

TRIAX[®] 1315

ABS/Nylon Alloy

15% Glass-Reinforced Grade

Description

Triax 1315 resin is a 15% glass-reinforced ABS (Acrylonitrile Butadiene Styrene)/Nylon alloy for injection molding. It is a semicrystalline thermoplastic with excellent processibility, good chemical resistance, good fatigue performance, and excellent abrasion characteristics. Triax 1315 resin offers added strength, rigidity, and heat resistance.

Applications

Triax 1315 resin is used for parts requiring good rigidity and warpage control. Typical applications include housings, shrouds handles for components of lawn and garden equipment, power tools, appliances, and sporting goods. Automotive applications include fasteners and interior functional components, housings, and shrouds. As with any product, use of Triax 1315 resin in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Drying

Triax ABS/Nylon alloy resins absorb moisture and must be dried prior to processing. The moisture level of the dried resin should be between 0.15 and 0.35%. A desiccant dehumidifying hopper dryer with a maximum inlet air dew point of -20°F (-29°C) is recommended. Typical drying conditions are 2 to 4 hours at 190°F (88°C) and should not exceed 200°F (93°C).

Processing

A reciprocating screw injection molding machine is recommended for Triax 1315 resin. A general-purpose screw with a 2.5:1 compression ratio is suggested. A minimum L/D ratio of 20:1 will ensure melt homogeneity.

For best part quality, use the lower range of the recommended melt temperature with minimum barrel residence time. To avoid excessive residence time in the barrel, volume and weight of the shot should be balanced against barrel capacity and injection stroke. A shot weight-to-machine capacity ratio of 0.5 to 0.7 is recommended; ratios below 0.3 should definitely be avoided.

Typical processing parameters are noted below. Actual processing conditions will depend on machine size, mold design, material residence time, shot size, etc.

Typical Injection Molding Conditions	
Barrel Temperatures:	
Rear.....	450° – 510°F (232° – 266°C)
Middle.....	450° – 510°F (232° – 266°C)
Front.....	450° – 510°F (232° – 266°C)
Nozzle.....	480° – 500°F (249° – 260°C)
Melt Temperature.....	460° – 520°F (238° – 271°C)
Mold Temperature.....	100° – 150°F (38° – 66°C)
Injection Pressure.....	6,000 – 12,000 psi
Hold Pressure.....	30 – 50% of Injection Pressure
Back Pressure.....	50 – 100 psi
Screw Speed.....	Moderate
Injection Speed.....	Fast
Cushion	1/8 in max
Clamp.....	3 – 5 ton/in ²

Additional information on processing may be obtained by contacting an INEOS ABS technical service representative.

Typical Properties* for Natural Resin	ASTM Test Method (Other)	Triax [®] 1315 Resin	
		Dry as Molded	Conditioned
General Specific Gravity Density Specific Volume Mold Shrinkage: Cross to Flow Melt Flow Rate at 250°C/5-kg Load Gloss: 20° Angle 60° Angle	D 792 D 792 D 792 D 955 D 1238 D 523	1.17 0.042 lb/in ³ 23.7 in ³ /lb 0.0045 in/in 3.5 g/10 min 7% 26%	
Mechanical Tensile Stress at Yield Tensile Elongation at Break Tensile Modulus Flexural Stress at Yield Flexural Modulus Impact Strength, Notched Izod: 0.125-in Thickness 73°F -40°F 0.250-in Thickness 73°F -40°F Rockwell Hardness, R Scale	D 638 D 638 D 638 D 790 D 790 D 256 D 785	12,000 lb/in ² 3.5% 750,000 lb/in ² 18,800 lb/in ² 630,000 lb/in ² 2.1 ft-lb/in 1.3 ft-lb/in 2.6 ft-lb/in 1.1 ft-lb/in 107	10,900 lb/in ² 4.1% 670,000 lb/in ² 16,200 lb/in ² 545,000 lb/in ² 2.1 ft-lb/in 1.3 ft-lb/in 2.6 ft-lb/in 1.1 ft-lb/in 101
Thermal Deflection Temperature Under Load: 0.125-in Thickness, Unannealed 264 psi 66 psi 0.250-in Thickness, Unannealed 264 psi 66 psi Coefficient of Linear Thermal Expansion: -40 to 71°F 71 to 181°F Relative Temperature Index: 1.5-mm Thickness Electrical Mechanical with Impact Mechanical without Impact Vicat Softening Temperature Rate B; 1-kg; 120°C/h	D 648 D 696 (UL746B) D 1525	210°F 336°F 216°F 374°F 2.6 E-05 in/in/°F 2.3 E-05 in/in/°F	207°F 334°F 212°F 356°F 2.5 E-05 in/in/°F 2.2 E-05 in/in/°F 140°F 140°F 140°F 390°F
Flammability** UL94 Flame Class: 1.5-mm Thickness 3.0-mm Thickness	(UL94)	HB Rating ^a HB Rating ^a	

* These items are provided as general information only. They are approximate values and are not part of the product specifications.

** Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect hazards presented by this or any other material under actual fire conditions.

^a Natural, black and gray colors

Dry as Molded: Refers to a moisture content of less than 0.2% by weight.

Conditioned: Refers to an equilibrium moisture content in a standard laboratory atmosphere of 73°F (23°C) and 50% relative humidity.

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