

104-MSK Series Adhesive for Bonding Anesthesia Masks

APPLICATIONS

- Respiratory Face Masks
- Breathing Circuits
- Resuscitator Bags

FEATURES & BENEFITS

- Solvent Free
- Cures Through UV-Blocked Substrates
- Extremely Fast Curing

RECOMMENDED SUBSTRATES

- PVC
- Polycarbonate
- Polystyrene
- Polyurethane
- PET

Dymax MSK-series MD® adhesives are solvent-free and cure only upon exposure to UV or Visible light. Their ability to cure in seconds enables faster processing, greater output, and lower assembly costs. When cured with Dymax spot, focused beam, or flood lamps, they deliver optimum speed and performance for medical device assembly while enhancing worker safety. A fluorescing version, 104-MSK-F is available to facilitate manual or automated in-line inspection of assembled components.

TYPICAL UNCURED PROPERTIES

Solvent Content	None - 100% solids	
Composition	Urethane Oligomer/(Meth)Acrylate Monomer Blends	
Appearance	Clear/Light Amber Liquid	
Flash Point	>93°C (200°F)	
Solubility	Low	
Toxicity	Low	
Refractive Index @24°C	1.48	
Density	1.05 g/mL	
Viscosity (20 rpm)	104-MSK 550 cP (nominal)	ASTM D-1084
	104-MSK-T 5,000	ASTM D-2556
	104-MSK-Gel 25,000 (nominal)	ASTM D-2556

TYPICAL CURED PROPERTIES

PHYSICAL

Durometer Hardness	D55	ASTM- D2240
Tensile at Break	2,500	ASTM D-638
Elongation at Break	125%	ASTM D-638
Modulus of Elasticity	80,000 psi	ASTM D-638
Thermal Range (brittle/degrades)	-55° to 180°C (-65° to +350°F)	DSTM D-200*
Water Absorption (24 h)	10.5%	ASTM D-570
Boiling Water Absorption (2 h)	7.5%	ASTM D-570
Linear Shrinkage	3%	ASTM D-2566

*DSTM Refers to Dymax Standard Test Method

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TYPICAL LIGHT CURE DATA

Lamp	MC-5000	MC-4000	UVC-6 Conveyor*
Light Type	UV/Visible	UV/Visible	UV/Visible
Lamp Type	5" x 5" Flood	3/16" Spot	1" x 6" Focused Beam
Maximum Lamp Intensity @ 365 nm	300 mW/cm ²	4000 mW/cm ²	8000+ mW/cm ²
Intensity @ Time Of Test @ 365 nm	150 mW/cm ²	1800 mW/cm ²	4000 mW/cm ²
Adhesive Absorption Range (nm)	300-500	300-500	300-500
Equipment Output Range (nm)	300-500	300-500	300-500
Cure Speed (Sec)			
Fixture Between Glass Slides	1	2	<1
Tack Free Surface Cure	>30	10	5
Nominal Cure Depth (0.125")	45	20	5
Cure Depth In 1 Minute (Inch)	>0.25	>0.25	>0.25

* Equipped with Fusion "D" lamp

The required intensity and cure time should be determined during the initial process validation stage. Factors that should be considered during process validation which can affect the adhesive cure rate and depth of cure include but are not limited to: the part geometry, bond-gap size, percent light transmission through the substrate at 365 nm and 436 nm, distance from the light source to the adhesive bond area, UV and visible light intensity and spectral output of the light source, the desired margin of safety to be built into the process and minimum and maximum exposure times.

DISPENSING

Dymax 104-MSK is available in various packages such as syringes, cartridges, bottles, and pails. It may be dispensed with a variety of automatic bench-top syringe applicators or other equipment as required. Any questions relating to dispensing and curing systems for specific applications should be referred to the Dymax Application Engineering.

STORAGE AND SHELF LIFE

Store in original, light blocking container. Do not expose to any light source. This product is light sensitive and has a one year shelf life when stored between 50° and 90°F in original, unopened container.

BIOCOMPATIBILITY & STERILIZATION

This product has not been submitted for USP Class VI biocompatibility certification. This PDS will be updated whenever such certification is completed. In all cases, it is the user's responsibility to determine and validate the suitability of these adhesives in the intended medical device.

SME Technical Paper #AS91-397, 1991 advises that "All adhesives are toxic in their raw or uncured state. Complete cure...is required to retain Class VI certification status." It is recommended that biocompatibility testing of the completed device be done following sterilization to eliminate the effects of minor process variations and contamination during assembly. The sterilization methods of choice are gamma irradiation and ethylene oxide. Sterilization by autoclaving may be limited to certain applications. Laboratory data indicates that gamma irradiation cures Dymax adhesives.

SAFETY

Wear impervious gloves and/or barrier cream. Repeated or continuous skin contact with liquid adhesive will cause irritation and should be avoided. Do not wear absorbent gloves. Remove adhesive from skin with soap and water. Never use solvents to remove adhesive from skin or eyes.

CAUTION

For industrial use only. Avoid breathing vapors. Avoid contact with eyes and clothing. In case of contact, immediately flush with water for at least 15 minutes; for eyes, get medical attention. Wash clothing before reuse. Keep out of reach of children. Do not take internally. If swallowed, vomiting should be induced at once and a physician called. For specific information, refer to the Material Safety Data Sheet before use.