

**UV and Visible Light/Heat Cure Acrylate Adhesive  
For Medical Applications  
USP Class VI Approved**

**mCAST 7105-5K** is a very low viscosity, 100% solids, UV/Visible light and heat curable adhesive that bonds to all substrates such as glass, metals, and plastics. It cures rapidly even under low intensity UV lamps (25-45mW/cm<sup>2</sup>) to a tack free surface. All of these products are available with a fluorescent tracer in them. They will have a "T" designation after the number.

### Properties Uncured

Color:	Clear as liquid	Flash Point:	>200°F
Specific Gravity:	1.06	Shelf Life:	6 months at 0°C or less.
Liquid Refractive Index:	1.478	Pot Life:	30 days at 20-25°C

Viscosity Variations available:

7105 Clear	500 cps
7105-2K	2,000 cps
7105-5K	5,000 cps
7105-20K	20,000 cps

### Properties Cured

Hardness:	84 Rex D	Young's Modulus:	50,000 psi
Cured Color:	Clear	Tensile Strength:	4000 psi
Tg:	52°C	Elongation:	300%
Moisture Absorption: (24 hr water soak)	Less than 0.5%	Volumetric Shrinkage:	Less than 7%
Lap Shear Strength: (glass to glass)	3700 psi		

### Cure Profile

mCAST 7105 adhesives can be cured with light wavelengths from 320-500 nm, or heat above 121°C

- ◆ Typical cure times are 2-10 seconds depending upon the intensity of the light, the depth of the adhesive and other environmental factors.
- ◆ Minimum Heat cure time at 121°C is 10 minutes.
- ◆ This material may be oxygen inhibited so a nitrogen blanket while curing is recommended.
- ◆ 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.

### **Shipping and Unpacking Procedure**

This material is shipped on Dry Ice for international shipments and **MUST BE PLACED IN THE FREEZER UPON RECEIPT.**

This material may be shipped domestically at ambient temperatures, however we strongly recommend frozen shipment in all cases.

The material must be kept frozen until use.

- ◆ 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.**
- ◆ Maintaining temperature at 0°C or less upon receipt is critical to maintain the functionality and performance of the material.
- ◆ Failure to maintain these temperatures will void any warranties and will adversely affect the materials performance.
- ◆ Upon receipt, the syringes should be transferred from the shipping container to a freezer at 0°C or less.
- ◆ Care must be taken during this step as a sudden increase in temperature can cause irreversible air voids due to the thermal expansion of the syringe barrels.
- ◆ 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.
- ◆ Always wear appropriate gloves and eye protection when working with acrylate adhesives.

### **Storage and Thawing**

Prior to application, the material must be allowed to thaw naturally to room temperature (ideally 20-25°C) by placing the syringes in a vertical position with dispense tip facing downward. This is a critical step for obtaining optimum dispensing performance.

- ◆ Under no circumstance should artificial heat sources be used to increase thaw speed.
- ◆ Do not place the syringes in, or near, any heat source including ovens, hot plates, hot air guns, etc. to speed thawing.
- ◆ Thaw time varies by package style, size, and ambient temperature, but is typically 30 to 120 minutes.
- ◆ Do not attempt to dispense the material before it reaches ambient temperature.
- ◆ Wipe all excess moisture or condensation from the syringes prior to use.
- ◆ 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 available upon request.

### **IMPORTANT NOTICE**

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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