Free Form®- Air

Mix & Apply-By-Hand Epoxy Dough

www.smooth-on.com

PRODUCT OVERVIEW

Free Form®- Air is an extremely lightweight epoxy putty suitable for an infinite variety of industrial and art-related applications. This is a **low-odor, low shrinkage** putty that is unique, inexpensive and **easy to use. Free Form®- Air** is mixed by hand with a 1A:1B by volume mix ratio. It offers a long working time and cures overnight at room temperature to a hard, rigid epoxy that is very strong with modeling board-like properties. **Cured Free Form®- Air is so lightweight, it will float in water.** It can be sanded, shaped, drilled, tapped and CNC machined/routered. It will readily accept any paint. Free Form can also be color pigmented with SO-Strong® or Ignite® colorants.

After mixing, **Free Form®- Air** can be pressed into a mold to make a lightweight, detailed casting. It will hold vertical surfaces and can be applied to almost any surface including polystyrene foam for rough sculpting. **Free Form®- Air** putty can also be used to make **rigid support shells or mother molds.**

Epoxy Laminating; Laminate **Free Form®- Air** putty in between layers of EpoxAmite® Laminating Epoxy and fiberglass cloth, carbon or other fiber for making lightweight composite parts. Eliminates the need to make multiple layers of laminating with liquid epoxy; saves time and labor. **Epoxy Tooling Applications** – use as a filleting material. Also good for jig and fixture construction.

Used as a lightweight adhesive, Free Form®- Air will bond to itself and a variety of surfaces including wood, stone and EpoxAcoat® Red surface coat epoxy. **Free Form®- Air will even cure under water.**

Pot Life/Working Time; this material is mass sensitive. The more material you mix at one time, the less time you have to work with it. Working tip; If mixing a large quantity, flatten putty with a rolling pin to reduce mass concentration and extend pot life.

- **Thickness; 1.5 inch (3.81 cm)** – pot life is 30 minutes, handling time is 2.5 hours, full cure in 24 hours.
- **Thickness; 3/8" (0.95 cm)** – pot life is 60 minutes, handling time is 4 hours, full cure in 24 hours.
- **Thickness; 1/8" (0.32 cm)** - pot life is 120 minutes; handling time is 8 hours, full cure in 24 hours.

TECHNICAL OVERVIEW

Mix Ratio: 1A:1B by volume	
Mixed Viscosity: Dough	(ASTM D-2393)
Specific Gravity, g/cc: .45	(ASTM D-1475)
Specific Volume, cu. in. /lb.: 61.6	(ASTM D-1475)
Color: Grey	
Shore D Hardness: 50	(ASTM D-2240)
Heat Deflection Temp: 140°F/60°C	(ASTM D-648)
Buoyant Force: 10.4 lbs /ft^3 (166.5 kg /m^3.)	

* All values measured after 7 days at 73°F/23°C

** Depending on mass

PROCESSING RECOMMENDATIONS

Safety – Use in a properly ventilated area ("room size" ventilation). Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. Wear vinyl gloves only. Use of a NIOSH approved respirator is recommended.

Preparation – Materials should be stored and used in at room temperature (73° F / 23° C). This product has a limited shelf life and should be used as soon as possible. Mixing should be done in a well-ventilated area. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. If making a 2 or more piece mother mold, apply appropriate shim apparatus to rubber mold exterior. **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 – This product is adhesive and will bond to many surfaces. For epoxy to epoxy applications where adhesion is not desired, an application of paste wax followed by Ease Release® 2125 PVA available from Smooth-On may be used. For other surfaces such as metal or plastic, a spray release such as Ease Release® 200 also available from Smooth-On may be used to prevent adhesion.

This product is mixed by hand. **You must wear gloves when mixing this material**, wearing vinyl gloves reduces inhibition risk.

Safety First!

The Material Safety Data Sheet (MSDS) for this or any Smooth-On product should be read prior to use and is available upon request from Smooth-On. All Smooth-On products are safe to use if directions are read and followed carefully.

Keep Out of Reach of Children

Be careful. Use only with adequate ventilation. Contact with skin and eyes may cause irritation. Flush eyes with water for 15 minutes and seek immediate medical attention. Remove from skin with waterless hand cleaner followed by soap and water.

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.

MIXING & MEASURING

Measuring **- Free Form®- Air** putty comes as two parts. Dispense equal amounts (golf ball size, for example) of Part A and Part B. These products have a limited shelf life and should be used as soon as possible.

Mixing **-** Knead parts together aggressively to a uniform color and apply quickly to surface of tool or mold.

APPLYING & LAMINATING

Applying – Mixed **Free Form®- Air** is a dough that can be applied up to 1.5" (3.81 cm) thickness. Mix only enough Free Form to be used at one time. **Free Form®- Air** will bond to itself.

Laminating **-** **Free Form®- Air** can be used in conjunction with EpoxAcoat® surface coat and EpoxAmite® laminating resin to create a strong and lightweight composite tool or mold.

USE AS A SCULPTING MATERIAL & PAINTING

Use as a Sculpting Medium **- Free Form®- Air** can be applied to wire mesh armatures to create rigid forms for sculpting. Wire mesh for sculpting is available at most art supply stores. **Free Form®- Air** can be applied to polystyrene foam to create a hard, rough-sculptable and sandable surface. When applying to polystyrene foam, maximum thickness is 3/4" (1.90 cm).

Painting – Cured **Free Form®- Air** can be painted and / or primed and then painted with acrylic enamel paints. Let paint fully dry before putting part into service.

CURING & HEAT RESISTANCE

Cure Time **-** Refer to specified **Cure Times** in the **Product Overview** section 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.*** **Pot Life and Cure Time values are dependent on mass and mold configuration, as epoxies are mass-sensitive.**

Heat Resistance – Fully cured putty with a minimum thickness of ½" (1.27 cm) will resist temperatures up to 140°F/60°C.

Removing Uncured Free Form®- Air Epoxy Putty - Remove as much uncured material from the surface as possible. Clean any residue with soap and water. **Optional** - Use **E-POX-EE KLEENER®** available from Smooth-On.

Call Us Anytime With Questions About Your Application.

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

The new **www.smooth-on.com** is loaded with information about mold making, casting and more.