



# 4281A RESIN 4284B HARDENER

EPOXY RESIN SYSTEM FOR INJECTION AND INFUSION  
TECHNICAL DATA BULLETIN

## SYSTEM BENEFITS:

CPD 4281A Resin with 4284B Hardener is a medium setting, clear, low viscosity, general purpose epoxy compound that may be used in many diverse applications such as casting, laminating, RTM and infusion.

- Infusion
- Medium gel time
- Very low mixed viscosity

## HANDLING PROPERTIES

	CPD 4284B	Test Method
Resin Density at 25°C, lbs/gal	9.7	ASTM D1475
Hardener Density at 25°C, lbs/gal	7.8	ASTM D1475
Resin Viscosity at 25°C, cP	900	ASTM D2196
Hardener Viscosity at 25°C, cP	8	ASTM D2196
Mix Ratio by Weight	100A : 22B	Calculated
Mix Ratio by Volume	100A : 27B	Calculated
Initial Mixed Viscosity 25°C, cP	150	ASTM D2196
Initial Mixed Viscosity 38°C, cP	90	ASTM D2196
Gel Time at 25°C, 150g mass, min.	40	ASTM D2471
Gel Time at 38°C, 150g mass, min.	17	ASTM D2471

## PHYSICAL PROPERTIES

	CPD 4284B	Test Method
Color	Clear Amber	Visual
Izod Impact, Notched, ft-lb/in	1.16	ASTM D256
Tensile Strength, psi	10,300	ASTM D638
Tensile Modulus, psi	348,000	ASTM D638
Tensile Elongation, %	5.9	ASTM D638
HDT, Room Temp Cure, °F	140	ASTM D648
HDT, Post Cure, °F	180	ASTM D648
Compressive Strength, psi	18,800	ASTM D695
Flexural Strength, psi	15,400	ASTM D790
Flexural Modulus, psi	413,000	ASTM D790
Hardness, Shore D	86	ASTM D2240
Linear Shrinkage, in/in	<0.002	ASTM D2566

## VARIABLE MIX RATIO:

The mix ratio of CPD 4281A Resin with CPD 4284B Hardener may be varied for ease of handling.

### HANDLING PROPERTIES

	CPD 4284B	Test Method
Mix Ratio by Weight	100A : 20B	Calculated
Mix Ratio by Volume	4A : 1B	Calculated
Initial Mixed Viscosity 25°C, cP	180	ASTM D2196
Gel Time at 25°C, 150g mass, min.	45	ASTM D2471

### PHYSICAL PROPERTIES

	CPD 4284B	Test Method
Tensile Strength, psi	8,200	ASTM D638
HDT, Post Cure, °F	171	ASTM D648
Compressive Strength, psi	17,900	ASTM D695
Flexural Strength, psi	14,600	ASTM D790
Hardness, Shore D	85	ASTM D2240

## 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 4284B	24 Hours at 77°F (25°C)	7 Days at 77°F (25°C)	24 Hours at 104°F (40°C)	8 Hours at 140°F (60°C)
Room Temperature Cure	Supported	Unsupported		
Post Cure 1	Supported		Unsupported	
Post Cure 2	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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