76500 - 3M TT1 MC PET 25-310E-65WG

Thermal Transfer Polyester Label Material

Product Data Sheet

Issued **February 2002**
Supersedes **February 2001**

Physical Properties
Not for specification purposes
(Calipers are nominal values)

Facestock	31 micron Matte clear polyester
Adhesive	20 micron #310 E Acrylic
Liner	56 micron, 62 g/m² White Densified Glassine
Shelf Life	24 months from date of manufacture of product when properly stored between 22°C and 50% relative humidity.

Features:

- Matte topcoat provides the advantages of matte coating combined with a surface that is smooth enough for thermal transfer printing. Resin ribbons are recommended for optimum durability. The matte coating is extremely resistant to degradation from scuffing, chemicals, moisture, and wide temperature fluctuations. The topcoat also provides improved ink anchorage for traditional forms of press printing.
- 310 E is a firm adhesive, which resists oozing and provides high strength on a variety of surfaces including high surface energy (HSE) plastics and metals. It additionally has improved chemical and U.V resistance.
- 62 g/m^2 densified glassine liner assures consistent die cutting.
- 3M™ Label Material 76500 UL and cUL recognised (File MH 18072). See UL listings for details

Application Ideas:

- Thermal Transfer Printable Overlaminate.
- Protective overlaminate for label and nameplate graphics can be used on appliances, industrial equipment, tools etc.

Performance Characteristics
Not for specification purposes

Adhesion	90°Peel Adhesion, Test procedure FTM 2			
	Initial (20 Minute Dwell/RT)		Ultimate Adhesion 72 Hours Dwell at Maximum UL Temperature rating	
	N/10mm	Oz/In	N/10mm	Oz/In
Aluminium	3.1	28	6.4	58
Stainless Steel	4.7	43	6.8	62
Phenolic	3.1	28	4.7	43
ABS	3.4	31	3.2	29
Polycarbonate	2.5	23	3.1	28
Polystyrene	3.7	34	4.5	41
Polypropylene	0.5	4.6	1.8	16
HD Polyethylene	1.8	16	3.2	29
LD Polyethylene	0.9	8.2	1.3	12
Powder Coating	3.7	34	6.4	31

	Conditioned for 3 Days at - 40ºC	
Surface	90º Peel	
	N/10mm	Oz/In
Aluminium	2.8	25
Stainless Steel	5.9	54
Phenolic	4.0	36
ABS	4.6	42
Polycarbonate	3.3	42
Polystyrene	4.5	41
Polypropylene	1.1	10
HD Polyethylene	2.0	18
LD Polyethylene	1.3	12
Powder Coating	3.3	30

Performance Characteristics Contd.
Not for specification purposes

Adhesion	180°Peel Adhesion, Test procedure FTM 1			
	Initial (20 Minute Dwell/RT)		Ultimate Adhesion 72 Hours Dwell at Maximum UL Temperature rating	
	N/10mm	Oz/In	N/10mm	Oz/In
Aluminium	4.2	38	6.7	61
Stainless Steel	4.5	41	8.7	80
Phenolic	4.8	44	8.7	80
ABS	5.2	47	6.0	55
Polycarbonate	5.1	46	4.2	38
Polystyrene	4.8	44	4.8	44
Polypropylene	0.4	3.6	3.1	28
HD Polyethylene	0.4	3.6	3.0	27
LD Polyethylene	0.4	3.6	0.8	7.5

	Conditioned for 3 Days at - 40ºC	
Surface	180º Peel (FTM 1)	
	N/10mm	Oz/In
Aluminium	4.7	43
Stainless Steel	7.0	64
Phenolic	5.0	46
ABS	4.9	45
Polycarbonate	5.8	53
Polystyrene	4.8	44
Polypropylene	0.6	5.5
HD Polyethylene	0.4	3.6
LD Polyethylene	0.4	3.6

Performance Characteristics Contd…
Not for specification purposes

Liner Release	FTM 3 180º Removal of Liner from Facestock		
	Rate of Removal	N/10mm	Gms/50mm Width
	2.3 m / min	0.025	13

Environmental Performance	The properties defined are based on four hour immersions at room temperature 22ºC unless otherwise noted. Samples were applied to stainless steel panels 24 hours prior to immersion and were evaluated one hour after removal from the solution for peel adhesion. Adhesion measured at 90º peel angle (FTM 2 at 305 mm/min.				
Chemical Resistance	**Adhesion to Stainless Steel**			**Appearance**	**Edge Penetration**
Chemical	**N/10mm**	**Oz/In**	**% Change**	**Visual**	**Millimetres**
Isopropyl Alcohol	5.4	49	90	No change	1
Detergent (1% Alconox®*)	5.5	51	104	No change	1
Engine Oil (10W30) @ 250ºF (121ºC)	5.7	52	106	No change	1
Water for 48 hours	5.7	52	106	No change	0
pH 4	5.8	53	107	No change	0
PH10	5.8	53	107	No change	0
Toluene	3.1	28	57	Topcoat Damaged	5.0
Acetone	3.0	27	56	Topcoat Damaged	6.0
Brake Fluid	5.3	48	98	Slight Damage	1
Gasoline	3.8	35	70	No change	5.0
Diesel Fuel	4.6	42	85	No change	0
Naphtha	3.2	29	59	No change	3.0
Hydraulic Fluid	5.6	51	103	No change	0

Temperature Resistance	149°C for 24 hours:	no significant visual change 0.7% MD shrinkage 0.9% CD shrinkage
	-40°C for 3 days:	no significant visual change
Humidity Resistance	24 hours at 38°C and 100% relative humidity	no significant changes in appearance or adhesion

Agency Listing Information

Thermal Transfer Printing:

UL approved with the following thermal transfer ribbons, indoor and outdoor :-

Armor: , AXR 8+
Ricoh™: B110C, B110 CX
Sony™: TR 4070, TR 5070
Keymax Alpha
Astromed R5, RY
Kurz 501

Armor AXR 7+ and Iimak SP 360, Indoor only

cUL approved with the following thermal transfer ribbons, Type A, normal use indoor suitable for indoor and outdoor :-

Armor: , AXR 7+, AXR 8+
Ricoh™: B110C,
Sony™: TR 4070, TR 5070
Keymax Alpha
Astromed RY
Iimak SP 360

Press Inks:
For details of inks compatible with this labelstock that meet the requirements of both UL and cUL, please contact your local technical service engineer.

Processing

Printing:
Facestock is topcoated for improved ink receptivity and is designed for thermal transfer printing. It is printable by all standard roll-processing methods including flexography, hot stamp, letterpress, and screen-printing.

Die Cutting:
Rotary die cutting is recommended. Fanfolding of labels is not recommended. Small labels should be evaluated carefully. Winding tensions should be kept at a minimum to help prevent the adhesive from oozing.

Packaging:
Finished labels should be stored in plastic bags.

Special Considerations

For maximum bond strength, the surface should be clean and dry. Typical cleaning solvents are heptane and isopropyl alcohol.

NOTE: When using solvents, read and follow the manufacturer's precautions and directions for use.

For best bonding conditions, application surface should be at room temperature or higher. Low temperature surfaces, below 10°C can cause the adhesive to become so firm that it will not develop maximum contact with the substrate. Higher initial bonds can be achieved through increased rubdown pressure.

Values presented have been determined by standard test methods and are average values not to be used for specification purposes.
Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications.
This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

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