

Aardvark Polymers Aardalloy® 3300 POM Alloy Rotational Molding Resin

Category : Polymer , Thermoplastic , Acetal (POM)

Material Notes:

Aardalloy 3300 is an acetal alloy formulated for enhanced impact resistance and elongation. Aardalloy 3300 maintains the high degree of chemical resistance and low fuel permeation rates of unfilled acetals. Aardalloy 3300 is a medium viscosity resin with excellent molding characteristics. Aardalloy 3300 is available in natural white and may be dry colored to suit. Aardalloy 3300 is an excellent choice for fuel tanks, hydraulic reservoirs, brake and fuel system components.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Aardvark-Polymers-Aardalloy-3300-POM-Alloy-Rotational-Molding-Resin.php

Physical Properties	Metric	English	Comments
Density	1.34 g/cc	0.0484 lb/in ³	Test 1
	1.34 g/cc	0.0484 lb/in ³	Test 2
Water Absorption	0.44 %	0.44 %	24 hour immersion
Moisture Absorption at Equilibrium	0.35 %	0.35 %	50% RH, Test 1
	0.35 %	0.35 %	50% RH, Test 2
Water Absorption at Saturation	0.85 %	0.85 %	Test 2
	0.90 %	0.90 %	Test 1
Linear Mold Shrinkage, Flow	0.013 cm/cm	0.013 in/in	
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Linear Mold Shrinkage, Transverse	0.014 cm/cm	0.014 in/in	
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Melt Flow	2.0 g/10 min	2.0 g/10 min	
	2.278 g/10 min	2.278 g/10 min	
	@Load 2.16 kg, Temperature 190 °C	@Load 4.76 lb, Temperature 374 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	58	58	Test 1
	58	58	Test 2
Hardness, Rockwell R	105	105	Test 1
	105	105	Test 2

Tensile Strength Yield Mechanical Properties	41.0 MPa Metric	5950 psi English	Comments
	45.0 MPa	6530 psi	50 mm/min (2.0 in/min)
Elongation at Break	50 %	50 %	Test 3
	100 %	100 %	Test 1
	150 %	150 %	Test 2
Elongation at Yield	30 %	30 %	
	35 %	35 %	50 mm/min (2.0 in/min)
Tensile Modulus	1.30 GPa	189 ksi	50 mm/min (2.0 in/min)
	1.40 GPa	203 ksi	
Flexural Yield Strength	34.0 MPa	4930 psi	At 3.5% strain
	36.0 MPa	5220 psi	At 5% strain
Flexural Modulus	1.10 GPa	160 ksi	Test 2
	1.13 GPa	164 ksi	Test 1
Shear Strength	34.0 MPa	4930 psi	
Izod Impact, Unnotched	NB	NB	
	2.50 J/cm	4.68 ft-lb/in	
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Izod Impact, Notched (ISO)	90.0 kJ/mÂ²	42.8 ft-lb/inÂ²	
	20.0 kJ/mÂ²	9.52 ft-lb/inÂ²	
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Charpy Impact Unnotched	NB	NB	
	NB	NB	
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	9.00 J/cmÂ²	42.8 ft-lb/inÂ²	
	2.00 J/cmÂ²	9.52 ft-lb/inÂ²	
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Tensile Impact Strength	1580 kJ/mÂ²	752 ft-lb/inÂ²	Long Specimen

Mechanical Properties	Metric	English	Comments
Tensile Creep Modulus, 1 hour	1350 MPa	196000 psi	
Tensile Creep Modulus, 1000 hours	550 MPa	79800 psi	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	126 $\mu\text{m/m-}^{\circ}\text{C}$	70.0 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 23.0 - 55.0 $^{\circ}\text{C}$	@Temperature 73.4 - 131 $^{\circ}\text{F}$	
	130 $\mu\text{m/m-}^{\circ}\text{C}$	72.2 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 23.0 - 55.0 $^{\circ}\text{C}$	@Temperature 73.4 - 131 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	136 $\mu\text{m/m-}^{\circ}\text{C}$	75.6 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 23.0 - 55.0 $^{\circ}\text{C}$	@Temperature 73.4 - 131 $^{\circ}\text{F}$	
	140 $\mu\text{m/m-}^{\circ}\text{C}$	77.8 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 23.0 - 55.0 $^{\circ}\text{C}$	@Temperature 73.4 - 131 $^{\circ}\text{F}$	
Melting Point	178 $^{\circ}\text{C}$	352 $^{\circ}\text{F}$	10 $^{\circ}\text{C/min}$
	178 $^{\circ}\text{C}$	352 $^{\circ}\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	100 $^{\circ}\text{C}$	212 $^{\circ}\text{F}$	
	124 $^{\circ}\text{C}$	255 $^{\circ}\text{F}$	Unannealed
Deflection Temperature at 1.8 MPa (264 psi)	60.0 $^{\circ}\text{C}$	140 $^{\circ}\text{F}$	
	61.0 $^{\circ}\text{C}$	142 $^{\circ}\text{F}$	Unannealed
UL RTI, Electrical	105 $^{\circ}\text{C}$	221 $^{\circ}\text{F}$	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	105 $^{\circ}\text{C}$	221 $^{\circ}\text{F}$	
	@Thickness 3.00 mm	@Thickness 0.118 in	
UL RTI, Mechanical with Impact	85.0 $^{\circ}\text{C}$	185 $^{\circ}\text{F}$	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	85.0 $^{\circ}\text{C}$	185 $^{\circ}\text{F}$	
	@Thickness 3.00 mm	@Thickness 0.118 in	
	85.0 $^{\circ}\text{C}$	185 $^{\circ}\text{F}$	

UL RTI Mechanical without Impact Thermal Properties	Metric @ Thickness 1.50 mm	English @ Thickness 0.0591 in	Comments
	85.0 Â°C	185 Â°F	
	@Thickness 3.00 mm	@Thickness 0.118 in	
Flammability, UL94	HB	HB	Test 1
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	HB	HB	Test 2
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	HB	HB	Test 1
	@Thickness 3.00 mm	@Thickness 0.118 in	
	HB	HB	Test 2
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	21 %	21 %	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	Test 1
	4.00e+14 ohm-cm	4.00e+14 ohm-cm	Test 2
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	Test 1
	2.00e+14 ohm	2.00e+14 ohm	Test 2
Dielectric Constant	4.2	4.2	
	3.8	3.8	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	4.4	4.4	
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	20.0 kV/mm	508 kV/in	Short Time
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.0065	0.0065	
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.027	0.027	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Comparative Tracking Index	600 V	600 V	

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