

UV CURING EPOXY 4-20586

DESCRIPTION

Dymax 4-20586 is a clear, resilient, UV curing epoxy adhesive, forming chemical and moisture resistant bonds. Dymax 4-20586 is a cationic epoxy and may continue to cure for 24 hours following exposure to UV light or following exposure to 100°C for one hour. This product bonds well to a variety of different glass, metal and plastics.

TYPICAL UNCURED PROPERTIES

Solvent Content	None, 100% Solids	
Chemical Class	Epoxy	
Appearance	Clear Liquid	
Solubility	Alcohols/Chlorinated Solvents/Ketones	
Toxicity	Low	
Flash Point	>93°C (200°F)	
Viscosity (20 rpm)	1,200 cP (nominal)	ASTM D-1084

TYPICAL CURED PROPERTIES

Durometer Hardness	D60	ASTM D-2240
Tensile at Break	2,400 psi	ASTM D-638
Modulus of Elasticity	750,000 psi	ASTM D-638
Elongation at Break	2.7%	ASTM D-638
Thermal Limit	300°C	DSTM D-200*
Tensile Compression Shear		
Glass to Glass	2,900 psi (glass shatters)	DSTM D-250
Glass to Metal	1,350 psi (glass shatters)	DSTM D-251
Refractive Index, n_D^{20}	1.537	ASTM D-1218
Water Absorption (24 h)	0.4%	ASTM D-570
Boiling Water Absorption (2 h)	2.0%	ASTM D-570

*DSTM refers to Dymax Standard Test Method

Recommended Cure Time With UV Light:

<u>Exposure Time</u>	<u>UV Lamp</u>	<u>Intensity mW/cm²</u>	<u>Spectral Output</u>
30-90 sec	Light Welder [®] 2000-EC	20-50	300-400 nm
10-60 sec	Light-Welder [®] 5000-EC	100-200	200-400 nm
2-5 min	Lower intensity UV	6-10	300-400 nm

Intensity above 6 mW/cm² of UVA (longwave UV light) is recommended to cure 4-20586. Strength and reliability testing should not begin until bonds have "matured" for 24 hours.

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.

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DYMAX CORPORATION

PRELIMINARY PRODUCT DATA SHEET

4-20586, 5/30/2003

DISPENSING AND HANDLING ADHESIVE

Dymax 4-20586 adhesive 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. Direct questions relating to dispensing and curing systems for specific applications, should be referred to the Dymax Technical Center at 860-482-1010.

STORAGE AND SHELF LIFE

Store material in a cool, dark place when not in use. Do not expose to UV light or sunlight. Material may polymerize upon prolonged exposure to ambient light. Replace lid immediately after use. Product has a one year shelf life when stored below 90°F in the original, unopened container.

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.

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