INEOS ABS

TRIAX® 1185

ABS/Nylon Alloy

Injection Molding Grade

Description

Triax 1185 resin is an ABS (Acrylonitrile Butadiene Styrene)/Nylon 6 alloy for injection molding. It is a semicrystalline thermoplastic with excellent processibility, good chemical resistance, good fatigue performance, and excellent abrasion characteristics. Triax 1185 resin has excellent impact resistance across a broad temperature range and excellent surface appearance.

Applications

Triax 1185 resin is designed for use in large parts requiring a smooth finish and consistent appearance. Typical applications include components for recreational vehicles, snowmobiles, sporting goods, and a variety of parts for industrial and consumer applications. As with any product, use of Triax 1185 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 1185 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° – 200°F (38° – 93°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* of Natural Resin	ASTM Method (Other)	Units	Triax 1185 Conditioned**
General			
Specific Gravity	D792	---	1.07
Mold Shrinkage	D955	%	0.009 - 0.011
Water Absorption, Immersion at 73°F:	D570		
24hr		%	1
Equilibrium		%	5
Gloss:	D523		
20°		%	83
60°		%	93
Melt Flow, 250°C / 5-kg	D1238	gm / 10min	11
Melt Flow, 230°C / 10-kg	D1238	gm / 10min	20
Mechanical			
Tensile Stress at Yield	D638	psi	4890
Tensile Modulus	D638	ksi	223
Flexural Stress	D790	psi	7430
Flexural Modulus	D790	ksi	191
Impact Strength, Notched Izod:	D256		
73°F		ft•lb/in	19
-22°F		ft•lb/in	15
Instrumented Impact, Total Energy:	D3763		
73°F		ft•lb	35
-22°F		ft•lb	35
Thermal			
Deflection Temperature, Unannealed:	D648		
0.125-in, 264 psi		°F	124
0.125-in, 66 psi		°F	180
Vicat Softening Temperature:	D1525		
1kg, 120°C/hr		°F	385
Relative Temperature Index:	(UL746B)		
1.5-mm Thickness			
Electrical		°F	140
Mechanical with Impact		°F	140
Mechanical without Impact		°F	140
Coefficient of Linear Thermal Expansion:	E831		
-40 to 176°F		in/in/°F (mm/mm/°C)	6.16 (11.1) E-05
Flammability ***			
UL94 Flame Class:	(UL94)		
All Colors, 1.5-mm Thickness		Rating	HB

** These items are provided as general information only. They are approximate values and are not part of the material specifications. Individual sample results may vary from the average reported.*

*** All properties are tested on specimens conditioned to an equilibrium moisture content in a standard laboratory atmosphere of 73°F and 50% relative humidity.*

**** 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.*

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