

UV10Med

Master Bond Polymer System

UV curable, biocompatible, low viscosity compound

Key Features

- ✓ USP Class VI certified
- ✓ Fast curing
- ✓ High bond strength
- ✓ Low shrinkage upon cure
- ✓ Electrically insulative
- ✓ Withstands 1,000 hours 85°C/85% RH

Product Description

Master Bond UV10Med is a multi-purpose, one part UV type system for bonding, sealing and coating that features superb optical clarity and excellent physical properties as well as a very low viscosity. Most significantly it fully passes USP Class VI testing requirements. UV10Med cures readily in 20-30 seconds when exposed to a UV light source emitting at a wavelength of 320-365 nm with an energy output as low as 20-40 milliwatts per cm². The rate of cure depends upon the compound's distance from the light source, the thickness of the section and of course the intensity of the light source. It should be noted that the system can cure in sections up to 0.020-0.025 inches. However, when bonding, sections of a few thousandths of an inch are more than adequate. Master Bond UV10Med is not oxygen inhibited and therefore does not require any special treatment in that regard. It bonds well to glass, surface treated metals and plastics such as polycarbonates and acrylics, among others. UV10Med is not only effective for bonding applications; it can also be used as a coating or sealant. UV10Med is resistant to many chemicals such as water, oils, bases and salts as well as sterilants including

gamma, EtO and various chemical sterilants. The system does not contain any solvents or volatiles and has low shrinkage upon cure. Its service temperature range is -60°F to +250°F and it is an outstanding electrical insulator. Ideal for high production applications, particularly those involving disposable medical devices. UV10Med is also widely used in fiber-optic, optical, electronic and related industries.

Product Advantages

- One component, no mix system
- Exceptionally fast cure upon exposure to a UV light source at ambient temperatures
- No air inhibition while curing; no special inert atmosphere required
- Low shrinkage upon cure
- High bond strength; excellent adhesion to surface treated metals, glass and many plastics
- Excellent optical clarity; excellent light transmission
- Exceptionally low viscosity

Typical Properties

Viscosity, 75°F	250-500 cps
Color	Transparent
Tensile strength, 75°F	5,000-6,000 psi
Tensile modulus, 75°F	200,000-250,000 psi
Hardness, 75°F	70-80 Shore D
Hardness after 1,000 hours 85°C/85% RH	70 Shore D
Elongation, 75°F	3-4%
Coefficient of thermal expansion, 75°F	60-65 x 10 ⁻⁶ in/in/°C

Typical Properties Cont'd

Refractive index, 75°F	1.557
Volume resistivity, 75°F	>10 ¹⁴ ohm-cm
Dielectric constant, 75°F, 60 Hz	3.5
Glass transition temperature (T _g)	65-70°C
Service temperature range	-60°F to +250°F [-51°C to +121°C]
Shelf life at 75°F, in original, unopened containers (with no exposure to light)	6 months

Preparation of Adhesive & Bonding Surface

UV10Med is a single part system that requires no special mixing or heating. Realistically, one of the substrates to be bonded must be optically clear with no UV blocking agents to allow the light to penetrate the surface of the substrate. Typically optically clear surfaces such as glass, polycarbonates and acrylics (that do not contain UV blocking agents) do not require surface preparation. If bonding an optically clear substrate to a metal, plastic or rubber, it is advisable to use proper surface treatments, such as roughening or chemically etching, to optimize adhesion. All substrates should be clean and free of oils, dirt, grease, etc. for proper adhesion.

Adhesive Application

Master Bond UV10Med can be conveniently applied by spraying, brushing or rolling. The system can be applied as a coating up to thicknesses of 0.020-0.025 inches. For bonding applications, bond line thicknesses of 0.001-0.003 are more than adequate. Porous surfaces may require somewhat more adhesive to fill the voids than non-porous ones. The parts to be bonded should then be fixtured together with just enough pressure to maintain intimate contact during cure. The beauty of the system is that it is fast curing and fixturing time is minimal. Since Master Bond Polymer System UV10Med is 100% reactive and does not contain any solvents or diluents, shrinkage upon cure is minimal.

Cure

As previously noted, Master Bond UV10Med requires exposure to an appropriate UV light source with adequate intensity to cure, ideally at a wavelength of 320-365 nm. UV10Med normally cures in 20-30 seconds under appropriate conditions. It will not sufficiently cure in sunlight and needs a suitable UV light source. One can remove the excess adhesive with a spatula, then wipe with a rag and solvent such as acetone or xylene.

Packaging

Product is available in:

- 1/2 Pints
- Pints
- Quarts
- Gallons
- 5 Gallons



Specialty packaging is also available in syringes.

Handling and Storage

All materials of this type should be used with good ventilation and skin contact should be avoided. For safe handling details, please consult the product SDS. Optimum storage is at or below 75°F in closed containers. No special storage conditions are necessary. Containers should, however, be kept closed when not in use to avoid contamination. Cleanup of spills and equipment is readily achieved with aromatic or ketone solvents employing proper precautions of ventilation and flammability.

Certifications



Not to Be Used for Specification Purposes

The values contained herein are considered typical properties only and are not intended to be used as specification limits. For assistance in preparing specifications, please contact Master Bond technical support for further details.

Notice

Master Bond believes the information on the data sheets is reliable and accurate as is technical advice provided by the company. Master Bond makes no warranties, expressed or implied, regarding the accuracy of the information, and assumes no liability regarding the handling and use of this product.

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