

DESCRIPTION: PolyPoxy® Surface Coat Epoxies are thixotropic, room temperature curing (RTV) systems formulated for the fabrication of general purpose or heat-resistant laminated tools, including dies, foundry patterns, core boxes, and router, trim and inspection fixtures. Product options include:

PolyPoxy® 6005 is a white, thixotropic, general-purpose surface coat epoxy designed for quality reproduction of a variety of surfaces. It may be applied with a brush or trowel to a thickness of 1/16" or less on vertical surfaces or over sharp radii without sag or fear of runoff.

PolyPoxy® 6060 is a blue, abrasion-resistant, surface coat system that can be applied by brush or, if preferred, cast in a section no thicker than 3/8". When cured, this resin system provides a hard, tough, and chip-resistant surface.

PolyPoxy® 6126 is a gray, aluminum-filled, surface coat epoxy that can be used for high-heat tooling applications up to ~300°F. For continuous service temperatures between 150°F and 300°F, a post cure is required. Common applications include: vacuum form tools, RTM and RIM molds, and compression and injection molds.

BEFORE USE: Thoroughly read Safety Data Sheets, product labels and the "SAFETY" section in this Technical Bulletin.

WARNING: THE EPOXY CURE REACTION IS VERY EXOTHERMIC. Do not apply in thicknesses greater than the recommended maximum thickness for each product. **DOING SO CAN CAUSE WARPING AND EVEN A FIRE.** Exothermic reactions can be greater when working in temperatures higher than the recommended mixing/application temperature range and when the epoxy is in a mass in the mixing container. It is recommended to only mix as much epoxy as will be needed for one layer. Because epoxy is especially exothermic in masses, it is important to work quickly to get the epoxy out of the mixing container and onto the desired surface.

PRODUCT LINE FEATURES

- Room-temperature curing (RTV)

- Thixotropic Formulas

- General Purpose & High-Temperature Product Options

PREPARATION: PolyPoxy surface coat epoxy systems are adhesives and bond to many surfaces. If adhesion is not desired, surfaces must be made non-porous with a suitable sealer, such as PVA, lacquer or other coatings. Surfaces must then be coated with a release agent such as Pol-Ease® 2300 Release Agent. A small test cure on a comparable surface is recommended.

Before use, be sure that Resin and Hardener are at room temperature (73°F) and that all tools are ready. Surface and air temperatures should be between 60°F and 80°F during mixing, application, and for the entire curing period.

Elevated temperatures will reduce pot life, while lower temperature will slow the cure. Very low temperatures could possibly prevent the cure entirely.

MIXING: Read product labels to determine the correct mix ratio and if pre-mixing of the Resin or Hardener component is required.

It is recommended to only mix as much epoxy as will be needed for the application of one layer. Because epoxy is very exothermic, especially in masses, it is important to work quickly to get the epoxy out of the mixing container and onto the desired surface.

Accurately weigh and dispense the Resin and Hardener components into clean plastic, metal or wax-free paper containers. Mix thoroughly, scraping the sides and bottom of the mixing container repeatedly.

PHYSICAL PROPERTIES

PolyPoxy® Surface Coat Product	PolyPoxy® 6005	PolyPoxy® 6060	PolyPoxy® 6126
Mix Ratio By Weight	6 Parts Resin : 1 Parts Hardener	100 Parts Resin : 9 Parts Hardener	100 Parts Resin : 10 Parts Hardener
Mix Ratio By Volume	4 Parts Resin : 1 Parts Hardener	100 Parts Resin : 15 Parts Hardener	100 Parts Resin : 15 Part Hardener
Shore Hardness*	D89	D89	D90†
Cured Color	White	Blue	Gray
Mixed Viscosity (cP)	Thixotropic Paste	25,000	Thixotropic Paste
Maximum Application Thickness	1/16"	3/8"	1/16"
Pot Life (1/2 lb mass)	18 - 22 min.	30 - 35 min.	45 min.
Demold Time*	8 - 12 hr.	12 - 16 hr.	16 hr.
Total Cure Time*	7 days	7 days	7 days
Specific Gravity	1.50	1.76	1.47
Specific Volume (in ³ /lb)	18.5	15.8	18.9
Tensile Strength* (psi)	6,800	7,200	5,800†
Flexural Strength* (psi)	8,900	8,900	6,500†
Compressive Strength* (psi)	13,100	16,400	28,000†
Heat Distortion Temperature* (°F)	138	158	291†

*All values measured after 7 days at 73°F/23°C. †Post-cure properties.

APPLYING: NOTE: Surface coat epoxies are not recommended for casting applications due to their strong exothermic reactions – never cast these materials in thicknesses greater than the recommended thicknesses below. Doing so can result in warped parts and even a fire.

Once mixed thoroughly:

PolyPoxy® 6005 may be applied with a brush or trowel to a thickness of 1/16" or less on vertical surfaces or over sharp radii without sag or fear of runoff.

PolyPoxy® 6060 can be applied by brush or, if preferred, cast in a thin section no thicker than 3/8".

PolyPoxy® 6126 may be applied with a brush or trowel to a thickness of 1/16".

CURING: Allow epoxy to cure at room temperature for the specified demold time listed in the "Physical Properties" table in this Technical Bulletin. Parts demolded too soon may be subject to deformation. Low temperatures will slow the demold time,.

Although a part may be demolded after the specified demold time, ultimate physical properties will not be achieved until after 7 days at room temperature. For PolyPoxy® 6126, ultimate physical properties will be achieved upon post curing.

POST-CURING: For PolyPoxy® 6126 – For best results, post cure on the original master to help eliminate deformation. Post cure for applications requiring service temperatures from 150°F to 300°F can be accomplished in an oven with gradual heat rise; 2 hours @ 150°F plus 2 hours @ 250°F plus 2 hours at 300°F. This post cure schedule will result in a surface with a heat distortion temperature of approximately 300°F / 149°C.

CLEAN UP: Tools should be wiped clean before the epoxy is hard. Denatured alcohol is a good cleaning solvent, but must be handled with extreme caution owing to its flammability and health hazards. Work surfaces can be coated with wax or release agent so that cured plastic can be easily removed.

STORAGE LIFE: For best results, store products in unopened containers at room temperature (60-90°F/15-32°C). Use products within six months from date of shipment.

SAFETY: Before use, thoroughly read Safety Data Sheets and product labels. Follow safety precautions and directions.

Resin: Keep out of reach of children. Do not eat, drink or smoke when using this product. Do not breathe fumes, vapors or mists. Use with adequate general or local exhaust ventilation to minimize exposure levels. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. Wear impervious gloves, such as butyl rubber or nitrile rubber. Wash thoroughly with soap and water after handling. Contaminated work clothing should not be allowed outside of the workplace. Take off contaminated clothing and wash it before reuse. If skin rash or irritation occurs, get medical help. Wear eye protection, such as chemical safety glasses/goggles. If in eyes, rinse immediately with water for several minutes, removing contact lenses if present and easy to do. If eye irritation persists, get medical help. If spilled, collect spillage and avoid release to the environment.

Hardener: Keep out of reach of children. Do not eat, drink or smoke when using this product. Do not breathe fumes, vapors or mists. Use with adequate general or local exhaust ventilation to minimize

exposure levels. Use only outdoors or in a well-ventilated area. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Wear impervious gloves, such as butyl rubber or nitrile rubber. Wash thoroughly with soap and water after handling. Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse. If skin rash occurs, get immediate medical help. Wear eye protection, such as safety glasses/goggles. If in eyes, immediately rinse with water for several minutes, removing contact lenses if present and easy to do. Get immediate medical help. If swallowed, rinse mouth and do not induce vomiting. Get medical attention immediately. If spilled, collect spillage and avoid release to the environment.

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DISCLAIMER: The information in this bulletin and otherwise provided by Polytek® Development Corp. is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained by the use thereof, or that any such use will not infringe any patent. Before using, the user shall determine the suitability of the product for the intended use and user assumes all risk and liability whatsoever in connection therewith.

ACCESSORIES

Sealers & Release Agents:

Pol-Ease® 2300 Release Agent
Poly PVA Solution (Green or Clear)

Product Life Extender:

Poly Purge Aerosol Dry Gas