

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	ISO Test Method	Property Value	
Density, g/cm	1183	1.07	
Moisture, %	62		
(24 Hour)		1.1	
(50% RH)		1.9	
(Saturation)		6.7	
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23C		1,800	675
Tensile stress at yield, MPa	527		
23C		52	32
Tensile strain at yield, %	527		
23C		4.5	9
Nominal strain at break, %	527		
23C		>50	>50
Flexural Strength, MPa	178		
23C		55	-
Flexural Modulus, MPa	178		
23C		1,600	-
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m ²	180		
23C		N	-
-40C		10	-
Charpy Notched, kJ/m ²	179		
23C		83	-
Charpy Unnotched, kJ/m ²	179		
23C		N	-
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, C	3146	220	-
HDT A, C	75	50	-
ELECTRICAL	ISO Test Method	Dry	Conditioned
Comparative Tracking Index	IEC 60112	600	-
Volume Resistivity	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

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

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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