



DIAMOND POLYMERS, INC.

Diamaloy GLY 7510

High Heat ASA Weatherable Polymer

Diamaloy GLY 7510 resin is a high gloss, high heat and high impact grade of ASA (acrylonitrile-styrene-acrylate) with good resistance to weather aging. This product is rated f1 by UL and be customized colored.

Applications

Typical applications include those requiring weatherability and toughness for automotive exterior applicaions and lawn and garden applications. As with any product, use of Diamaloy GLY 7510 resin in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Weatherability

Diamaloy GLY 7510 exhibits good resistance to weather aging in unpainted outdoor applications. Color changes may occur in certain colors but are minimal in comparison with ABS (acrylonitrile butadiene styrene) under similar exposure conditions. For optimum performance, appropriate pigments should be used. In coextrusion applications. Since weatherability is dependent on certain variables, such as resin color, end-use environment, and length of exposure, users need to determine whether color, appearance, and property shifts are acceptable for their intended applications. Please consult your DIAMOND POLYMERSASA representative for further information.

Drying

Drying prior to processing is recommended in a desiccant dehumidifying hopper dryer. An inlet air dew point of -20°F (-29°C) or below is recommended to achieve a moisture content of $\leq 0.04\%$. Typical drying conditions are 3-4 hours at 190°-210°F (88°-99°C).

Processing

A reciprocating screw injection molding machine is preferred. 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, 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. 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.....	460° – 520°F (238° – 271°C)
Melt Temperature.....	490° – 520°F (254° – 271°C)
Mold Temperature.....	130° – 160°F (54° – 71°C)
Back Pressure.....	50 -150 psi
Injection Speed.....	30 - 80 rpm

Regrind Information

Where end-use requirements permit, up to 20% Diamaloy resin regrind may be used with virgin material, during injection molding, provided that the material is kept free of contamination and is properly dried (see section on Drying). Any regrind used must be generated from properly molded parts, sprues, and/or runners. All regrind used must be clean, uncontaminated, and thoroughly blended with virgin resin prior to drying and processing. Under no circumstances should degraded, discolored, or contaminated material be used for regrind. Material of this type should be discarded. Improperly mixed and/or dried resin may diminish the desired properties of Diamaloy resin. It is critical that you test finished parts produced with any amount of regrind to ensure that your end-use performance requirements are fully met. Regulatory or testing organizations (e.g., UL) may have specific requirements limiting the allowable amount of regrind. Because third party regrind generally does not have a traceable heat history, nor offer any assurance that proper temperatures, conditions, and/or materials were used in processing, extreme caution must be exercised in buying and using regrind from third parties.

The use of regrind materials should be avoided entirely in those applications where resin properties equivalent to virgin material are required, including but not limited to color quality, impact strength, resin purity, and/or load-bearing performance.



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Preliminary Data Sheet

ASA Weatherable Polymers
Injection Molding Grade

Diamaloy
GLY 7510

PROPERTIES	ASTM METHOD	UNITS ENGLISH METRIC	
PHYSICAL			
Melt Flow Rate- Procedure A 220°C/10 kg 260°C/ 5 kg	D-1238	g/10 min	4.0 8.3
Specific Gravity	D-792		1.08
Mold Shrinkage	D-955	%	0.4 - 0.7
Rockwell Hardness	D-785	R Scale	101
Gloss, untextured, 60°	D-523		94
IMPACT			
Izod Impact, notched (0.125") @ 73°F @ -22°F	D-256	ft-lb/in	4.6 0.8
Instrumented Impact Total Energy @ 73°F @ -22°F	D-3763	in-lb	239 184
TENSILE			
Tensile Strength @ Yield Type 1 bar, chs 2 in/min	D-638	psi MPa	7,500 52
Tensile Strength @ Break Type 1 bar, chs 2 in/min	D-638	psi MPa	5,600 38
% Elongation @ Yield, Type 1 bar, chs 2 in/min	D-638	%	3
% Elongation @ Break Type 1 bar, chs 2 in/min	D-638	%	22
Tensile Modulus chs 2 in/min	D-638	psi MPa	404,000 2,784
Tensile Stress @ Yield chs 50 mm/min	ISO 527	MPa	49

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PROPERTIES	ASTM METHOD	UNITS ENGLISH METRIC	
FLEXURAL			
Flexural Modulus, 0.125 inch bar chs 0.05 in/min, 2 in span	D-790	psi MPa	353,000 2,432
Flexural Strength, 0.125" bar chs 0.05 in/min, 2 in span	D-790	psi MPa	11,500 79
Flexural Modulus, 2 mm/min	ISO 178	MPa	2,450
THERMAL			
Heat Deflection Temperature 0.125" bar @ 1.8 MPa (264 psi)	D-648	°F °C	190 88
Heat Deflection Temperature 0.125" bar @ 0.455 MPa (66 psi)	D-648	°F °C	215 102
CTE, flow, -40°F to100°F CTE, xflow, -40°F to100°F	E831	1/°F	4.2 E-05 4.8 E-05
Vicat Softening Point RateB/50	D-1525 ISO 306	°F °C	242 104
Relative Temperature Index, Elec.	UL 746B	°C	50
Relative Temperature Index, Mech. w/impact w/o impact	UL 746B	°C	50 50
ELECTRICAL			
Hot Wire Ignition (PLC)	UL 746A	PLC Code	3
High Ampere Arch Ign, surface (PLC)	UL 746A	PLC Code	0
Comparative Tracking Index (UL) (PLC)	UL 746A	PLC Code	0
FLAME CHARACTERISTICS			
Flammability, 0.06 in	UL94 UL 746C		HB f1
FMVSS Burnign Speed, 1 mm thick	FMVSS 302	mm/min	35

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