

# PEBAX<sup>®</sup>

## 4033 SP 01

Polyether block amide **Pebax<sup>®</sup> 4033 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.

### MAIN CHARACTERISTICS

PROPERTIES	DRY / COND	UNIT	TEST STANDARD
<b>RHEOLOGICAL PROPERTIES</b>			
Molding Shrinkage, parallel	0.4 / *	%	ISO 294-4, 2577
Molding Shrinkage, normal	1.1 / *	%	ISO 294-4, 2577
<b>MECHANICAL PROPERTIES</b>			
Tensile Modulus	73 / 71	MPa	ISO 527-1/-2
Stress at 50% Strain	9 / 9	MPa	ISO 527-1/-2
Strain at Break	>50 / >50	%	ISO 527-1/-2
Stress at 10% Elongation	5 / *	MPa	ISO 527-1/-2
Stress at 100% Elongation	11 / *	MPa	ISO 527-1/-2
Strain at Break TPE	>300 / *	%	ISO 527-1/-2
Stress at Break TPE	40 / *	MPa	ISO 527-1/-2
Compression Set at 23 °C, 24h	32 / *	%	ISO 815
Tear Strength	85 / *	kN/m	ISO 34-1
Abrasion Resistance	48 / *	mm <sup>3</sup>	ISO 4649
Shore A Hardness	90 / *	-	ISO 868
Shore D Hardness	35 / *	-	ISO 868
Charpy Impact Strength, +23°C	- / No Break	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy Impact Strength, -30°C	- / No Break	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy Notched Impact Strength, +23°C	- / No Break	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy Notched Impact Strength, -30°C	- / No Break	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL PROPERTIES</b>			
Melting Temperature, 10°C/min	160 / *	°C	ISO 11357-1/-3
Glass Transition Temperature, 10°C/min	-65 / *	°C	ISO 11357-1/-2
Temp. of Deflection Under Load, 0.45 MPa	52 / *	°C	ISO 75-1/-2
Vicat Softening Temperature, 50°C/h 50N	131 / *	°C	ISO 306
Coeff. of Linear Thermal Expansion, parallel	195 / *	E-6/K	ISO 11359-1/-2
<b>ELECTRICAL PROPERTIES</b>			
Relative Permittivity, 100Hz	7 / -	-	IEC 60250

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Relative Permittivity, 1MHz	5 / -	-	IEC 60250
Dissipation Factor, 100Hz	710 / -	E-4	IEC 60250
Dissipation Factor, 1MHz	604 / -	E-4	IEC 60250
Volume Resistivity	2.6E11 / -	Ohm*m	IEC 60093
Surface Resistivity	* / 3E12	Ohm	IEC 60093
Dielectric (Electric) Strength	39 / -	kV/mm	IEC 60243-1
Comparative Tracking Index	* / 600	-	IEC 60112
<b>OTHER PROPERTIES</b>			
Water Absorption	1.2 / *	%	Sim. to ISO 62
Humidity Absorption	0.5 / *	%	Sim. to ISO 62
Density	1000 / 1000	kg/m <sup>3</sup>	ISO 1183
Spec. heat capacity of melt	2800	J/(kg K)	-
Thermal conductivity of melt	0.18	W/(m K)	-
Density of melt	830	kg/m <sup>3</sup>	-

**MAIN APPLICATIONS:**

- Flexible injected parts
- High performance power transmission belts
- Silent gears
- PA6 film modifier

### PACKAGING:

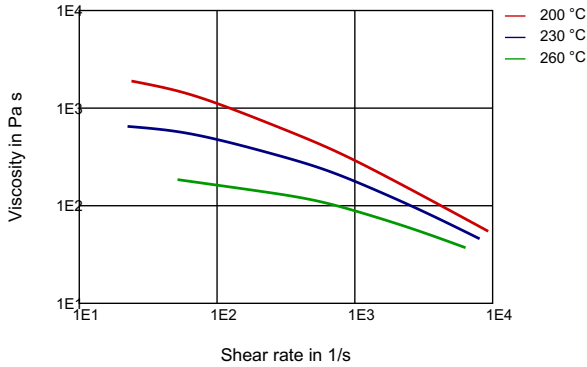
This grade is delivered dried in sealed packaging (25 kg bags and 550 rigid containers) ready to be processed.

### SHELF LIFE:

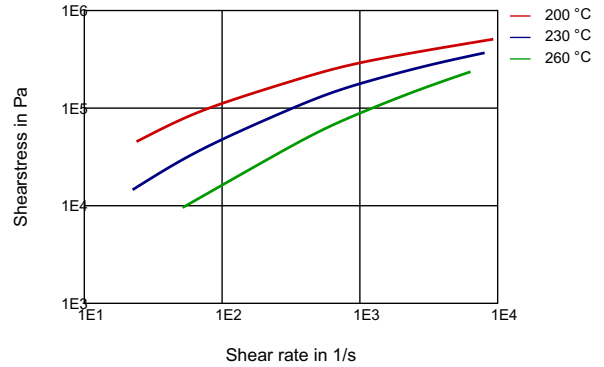
Two years from the delivery. For any use above this limit, please refer to our technical services.

### DIAGRAMS

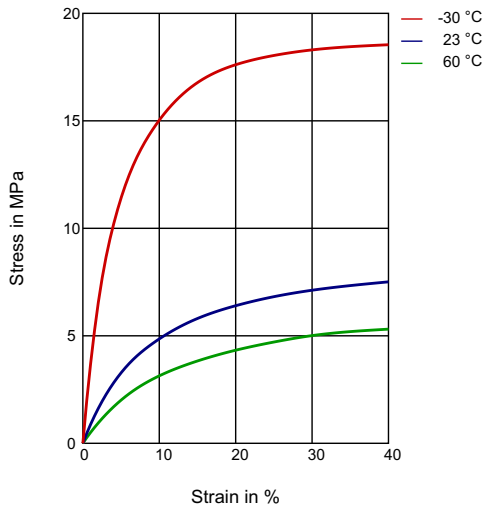
#### VISCOSITY-SHEAR RATE



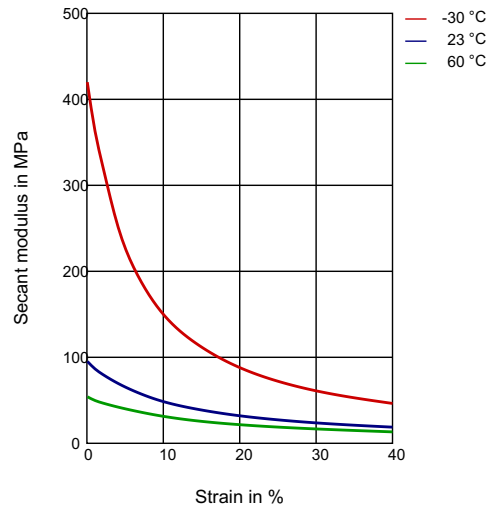
#### SHEARSTRESS-SHEAR RATE



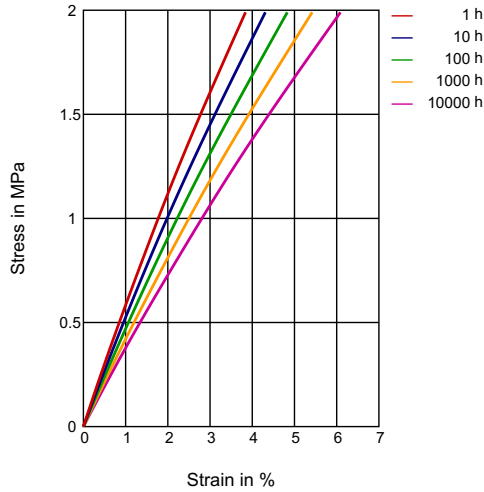
#### STRESS-STRAIN



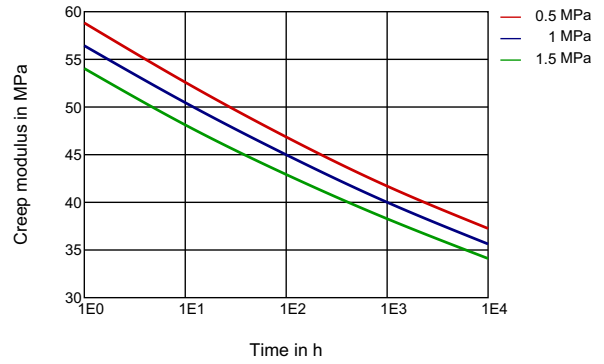
#### SECANT MODULUS-STRAIN



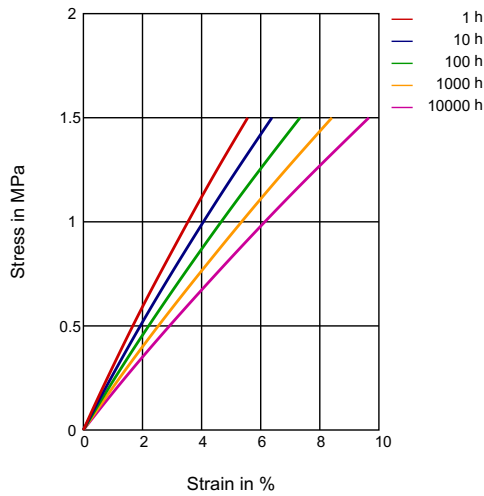
### STRESS-STRAIN (ISOCHRONOUS) 23°C



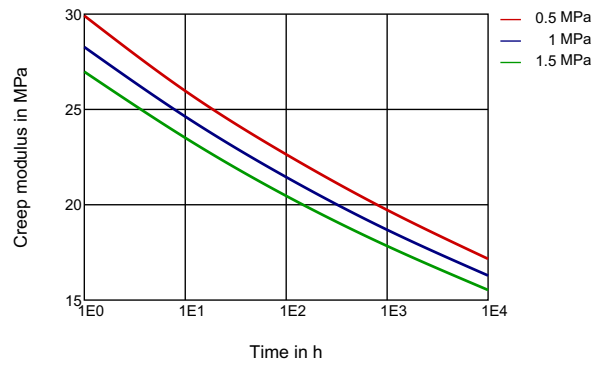
### CREEP MODULUS-TIME 23°C



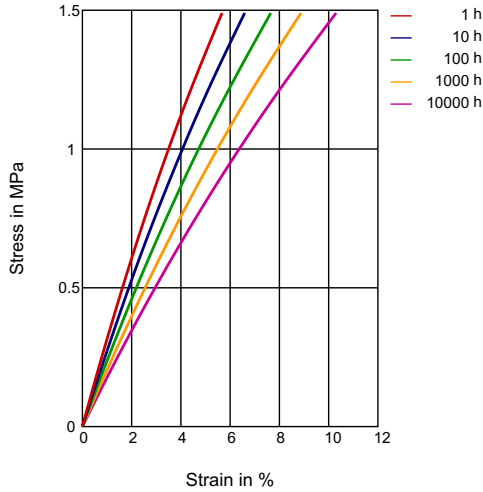
### STRESS-STRAIN (ISOCHRONOUS) 60°C



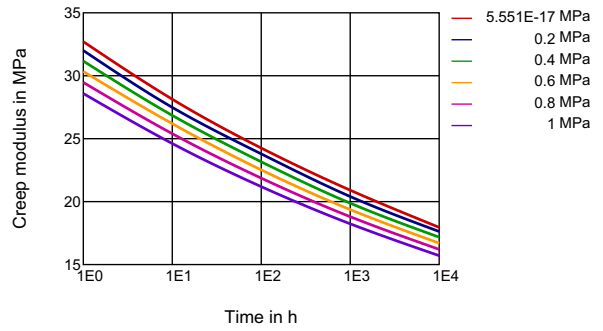
### CREEP MODULUS-TIME 60°C



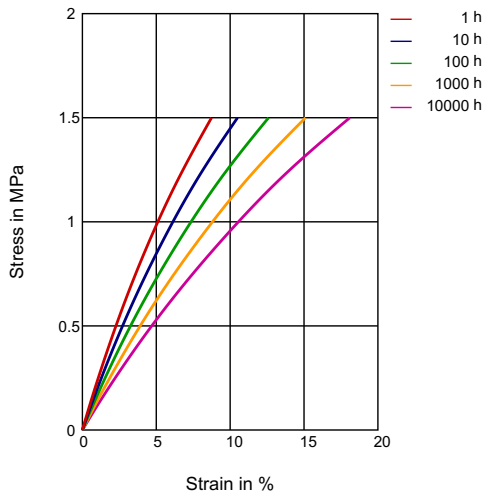
### STRESS-STRAIN (ISOCHRONOUS) 80°C



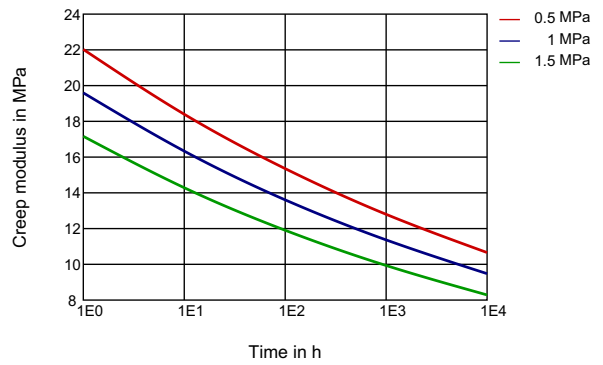
### CREEP MODULUS-TIME 80°C



### STRESS-STRAIN (ISOCHRONOUS) 100°C



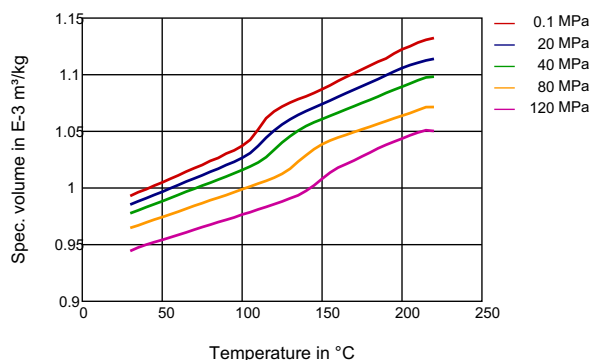
### CREEP MODULUS-TIME 100°C



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### SPECIFIC VOLUME-TEMPERATURE (PVT)



#### Processing conditions:

- Typical melt temperature (Min / Recommended / Max) : 200°C / 240°C / 270°C.
- Typical mold temperature : 10 – 30°C.
- Drying time and temperature (only necessary for bags/containers opened for more than two hours) : 4-6 hours at 60-70°C.

#### Processing conditions:

- Typical melt temperature (Min / Recommended / Max) : 210°C / 220°C / 230°C.
- Drying time and temperature (only necessary for bags/containers opened for more than two hours) : 4-6 hours at 60-70°C.

### 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

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