

# EpoxAmite™ 100

## Epoxy Laminating System



www.smooth-on.com

### PRODUCT OVERVIEW

EpoxAmite™ 100 Epoxy Laminating System is an easy-to-use liquid epoxy system formulated for a wide variety of fabrication applications. EpoxAmite™ 100 Laminating System is unfilled, low in viscosity, odorless and cures at room temperature. Cured epoxy displays exceptional physical and performance properties. It can be sanded, shaped, machined, drilled, tapped and painted.

EpoxAmite™ 100 Laminating System can be used with reinforcements such as S-Glass, E-Glass, Kevlar and Carbon fibers for lay-up applications or composite parts. EpoxAmite™ 100 Resin can also be mixed with fillers such as fumed silica for gel coat applications. Urefil™ 3, Urefil™ 7 and other fillers can be added for fairing, filleting or bonding applications.

### PRODUCT SPECIFICATIONS

EpoxAmite™ 100 Resin with:	101 FAST Hardener	102 MEDIUM Hardener	103 SLOW Hardener
<b>Handling Properties</b>			
Mix Ratio By Volume	4A:1B	3A:1B	3A:1B
Mix Ratio By Weight	100 A:24 B	100 A:29 B	100 A:28.4 B
Mixed Viscosity - CPS. (ASTM D2393) <sup>T</sup>	1,000	650	650
Specific Gravity - Mixed; g./c.c. (ASTM D1475)	1.13	1.11	1.10
Spec. Volume - Mixed; cu. in./lb. (ASTM D792)	24.5	25	25.2
Pot Life - Minutes (ASTM D2471) <sup>T</sup>	11	22	55
Thin Film Working Time - Minutes	30	90	180
Cure Time - Hours <sup>1</sup>	6 - 8	10 - 15	20 - 24
Color - Mixed	Clear Yellow	Clear Yellow	Clear Yellow
<b>Physical Properties</b>			
Shore D Hardness (ASTM D2240)*	84	80	80
Ultimate Tensile (ASTM D638*)	7,930	8,180	7,910
Ultimate Tensile (ASTM D638*)**	35,100	26,800	27,000
Tensile Modulus (ASTM D638*)	445,000	450,000	452,000
Tensile Elongation (ASTM D638*)	2.45	3.15	2.63
Flexural Strength - P.S.I. (ASTM D790*)	13,660	12,220	12,300
Flexural Strength - P.S.I. (ASTM D790*)**	30,700	28,500	20,700
Flexural Modulus - P.S.I. (ASTM D790*)	468,000	423,000	429,000
Compressive Strength - P.S.I. (ASTM D695*)	11,550	10,970	10,500
Compressive Modulus - P.S.I. (ASTM D695*)	121,400	122,000	104,000
Heat Deflection Temp. (ASTM D648*)	133° F / 56° C	120° F / 49° C	127° F / 53° C

### Applications

- Wet Lay-Up Lamination
- General Bonding & Repair
- Clear Coating
- Gel Coating
- Barrier Coating
- Thin-Section Casting
- Water Proofing
- Patching & Small Laminates

### Advantages

- Convenient Mix Ratios
- Easy-to-Use
- Excellent Moisture Resistance
- Low Viscosity
- Non-blush Formula
- Easy-to-Mix & Apply
- Exceptional Physical & Performance Properties

<sup>T</sup> 100 Gram Mass in Mixing Cup

<sup>1</sup> Thin Film

\* Value measured after 7 days at 73°F/23°C

\*\* Denotes testing conducted on a 6 ply/10 oz. laminate after 7 days at 73°F/23°C

### PROCESSING RECOMMENDATIONS

#### PREPARATION...

**Avoid breathing fumes** - use in a well ventilated area at minimum. NIOSH approved respirator is recommended. Wear safety glasses, long sleeves and rubber gloves to minimize skin contact. This material has a high exotherm (generates heat). Do not mix components in glass or foam containers. Mixing containers should have straight sides and a flat bottom. Mixing sticks should be flat and stiff with defined edges for scraping the sides and bottom of your mixing container.

Materials should be stored and used in a room temperature environment (73°F/23°C) at 55% relative humidity or less. Elevated temperatures will reduce Pot Life. EpoxAmite™ 100 Resin and 101, 102, 103 Hardener must be properly measured and thoroughly mixed to achieve full, high-strength, solid-cure properties. For best results, using an accurate gram scale to weigh components is recommended. **Because no two applications are quite the same, a small test application to determine suitability for your project is recommended if performance of this material is in question.**

**Applying A Release Agent** - For releasing epoxy from non-porous surfaces such as resin, metal, glass etc., use Ease Release™ 200 or 205 (available from Smooth-On) to prevent adhesion.

## Safety First!

The material safety data sheet (MSDS) for this or any Smooth-On product should be read before using and is available on request. All Smooth-On products are safe to use if directions are read and followed carefully.

### **EpoxAmite™ 100 Resin PART A:**

#### **WARNING: IRRITANT TO EYES, SKIN & MUCOUS MEMBRANES.**

EpoxAmite™ 100 Resin is irritating to the eyes and skin. Avoid prolonged or repeated skin contact to prevent possible sensitization. Avoid breathing vapors and use only with adequate ventilation. Wear personal protective equipment.

**First Aid:** In case of eye contact, flush thoroughly with water for 15 minutes and get immediate medical attention. In case of skin contact, wipe clean with white vinegar and wash thoroughly with soap and water. If irritation persists, get medical attention. If swallowed, do not induce vomiting. Drink 1 - 2 glasses of water and get immediate medical attention. If vapors are inhaled or if breathing becomes difficult, remove person to fresh air. If symptoms persist, get medical attention.

#### **Keep Out Of Reach Of Children.**

### **EpoxAmite™ 100 Laminating System Hardeners PART B:**

#### **WARNING: IRRITANT TO EYES, SKIN & MUCOUS MEMBRANES.**

EpoxAmite™ 101, 102, 103 Hardeners are corrosive materials and can cause severe eye and skin burns. They are sensitizers that may cause dermatitis from skin contact or vapor inhalation. Use these products only with adequate ventilation. Remove contaminated clothing and wash from skin with soap and water.

**First Aid:** In case of eye contact, flush thoroughly with water for 15 minutes and get immediate medical attention.

#### **Keep Out Of Reach Of Children.**

**IMPORTANT:** The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained from the use thereof, or that any such use will not infringe upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.

time can be reduced by applying mild heat. The higher the curing temperature is, the higher the resulting Heat Deflection Temperature. With a higher temperature cure, a service temperature of 138°F/59°C can be attained. Allow epoxy to cure for 30 minutes and then cure for 1 hour at 200°F / 93°C. Allow casting to cool to room temperature before handling.

**Painting** - Cured EpoxAmite™ 100 Laminating System can be painted and / or primed and then painted with acrylic enamel paints. Let paint fully dry before putting part into service.

**Removing Epoxy** - Uncured / Non-curing epoxy: Scrape as much material as possible from the surface using a scraper. Clean the residue with E-POX-EE KLEENER™ available from Smooth-On, lacquer thinner, acetone or alcohol. Follow safety warnings pertaining to solvents and provide adequate ventilation.



**Call Us Anytime With Questions About Your Application.**

**Toll-free: (800) 381-1733 Fax: (610) 252-6200**

[www.smooth-on.com](http://www.smooth-on.com) is loaded with information about mold making, casting and more. 011924DH

## MEASURING & MIXING...

Accurate ratio measurements by volume or weight are required for the material to cure properly and develop full physical properties. For best results, using an accurate gram scale to weigh components is recommended. Stir Part A and Part B thoroughly before dispensing. Refer to specified Mix Ratios in the "Handling Properties" section for proper measurements. Dispense Parts A and B proper proportions into clean plastic, metal or wax-free paper containers.

**Adding Color** - EpoxAmite™ 100 Epoxy Laminating System can be colored with UVO™ or IGNITE™ colorants. Pre-mix color with Part A thoroughly and then add Part B.

**Mixing** - Be sure mixing utensils are clean and free of any potential contaminants such as dirt, dust or grease. Mix Parts A and B thoroughly for at least 3 minutes with a square edged mixing stick. Be aggressive and scrape sides and bottom of mixing container several times. Use the square edge of mixing stick to bring material off of the sides of container and blend. **If using a drill mixer**, follow with hand mixing as directed above to ensure thorough mixing. **NOTE:** If mixture is to be used for coating, pour into a roller pan to extend Pot Life.

**Adding Fillers** - A variety of dry fillers can be added. Pre-mix dry filler with Part A before adding Part B.

**Lowering Viscosity** - Epic™ Epoxy Thinner is a clear, water-like liquid that will lower the viscosity of some Smooth-On casting and laminating epoxies. Epic™ is not a solvent and can be added in different proportions to improve flow-ability to make it easier to mix and pour or laminate. Epic™ will also aid in reducing bubble entrapment.

**Increasing Flexibility** - Flexer™ Epoxy Flexibilizer is a clear, low viscosity liquid additive that will lower the durometer (Shore hardness) of some Smooth-On casting and laminating epoxies. When added to the epoxy system in the proper proportion, the cured epoxy will be softer and, in some cases, can be made semi-rigid. See the Flexer™ Technical Bulletin for more information.

**Important** - Mixed EpoxAmite™ 100 Resin with EpoxAmite™ 101, 102, 103 Hardener is exothermic, meaning it generates heat. A concentrated mass of mixed epoxy in a confined area such as a mixing container can generate enough heat to melt a plastic cup, burn skin or ignite combustible materials if left to stand for its full Pot Life. Do not use foam or glass mixing containers or pour sections thicker than 1/8" (0.32 cm). If a batch of mixed epoxy begins to exotherm, move it to an open air environment.

## APPLICATION & CURING...

Mixed EpoxAmite™ 100 is initially a low viscosity liquid that can be poured up to 1/8" (0.32 cm) thickness. Laminating: cut the bristles of a chip brush 30% for better control. After epoxy is mixed, you must work quickly to apply multiple layers. Brush an initial gel coat of epoxy over surface. Apply reinforcement fabric evenly into gel coat. Using brush, gently use stippling motion to work fabric into epoxy. Ensure fabric ply is saturated. Plastic polyethylene spreaders may also be used.

Alternate additional thin layers of epoxy and fabric using above application method. Add additional epoxy as needed to wet out subsequent layers. Repeat as necessary until desired thickness is attained. After final layer of fabric is applied, use lamination roller to evenly distribute epoxy and reduce air bubbles. Be mindful of your Thin Film Working Time.

**Cure Time** - Refer to specified Cure Times in Handling Properties at room temperature depending on mass. Cured material will be hard and unable to penetrate with a finger nail. Cured epoxy can now be dry sanded. If machining or sanding, wear NIOSH approved mask to prevent inhalation of particles.

**Heat Curing** - This product will cure at room temperature and does not require heat. Cure time can be reduced by applying mild heat. The higher the curing temperature is, the higher the resulting Heat Deflection Temperature. With a higher temperature cure, a service temperature of 138°F/59°C can be attained. Allow epoxy to cure for 30 minutes and then cure for 1 hour at 200°F / 93°C. Allow casting to cool to room temperature before handling.

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