



# 7861EH 3M TT2 GC PET 50-300E-90WG

## Thermal Transfer Polyester Label Material

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### Provisional Product Data Sheet

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**Issued** : June 2004  
(Provisional)  
**Supersedes** : May 2003  
(Provisional)

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

|                   |  |
|-------------------|--|
| <b>Facestock</b>  | 50 micron Gloss Clear polyester  |
| <b>Adhesive</b>   | 20 micron #300E Acrylic  |
| <b>Liner</b>      | 77 micron, 90 g/m <sup>2</sup> White Densified Glassine  |
| <b>Shelf Life</b> | 24 months from date of manufacture of product when properly stored between 22°C and 50% relative humidity. |

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**Features:**

- Facestock is topcoated for thermal transfer printing. Resin ribbons are recommended for optimum durability. The topcoat also provides improved ink anchorage for traditional forms of press printing.
- 300E adhesive bonds well to a wide variety of substrates 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.
- 90 g/m<sup>2</sup> densified glassine liner assures consistent die cutting.
- UL and cUL approved (File no. MH18072)

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**Application Ideas:**

- Barcode labels and rating plates.
  - Property identification and asset labelling in harsh environments.
  - Warning, instruction, and service labels for durable goods.
  - Nameplates for durable, electronic and sporting goods.
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**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 70° C |       |
|                 | N/10mm                                 | Oz/In | N/10mm                                    | Oz/In |
| Aluminium       | 4.2                                    | 38    | 5.6                                       | 50    |
| Stainless Steel | 4.5                                    | 41    | 5.6                                       | 50    |
| Phenolic        | 4.3                                    | 39    | 5.4                                       | 48    |
| ABS             | 4.6                                    | 41    | 5.5                                       | 50    |
| Polycarbonate   | 5.0                                    | 45    | 5.3                                       | 48    |
| Polystyrene     | 4.7                                    | 42    | 5.1                                       | 46    |
| Polypropylene   | 4.4                                    | 40    | 4.7                                       | 42    |
| HD Polyethylene | 3.0                                    | 27    | 3.6                                       | 32    |
| LD Polyethylene | 3.5                                    | 32    | 3.4                                       | 31    |
| Powder Coating  | 3.0                                    | 27    | 5.2                                       | 47    |

| Surface         | Conditioned for 3 Days at - 40°C |       |
|-----------------|----------------------------------|-------|
|                 | 90° Peel                         |       |
|                 | N/10mm                           | Oz/In |
| Aluminium       | 4.3                              | 39    |
| Stainless Steel | 4.9                              | 44    |
| Phenolic        | 4.7                              | 42    |
| ABS             | 5.2                              | 47    |
| Polycarbonate   | 5.0                              | 45    |
| Polystyrene     | 5.0                              | 45    |
| Polypropylene   | 4.8                              | 43    |
| HD Polyethylene | 3.5                              | 32    |
| LD Polyethylene | 5.0                              | 45    |
| Powder Coating  | 4.0                              | 36    |

**Performance  
 Characteristics Contd.**

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

|                                  |  |
|----------------------------------|--|
| <b>Environmental Performance</b> | 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 90° peel angle (FTM 2) at 305 mm/min. |
|----------------------------------|--|

| <b>Chemical Resistance</b>  | <b>Adhesion to Stainless Steel</b> |              | <b>Appearance</b> | <b>Edge Penetration</b> |
|-----------------------------|------------------------------------|--------------|-------------------|-------------------------|
|                             | <b>N/10mm</b>                      | <b>Oz/In</b> | <b>Visual</b>     | <b>Millimetres</b>      |
| <b>Heptane</b>              | 3.8                                | 34           | No change         | 5                       |
| <b>Petrol</b>               | 3.2                                | 29           | No change         | 4                       |
| <b>Diesel</b>               | 4.8                                | 43           | No change         | 1                       |
| <b>SAE 15W40 Engine Oil</b> | 5.5                                | 50           | No change         | 0                       |
| <b>Dot 4 Brake Fluid</b>    | 5.6                                | 50           | No change         | 0                       |
| <b>Screen Wash</b>          | 7.0                                | 63           | No change         | 0                       |
| <b>IPA</b>                  | 5.3                                | 48           | No change         | 1                       |
| <b>Toluene</b>              | 3.1                                | 28           | No change         | 5                       |
| <b>MEK</b>                  | 3.2                                | 29           | No change         | 5                       |
| <b>Lemsolve</b>             | 5.0                                | 45           | No change         | 2                       |
| <b>Teepol Detergent</b>     | 3.6                                | 32           | No change         | 0                       |
| <b>PH 4</b>                 | 7.0                                | 63           | No change         | 0                       |
| <b>PH 10</b>                | 6.6                                | 59           | No change         | 0                       |
| <b>409 Solution</b>         | 6.4                                | 58           | No change         | 0                       |

## Agency Listing Information

### Thermal Transfer Printing:

UL and cUL approved with the following thermal transfer ribbons

Armor: AXR-8, AXR 600, AXR7+  
Ricoh™: B120EC  
Sony™: TR4570  
Zebra: 4800, 5095, 5100

Also UL approved with the following ribbons

Ricoh: B110CX  
Astromed: RY, R5  
Kurz: K501  
Sony: TR5070

## 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.

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## 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 5°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.

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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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