

## 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	-

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

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#### **Technical Assistance**

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