

## Ultramid® 8350 HS BK102

### Polyamide 6

Ultramid 8350 HS BK102 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 BK102 is generally recommended for applications such as automotive vacuum tubing, cable jacketing, and high pressure and hydraulic hoses.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm <sup>3</sup>	1183	1.07	
<b>Moisture, %</b>	62		
(24 Hour)		1.1	
(50% RH)		1.9	
(Saturation)		6.7	
MECHANICAL	ISO Test Method	Dry	Conditioned
<b>Tensile Modulus, MPa</b>	527		
23°C		1,800	675
<b>Tensile stress at yield, MPa</b>	527		
23°C		52	32
<b>Tensile strain at yield, %</b>	527		
23°C		4.5	9
<b>Nominal strain at break, %</b>	527		
23°C		>50	>50
<b>Flexural Strength, MPa</b>	178		
23°C		55	-

<b>Flexural Modulus, MPa</b>	178		
23°C		1,600	-
<b>IMPACT</b>	<b>ISO Test Method</b>	<b>Dry</b>	<b>Conditioned</b>
<b>Izod Notched Impact, kJ/m<sup>2</sup></b>	180		
-40°C		10	-
23°C		N	-
<b>Charpy Notched, kJ/m<sup>2</sup></b>	179		
23°C		83	-
<b>Charpy Unnotched, kJ/m<sup>2</sup></b>	179		
23°C		N	-
<b>THERMAL</b>	<b>ISO Test Method</b>	<b>Dry</b>	<b>Conditioned</b>
Melting Point, °C	3146	220	-
HDT A, °C	75	50	-
HDT B, °C	75	140	-
<b>ELECTRICAL</b>	<b>ISO Test Method</b>	<b>Dry</b>	<b>Conditioned</b>
Comparative Tracking Index	IEC 60112	600	-
Volume Resistivity (Ohm-m)	IEC 60093	>1E13	-
<b>UL RATINGS</b>	<b>UL Test Method</b>	<b>Property Value</b>	
Flammability Rating, 1.5mm	UL94	HB	
<b>Relative Temperature Index, 1.5mm</b>	UL746B		
Mechanical w/o Impact, °C		65	
Mechanical w/ Impact, °C		65	
Electrical, °C		65	
Flammability Rating, 3.0mm	UL94	HB	
<b>Relative Temperature Index, 3.0mm</b>	UL746B		
Mechanical w/o Impact, °C		65	

Mechanical w/ Impact, °C

65

Electrical, °C

65

## Processing Guidelines

### Material Handling

Max. Water content: 0.1%

Material is supplied in sealed containers and drying prior to molding in a dehumidifying or desiccant dryer is recommended. Drying parameters are dependent upon the actual percentage of moisture in the pellets and typical pre-drying conditions are 2-4 hours at 180F (83C). Further information concerning safe handling procedures can be obtained from the Safety Data Sheet (MSDS), or by contacting your BASF representative.

### Typical Profile

Melt Temperature 240-250°C (464-482°F)

Typical Barrel Profile (°C):

Rear 245-260°C (473-500°F)

Middle 240-255°C (464-491°F)

Front 240-250°C (464-482°F)

Head 225-245°C (437-473°F)

Flange 225-240°C (437-464°F)

Die 225-240°C (437-464°F)

### 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, however 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

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.

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## Note

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