



# PRODUCT DATA SHEET

## Filter-bond™ E-3503

65 SHORE D URETHANE

PRODUCT DESCRIPTION	RECOMMENDED USES
<b>Filter-bond™ E-3503</b> is a two-component elastomeric urethane that exhibits excellent bonding characteristics to various substrates.	Commonly used for potting, encapsulating, bonding, and sealing in the filtration and ultrafiltration industries. This material has been used in the production of filter media in food & beverage, pharmaceutical, and industrial markets.

PRODUCT CHARACTERISTICS	PERFORMANCE CHARACTERISTICS
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HANDLING PROPERTIES	TEST METHOD	A/B MIXED	PHYSICAL PROPERTIES	TEST METHOD	POST CURED PROPERTIES*
Mix Ratio by volume A:B	Calculation	100:20	Tensile Strength (ksi)	ASTM D-638	2.0
by weight A:B		100:24			
Gel Time 100 grams @ 25°C	ASTM D-2971	23 min. ±5	Heat Distortion Temperature 66 psi 264 psi	ASTM D-648	54°C 47°C
Demold Time 1/8" thick @ 25°C	Hapco Test	16-24 hrs.			
Hardness Shore	ASTM D-2240	65D ± 5	Izod Impact (pli) Notched Unnotched	ASTM D-256	No Break No Break
Viscosity (cps) mixed @ 25°C	ASTM D-4878	40,000			
Specific Gravity mixed @ 25°C	ASTM D-4669	1.13	Elongation (%)	ASTM D-638	120
Shrinkage inch/inch See shrinkage paragraph	ASTM D-2566	.0005-.002			
Color (cured)	Visual	Transparent/ Hazy	Flexural Modulus (ksi)	ASTM D-790	63.7
Cubic Inches per Pound	Calculation	24.5			
			Flexural Strength (ksi)	ASTM D-790	3.1

\*Note: These results are based on test specimens cured 1-3 hours at room temperature then 16 hours at 175°F(80°C) The above technical data is true and accurate at the date of issuance but is subject to change without prior notice.

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**MATERIAL HANDLING & SAFETY NOTES**

**SURFACE PREPARATION**

**TO PREVENT ADHESION:**

To prevent adhesion to the mold, use a **GREASE-IT™** release agent. Porous surfaces, such as wood, plaster, foam, etc., must be sealed thoroughly before release is applied. Use multiple coats of a good quality coating, such as a high grade oil-based or urethane lacquer.

**TO PROMOTE ADHESION:**

The surface must be abraded, cleaned with a solvent and dried. Sandblasting and mechanical roughing are the preferred ways of abrading surfaces to be bonded. For added adhesion to metals, use **Primer 200**. For added adhesion to plastic, use **Primer 810**. Make sure all surfaces are clean, dry, and free from moisture.

**MIXING**

Components may separate and should be mixed separately before each use. Mix, only when ready to use, by adding the curing agent to the resin portion and blending together thoroughly. Be sure to scrape and stir in all material sticking to the sides and bottom of the mixing container. Do not use paper containers or wooden mixing sticks. They may contain moisture. For best results, use plastic or coated containers, and metal or plastic sticks.

**CASTING**

Pour in a thin unbroken stream into the lowest point in the cavity or mold. This will help break up some of the air entrapped during mixing. For best results, Hapco recommends meter mix dispensing, vacuum degassing and/or pressure casting at 70-80 PSI.

**POSTCURE**

Postcure Heat: 100-176°F(38-80°C) for a minimum of 6-12 hours.

Properties increase with heat acceleration. Izod impact and heat distortion properties increase with postcure heat. The lower the temperature, the longer the postcure(8-24 hours).

**DEMOLD & CURE TIMES**

Demold and final cure time can be accelerated with the addition of heat 100-176°F(38-80°C). To retain working life, heat the mold, not the material. Increasing the temperature of the mold to 80-100°F (26-38°C) will accelerate demold and cure times by up to 50%. For full cure polymers require at least 7-10 days. Please be aware that size and mass effect demold and cure times.

**HARDNESS**

The hardness progresses more slowly in the longer working life systems. The hardness progression can be accelerated by using the faster version or by curing with mild heat. Hardness and cure progress will be retarded, slowed down, when the temperature falls below 70°F (21°C).

**SHRINKAGE**

The values in the brochures are for comparative reference only, using ASTM testing procedures. Shrinkage or dimensional variation is largely influenced by mass (total volume and thickness), temperature (material and mold), and mold material. Geometry, part thickness, and total volume vary in each design, therefore, the customer is responsible to test and determine the shrinkage factor to be used.





**MATERIAL HANDLING & SAFETY NOTES**

**SILICONE MOLDS**

Silicone molds should be postcured at 120°F(48°C) overnight(8-24 hours). When using a tin-based silicone mold, make sure the mold is open when it is in the oven during postcure. Improperly cured silicone can cause a sticky surface on molded parts. This process also extends mold life.

**CLEAN UP**

Cured polymers are difficult to remove. It is best to clean tools and equipment immediately after use. For best results use Hapco's **A-TAK™**.

**STORAGE**

Store both components in an area with a temperature range of 68-90°F(20-32°C). Store in a dry place off of cement floors and on shelving if possible. Containers should be kept tightly closed.

**COLD TEMPERATURES**

**CAUTION:** Part A may freeze or crystallize in cold temperatures. Part A may appear to be striated or solidify.

This situation can easily be corrected. Place the cover on the Part A loosely (do not seal) and place in an oven set at 125-150°F(51-65°C) for 3-8 hours or 8-12 hours for drums. Reseal, allow to cool, and then mix thoroughly.

**CAUTION:** Part B may freeze or crystallize in cold temperatures. Part B may turn thicker, appear to be striated, thicken, or solidify. **To prevent this see storage.**

This situation can be easily corrected. To reverse crystallization, loosen the cover on Part B and heat to 170-180°F(77-82°C) for 3-6 hours, drums, 6-12 hours. Allow to cool before using. If contents are pigmented, mix thoroughly.

**MACHINE MIXING AND DISPENSING**

Use Hapco's **RAPIDFIL™**, **MINIFIL™**, and/or **RAPIDSHOT™** dispensing machines for fast, reliable, and efficient mixing without the air entrapment, measuring, or mess associated with hand processing.

**SHELF LIFE**

The shelf life on Hapco products begins from the date of invoice for that product shipment. Hapco's shelf life only pertains to containers that are unopened and in their original condition. Once the container is opened Hapco has no control or responsibility for the shelf life.

**RESEALING**

Many polymers are moisture sensitive and should be resealed using one of the following methods:

1. Blanket with a dry gas like nitrogen or argon.
2. Use a hair dryer pointed into the opening of the container for 30 seconds.

**PRECAUTIONS**

**CAUTION:** The [Safety Data Sheets](#) should be read thoroughly before using this product.

Skin or eye contact with polymers should be avoided. The use of gloves, eye protection, and face masks are strongly recommended. All polymers, as a general practice, should be used in well-ventilated areas. Spot ventilation is most effective. Contaminated clothing should be removed immediately and the skin washed with soap and water or waterless skin cleaner. Should accidental eye contact occur, wash thoroughly with water and consult a physician.

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