

Ultramid® 8350 HS BK-102

Polyamide 6



Product Description

Ultramid 8350 HS BK-102 is a type 6, black pigmented, impact modified graft copolymer developed for extrusion, tubing, and jacketing applications requiring a high level of toughness combined with a moderate level of flexibility.

Applications

Ultramid 8350 HS BK-102 is generally recommended for applications such as automotive vacuum tubing, cable jacketing, and high pressure and hydraulic hoses.

PHYSICAL	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.07	
Mold Shrinkage (1/8" bar, in/in)		0.014	
Moisture, %	D-570		
(24 Hour)		1.1	
(50% RH)		1.9	
(Saturation)		6.7	
MECHANICAL	ASTM Test Method	Dry	Conditioned
Tensile Strength, Yield, MPa (psi)	D-638		
23C (73F)		55 (7,970)	32 (4,640)
Elongation, Yield, %	D-638		
23C (73F)		5	9
Elongation, Break, %	D-638		
23C (73F)		>100	>100
Flexural Modulus, MPa (psi)	D-790		
23C (73F)		1,890 (274,000)	-
Flexural Strength, MPa (psi)	D-790		
23C (73F)		65 (9,430)	-
Rockwell Hardness, R Scale	D-785	78	-
IMPACT	ASTM Test Method	Dry	Conditioned
Notched Izod Impact, J/M (ft-lbs/in)	D-256		
23C (73F)		NB	-
THERMAL	ASTM Test Method	Dry	Conditioned
Melting Point, C(F)	D-3418	220 (428)	-
Heat Deflection @ 264 psi (1.8 MPa) C(F)	D-648	56 (132)	-
Coef. of Linear Thermal Expansion, mm/mm C (in/in F)	E-831	1.06 X10-4	-
UL RATINGS	UL Test Method	Property Value	
Flammability Rating, 1.5mm	UL94	HB	
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, C		65	
Mechanical w/ Impact, C		65	
Electrical, C		65	
ELECTRICAL	ASTM Test Method	Dry	Conditioned



Volume Resistivity, 1.5 mm

D-257

>1E13

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Processing Guidelines

Material Handling

Max. Water content: 0.1%

Product is supplied in sealed containers and drying prior to molding is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80 degC (176 degF) is recommended. Drying time is dependent on moisture level, but 2-4 hours is generally sufficient. Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 240-250 degC (464-482 degF)

Typical Barrel Profile (degC):

Rear 245-260 degC (473-500 degF)
Middle 240-255 degC (464-491 degF)
Front 240-250 degC (464-482 degF)

Head 225-245 degC (437-473 degF)
Flange 225-240 degC (437-464 degF)
Die 225-240 degC (437-464 degF)

Screw Parameters

Metering Section	40%
Transition Section	6 to 7 flights
Feed Section	balance of screw length
Compression Ratio	3.5:1 to 4.0:1
L/D Ratio	20:1 to 24:1

Tooling & Sizing

Die to Finished Tube dia. 1.5-2.0:1

Selection of pin and die size will be dependent on the material viscosity. In general, the ratio of die size to finished tube diameter is about 1.5-2.0:1. The mandrel (pin) size is determined the same way in relation to the inner tube diameter.

Free (open tank) extrusion is recommended when producing tube diameters 1 cm and below. For larger diameters, a differential pressure vacuum tank is recommended.

Tooling draw ratio is generally higher with free extrusion versus sizing, but will depend on melt viscosity. The vacuum sizer entrance should be about 3-9% larger than the finished tube outer diameter. Selection will depend on melt viscosity and die swell of the extrudate.

Quenching



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For diameters less than or equal to 1 cm (.39") O.D., open tank quenching with normal tap water is suggested. Depending upon line speed, quenching distance can vary from 7.5 to 12 meters (24.6-39.4 feet). A short air gap (die to quench water) is recommended for both tubing and cable jacketing for best flexibility.

Note

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