Ultramid® 8350 HS
Polyamide 6

Ultramid 8350 HS is a heat stabilized, impact modified type 6 graft copolymer developed for extrusion, tubing, and jacketing applications requiring a high level of toughness combined with a moderate level of flexibility. It is also available in non-heat stabilized (Ultramid 8350) and/or pigmented versions.

Applications

Ultramid 8350 HS 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/cm³	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		
-40°C		2,150	-
23°C		1,800	675
80°C		210	-
120°C		150	-
150°C		130	-
Tensile stress at yield, MPa	527		
-40°C		85	95
23°C		53	32
80°C		20	-

120°C		14	-
150°C		9	-
Tensile strain at yield, %	527		
23°C		5	9
Nominal strain at break, %	527		
23°C		>50	>50
Flexural Strength, MPa	178		
23°C		50	-
Flexural Modulus, MPa	178		
23°C		1,750	-
IMPACT	**ISO Test Method**	**Dry**	**Conditioned**
Charpy Notched, kJ/m^2	179		
-30°C		15	-
23°C		100	-
Charpy Unnotched, kJ/m^2	179		
23°C		N	-
THERMAL	**ISO Test Method**	**Dry**	**Conditioned**
Melting Point, °C	3146	220	-
HDT A, ° C	75	51	-
HDT B, ° C	75	145	-
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	HB
Relative Temperature Index, 3.0mm	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.

Note

BASF Corporation

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General Information

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Technical Assistance

800-527-TECH (734-324-5150)

Web address

http://www.plasticsportal.com/usa