



4222A RESIN 9371B, 9372B & 9373B HARDENERS

EPOXY RESIN LAMINATING SYSTEM
TECHNICAL DATA BULLETIN

SYSTEM BENEFITS:

CPD 4222A Resin with CPD 9371B, 9372B and 9373B Hardeners is an epoxy laminating resin system designed for wet lay-up and vacuum bagging processes for use in fabricating large composite structures. While cure is complete after seven days at room temperature, a moderate post cure will decrease cure time and increase physical property values. The low viscosity and reactionary chemistry of this resin system assure maximum wet-out of fiber glass, carbon fiber and Kevlar® fibers.

- Low viscosity laminating
- Variable gel time
- Room temp applications

HANDLING PROPERTIES

	CPD 9371B	CPD 9372B	CPD 9373B	Test Method
Resin Density at 25°C, lbs/gal	9.6	9.6	9.6	ASTM D1475
Hardener Density at 25°C, lbs/gal	8.4	7.9	7.9	ASTM D1475
Resin Viscosity at 25°C, cP	2,400	2,400	2,400	ASTM D2196
Hardener Viscosity at 25°C, cP	110	25	20	ASTM D2196
Mix Ratio by Weight	100A : 28B	100A : 28B	100A : 28B	Calculated
Mix Ratio by Volume	3A : 1B	3A : 1B	3A : 1B	Calculated
Initial Mixed Viscosity 25°C, cP	1,260	800	580	ASTM D2196
Gel Time at 25°C, 150g mass, min.	22	60	215	ASTM D2471

PHYSICAL PROPERTIES

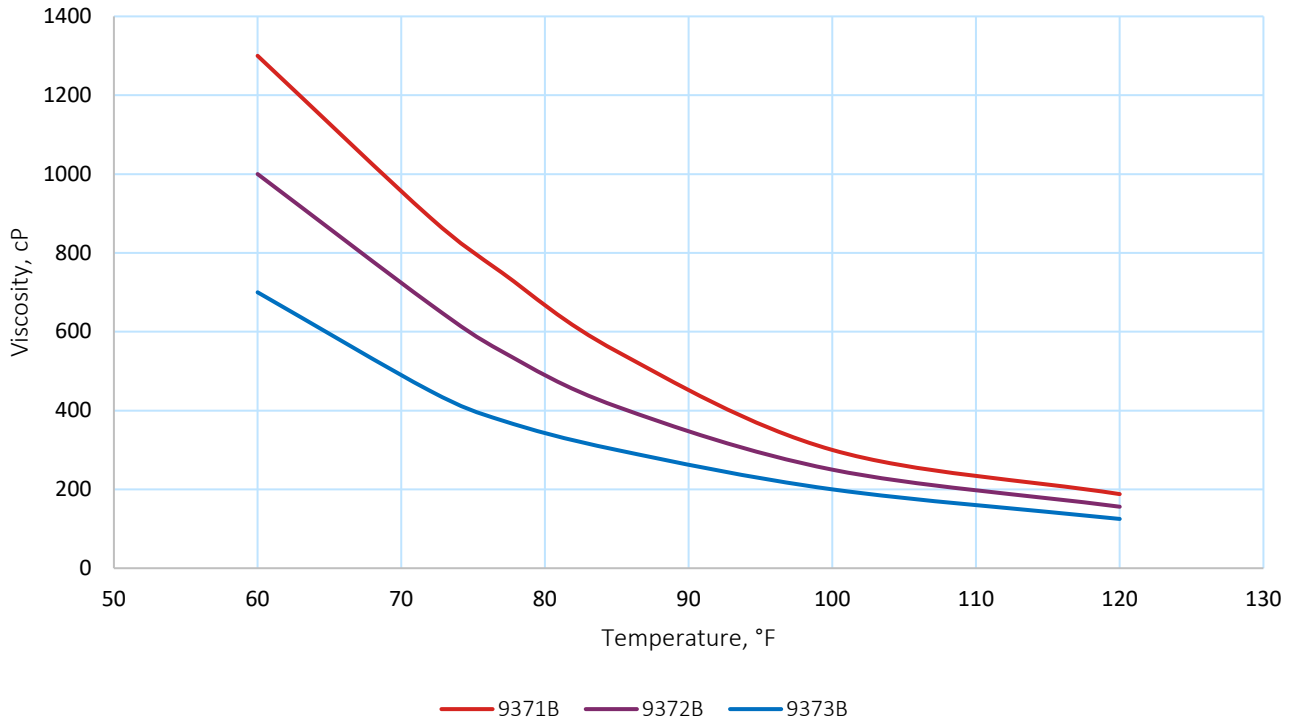
	CPD 9371B	CPD 9372B	CPD 9373B	Test Method
Color	Amber	Amber	Amber	Visual
Izod Impact, Notched, ft-lb/in	0.86	1.21	1.46	ASTM D256
Tensile Strength, psi	12,700	10,300	8,500	ASTM D638
Tensile Modulus, psi	528,000	540,000	560,000	ASTM D638
Tensile Elongation, %	4.5	4.1	5.6	ASTM D638
Compressive Strength, psi	12,800	14,600	13,500	ASTM D695
Flexural Strength, psi	17,500	12,800	18,200	ASTM D790
Flexural Modulus, psi	436,000	450,000	477,000	ASTM D790
HDT, Room Temp Cure, °F	134	130	125	ASTM D648
HDT, Post Cure, °F	170	185	181	ASTM D648
Cured Density, g/cm ³	1.16	1.14	1.14	ASTM D792
Volumetric Yield, in ³ /lb	24.0	24.3	24.4	ASTM D792
Volumetric Shrinkage, %	3.7	3.7	3.5	ASTM D792/2196
Hardness, Shore D	87	86	86	ASTM D2240





CURING PROPERTIES	CPD 9371B			CPD 9372B			CPD 9373B		
	72°F	77°F	85°F	72°F	77°F	85°F	72°F	77°F	85°F
Ambient Temperature	72°F	77°F	85°F	72°F	77°F	85°F	72°F	77°F	85°F
Mixed Viscosity, cP	1,400	1,260	550	930	800	410	700	580	300
Gel Time, 150g mass, min.	25-30	20-25	10-15	60-65	55-60	20-25	325-375	200-250	70-80
Gel Time, 500g mass, min.	20-25	15-20	10-15	35-40	30-35	20-25	175-225	90-115	70-80

MIXED VISCOSITY VS. TEMPERATURE



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:

	24 Hours at 77°F (25°C)	7 Days at 77°F (25°C)	4 Hours at 150°F (66°C)
CPD 9371B, 9372 & 9373B			
Room Temperature Cure	Supported	Unsupported	
Post Cure	Supported		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.

Polytek Development Corp. has experience only in the compounding of resins and hardeners and not in the actual manufacture of tools or parts. Each piece is different. The user should run tests to assure the suitability of the system for use in a particular application. The test data and results set forth herein are based on laboratory work and do not necessarily indicate the results that the buyer or user will attain.

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