COMPOSITE POLYMER DESIGN

2134A RESIN
9284B, 9286B & 9282B HARDENERS

HIGH TEMPERATURE EPOXY LAMINATING RESIN SYSTEM

TECHNICAL DATA BULLETIN

SYSTEM BENEFITS:

CPD 2134A Resin with 9284B, 9286B or 9282B Hardener is an unfilled epoxy laminating resin system designed for use where temperatures may reach 350°F. The system gels at room temperature, but a post cure is required achieve ultimate properties. The low viscosity and reactionary chemistry assure maximum wet-out of glass, carbon and Kevlar® fibers. It is excellent for wet lay-up/vacuum bagged parts, autoclaved parts, RTM application, filament winding, and compression molded parts.

- Laminating
- High temp
- Aluminum filled

HANDLING PROPERTIES	CPD 9284B	CPD 9286B	CPD 9282B	Test Method
Resin Density at 25°C, lbs/gal	9.8	9.8	9.8	ASTM D1475
Hardener Density at 25°C, lbs/gal	8.1	8.1	8.1	ASTM D1475
Resin Viscosity at 25°C, cP	7,500	7,500	7,500	ASTM D2196
Hardener Viscosity at 25°C, cP	40	40	40	ASTM D2196
Mix Ratio by Weight	100A : 14B	100A : 14B	100A : 14B	Calculated
Mix Ratio by Volume	6A : 1B	6A : 1B	6A : 1B	Calculated
Initial Mixed Viscosity 25°C, cP	1,800	1,800	1,800	ASTM D2196
Gel Time at 25°C, 150g mass, min.	30	50	110	ASTM D2471

PHYSICAL PROPERTIES	CPD 9284B	CPD 9286B	CPD 9282B	Test Method
Color	Dark Amber	Dark Amber	Dark Amber	Visual
Izod Impact, Notched, ft-lb/in	1.23	1.23	1.23	ASTM D256
Tensile Strength, psi	12,400	12,400	12,400	ASTM D638
Tensile Modulus, psi	460,000	460,000	460,000	ASTM D638
Tensile Elongation, %	3.7	3.7	3.7	ASTM D638
HDT, Post Cure, °F	355	355	355	ASTM D648
CTE, in/in/ °F	2.65×10^{-5}	2.65×10^{-5}	2.65×10^{-5}	ASTM D696
Compressive Strength, psi	21,500	21,500	21,500	ASTM D695
Flexural Strength, psi	16,600	16,600	16,600	ASTM D790
Flexural Modulus, psi	470,000	470,000	470,000	ASTM D790
Cured Density, g/cm^3 (lbs/in^3)	1.15 (0.041)	1.15 (0.041)	1.15 (0.041)	ASTM D792
Volumetric Yield, in^3/lb	24.0	24.0	24.0	ASTM D792
Hardness, Shore D	88	88	88	ASTM D2240
Linear Shrinkage, in/in	<0.002	<0.002	<0.002	ASTM D2566

SYSTEM POST CURE OPTIONS:

Select one of the following cure schedules depending on the available time, the physical properties of the mold and the desired physical properties of the final part. Post cure the part to obtain maximum physical and thermal properties of the system. The recommended post cure temperature ramp rate between stages is up 5°F per minute for heating and down 1-2°F per minute for cooling. Heating and cooling ramp rates can vary based on size and thickness of the part. For larger thicker parts use a more conservative ramp. If you need to deviate from the recommended post cure schedule, please contact our technical service department.

CURE INCREMENTS:

CPD 9284B, 9286B & 9282B	24 Hours at 77°F (25°C)	2 Hours at 150°F (66°C)	4 Hour at 150°F (66°C)	1 Hour at 200°F (93°C)	1 Hour at 250°F (121°C)	1 Hour at 300°F (149°C)	1 Hour at 350°F (177°C)
Post Cure Option 1	Supported	Supported		Supported	Supported	Supported	Supported
Post Cure Option 2	Supported		Supported	Unsupported	Unsupported	Unsupported	Unsupported

MIXING AND SURFACE PREP:

Always use the recommended mix ratio for the system. Do not deviate in an attempt to speed up or slow down gel time. Mix together thoroughly, scraping sides and bottom of mixing container, until no streaks or striations are visible, then use immediately. Use only clean dry tools for mixing and applying. Do not mix or apply below 60°F. All surfaces must be clean, dry, and free of any surface contamination. Molds and patterns should be treated with release or parting agents.

STORAGE AND CRYSTALLIZATION:

Store between 60-90°F in a dry place. After use, tightly reseal all containers and store products on a raised surface during cold weather and avoid storing near outside walls or doors. If available, Purge with dry nitrogen to preserve color and minimize moisture contamination. Do not allow to freeze during winter storage. Do not use material with any signs of crystallization such as solid chunks, grainy texture or white color. Crystallization can be reversed by heating the material to 125-140°F, and stirring occasionally, until all crystals dissolve.

SAFETY HANDLING:

Wear protective gloves, clothing, and eye/face protection. Use only outdoors or in a well-ventilated area. Avoid contact to the skin and eyes. Avoid breathing dust, fumes, gas mist, vapors and spray. Wash hands thoroughly after handling. Take off contaminated clothing and wash before reuse. These products may cause skin and respiratory allergic reactions. Consult product Safety Data Sheets for complete precautions for use of this product.