

**Novatech A-B Rigid Resin Kit**

**DESCRIPTION**

Novatech A-B Rigid Resin Kit is perfect for casting decorative objects, reproducing sculptures, creating production parts, tools, models, duplicate masters and more. This mercury-free two-part system (A and B) quickly cures into durable polyurethane plastic after mixing. With its low-viscosity formula, the kit ensures easy mixing, excellent detail reproduction, and bubble-free castings without the need for vacuum degassing or pressure casting techniques.

**PHYSICAL PROPERTIES**

Mix Ratio by Volume	1A:1B
Mix Ratio by Weight	100A:90B
Shore Hardness*	D65
Pot Life (1-lb mix)	2-2.5 min.
Demold Time @ 73°F	15-30 min.
Cured Color	White
Mixed Viscosity (cP)	60
Specific Volume	26.9
Specific Gravity	1.03
Linear Shrinkage*^ (in/in)	0.0041
Elongation* (%)	13.9
Max Exotherm (°F)	230
Heat Deflection Temp.*	149
Tensile Strength* (psi)	2,936
Elastic Modulus* (psi)	72,627
Flexural Modulus* (psi)	93,112
Flexural Strength, 5% Strain* (psi)	3,915

\*All values measured after 7 days at 73°F/23°C. Demold time varies with thickness of casting and the amount of accelerator used. ^Shrinkage is primarily caused by gelling while hot then cooling.

**BEFORE USE**

Thoroughly read Safety Data Sheets, product labels and the “SAFETY” section in this TDS. Novatech A-B Resin Kit offers rapid demold times, making it an ideal for high-volume, fast-cast applications. It is easily adaptable for color-casting, painting, or machining, providing versatility for various creative and industrial uses. The resin can also be filled with additives for cold-casting techniques, such as simulating bronze, marble, and other materials. Castings produced with the Novatech A-B Resin Kit are strong and durable, with thin-walled pieces demonstrating exceptional strength without the brittleness commonly associated with other low-viscosity, fast-curing polyurethane resins.

The Novatech A-B Resin Kit features a water-like consistency, allowing for easy and fast bubble-free casting. With a working time of 2 to 2.5 minutes and a demold time of 15 to 30 minutes, it ensures efficient production without compromising quality.

**FEATURES**

- Easy 1A:1B mix ratios by volume
- Very low viscosities
- Rapid demold
- Reproduces fine detail
- Tough, non-brittle formulas
- Excellent bubble release
- Reduced need for pressure or vacuum

**MOLD PREPARATION**

The Novatech Rigid Resin Kit A-B reproduces fine details from molds or patterns, but proper surface preparation is essential to prevent sticking or foaming. We recommend conducting a trial casting on a similar surface finish to the final mold to avoid potential damage to valuable molds.

Molds made of polyethylene or silicone rubber (such as those from Novatech or similar materials) typically do not require a release agent. For optimal results when casting Novatech Rigid Resin in silicone molds, applying an appropriate primer and allowing it to dry before casting can enhance the surface finish and improve adhesion for subsequent paint or coatings.

For molds made of latex, polyurethane rubber, or metal, ensure the surface is dry and apply Novatech Composites' proprietary mold release product. Our mold release formula is designed for exceptional performance and remains a trade secret for guaranteed reliability.

For molds created using 3D printing materials, apply Novatech Mold Release before every pour during the casting process. This will prevent sticking and extend

the mold's usability over multiple

## MIXING

Novatech A-B Resin Kit has a 1A:1B mix ratio by volume (100A:90B by weight, except for specific variations). Before use, ensure that Parts A and B are at room temperature and that all tools or equipment are prepared. Surface and air temperatures should remain above 60°F during the application and curing period to ensure optimal performance.

When used with Flovv or Flovv-e, the resin components are precisely mixed at the point of injection through a mixing nozzle. The system ensures accurate 1A:1B ratios, prevents bubble formation, and supports the addition of color pigments, which are evenly blended with in tank mixing.

The Flovv and Flovv-e systems streamline the process, allowing for faster production cycles while maintaining material quality. Tanks equipped with our advanced pump system ensure superior performance and fluid preservation. This system maintains a controlled environment by preventing moisture ingress, reducing oxidation, and preserving resin consistency through continuous agitation and an inert atmosphere. The integrated pump enhances the flow and distribution of fluids, ensuring homogeneous mixing and preventing sedimentation, even in demanding industrial applications.

For users mixing manually, equal volumes of Parts A and B should be measured into a clean metal or plastic mixing container. Avoid using paper or wooden tools, as they may introduce moisture.

Thoroughly scrape the sides and bottom of the container to achieve a uniform blend, and pour the mixture into the mold cavity promptly to prevent premature curing. Novatech A-B Rig

## CURING

Castings should be allowed to remain in the mold until thoroughly cured. Parts demolded too soon may be subject to deformation. Use of pre-warmed molds will hasten curing. Low temperatures will slow the curing and extend demold time. Thin castings or thin sections of castings will take longer to cure than thick castings or thick sections of castings. Refer to the Physical Properties table for individual product pour and demold times.

## CLEAN UP

For users of Flovv and Flovv-e, cleaning is streamlined with the built-in one-gallon cleaning tanks and onboard air systems, which utilize a combination of air and Novatech Cleaning Liquid to maintain clear nozzles and ensure repeatability. After completing your injection, simply purge the system with air to remove residual resin, followed by running the cleaning liquid to clear the mixing nozzle and pathways without requiring constant replacements. For those not using Flovv or Flovv-e, tools should be scraped clean before the resin hardens, and surfaces can be coated with wax or a release agent to simplify the removal of cured material. Novatech Cleaning Liquid is the recommended cleaning solution due to its efficiency and safety, while denatured alcohol may also be used with caution, as it is flammable and poses health hazards. By following these steps, you can maintain the longevity and performance of your tools and equipment.

## SAFETY

Before use, thoroughly review the Safety Data Sheets (SDS) and product labels for detailed safety precautions and handling instructions. Always adhere to the recommended guidelines to ensure safe use.

**Part A:** Keep out of the reach of children. Avoid inhaling fumes, vapors, or mists. Operate only in outdoor or well-ventilated areas. If necessary, use a NIOSH-approved respirator with an organic vapor cartridge. If inhaled, move the affected individual to fresh air, ensure they are resting comfortably, and seek medical attention if respiratory irritation occurs. If swallowed, seek immediate medical assistance and do not induce vomiting. Wear impervious gloves made of materials such as butyl rubber or nitrile rubber, and remove contaminated clothing for washing before reuse. Wash skin thoroughly with soap and water after handling. In case of skin irritation, consult a healthcare professional. Protect eyes with chemical safety glasses or goggles. If contact with eyes occurs, rinse cautiously with water for several minutes, removing contact lenses if easy to do. If irritation persists, seek medical attention.

**Part B:** Keep out of the reach of children and away from open flames or hot surfaces. Avoid eating, drinking, or smoking while handling the product. Ensure proper ventilation, using general or local exhaust systems to minimize exposure levels. If necessary, wear a NIOSH-approved respirator with an organic vapor cartridge. Always wear impervious gloves, such as those made from butyl or nitrile rubber, and wash skin thoroughly with soap and water after use. Protect eyes with safety glasses or goggles. In case of eye contact, rinse thoroughly with water for several minutes, removing contact lenses if easy to

do. If irritation occurs or persists, seek medical attention promptly.

Rigid Resin Kit

## **STORAGE LIFE**

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

## **DISCLAIMER**

The information in this Technical Data Sheet (TDS) accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results obtained from its use, or its non-infringement of any patent. Before use, the user must determine the product's suitability for the intended application and assumes all risks and liabilities arising from its use.

## **ACCESSORIES**

Novatech Mold Release, Novatech Color Kit, Novatech Cleaning Fluid.