

# ORGALLOY® LE 6000 NAT

Orgalloy® LE 6000 NAT resin is a polyamide alloy especially designed for cable sheathing and blown film extrusion. This natural grade dedicated to extrusion offers excellent barrier properties and chemical resistance to hydrocarbons, alcohols and solvents. Conform to the European regulations concerning materials in contact with foodstuffs.

PROPERTIES	DRY / COND	UNIT	TEST STANDARD
<b>RHEOLOGICAL PROPERTIES</b>			
Melt Volume-Flow Rate	2.5 / *	cm <sup>3</sup> /10min	ISO 1133
Temperature	235 / *	°C	-
	455 / *	°F	
Load	2.16 / *	kg	-
	4.76 / *	lb	
Molding Shrinkage, parallel	0.8 / *	%	ISO 294-4, 2577
Molding Shrinkage, normal	0.7 / *	%	ISO 294-4, 2577
<b>MECHANICAL PROPERTIES</b>			
Tensile Modulus	1815 / 1400	MPa	ISO 527-1/-2
	263000 / 203000	psi	
Yield stress	44 / 36	MPa	ISO 527-1/-2
	6380 / 5220	psi	
Yield strain	4 / 7	%	ISO 527-1/-2
Nominal Strain at Break	>50 / >50	%	ISO 527-1/-2
Shore D Hardness	66 / *	-	ISO 868
Tensile Creep Modulus, 1h	* / 1130	MPa	ISO 899-1
	* /	psi	
Tensile Creep Modulus, 1000h	164000	MPa	ISO 899-1
	* / 7520	psi	
Charpy Impact Strength, +23°C	No Break / No Break	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy Impact Strength, -30°C	No Break / No Break	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy Notched Impact Strength, +23°C	29 / 35	kJ/m <sup>2</sup>	ISO 179/1eA
	13.8 / 16.6	ftlb/in <sup>2</sup>	
Charpy Notched Impact Strength, -30°C	11 / 11	kJ/m <sup>2</sup>	ISO 179/1eA
	5.23 / 5.23	ftlb/in <sup>2</sup>	
Stress at Yield, parallel	25 / *	MPa	ISO 527-3
	3630 / *	psi	
Stress at Yield, normal	26 / *	MPa	ISO 527-3
	3770 / *	psi	

Arkema France - A French "société anonyme", registered in the Nanterre (France) Trade and Companies Register under the number 319 632 790 SDC/11-2018  
Source: automatically generated TDS from Material Database on 25-04-2023

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Strain at Yield, parallel	20 / *	%	ISO 527-3
Strain at Yield, normal	14 / *	%	ISO 527-3
Maximum Stress, parallel	53 / *	MPa	ISO 527-3
	7690 / *	psi	
Maximum Stress, normal	41 / *	MPa	ISO 527-3
	5950 / *	psi	
Maximum Strain, parallel	410 / *	%	ISO 527-3
Maximum Strain, normal	490 / *	%	ISO 527-3
Elmendorf Tear Resistance, parallel	25 / *	N	ISO 6383-2
Elmendorf Tear Resistance, normal	150 / *	N	ISO 6383-2
Dart Drop B	313 / *	g	ISO 7765-1
<b>THERMAL PROPERTIES</b>			
Melting Temperature, 10°C/min	220 / *	°C	ISO 11357-1/-3
Temp. of Deflection Under Load, 1.80 MPa	50 / *	°C	ISO 75-1/-2
	122 / *	°F	
Temp. of Deflection Under Load, 0.45 MPa	84 / *	°C	ISO 75-1/-2
	183 / *	°F	
Vicat Softening Temperature, 50°C/h 50N	118 / *	°C	ISO 306
	244 / *	°F	
Coeff. of Linear Thermal Expansion, parallel	216 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Thermal Expansion, normal	170 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nominal Thickness	HB / *	class	IEC 60695-11-10
	Thickness Tested	1.6 / *	
	0.0630 / *	in	-
Burning Behav. at Thickness h	HB / *	class	IEC 60695-11-10
	Thickness Tested	3.2 / *	
	0.1260 / *	in	-
<b>ELECTRICAL PROPERTIES</b>			
Comparative Tracking Index	* / 600	-	IEC 60112
<b>OTHER PROPERTIES</b>			
Water Absorption	7 / *	%	Sim. to ISO 62
Humidity Absorption	2.5 / *	%	Sim. to ISO 62
Density	1040 / 1040	kg/m <sup>3</sup>	ISO 1183
	1.04 / 1.04	g/cm <sup>3</sup>	

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### FILM PROPERTIES

WVTR, 23°C/85%r.h.	60 / *	g/(m <sup>2</sup> *d)	ISO 15106-1/-2
Oxygen Transmission Rate, 23°C/0%r.h.	90 / *	cm <sup>3</sup> /(m <sup>2</sup> *d*bar)	ISO 15105-1/-2
Oxygen Transmission Rate, 23°C/85%r.h.	90 / *	cm <sup>3</sup> /(m <sup>2</sup> *d*bar)	ISO 15105-1/-2
Carbon Dioxide Transmission Rate, 23°C/0%r.h.	290 / *	cm <sup>3</sup> /(m <sup>2</sup> *d*bar)	ISO 15105-1/-2
Carbon Dioxide Transmission Rate, 23°C/85%r.h.	290 / *	cm <sup>3</sup> /(m <sup>2</sup> *d*bar)	ISO 15105-1/-2

**MAIN APPLICATIONS:** • Hydrocarbons barrier layer for power & data cables • Food and chemical packaging

### PACKAGING:

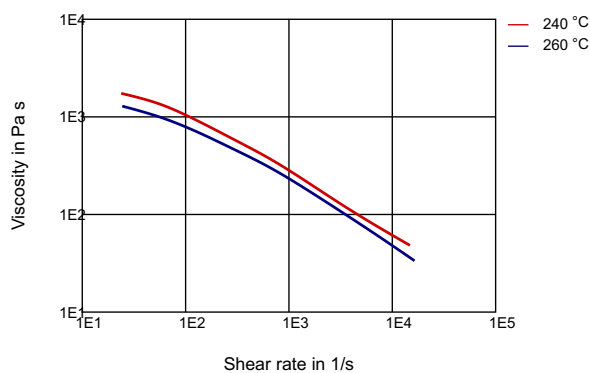
This grade is delivered dried in sealed packaging (25kg bags) ready to be processed.

### SHELF LIFE:

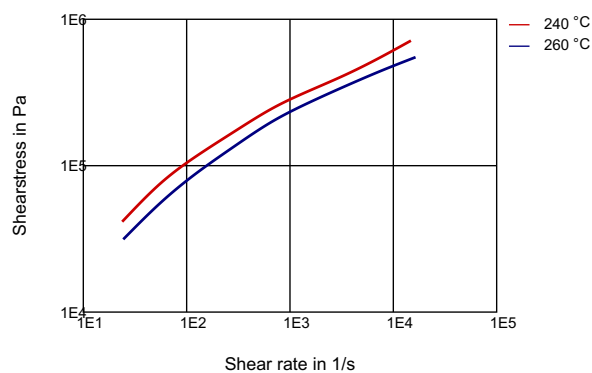
Two years from the date of delivery. For any use above this limit, please refer to our technical services.

### DIAGRAMS

#### VISCOSITY-SHEAR RATE

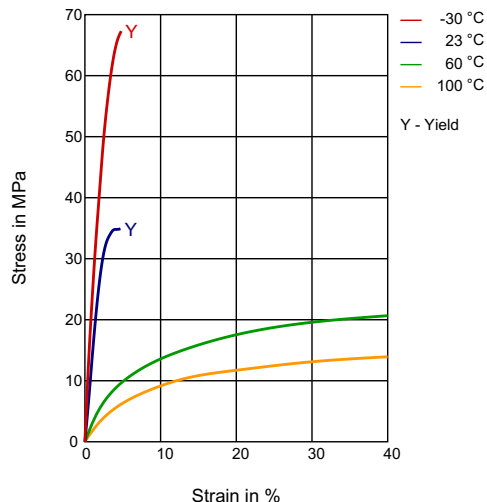
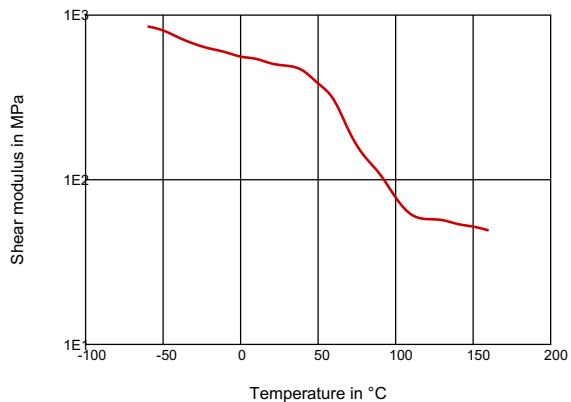


#### SHEARSTRESS-SHEAR RATE

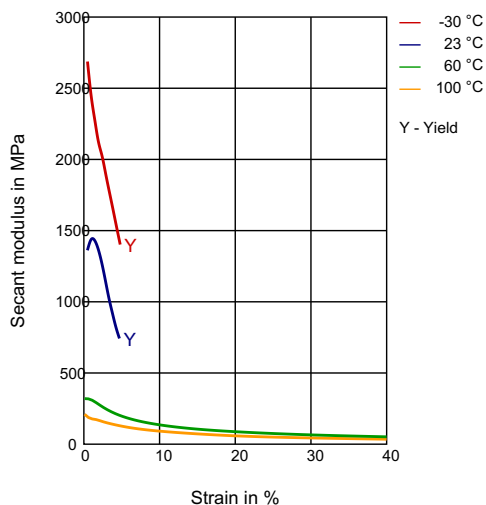


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## DYNAMIC SHEAR MODULUS-TEMPERATURE STRESS-STRAIN



## SECANT MODULUS-STRAIN



### Processing conditions:

- Drying time (only necessary for bags opened for more than two hours): 4-8 hours at 80°C
- Extrusion melt temperature (min-recommended-max): 250-260-270°C

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<b>PROCESSING</b> Profile Extrusion, Sheet Extrusion, Other Extrusion	Headquarters: Arkema France 420 rue d'Estienne d'Orves 92705 Colombes Cedex France T +33 (0)1 49 00 80 80 hpp.arkema.com  Arkema Inc. – High Performance Polymers 900 First Avenue King of Prussia, PA 19406 Tel.: +1 610 205 7000 hpp.arkema.com
<b>DELIVERY FORM</b> Pellets	
<b>SPECIAL CHARACTERISTICS</b> Heat Stabilized, Light Stabilized	
<b>REGIONAL AVAILABILITY</b> North America, Europe, Asia Pacific, South and Central America, Near East/Africa	

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