colors or additives can affect the compliance.

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