

Novatech A-B Rigid Foam Kit

DESCRIPTION

The Novatech Rigid Foam Kit incorporates advanced two-part casting foam technology, utilizing A and B components that, when mixed, form rigid foam products ideal for various applications. It is specifically designed for precision and durability, making it suitable for producing decorative objects, lightweight mold shells, production parts, models, patterns, fixtures, duplicate masters, and general tooling purposes.

This system is practically odorless and does not contain toluene diisocyanate, MOCA, heavy metals, or HCFCs.

PHYSICAL PROPERTIES

Mix Ratio by Weight or Volume	1A:1B
Mix Viscosity (cP)	1,100
Cream Time	45 sec.
Rise Time	2 min.
Tack-Free Time	3 min.
Demold Time	10-15 min.
Free-Rise Density (lb/ft ³)	5
Molded Density (lb/ft ³)	8-20

BEFORE USE

Thoroughly read Safety Data Sheets, product labels and the "SAFETY" section in this TDS. The Novatech Rigid Foam Kit offers rapid demold times, making it ideal for high-volume, fast-cast applications. It is highly versatile, easily adaptable for color-casting, painting, or machining, and suitable for various creative and industrial purposes. The foam can also be enhanced with additives for cold-casting techniques, such as simulating bronze, marble, and other materials. Castings produced with the Novatech A-B Foam Kit are strong and durable, with thin-walled pieces exhibiting exceptional strength without the brittleness often associated with other low-viscosity, fast-curing polyurethane foams.

MOLD PREPARATION

The Novatech Rigid Foam Kit reproduces fine details from molds or patterns, but proper preparation is critical to avoid sticking and ensure optimal results. 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 Foam 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 completely dry and use Novatech Composites' proprietary mold release formula for superior performance and reliability.

When using molds created from 3D printing materials, always apply Novatech Mold Release before each pour to prevent sticking and maintain the mold's longevity across multiple castings.

Conducting a trial casting on a similar surface finish is recommended to safeguard valuable molds.

MIXING

Before mixing, ensure that both Parts A and B are at room temperature and that all tools and equipment are ready. The foam sets quickly, so it is essential to work promptly to avoid material loss.

When using Flovv or Flovv-e devices, the components are accurately mixed at the injection point through a specialized nozzle. Our systems ensure consistent ratios, prevent bubble formation, and seamlessly integrate color pigments, which are evenly blended through in-tank mixing. The system supports faster production cycles while maintaining high material quality. Tanks are equipped with pumps to preserve resin consistency, prevent moisture ingress, and reduce oxidation. When changing the tanks, make sure to securely place the tank cap to prevent moisture contamination.

For manual mixing, measure or weigh equal parts of A and B into clean containers. Mix thoroughly using a high-speed mixer for approximately 15 seconds. For smaller quantities, rapid hand mixing is sufficient. Pour the mixture into the mold cavity immediately, as foaming begins upon mixing. Delays can result in the foam rising in the mixing container, leading to material loss.

To maintain product quality, promptly reseal containers after use to prevent moisture contamination. Always work efficiently to ensure the best results.

CURING

To achieve optimal surface detail and proper mold fill, it is recommended to pack the foam to a minimum of 2 to 3 lb/ft³ above its free-rise density. When using Flovv or Flovv-e devices, the foam injection process is precisely controlled, ensuring uniform curing and enhanced production efficiency. Pre-warmed molds (75 to 85°F) are highly recommended for the first casting to accelerate curing and improve results. Once the mold is heated and cycled, it retains heat for continued production.

After the foam begins to rise, avoid stirring or movement, as this can cause the foam cells to

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collapse. Allow the foam to remain in the mold until fully cured, as parts demolded too soon may deform. Low ambient or mold temperatures may slow the curing process and extend demold times, while thicker sections of the foam will cure faster than thinner ones.

The Flovv and Flovv-e systems ensure consistent temperatures and curing conditions, minimizing errors and optimizing production cycles. For best results, always follow recommended pour and demold times based on the specific application.

FINISHING

Cured Novatech Rigid Foam may yellow or chalk when exposed to sunlight. For exterior use, it is recommended to paint or seal the surface to protect it from UV degradation. The foam can be easily drilled, sanded, and machined, making it versatile for a wide range of applications.

If painting or coating is required, ensure proper adhesion by testing the coating over a period of time to confirm its suitability for the intended use. This step helps to ensure durability and aesthetic quality for long-term performance.

COLORS

To achieve custom-colored foams, add Novatech Color Pigments to Part B before mixing with Part A. For vibrant results, use up to 0.5% of the total mixed weight for pigments such as Black, Brown, Blue, Green, Red, and Yellow. For lighter shades like White and Fleshtone, use up to 2% of the total mixed weight. This ensures even coloration and optimal visual appeal in your foam applications.

CLEAN UP

For users of Flovv and Flovv-e, the cleaning process is simplified with the integrated one-gallon cleaning tanks and onboard air systems. Novatech A-B Rig These systems use a combination of air and Novatech Cleaning Liquid to keep nozzles clear and ensure consistent performance.

After completing an injection, purge the system with air to remove residual resin, then run the cleaning liquid to thoroughly clear the mixing nozzle and pathways, minimizing the need for constant replacements.

For those not using Flovv or Flovv-e, tools should be scraped clean immediately before the resin hardens. Coating work surfaces with wax or a release agent can make the removal of cured material easier. Novatech Cleaning Liquid is recommended for its safety and efficiency, but denatured alcohol can also be used with caution due to its flammability and associated health risks.

By following these steps, you can ensure the longevity and optimal 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.

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.