55 Hilton Street, Easton PA 18042
(269) 488-4000
www.alumilite.com

TECHNICAL DATA SHEET

Flex 50

Flex 50 is a low-viscosity, tough, and flexible urethane rubber designed for high-detail and precise part reproduction. With a Shore hardness of 50A, it provides durability while maintaining flexibility. Vacuum or pressure casting is recommended for achieving bubble-free results. When coloring, white dye must be used in combination with translucent dyes to create opaque castings. Flex 50 is ideal for applications requiring strength, flexibility, and fine detail reproduction.

PRODUCT SPECIFICATIONS	
Mix Ratio	1:1 by volume
Mixed Viscosity	550 cps
Working Time	4.0 minutes
Demold Time	2.0 hours
Hardness	50-A
Full Cure Time	3 Days
Tensile Strength	250 psi
Tear Resistance	50 ppi
Elongation Strength	200%
Shelf Life	1 year
Color	Translucent Yellow

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

BEFORE YOU BEGIN

Work Environment: The ideal working temperature is around 65-75°F in a clean, dry, dust-free environment. Avoid working in high humidity. If you are pouring in large volumes of 2 or more gallons, we suggest keeping room temperature closer to 65°F. We highly recommend keeping fans on your project to help dissipate heat.

Coverage: You can use the coverage calculator on our website to determine the volume of mixed resin that you will need before you begin your project. Please remember, this is not an exact science, as each project is different and each substrate will absorb the epoxy differently. As the product fills the cracks and crevices in your mold, the level may drop. Be prepared to add more epoxy as needed. The calculator does not take into account embedded objects. It is always best to have more than enough material on hand to ensure completion of your project.

Materials: Be prepared with all necessary materials and tools before beginning your project.

- Powders & dyes
- Stir-sticks
- Utensils to shape material
- Molds for artistic creation
- Misc. handling tools – scissors, pliers, a drill or Dremel tool, heat gun, blow torch, etc.

IMPORTANT INFORMATION

To create **Flex 30** (30 Shore A hardness):

1. Blend **50% Flex 20 A** with **50% Flex 50 A**.
2. Separately, blend **50% Flex 20 B** with **50% Flex 50 B**.
3. Once both mixtures are prepared, combine the new **Flex 30 A** and **Flex 30 B** in a **1:1 ratio by weight or volume**.

To create **Flex 40** (40 Shore A hardness):

1. Blend **25% Flex 20 A** with **75% Flex 50 A**.
2. Separately, blend **25% Flex 20 B** with **75% Flex 50 B**.
3. Once both mixtures are prepared, combine the new **Flex 40 A** and **Flex 40 B** in a **1:1 ratio by weight or volume**.

MIXING & POURING

1. **Preheat the Mold**: Heat your mold to **130-150°F** before casting.
2. **Prepare the Material**: Shake both **A & B components** thoroughly before use.
3. **Measure & Mix**: Measure equal amounts (**1:1 by weight**) and mix thoroughly, scraping the sides and bottom to ensure a complete blend.
4. **Degas the Mixture**: Vacuum the mixed material to remove air bubbles. If a vacuum chamber is unavailable, mix slowly to minimize air entrapment.
5. **Pouring**: Slowly pour the material down the **side of the mold** to prevent air pockets.
6. **Gelling & Post-Curing**: Once the material gels (**about 4 minutes**), post-cure at **120-150°F** for **2 hours**, then allow it to cool before demolding.
7. **Curing Time**:
   - **With post-curing**: Demold after cooling; full cure in **72 hours**.
   - **Without post-curing**: Allow **18-24 hours** at room temperature before demolding.

Coloring

Alumilite's Flex Series urethane elastomers can be colored using **Alumilite's Coloring Dyes**. For best results:

- Add dye to the **B side** only, using a **maximum of 1-5%** by weight.
- Use the **smallest amount necessary** to achieve the desired color, as excessive dye can interfere with curing, reducing tear strength and causing the material to crumble.
- **Preheat your mold** and **post-cure the part** after pouring for optimal results.
- For **Flex 50, 60, 70, and 80**, which have a **translucent yellow base**, mix **white dye** with translucent colors to achieve an opaque finish.

Storage

- **Ideal Storage Conditions**: Store Flex materials at **70°F or above** in a **dry location** to prevent thickening of the B side.
- **Handling Thickened B Side**: If the B side thickens due to cold temperatures or moisture, safely **warm it to at least 100°F** and shake well to restore proper viscosity.
- **Safe Warming Methods**:
  - Place the bottle **near a warm air register**, ensuring it doesn't overheat or melt.
  - Submerge the **sealed bottle in a pot of water**, gradually increasing the water temperature until the material loosens and can be shaken properly.
  - Once cooled to room temperature, the material is ready for use.

SAFETY

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

- Wear gloves
- Safety glasses

- Protect clothing with a work smock or other outer garment
- For cleaning surfaces, containers – use Acetone, rubbing alcohol or nail polish remover
- When stored separately, epoxy & hardener have long shelf lives – store in a cool dry area in tightly sealed containers

WARNING: THE CURE REACTION IS EXOTHERMIC. Do not apply in thicknesses greater than the recommended maximum application thickness for the product.

DISCLAIMER: The information contained herein is considered accurate; however, Alumilite makes no warranty regarding its accuracy. The user must determine the suitability of the product for the intended use and accepts all risk and liability associated with that use.