

Product Information

Apr 2004 UM 3WG3 (Dry)

Ultramid[®] B 3WG3 (Dry)

Polyamide 6 (Nylon 6)

Product Description

Heat stabilized glass fiber reinforced injection molding grade.

Processing

Ultramid nylon is delivered as flat or cylindrical pellets in moisture-proof packaging. Drying time is dependent on moisture content. Typical drying temperatures are 80° to 110° C, with drying times between 2 to 4 hours. The maximum permissible moisture content for injection molding is 0.15%, 0.10% for extrusion. Reprocessing is permissible, up to about 10%, provided the material has not been previously contaminated or degraded. Reground Ultramid is particularly susceptible to moisture, so extra care should be taken to ensure the moisture content is acceptable prior to processing. Changes between Ultramid and other thermoplastics should be preceded by purging the barrel with high molecular weight polyethylene or polypropylene of approximately 10 melt index or another suitable compound with cleansing action.

Applications

Fan wheels.

Form supplied and storage

Ultramid is supplied dry and ready to use in moisture-proof packaging in the form of cylindrical or flat pellets. Its bulk density is about 0.7g/cm³. Standard packs are the special 25kg bag and the 1000kg bulk container (octagonal IBC, an intermediate bulk container made from corrugated board with a liner bag). Other forms of packaging and shipment (in tankers by road or rail) are also possible, subject to agreement.

All containers are tightly sealed and should be opened only immediately prior to processing. To ensure that the perfectly dry material delivered cannot absorb moisture from the air, the containers must be stored in dry rooms and always carefully sealed again after portions of material have been withdrawn. Ultramid can be kept indefinitely in the undamaged bags. Experience has shown that product supplied in IBCs can be stored for about 3 months without any adverse effects on processing properties due to moisture absorption. Containers stored in cold rooms should be allowed to equilibrate to normal temperature so that no condensation forms on the pellets.

Agency Approvals (Automotive, NSF, USP, FDA, etc.)

Product safety

Ultramid melts are thermally stable at the usual temperature for A, B and C up to 310°C and 350°C for T and do not give rise to hazards due to molecular degradation or the evolution of gases and vapors. Like all thermoplastic polymers Ultramid decomposes on exposure to excessive thermal load, e.g. when it is overheated or as a result of cleaning by burning off. In such cases gaseous decomposition products are formed. Decomposition accelerates above 310°C (T>350°C) approximately, the initial products formed being mainly carbon monoxide and ammonia, and caprolactam too in the case of Ultramid B. At temperatures above about 350°C (T>400°C) small quantities of pungent smelling vapors of aldehydes, amines and other nitrogenous decomposition products are also formed.

Further safety information see safety data sheet of the individual product.

Note

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Ultramid[®] B 3WG3 (Dry)

Typical Properties for uncolored products	Test Method ISO / IEC / ASTM	SI		English	
		Unit	Value	Unit	Value
Features					
Water absorption at saturation (73 °F)	ASTM D570	%	8.0	%	8.0
Moisture absorption (50% RH)	ASTM D570	%	2.6	%	2.6
Mechanical properties					
Izod notched impact strength (23 °C (73 °F))	ASTM D256	J/m	58.7	ft-lb/in	1.10
Izod notched impact strength (-40 °C (-40 °F))	ASTM D256	J/m	48.0	ft-lb/in	0.900
Processing					
Melt temperature range, injection molding	ASTM D955	°C	271 to 291	°F	520 to 555
Mold temperature		°C	80.0 to 90.0	°F	176 to 194
Mold shrinkage. Free, longitudinal ¹⁾		cm/cm	0.0020 to 0.0030	in/in	0.0020 to 0.0030
Pre-drying, temperature		°C	79	°F	175
Pre-drying, time		hr	2 to 4	hr	2 to 4
Flammability					
UL 94 (1.50 mm)	UL 94	-	HB	-	HB
UL 94 (0.800 mm)	UL 94	-	HB	-	HB
UL 94 (3.00 mm)	UL 94	-	HB	-	HB
Film properties**					
Melting Point (DSC)	ISO 3146	°C	220	°F	428

NB : no break ¹⁾ Shrinkage depends on wall thickness, design of molding, gating and processing conditions

** Properties of non-oriented cast film (2 mil thick)

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