



406A RESIN 406B HARDENER

EPOXY SURFACE COAT SYSTEM
TECHNICAL DATA BULLETIN

SYSTEM BENEFITS:

CPD 406A Resin with CPD 406B Hardener is a white, easy to brush, thixotropic surface coat with good “hang” characteristics for tooling and pattern making applications. It is designed for use with the CPD 506 white laminating resin to produce white, dimensionally stable patterns and molds. CPD 406 can be brushed on or applied with a squeegee to the surface of models or patterns.

- Surface coat
- Room temp
- Brushable

HANDLING PROPERTIES

| | CPD 406B | Test Method |
|--------------------------------------|-------------------|-------------|
| Resin Density at 25°C, lbs/gal | 13.6 | ASTM D1475 |
| Hardener Density at 25°C, lbs/gal | 9.0 | ASTM D1475 |
| Mix Ratio by Weight | 10A : 1B | Calculated |
| Mix Ratio by Volume | 6.6A : 1B | Calculated |
| Initial Mixed Viscosity 25°C, cP | Thixotropic paste | ASTM D2196 |
| Gel Time at 25°C, 150g mass, minutes | 20 - 25 | ASTM D2471 |
| Demold Time at 25°C, hours | 12 – 16 | Visual |
| Sag Test, 1/16” | Pass | Visual |
| Sag Test, 1/8” | Fail | Visual |

PHYSICAL PROPERTIES

| | CPD 406B | Test Method |
|---|--------------|-------------|
| Color | White | Visual |
| Tensile Strength, psi | 6,800 | ASTM D638 |
| HDT, Room Temp Cure, °F | 130 | ASTM D648 |
| HDT, Post Cure, °F | 165 | ASTM D648 |
| Compressive Strength, psi | 13,800 | ASTM D695 |
| Flexural Strength, psi | 10,300 | ASTM D790 |
| Hardness, Shore D | 88 - 90 | ASTM D2240 |
| Cured Density, g/cm ³ (lbs/in ³) | 1.54 (0.056) | ASTM D792 |
| Volumetric Yield, in ³ /lb | 17.9 | ASTM D792 |

MOLD PREPERATION:

Metal and plastic molds do not require sealing. Porous mold materials, such as gypsum cement, wood, and plaster must be sealed to prevent the resin from sticking to the pores of the mold. Several mold sealants are available such as automotive type (quick drying) lacquer. Alternatively, CPD 504A/B laminating epoxy provides excellent results when diluted with methyl alcohol. After the resin and hardener have been mixed according to the directions, mix one part methyl alcohol to 3 parts of resin/hardener mixture. After the mold surface has been properly sealed, apply two coats of urethane wax release, buff the wax and then spray or brush on a thin coat of PVA.



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 406B | 24 Hours at 77°F (25°C) | 7 Days at 77°F (25°C) | 4 Hours at 150°F (66°C) |
|-----------------------|----------------------------|--------------------------|----------------------------|
| 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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