

Zytel[®] HTN51G35EF BK236LT HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN51G35EF BK236LT is a 35% glass reinforced, heat stabilized, lubricated, hydrolysis resistant, laser transparent, high performance polyamide resin developed for electrical and electronics applications. It is also a PPA resin.

Product information

Resin Identification Part Marking Code Part Marking Code	PA6T/XT-GF3 >PA6T/XT-GF3 >PPA-GF35	35<	ISO 1043 ISO 11469 SAE J1344
Rheological properties	dry/cond.		
Moulding shrinkage, parallel Moulding shrinkage, normal	0.2/- 0.6/-	% %	ISO 294-4, 2577 ISO 294-4, 2577
Typical mechanical properties	dry/cond.		
Tensile modulus Tensile stress at break, 5mm/min Tensile strain at break, 5mm/min Charpy impact strength, 23°C Charpy notched impact strength, 23°C Poisson's ratio	12200/- 230/- 2.4/2.2 65/- 11/- 0.33/-	MPa MPa % kJ/m ² kJ/m ²	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 179/1eU ISO 179/1eA
Thermal properties	dry/cond.		
Melting temperature, 10 °C/min Glass transition temperature, 10 °C/min Temperature of deflection under load, 1.8 MPa Specific heat capacity of melt Specific heat capacity solid [DS]: Derived from similar grade	300/* 140/95 263/* 1820 610 ^[DS]	°C °C °C J/(kg K) J/(kg K)	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 22007-4 ISO 22007-4
Physical/Other properties	dry/cond.		
Humidity absorption, 2mm Water absorption, 2mm Water absorption, Immersion 24h Density	1.4/* 4/* 1/* 1470/-	% % % kg/m ³	Sim. to ISO 62 Sim. to ISO 62 Sim. to ISO 62 ISO 1183
Injection			
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Min. melt temperature Max. melt temperature Mold Temperature Optimum Min. mould temperature Max. mould temperature [1]: Higher temperature needed for thinner sections.	yes 100 °C 6-8 h ≤0.1 % 325 °C 320 °C 330 °C 150 °C 140 ^[1] °C 180 °C		

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Characteristics

Processing	Injection Moulding
Delivery form	Pellets, Granules
Special characteristics	Heat stabilised or stable to heat, Hydrolysis resistant
Additional information	

Additional information

Injection molding

During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

When lower mold temperatures are used, the initial warpage and shrinkage may be lower, but the surface appearance and chemical resistance may be reduced, and the dimensional change may be greater when parts are subsequently heated.

Automotive

OEM	ADDITIONAL INFORMATION
General Motors	Part Specific Approval, Please Contact Your CE Representative For More Details.
Hyundai	MS941-12 Type B
Renault-Nissan	UB23, No Spec, Special Part Approval, See Your CE Account Manager.

Chemical Media Resistance

Acids

- Acetic Acid (5% by mass), 23°C
- Citric Acid solution (10% by mass), 23°C
- Lactic Acid (10% by mass), 23°C

Mineral oils

- SAE 10W40 multigrade motor oil, 23°C
- ✓ Insulating Oil, 23°C

Other

- Ethylene Glycol (50% by mass) in water, 108°C
- ✓ Water, 23°C
- ✓ Water, 90°C
- ✓ Coolant Glysantin G48, 1:1 in water, 125°C
- Urea solution (32.5% by mass), 23°C

Symbols used:

 possibly resistant Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and

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expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

X not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

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NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design not intended for use in medical or dental implants. Regardless of any such product expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials the lowest that texist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the m

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