

## PRODUCT SPECIFICATION

### 5000-M

#### UV Adhesive

#### Description:

Formulated for high-strength assembly, this single-component, medium viscosity UV and visible light curable structural adhesive cures in seconds under ultraviolet radiation. It forms a flexible, impact-resistant, and weather-resistant bond across an extensive range of thermoplastics, thermoset plastics, composites, and dissimilar substrates, including PVC, PC, PET, ABS, Acrylic, Nylon, and FRP.

Engineered for precision industrial, medical, and general-purpose applications, it is ideal for assembling disposable medical devices, decorative components, plastic housings, and clamshell packaging. Additionally, the formulation includes built-in fluorescence under blacklight, enabling automated in-line quality control inspection using optical vision systems during production.

#### Typical Properties of Cured/Uncured Material:

| Liquid State            |                       | Cured State                  |    |
|-------------------------|-----------------------|------------------------------|----|
| Base                    | Urethane Methacrylate | Elongation @ break (%)       | 60 |
| Colour                  | Clear                 | Hardness, ASTM D2240 Shore D | 42 |
| Specific Gravity (25°C) | 1.1                   |                              |    |
| Viscosity (cP)          | 4000-6000             |                              |    |

#### UV Curing System:

| Lamp Type                      | 5" x 5" Flood          | 3/16" Spot              | 1" x 6" Focused         |
|--------------------------------|------------------------|-------------------------|-------------------------|
| Max. Lamp Intensity @ 365 nm   | 300 mW/cm <sup>2</sup> | 4000 mW/cm <sup>2</sup> | 8000 mW/cm <sup>2</sup> |
| Adhesive Absorption Range (nm) | 300 - 500              | 300 - 500               | 300 - 500               |
| Cure Speed (Sec)               |                        |                         |                         |
| Glass to Glass Bonding         | 12                     | 11                      | <5                      |
| Surface Cure Speed             | 16                     | 14                      | <5                      |

#### Bond Strength

(Shear Strength, psi, ASTM D4501):

| Substrate      | psi  | N/mm <sup>2</sup> |
|----------------|------|-------------------|
| PVC to PVC     | 3100 | 21                |
| PVC to PU      | 2950 | 20                |
| PET to PVC     | 2355 | 2                 |
| PVC to Acrylic | 2550 | 17                |
| ABS to PC      | 2150 | 14                |

#### Cure Conditions:

Cure can be achieved using both low and high-intensity UV light sources. Under a low UV intensity of 30 mW/cm, highly transmissive substrates with joint gaps under 0.25 mm (0.010") cure in 5 seconds, while gaps of 1.75 mm to 2.25 mm (0.070" to 0.090") cure within 10 to 20 seconds. Under a high UV intensity of 100 mW/cm, highly transmissive substrates with gaps under 0.25 mm (0.010") cure in 2 seconds, while larger gaps of 2.5 mm to 5.0 mm (0.100" to 0.200") achieve full cure within 10 to 20 seconds.

#### Directions For Use:

This adhesive is UV sensitive. Exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling. Adhesive product should be dispensed from applicators with black feed lines. For best performance bond surfaces should be clean and free from grease.

UV cure rate is depends on lamp intensity, distance from light source, depth of cure needed or bond line gap and light transmittance of the substrate through which the radiation must pass.

Recommended intensity for cure in an adhesive application are 40-mW/cm<sup>2</sup> minimums with an exposure time of 5-6 times the fixture time at this same intensity. For tack free surface cure, as necessary in coating, potting or tacking applications, higher intensity UV is required.

#### Disclaimer:

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