

PEBAX®

5533 SP 01

Polyether block amide **Pebax® 5533 SP 01 resin** is a thermoplastic elastomer made of flexible polyether and rigid polyamide. This SP grade has been developed to be heat and UV resistant.

PROPERTIES	DRY / COND	UNIT	TEST STANDARD
RHEOLOGICAL PROPERTIES			
Molding Shrinkage, parallel	1.2 / *	%	ISO 294-4, 2577
Molding Shrinkage, normal	1.4 / *	%	ISO 294-4, 2577
MECHANICAL PROPERTIES			
Tensile Modulus	170 / 165	MPa	ISO 527-1/-2
	24700 / 23900	psi	
Yield stress	12 / 12	MPa	ISO 527-1/-2
	1740 / 1740	psi	
Yield strain	25 / 25	%	ISO 527-1/-2
Nominal Strain at Break	>50 / >50	%	ISO 527-1/-2
Stress at 10% Elongation	10 / *	MPa	ISO 527-1/-2
	1450 / *	psi	
Stress at 100% Elongation	14 / *	MPa	ISO 527-1/-2
	2030 / *	psi	
Strain at Break TPE	>300 / *	%	ISO 527-1/-2
Stress at Break TPE	52 / *	MPa	ISO 527-1/-2
	7540 / *	psi	
Compression Set at 23 °C, 24h	43 / *	%	ISO 815
Tear Strength	106 / *	kN/m	ISO 34-1
Abrasion Resistance	47 / *	mm ³	ISO 4649
Shore D Hardness	50 / *	-	ISO 868
Charpy Impact Strength, +23°C	No Break / No Break	kJ/m ²	ISO 179/1eU
Charpy Impact Strength, -30°C	No Break / No Break	kJ/m ²	ISO 179/1eU
Charpy Notched Impact Strength, +23°C	No Break / No Break	kJ/m ²	ISO 179/1eA
Charpy Notched Impact Strength, -30°C	No Break / No Break	kJ/m ²	ISO 179/1eA
THERMAL PROPERTIES			
Melting Temperature, 10°C/min	159 / *	°C	ISO 11357-1/-3
Temp. of Deflection Under Load, 0.45 MPa	66 / *	°C	ISO 75-1/-2
	151 / *	°F	
Vicat Softening Temperature, 50°C/h 50N	66 / *	°C	ISO 306
	151 / *	°F	

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Coeff. of Linear Thermal Expansion, parallel	170 / *	E-6/K	ISO 11359-1/-2
ELECTRICAL PROPERTIES			
Relative Permittivity, 100Hz	9 / -	-	IEC 60250
Relative Permittivity, 1MHz	5 / -	-	IEC 60250
Dissipation Factor, 100Hz	1110 / -	E-4	IEC 60250
Dissipation Factor, 1MHz	1020 / -	E-4	IEC 60250
Volume Resistivity	3.2E11 / -	Ohm*m	IEC 60093
Surface Resistivity	* / 3E12	Ohm	IEC 60093
Dielectric (Electric) Strength	38.5 / -	kV/mm	IEC 60243-1
	978 / -	kV/in	
Comparative Tracking Index	* / 600	-	IEC 60112
OTHER PROPERTIES			
Water Absorption	1.2 / *	%	Sim. to ISO 62
Humidity Absorption	0.6 / *	%	Sim. to ISO 62
Density	1010 / 1010	kg/m ³	ISO 1183
	1.01 / 1.01	g/cm ³	
Spec. heat capacity of melt	2800	J/(kg K)	-
Thermal conductivity of melt	0.18	W/(m K)	-
Density of melt	830	kg/m ³	-
	51.8	lb/ft ³	

MAIN APPLICATIONS:

- Athletic foot wear components
- Ski shoes
- High performance power trasmission belts

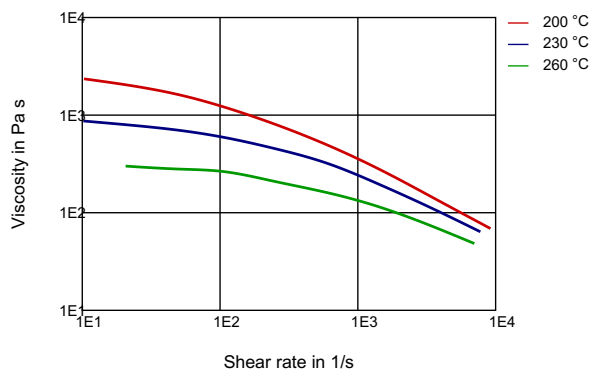
PACKAGING:

This grade is delivered dried in sealed packaging (20 or 25 kg bags) ready to be processed.

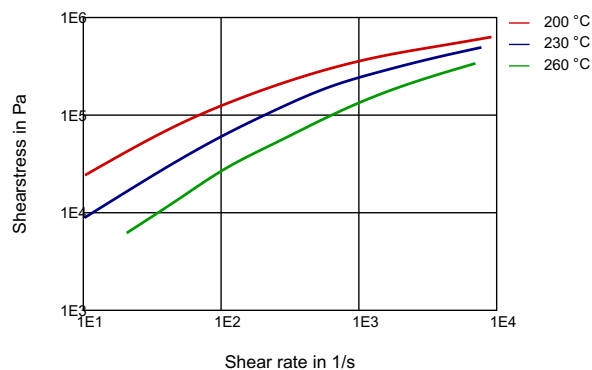
PEBAX® 5533 SP 01

DIAGRAMS

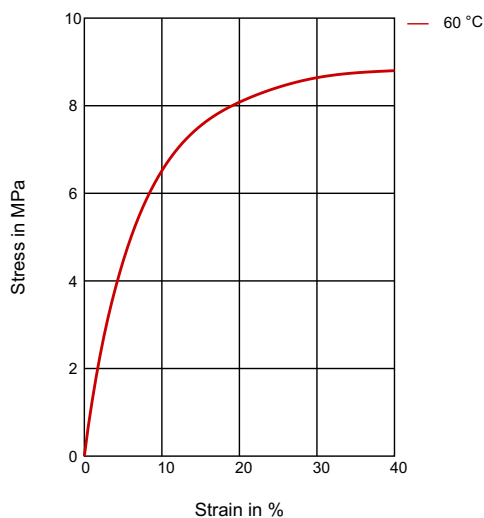
VISCOSITY-SHEAR RATE



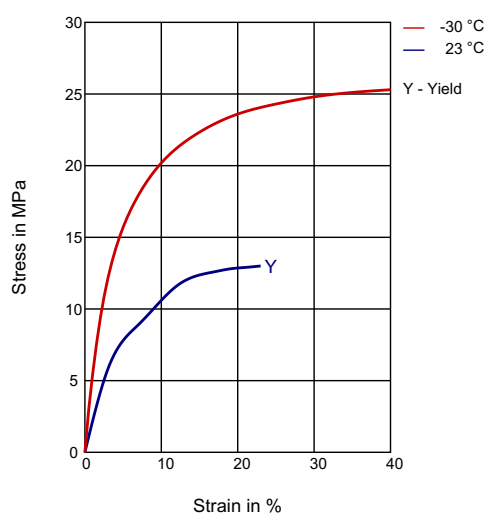
SHEARSTRESS-SHEAR RATE



STRESS-STRAIN

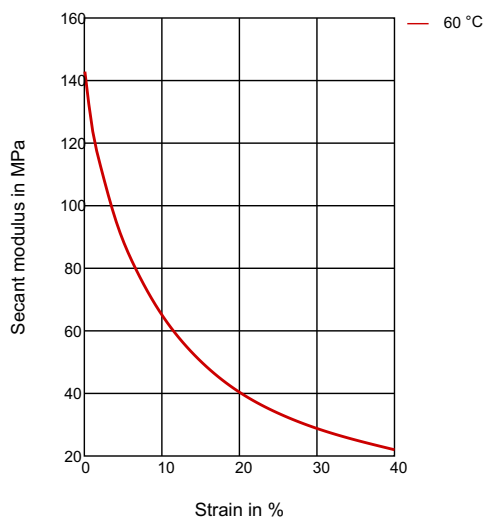


STRESS-STRAIN

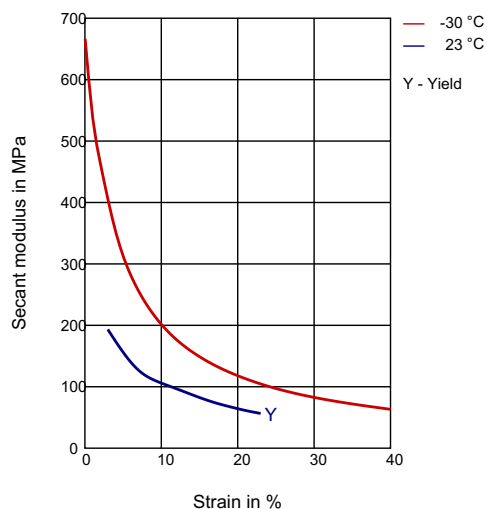


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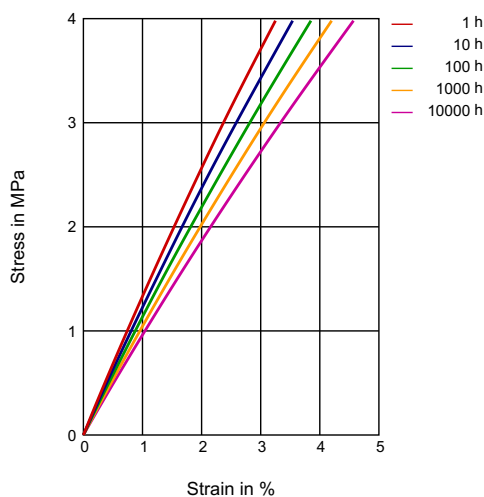
SECANT MODULUS-STRAIN



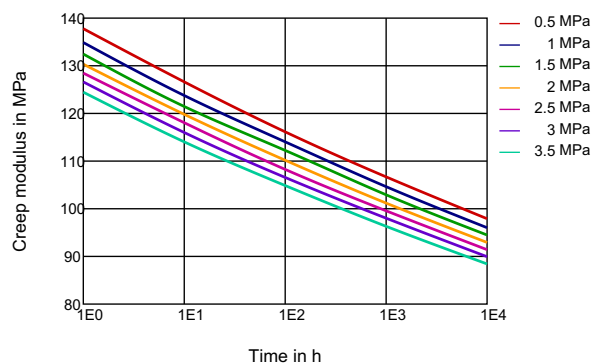
SECANT MODULUS-STRAIN



STRESS-STRAIN (ISOCHRONOUS) 73°F

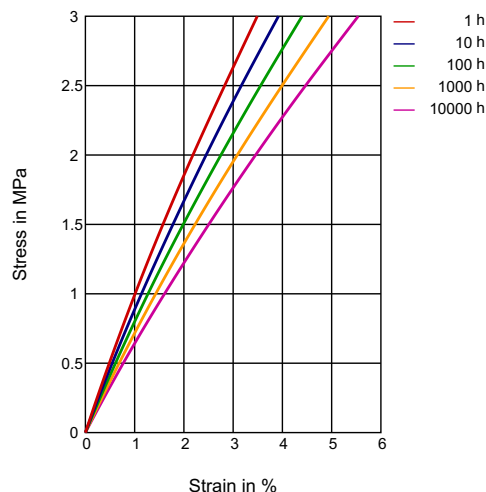


CREEP MODULUS-TIME 73°F

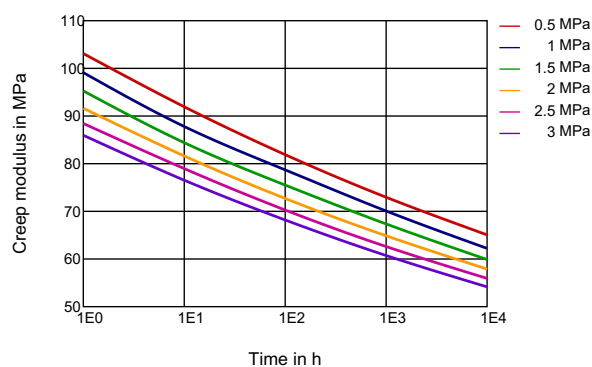


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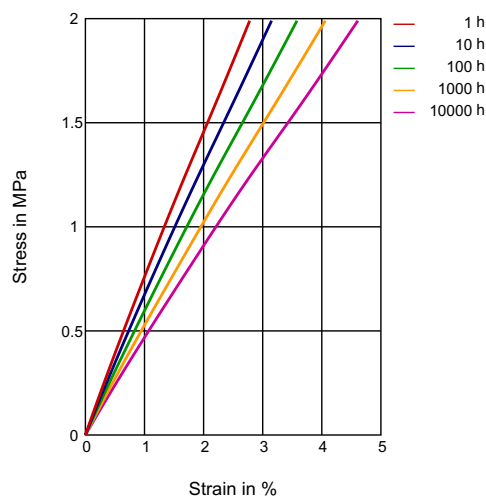
STRESS-STRAIN (ISOCHRONOUS) 104°F



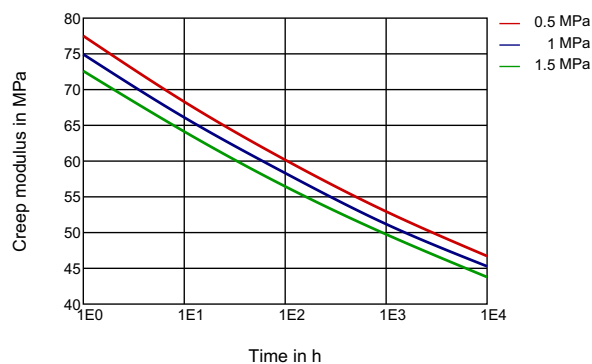
CREEP MODULUS-TIME 104°F



STRESS-STRAIN (ISOCHRONOUS) 140°F

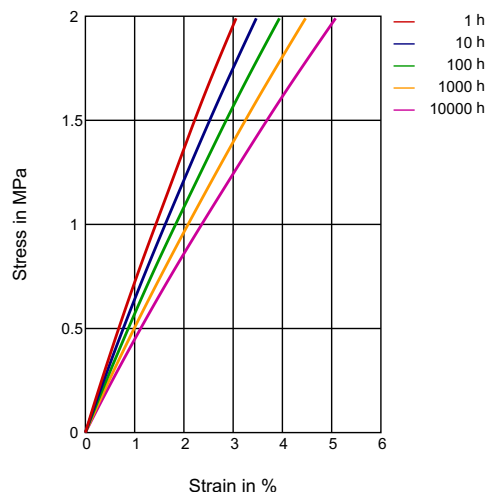


CREEP MODULUS-TIME 140°F

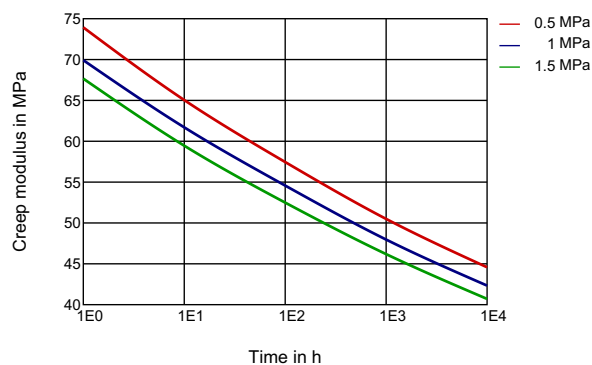


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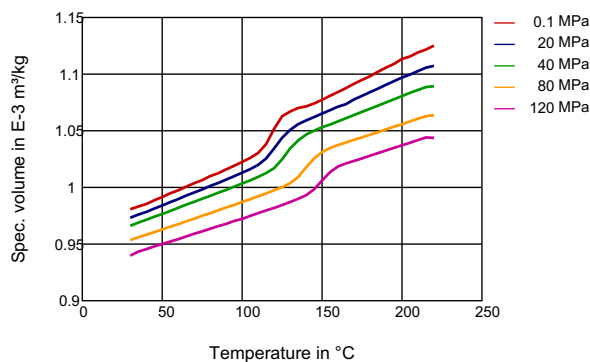
STRESS-STRAIN (ISOCRONOUS) 176°F



CREEP MODULUS-TIME 176°F



SPECIFIC VOLUME-TEMPERATURE (PVT)



Processing conditions:

- Typical melt temperature (Min / Recommended / Max) : 200°C / 240°C / 270°C.
- Typical mold temperature : 25 – 60°C.
- Drying time and temperature (only necessary for bags opened for more than two hours) : 4-6 hours at 65-75°C.

Processing conditions:

- Typical melt temperature (Min / Recommended / Max) : 210°C / 220°C / 230°C
- Drying time and temperature (only necessary for bags opened for more than two hours) : 4-6 hours at 65-75°C

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PROCESSING Injection Molding, Film Extrusion, Profile Extrusion, Other Extrusion, Transfer Molding, Casting, Thermoforming	
DELIVERY FORM Pellets	
SPECIAL CHARACTERISTICS Heat Stabilized, Light Stabilized	
REGIONAL AVAILABILITY North America, Europe, Asia Pacific, South and Central America, Near East/Africa	