



ZYLAR® 960

INEOS Styrolution - Methyl Methacrylate Butadiene Styrene

Monday, November 4, 2019

General Information

Product Description

Zylar® 960 is an impact modified styrene acrylic copolymer that provides toughness equivalent to some grades of polycarbonate, good clarity and superior processing characteristics for demanding injection molded applications.

FEATURES

- Exceptional toughness
- Low density
- Ease of processing
- Gamma & ETO sterilizable
- Meets USP XXIII specifications for Class VI plastics
- UL 94 HB approved

APPLICATIONS

- Appliances and consumer goods
- Medical devices
- Toys
- Office accessories
- Industrial housings and covers
- Reusable drinkware

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Impact Modifier		
Features	• Copolymer • Ethylene Oxide Sterilizable • Good Processability	• Good Toughness • Impact Modified • Low Density	• Medium Clarity • Radiation Sterilizable
Uses	• Appliances • Consumer Applications	• Housings • Industrial Applications	• Medical Devices • Toys
Agency Ratings	• USP XXIII, Class VI		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.05		ASTM D792
Density	1.05	g/cm ³	ISO 1183
Melt Mass-Flow Rate (200°C/5.0 kg)	6.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
200°C/5.0 kg	6.00	cm ³ /10min	
220°C/10.0 kg	65	cm ³ /10min	
Molding Shrinkage - Flow	2.0E-3 to 6.0E-3	in/in	ASTM D955
Molding Shrinkage	0.20 to 0.60	%	ISO 294-4
Water Absorption (Saturation, 73°F)	0.10	%	ASTM D570
Water Absorption (Saturation, 73°F)	0.10	%	ISO 62

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Physical	Nominal Value	Unit	Test Method
Water Absorption (Equilibrium, 73°F, 50% RH)	0.050	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	250000	psi	ASTM D638
Tensile Modulus	238000	psi	ISO 527-2
Tensile Strength (Yield, 73°F)	3400	psi	ASTM D638
Tensile Stress (Yield, 73°F)	4060	psi	ISO 527-2
Tensile Elongation (Break)	70	%	ASTM D638
Tensile Strain (Break, 73°F)	120	%	ISO 527-2
Flexural Modulus (73°F)	250000	psi	ASTM D790
Flexural Modulus (73°F)	239000	psi	ISO 178
Flexural Strength (73°F)	6200	psi	ASTM D790
Flexural Stress (73°F)	6530	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	7.6	ft·lb/in ²	ISO 179/1eA
Charpy Unnotched Impact Strength (73°F)	No Break		ISO 179
Notched Izod Impact (73°F)	11	ft·lb/in	ASTM D256
Notched Izod Impact Strength (73°F)	7.1	ft·lb/in ²	ISO 180/A
Unnotched Izod Impact Strength	No Break		ISO 180
Gardner Impact	170	in·lb	ASTM D5420
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	62		ASTM D785
Rockwell Hardness (R-Scale)	62		ISO 2039-2
Ball Indentation Hardness	5080	psi	ISO 2039-1
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	172	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	153	°F	ISO 75-2/A
Deflection Temperature Under Load ² (264 psi, Annealed)	187	°F	
Vicat Softening Temperature	201	°F	ASTM D1525 ³
Vicat Softening Temperature			
--	194	°F	ISO 306/A120
--	140	°F	ISO 306/B50
Maximum Service Temperature	482	°F	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+14	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Dielectric Constant (100 Hz)	2.50		IEC 60250
Flammability	Nominal Value	Unit	Test Method
Flame Rating	HB		UL 94
Optical	Nominal Value	Unit	Test Method
Refractive Index ⁴	1.570		ASTM D542
Refractive Index	1.560		ISO 489
Transmittance (550 nm)	91.0	%	ASTM D1003
Haze	2.00	%	ASTM D1003

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Processing Information

Injection	Nominal Value	Unit
Drying Temperature	149	°F
Drying Time	2.0	hr
Rear Temperature	374 to 428	°F
Middle Temperature	392 to 446	°F
Front Temperature	392 to 446	°F
Processing (Melt) Temp	392 to 464	°F
Mold Temperature	86 to 131	°F
Injection Rate	Moderate-Fast	

Notes

¹ Typical properties: these are not to be construed as specifications.

² 4h/80°C

³ Rate B (120°C/h), Loading 1 (10 N)

⁴ Sodium D Line