



Zytel® FR70M30V0 BK010

NYLON RESIN

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-31kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

Zytel® FR70M30V0 BK010 is a 30% mineral reinforced, flame retardant polyamide 66 resin for injection molding.

Product information

1 Toddot information					
Resin Identification	PA66-MD30FR(ISO 1043			
Part Marking Code	•	>PA66-MD30FR(17)< ISO 11469			
ISO designation		ISO 16396-PA66,MD30 FR(17),M1CF1GR,S14-060			
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Rheological properties	dry/cond.				
Moulding shrinkage, parallel	0.8/-	%	ISO 294-4, 2577		
Moulding shrinkage, normal	0.9/-	%	ISO 294-4, 2577		
Typical mechanical properties	dry/cond.				
Tensile modulus	6200/4000	MPa	ISO 527-1/-2		
Tensile stress at break, 5mm/min	65/45	MPa	ISO 527-1/-2		
Tensile strain at break, 5mm/min	2/3.5	%	ISO 527-1/-2		
Charpy impact strength, 23°C	20/25	kJ/m²	ISO 179/1eU		
Charpy impact strength, -30°C	20/18	kJ/m²	ISO 179/1eU		
Charpy notched impact strength, 23°C	2.5/2.5	kJ/m²	ISO 179/1eA		
Izod notched impact strength, 23°C	2/2.5	kJ/m²	ISO 180/1A		
Poisson's ratio	0.35/0.36				
Thermal properties	dry/cond.				
Melting temperature, 10°C/min	263/*	°C	ISO 11357-1/-3		
Glass transition temperature, 10°C/min	80/20	°C	ISO 11357-1/-3		
Temperature of deflection under load, 1.8 MPa	145/*	°C	ISO 75-1/-2		
RTI, electrical, 0.75mm	105	°C	UL 746B		
RTI, electrical, 1.5mm	120	°C	UL 746B		
RTI, electrical, 3.0mm	120	°C	UL 746B		
RTI, impact, 0.75mm	95	°C	UL 746B		
RTI, impact, 1.5mm	105	°C	UL 746B		
RTI, impact, 3.0mm	115	°C	UL 746B		
RTI, strength, 0.75mm	105	°C	UL 746B		
RTI, strength, 1.5mm	115/*	°C	UL 746B		
RTI, strength, 3.0mm	115	°C	UL 746B		

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Flammability	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0/*	class	IEC 60695-11-10
Thickness tested	1.5/*	mm	IEC 60695-11-10
UL recognition	yes/*		UL 94
Burning Behav. at thickness h	V-2/*	class	IEC 60695-11-10
Thickness tested	0.75/*	mm	IEC 60695-11-10
UL recognition	yes/*		UL 94
Burning Behav. 5V at thickness h	5VA/*	class	IEC 60695-11-20
Thickness tested	1.5/*	mm	IEC 60695-11-20
UL recognition	yes/*		UL 94
Oxygen index	40/*	%	ISO 4589-1/-2
Glow Wire Flammability Index, 0.75mm	960/-	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	960/-	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	960/-	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	800/-	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.0mm	800/-	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	800/-	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	800/-	°C	IEC 60695-2-13
FMVSS Class	DNI		ISO 3795 (FMVSS 302)

Physical/Other properties

Density 1620/- kg/m³ ISO 1183

dry/cond.

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	295	°C
Min. melt temperature	285	°C
Max. melt temperature	305	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	100	°C
Min. mould temperature	70	°C
Max. mould temperature	120	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm
Ejection temperature	210	°C

Characteristics

Processing Injection Moulding
Additives Flame retardant
Special characteristics Flame retardant

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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
- X Hydrochloric Acid (36% by mass), 23°C
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23°C
- X Sulfuric Acid (5% by mass), 23°C
- X Chromic Acid solution (40% by mass), 23°C

Bases

- X Sodium Hydroxide solution (35% by mass), 23°C
- ✓ Sodium Hydroxide solution (1% by mass), 23°C
- ✓ Ammonium Hydroxide solution (10% by mass), 23°C

Alcohols

- ✓ Isopropyl alcohol, 23°C
- ✓ Methanol, 23°C
- ✓ Ethanol, 23°C

Hvdrocarbons

- ✓ n-Hexane, 23°C
- ✓ Toluene, 23°C
- ✓ iso-Octane, 23°C

Ketones

✓ Acetone, 23°C

Ethers

✓ Diethyl ether, 23°C

Mineral oils

- ✓ SAE 10W40 multigrade motor oil, 23°C
- ✓ SAE 10W40 multigrade motor oil, 130°C
- ✓ SAE 80/90 hypoid-gear oil, 130°C
- ✓ Insulating Oil, 23°C

Standard Fuels

- ✓ ISO 1817 Liquid 1 E5, 60°C
- ✓ ISO 1817 Liquid 2 M15E4, 60°C
- ✓ ISO 1817 Liquid 3 M3E7, 60°C
- ✓ ISO 1817 Liquid 4 M15, 60°C
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), >90°C

Salt solutions

- ✓ Sodium Chloride solution (10% by mass), 23°C
- X Sodium Hypochlorite solution (10% by mass), 23°C
- ✓ Sodium Carbonate solution (20% by mass), 23°C

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- ✓ Sodium Carbonate solution (2% by mass), 23°C
- X Zinc Chloride solution (50% by mass), 23°C

Other

- ✓ Ethyl Acetate, 23°C
- X Hydrogen peroxide, 23°C
- ✓ DOT No. 4 Brake fluid, 130°C
- ✓ Ethylene Glycol (50% by mass) in water, 108°C
- √ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23°C
- ✓ 50% Oleic acid + 50% Olive Oil, 23°C
- ✓ Water, 23°C
- X Water, 90°C
- X Phenol solution (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 expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

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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