

**UV Light Curable Epoxy Adhesive
 For Medical Applications
 USP Class VI Approved**

mCAST 7222 is a low viscosity, 100% solids, UV light curable epoxy adhesive that bonds to many substrates such as glass, metals and many plastics. It cures rapidly under UV light intensities from 50-100 mW/cm² to a high strength rigid film. mCAST 7222 is the first true cationic epoxy resin formulation approved for USP Class VI medical applications.

These are typical properties and are not to be used as a specification.

Properties Uncured

Color: Slightly yellow as liquid
 Viscosity: 400 cps
 Specific Gravity: 1.12
 Flash Point: >200°F
 UV 1 year at 20-25°C
 Shelf Life: UV+Heat 6 months @
 0°C or less
 Liquid Refractive Index: 1.507

Properties Cured

Hardness: 80 Rex D
 Cured Color: Clear
 Tg: 53°C
 Moisture Absorption:
 (24 hr water soak) Less than 0.5%
 Lap Shear Strength:
 (Glass to Glass) 3300 psi
 Young's Modulus: 185,000 psi
 Tensile Strength: 4200 psi
 Elongation: 8%
 Volumetric Shrinkage: 1.5%

Cure Profile

mCAST 7222 is cured by UV and heat. Optimal light wavelengths are 320-380 nm.

365 nm LED ONLY will cure these materials, longer exposure times may be necessary.

- ◆ A heat cure after UV is REQUIRED for full crosslink. UV exposure only results in 70-80% crosslink. UV exposure + 60 minutes at 110C (plus part heat up time) typically results in 100% crosslink.
- ◆ The Light Guide should be within 1cm of adhesive. Or use the recommended focal length for the LED lens used.
- ◆ This material is not oxygen inhibited so a nitrogen blanket while curing is not necessary.
- ◆ Always wear proper eye protection when working with UV light.
- ◆ Consult your EMI-UV representative for more detailed cure information based upon your specific application and equipment.

Broad Spectrum Lamp:	@ 1500 mW/cm ² :	5-10 second cycles
365 nm LED:	@ < 1000mW/cm ² :	10-30 seconds
Heat only Cure from Liquid:	Heat cure from Liquid Minimum Temperature	
	110°C:	45-60 minutes
	120°C:	20-30 minutes
	130°C:	10-15 minutes
Post UV Heat:	Minimum temperature, 95°C	4-6 hours
	110°C	45-60 minutes
	120°C:	20-30 minutes
	130°C:	10-15 minutes

Storage and Handling

mCAST 7222 (and viscosity variations) are shipped at ambient temperatures and stored at 20-25°C or at 5°C or less. Check your sample syringe for proper storage temperature.

- ◆ Shelf Life at 20-25°C or 5°C or less is 1 year when stored in the original unopened container.
- ◆ Pot Life is 60 days at 20-25°C.
- ◆ Do not expose to ambient lighting or storage temperatures above 32°C.
- ◆ Keep covered from all ambient light until cured. Exposure to office lighting or general manufacturing floor lighting will cure this material. Filtered plexiglass shielding is recommended for all adhesive work areas.

mCAST 7222 (-HM versions) are shipped and stored frozen for maximum shelf life.

- ◆ Shelf life is 6 months at 0°C or less.
- ◆ Place the material in the freezer as soon as it is received.
- ◆ Once thawed, the material should not be used for more than 24 hours total time at 20-25°C.
- ◆ Avoid prolonged exposure to elevated temperatures before curing.
- ◆ Store in a cool dark area and avoid prolonged exposure to light during long term storage.
- ◆ Do not thaw and refreeze syringe more than 5 times in testing and research.

Other Versions Available:

7222-5K	5000 cps version, Heat after full UV exposure
7222-5K-HM	5000 cps version, can be solely heat cured at 110-130°C
7222-HM	UV and Heat cure version, can be solely heat cured at 110-130°C

Shipping and Unpacking Procedure

UV versions of this material are packed and shipped at ambient temperatures. It is a stable material and can be stored on the shelf, shielded from light for 1 year. The expiration date is on the syringe label.

Heat cure versions of this material are packed and shipped Overnight in Dry Ice and require immediate placement in the freezer upon receipt. Storage at less than 0°C is necessary for shelf life. The expiration date is on the syringes label.

- ◆ Syringes should thaw for 30 minutes before removing the tip cap and back cap. Syringes may be used and re-frozen up to 5 times within the total pot life time.
- ◆ It is critical that the shipping container is not opened in transit and is expedited to its final destination.
- ◆ **DO NOT ALLOW THE SHIPMENT TO BE LEFT ON LOADING DOCKS, IN CUSTOMS WAREHOUSES, OR ON FREIGHT TRUCKS FOR EXTENDED TIME PERIODS.**
- ◆ Do not heat or expose this material to temperatures over 32°C, decreased shelf life or rapid polymerization may occur.
- ◆ A small amount of air in the tip area is normal. Carefully remove the tip cap and manually extrude a small amount of material. This will displace any air that may be in the tip area.
- ◆ A small amount of air may accumulate at the rear of the syringe near the piston. This is also normal and this air can easily be removed by manually placing a light amount of pressure on the piston near the location of the visible air with the tip cap in place. This will force the air to by-pass the piston and exit the rear of the syringe. Mount the syringe onto the dispense equipment and purge material through the system until an unbroken flow of material is extruded.

USP Class VI documentation for 7222 is available upon request.

Cautions: THIS DOCUMENT IS NOT TO BE USED AS A MATERIAL SPECIFICATION. IT PROVIDES AN INDICATION OF TYPICAL PROPERTIES OF THIS RESIN SYSTEM. The Certificate of Compliance contains the actual batch data and manufacturing specification. Good housekeeping rules are always important. Provide ample ventilation in all areas of handling, and use. Avoid prolonged breathing of possible fumes. Minimize skin contact. Use of goggles, rubber gloves, and protective creams is recommended. Always wash exposed areas immediately using warm water and soap followed by rinsing with clear water. If material comes in contact with eyes, flush with clear water for fifteen minutes and consult a physician immediately.

All data in this bulletin are based on our own research and the research of others. They are believed to be accurate. However, no guarantee of accuracy is made. Product description is sold without warranty except conformity to specification and on condition that the purchasers shall determine suitability for their particular purpose.

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