

Garland Manufacturing GAR-DURÂ® Ultra High Molecular Weight Polyethylene (UHMW-PE)

Category : Polymer , Thermoplastic , Polyethylene (PE) , HDPE , High Density Polyethylene (HDPE), UHMW PE Ultra High Molecular Weight

Material Notes:

GAR-DURÂ® plastic parts are made from ultra high molecular weight (UHMW) polymer having a molecular weight of 4.2 million and greater. Garland Manufacturing Company has been processing UHMW resin for over 45 years. This true UHMW polymer is excellent for resisting abrasion and corrosion while contributing a low coefficient of friction. Fabricated Gar-DurÂ® parts have helped companies improve performance, reduce downtime, eliminate the need for lubrication, replace steel parts and lower their operating costs. Applications: GAR-DURÂ® machined parts are being used in mining, pulp and paper operations, refrigeration, chemical plants, material handling industries, and automotive assembly plants to name just a few. Advantages: GAR-DURÂ® is designed to function in corrosive and chemical environments, in extreme cold and where abrasion resistance is a desirable factor. It is durable, has a very low coefficient of friction and high impact resistance, it is much quieter than metals, and it won't absorb fluids. Information provided by Garland Manufacturing.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Garland-Manufacturing-GAR-DUR-Ultra-High-Molecular-Weight-Polyethylene-UHMW-PE.php

Physical Properties	Metric	English	Comments
Density	0.941 g/cc	0.0340 lb/inÂ³	ASTM D792
Molecular Weight	>= 4.20e+6 g/mol	>= 4.20e+6 g/mol	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	64	64	ASTM D785
Hardness, Shore D	67	67	15 seconds; ASTM D2240
Tensile Strength at Break	44.1 MPa	6400 psi	2"/min; ASTM D638
Tensile Strength, Yield	23.4 MPa	3400 psi	2"/min; ASTM D638
Elongation at Break	350 %	350 %	2"/min; ASTM D638
Elongation at Yield	14 %	14 %	ASTM D638
1% Secant Modulus	1210 MPa	175000 psi	ASTM D790B
Izod Impact, Unnotched	NB	NB	ASTM D256A
	@Temperature -40.0 Â°C	@Temperature -40.0 Â°F	
Coefficient of Friction	NB	NB	ASTM D256A
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Coefficient of Friction	0.11	0.11	Gar-Dur to Gar-Dur

Mechanical Properties	0.13 Metric	0.13 English	To stainless steel Comments
	0.14	0.14	To rolled steel
Abrasion	10	10	Relative, where Carbon Steel is 100 and Nylon 6/6 is 24 in; Sand Slurry Test
Compression Set	0.60 %	0.60 %	24 hours after removal of 282 psi compressive stress at 20°C
	0.90 %	0.90 %	1 minute after removal of 282 psi compressive stress at 20°C
	3.5 %	3.5 %	24 hours after removal of 1700 psi compressive stress at 20°C
	5.4 %	5.4 %	1 minute after removal of 1700 psi compressive stress at 20°C
	1.1 % @Temperature 80.0 °C	1.1 % @Temperature 176 °F	24 hours after removal of 282 psi compressive stress
	1.6 % @Temperature 80.0 °C	1.6 % @Temperature 176 °F	1 minute after removal of 282 psi compressive stress

Thermal Properties	Metric	English	Comments
CTE, linear	164 Åµm/m-Å°C @Temperature 20.0 Å°C	91.0 Åµin/in-Å°F @Temperature 68.0 Å°F	ASTM D696
Melting Point	130 - 131 Å°C	266 - 268 Å°F	Crystalline MP
Deflection Temperature at 0.46 MPa (66 psi)	80.0 Å°C	176 Å°F	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	47.0 Å°C	117 Å°F	ASTM D648
Vicat Softening Point	136 Å°C	277 Å°F	ASTM D1525B

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China