TECHNICAL DATA SHEET
3M Clear Polyester

This technical data sheet refers to the following Lighthouse product(s):

CPMSP14, 3M Clear Polyester

PHYSICAL PROPERTIES

Not for specification purposes (Calipers are nominal values)

Face stock	51 micron (2.0 thou) Gloss Clear Polyester
Adhesive	20 micron (0.8 thou) Acrylic
Liner	140 gsm kraft
Shelf Life	24 months from date of manufacture of product when properly stored at 22°C and 50% relative humidity.

FEATURES

- Face stock is top coated for thermal transfer printing. Lighthouse durable resin ribbons are recommended for optimum durability.
- The acrylic adhesive bonds well to a wide variety of substances including metals, high surface energy (HSE) plastics and low surface energy (LSE) plastics. It is ideal for applications requiring high initial adhesion especially to LSE plastic surfaces.
- 3M Clear Polyester is UL recognised (File MH16411) and CSA accepted (File 99316). See the UL and CSA listings for details.

APPLICATION IDEAS

- Barcode labels and rating plates.
- Property identification and asset labelling.
- Warning, instruction and service labels for durable goods.
- Nameplates for durable goods.

PERFORMANCE CHARACTERISTICS (Not for specification purposes)

Adhesion	180° peel test procedure is ASTM D 3330 90° peel test procedure is ASTM D 3330 modified for the angle change							
	Initial (10 Minute Dwell/RT)				**Conditioned for 3 days at Room Temperature (22°C)**			
	180 ° Peel		**90 ° Peel**		**180 ° Peel**		**90 ° Peel**	
Surface	**N/10 mm**	**Oz./In.**	**N/10 mm**	**Oz./In.**	**N/10 mm**	**Oz./In.**	**N/10 mm**	**Oz./In.**
Stainless Steel	6.1	56	4.6	42	7.3	67	5.0	46
Polycarbonate	6.7	59	4.8	44	6.7	61	5.0	46
Polypropylene	5.8	53	4.2	38	6.1	56	4.2	38
Glass	6.6	60	4.6	42	7.8	71	5.2	48
HD Polyethylene	3.8	35	3.1	28	4.4	40	3.1	28
LD Polyethylene	3.5	32	2.7	25	4.6	42	3.7	34

Surface	**Conditioned for 3 days at 49°C**				**Conditioned for 24 hours at 32°C at 90% Relative Humidity**			
	180 ° Peel		**90 ° Peel**		**180 ° Peel**		**90 ° Peel**	
	N/10 mm	**Oz./In.**	**N/10 mm**	**Oz./In.**	**N/10 mm**	**Oz./In.**	**N/10 mm**	**Oz./In.**
Stainless Steel	7.7	70	5.5	50	7.4	68	5.8	53
Polycarbonate	3.3	30	1.9	17	6.0	55	3.9	36
Polypropylene	5.9	54	4.6	42	7.2	66	4.8	44
Glass	7.7	70	5.5	50	7.3	67	4.8	44
HD Polyethylene	4.4	40	3.2	29	4.9	45	3.5	32
LD Polyethylene	1.0	9	1.1	10	3.9	36	3.3	30

Liner Release	180° Removal of Liner from Face stock		
	Rate of Removal	**N/10mm**	**Grams / 25mm Width**
	2.3m / min	0.054	14
	7.6m / min	0.069	18

Environmental Performance	The properties defined are based on four hour immersions at room temperature 22°C 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 180° peel angle (ASTM D3330) at 305 mm/min.			
Chemical Resistance	**Adhesion to Stainless Steel**		**Appearance**	**Edge Penetration**
Chemical	**N/10mm**	**Oz/In**	**Visual**	**Millimetres**
Isopropyl Alcohol	6.6	60	No change	0.8
Detergent (1% Alconox®*)	7.0	64	No change	0
Engine Oil (10W30) @ 250°F (121°C)	7.0	64	No change	1
Water for 48 hours	7.2	66	No change	0
pH 4	7.1	65	No change	0
pH 10	7.0	64	No change	0
409[8*] Cleaning Solution	7.0	64	No change	0
Toluene	3.6	33	No change	6.5
Acetone	5.1	47	No change	4.3
Brake Fluid	8.1	74	No change	0
Gasoline	3.9	36	No change	5.8
Diesel Fuel	6.8	62	No change	1
Mineral Spirits	5.9	54	No change	2.4
Hydraulic Fluid	7.2	66	No change	0

Temperature Resistance	149°C for 24 hours:		No significant visual change 0.75% 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
Accelerated Ageing:	**ASTM D3611: 96 hours at 65°C & 80% relative humidity**		
	Rate of Removal	**N/10mm**	**Grams/25mm Width**
180° Peel Removal of Liner from Face stock	2.3 m / minute	0.62	16
180° Peel Adhesion from Stainless Steel	**Rate of Removal**	**N/10mm**	**Oz / Inch Width**
	305 mm/ minute	5.9	54

PROCESSING

Printing	Face stock is top coated for improved ink receptivity and is designed for thermal transfer printing with Lighthouse durable resin ribbons.
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.

IMPORTANT NOTICE

All Lighthouse products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects.

Published information concerning Lighthouse products is based on research, which the Company believes to be reliable, although such information does not constitute a warranty.

Because of the variety of uses of Lighthouse products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use. The seller shall not be liable for damages in excess of the purchase price of the product nor for incidental or consequential damages.

All specifications are subject to change without prior notice.