

# FlexFoam-iT!™ Series

## Flexible Polyurethane Foams

3 lb., 4 lb., 5 lb., 6 lb., 7 lb., 8 lb., 10 lb., 14 lb., 15 lb., 17 lb., 23 lb. or 25 lb.



www.smooth-on.com

### PRODUCT OVERVIEW

FlexFoam-iT!™ Series foams are premium quality water blown flexible foams that can be used for a variety of industrial, special effects and art & crafts and projects. With several to choose from, uses include making theatrical props (swords, knives, hammers, etc.), industrial gaskets, custom padding and cushioning, and more. FlexFoam-iT!™ foams are also used as repair materials for seats, cushions and archery targets. SO-Strong™, UVO™, and Ignite™ colorants can be added for color effects.

Part A and B liquids are combined, mixed and poured into a mold or other form (apply release agent if necessary). Mixture will rise and cure quickly to a solid, flexible foam. Foams vary by density and offer good physical properties. The lower the number, the more the foam expands. FlexFoam-iT!™ III is the lowest density foam and expands the most. FlexFoam-iT!™ 25 is the highest density foam and expands the least. FlexFoam-iT!™ 15 has a relatively long, 2 minute pot life.

- FlexFoam-iT!™ IV and FlexFoam-iT!™ 15 are “Tuff Stuff” foams which are exceptionally strong.
- FlexFoam-iT!™ 6 and FlexFoam-iT!™ 8 are “Pillow Soft” foams with a similar softness to pillow or cushion foam.
- FlexFoam-iT!™ 7 FR is Flame Rated to FMVSS-302 specification
- FlexFoam-iT!™ 23 FR is Flame Rated to UL-94 HB specification

8oz./237ml. of FlexFoam-iT!™ A+B  
poured into a 32oz./946ml. cup.



### TECHNICAL OVERVIEW

	A:B Mix Ratio by Volume	A:B Mix Ratio by Weight	Specific Gravity (g/cc) (ASTM D-1475)	Specific Volume (cu. in./lb.)	Pot Life (Cream Time) (ASTM D-2471)	Handling Time	Cure Time	Approximate Volumetric Expansion	Approximate Lbs. / Cu. Foot = Kgs. / Cu. Meter
FlexFoam-iT!™ III	1:2 pbv	57.5:100 pbw	0.05	504	35 sec.	25 min.	2 hrs	15 times	3 lb/ft <sup>3</sup> = 48 kg/m <sup>3</sup>
FlexFoam-iT!™ IV	N/A	80:100 pbw	0.06	420	30 sec.	45 min.	2 hrs	13 times	4 lb/ft <sup>3</sup> = 64 kg/m <sup>3</sup>
FlexFoam-iT!™ V	1:1 pbv	105:100 pbw	0.08	315	50 sec.	45 min.	2 hrs	11 times	5 lb/ft <sup>3</sup> = 80 kg/m <sup>3</sup>
FlexFoam-iT!™ 6	1:1 pbv	105:100 pbw	0.09	280	35 sec.	60 min.	2 hrs	10 times	6 lb/ft <sup>3</sup> = 96 kg/m <sup>3</sup>
FlexFoam-iT!™ 7 FR	1:1 pbv	100:88 pbw	0.11	229	35 sec.	60 min.	2 hrs	8 times	7 lb/ft <sup>3</sup> = 110 kg/m <sup>3</sup>
FlexFoam-iT!™ VIII	1:2 pbv	52.6:100 pbw	0.13	194	35 sec.	25 min.	2 hrs	7 times	8 lb/ft <sup>3</sup> = 128 kg/m <sup>3</sup>
FlexFoam-iT!™ X	1:1 pbv	105:100 pbw	0.16	157	50 sec.	45 min.	2 hrs	6 times	10 lb/ft <sup>3</sup> = 160 kg/m <sup>3</sup>
FlexFoam-iT!™ 14	1:2 pbv	100:190 pbw	0.22	114	60 sec.	45 min.	2 hrs	4 times	14 lb/ft <sup>3</sup> = 220 kg/m <sup>3</sup>
FlexFoam-iT!™ 15	1:2 pbv	100:185 pbw	0.24	115	2 min.	90 min.	4 hrs	4 times	15 lb/ft <sup>3</sup> = 240 kg/m <sup>3</sup>
FlexFoam-iT!™ 17	1:2 pbv	100:185 pbw	0.27	93	60 sec.	30 min.	2 hrs	3.5 times	17 lb/ft <sup>3</sup> = 270 kg/m <sup>3</sup>
FlexFoam-iT!™ 23 FR	N/A	85:100 pbw	0.37	68	90 sec.	60 min.	2 hrs	2 times	23 lb/ft <sup>3</sup> = 370 kg/m <sup>3</sup>
FlexFoam-iT!™ 25	N/A	1:2 pbw	0.40	63	90 sec.	25 min.	2 hrs	2 times	25 lb/ft <sup>3</sup> = 400 kg/m <sup>3</sup>

**Mixed Viscosity** (ASTM D-2393): 1000 cps

**Color:** White

\* Values measured at room temperature (73°F/23°C)

**IMPORTANT:** Shelf life of product is reduced after opening. Remaining product should be used as soon as possible. Immediately replacing the lids on both containers after dispensing product will help prolong the shelf life of the unused product. XTEND-IT™ Dry Gas Blanket (available from Smooth-On) will significantly prolong the shelf life of unused liquid urethane products.

## 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.** Part A (Yellow Label) contains methylene diphenyldiisocyanate. Vapors, which can be significant if heated or sprayed, may cause lung damage and sensitization. Use only with adequate ventilation. Contact with skin and eyes may cause severe irritation. Flush eyes with water for 15 minutes and get immediate medical attention. Remove from skin with soap and water.

Part B (Blue Label) is irritating to the eyes and skin. Avoid prolonged or repeated skin contact. If contaminated, flush eyes with water for 15 minutes and get immediate medical attention. Remove from skin with soap and water. When mixing with Part A, follow precautions for handling isocyanates. If machining cured FlexFoam-It!™, wear dust mask or other apparatus to prevent inhalation of residual particles.

**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 a copyright or patent. User shall determine suitability of the product for the intended application and assume all associated risks and liability whatsoever in connection therewith.

## PROCESSING RECOMMENDATIONS

### PREPARATION...

Store and use at room temperature (73°F/23°C). Use in a low humidity environment (below 50% RH). 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. Good ventilation (room size) is essential. This product has a limited shelf life and should be used as soon as possible. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. **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...

Urethane foams are adhesive and will stick / bond to many surfaces. **We recommend Ease Release™ 2831 to release urethane foam from most surfaces.**

If the release application is particularly difficult (example; releasing urethane foam from urethane rubber), we recommend an application of Universal Mold Release™ followed by an application of Ease Release™ 2831. **WARNING:** Do not use Universal Mold Release by itself, or any other silicone based release agents. This will collapse the foam.

### PRE-MIXING & MIXING...

**Pre-mix Parts A & B** - Stir or shake both Part A & Part B thoroughly before dispensing.

**Measuring - Stop!** Know the mix ratio of the foam product you are using. Some are by weight and some are by volume. Dispense the correct amounts of Part A and Part B into a large mixing container.

**For Best Results - Pre-Mix Part B after measuring out material** - although not necessary, pre-mixing Part B using a drill and mechanical mixer (such as a turbine mixer available from Smooth-On) after measuring out and before combining with Part A will yield best results.

**For Best Results - Use a Mechanical Mixer** - Mix for a minimum of 15 seconds and pour into mold or form.

**Mixing by Hand** - Stir quickly and deliberately for a minimum of 15 seconds. Make sure that you aggressively scrape the sides and bottom of your mixing container several times. Pour into mold or form.

Be careful not to splash low-viscosity liquid out of container. Remember, these materials cure quickly. Do not delay between mixing and pouring.

### POURING, CURING & PERFORMANCE...

**Pouring & Curing** - For best results, pour your mixture in a single spot at the lowest point of the containment field and let the mixture seek its level. Allow space in the containment field for the foam to grow as it expands to its ultimate volume. Allow foam to cure for at least 30 minutes before handling. Cure time will be affected by mass and mold configuration.

**Mass Concentration / Mold Configuration** - Pouring large amounts at a time in certain mold configurations (i.e. cylinder) could cause excess heat to be generated and result in splitting (fissures). Step pouring in layers may resolve this problem.

**Improving Surface Finish & Minimizing Voids With Back Pressure** - Capping the mold cavity opening with a board that has predrilled holes will improve surface finish for some foams. For more information, watch the video at [smooth-on.com/backpressure](http://smooth-on.com/backpressure)

**Is Your Foam Collapsing?** - This is a common phenomenon associated with cold temperatures, inadequate mixing or both. Environment or material too cold? Warm it up. Inadequate mixing? You must thoroughly pre-mix both parts A and B. After combining A and B, mix thoroughly. If using a mechanical mixer, mix for 30 seconds. When hand mixing, mix quickly and aggressively, almost whipping the material.



**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.