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331 Matte Silver Polyester

Liberty 331 is a high performance polyester label film. This facestock resists tearing, abrasion and heat. The gloss white surface makes label graphics easy to read. The durable topcoating resists smudging and abrasion when printed with resin based thermal transfer ribbons.

The high performance acrylic adhesive provides a permanent bond to a wide range of surfaces. The release liner is a standard roll label liner compatible with most thermal transfer printers.

Liberty 331 is UL Recognized for indoor and outdoor use, with limited exposure to lubricating oil and water. For further information on printer and ribbon combinations please reference file # MH25432. The temperature limits of the recognition are listed below. Contact your Liberty Marking Systems representative for further information.

SURFACE	TEMPERATURE LIMITS	RECOGNITION
Stainless Steel	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Aluminum	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Anodized Aluminum	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Galvanized Steel	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Alkyd Paint	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Polyester Paint	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Acrylic Paint	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Epoxy Paint	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Porcelain	-40° F to 302° F (-40° C to 150° C)	Indoor/Outdoor
Glass	-40° F to 212° F (-40° C to 100° C)	Indoor/Outdoor
Nylon	-40° F to 212° F (-40° C to 100° C)	Indoor/Outdoor
Melamine	-40° F to 212° F (-40° C to 100° C)	Indoor/Outdoor
Polycarbonate	-40° F to 212° F (-40° C to 100° C)	Indoor/Outdoor
Polystyrene	-40° F to 176° F (-40° C to 80° C)	Indoor/Outdoor
ABS Plastic	-40° F to 176° F (-40° C to 80° C)	Indoor/Outdoor
Unsaturated Thermoset Polyester	-40° F to 212° F (-40° C to 100° C)	Indoor/Outdoor
Phenolic-Phenol Formaldehyde	-40° F to 212° F (-40° C to 100° C)	Indoor/Outdoor
Polyethylene	140° F (60° C) No Cold Rating	Indoor Only
Polypropylene	176° F (80° C) No Cold Rating	Indoor Only
Polyphenylene Oxide/Ether	-40° F to 176° F (-40° C to 80° C)	Indoor Only
Alkyd Painted Plastic	-40° F to 140° F (-40° C to 60° C)	Indoor Only

Product Performance and Suitability

All of the descriptive information and recommendations for the use of Liberty Marking Systems products are to be used only as a guide. The furnishing of such information and recommendations shall in no event constitute a warranty of any kind by Liberty Marking Systems. All purchasers of Liberty Marking Systems products shall independently determine the suitability of the material for the purpose for which it is purchased. No distributor, salesman, or representative of Liberty Marking Systems is authorized to give any warranty, guarantee, or to make any representation in addition or contrary to the above.

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SERVICE TEMPERATURE RANGE See page 1 for exact surface	-40° F to 302° F (-40° C to 150° C)
Minimum Application Temperature	50° F (10 C)
Expected Exterior Life	Two years - slight yellowing may occur
Storage Stability	Two years stored at 70° F (21° C) and 50% RH

PHYSICAL CHARACTERISTICS

Thickness	Film	2.0 mils +/- 10%
	Adhesive	0.8-0.9 mils +/- 0.1
	Liner	3.2 mils +/- 10%

ADHESION PROPERTIES

	Initial (15 minute dwell)		72 Hours at Room Temperature		72 Hours at 120° F	
	oz/in	(N/100mm)	oz/in	(N/100mm)	oz/in	(N/100mm)
Aluminum	55	(61)	60	(66)	63	(70)
Stainless Steel	36.5	(40.2)	59.6	(65.6)	68.4	(75.2)
Polypropylene	19	(21)	5.4	(5.9)	28	(31)
ABS Plastic	51.5	(56.7)	62.9	(69.2)	60.2	(66.2)
HDPE	11.2	(12.3)	12.9	(14.2)	17.2	(18.9)
LDPE	13	(14.3)	28	(31)	12	(13)
Loop Tack	59.2					