



# TECHNICAL DATA

## ENVIROTHERM 08-76B WARM BOX RESIN

### Performance Features

HA International's Envirotherm 08-76B Warm Box Resin is a high tensile strength resin with improved humidity resistance, designed for use in a broad variety of casting applications. This binder is characterized by the following product features:

- Low Free Formaldehyde
- High Tensile Strength
- Excellent Resistance to Humidity
- Less Smoke
- Good Collapsibility
- Lower Odor at Mixing
- Good Bench Life Characteristics

### Product Description

Envirotherm 08-76B, like other warm box resins, is a high furfuryl alcohol content copolymer. Such resins are catalyzed by acidic solutions of various salts. The resin, catalyst, and a release agent are mixed with sand, providing a sand mix with long shelf life. This mixed sand is blown into a pattern that is heated between 300°F and 450°F. The heat from the pattern highly accelerates the cure of the resin to an insoluble, infusible solid. The core remains in the box long enough to develop adequate strength for handling. It is then ejected, and curing continues as the core cools.

Typical sand mixes contain 0.8% to 1.5% resin, based on sand, and 20% 6500E Warm Box Catalyst based on resin weight. Most users add 0.5-1.0% (BOR) Silane, 19-314, to improve strength and humidity resistance. The 19-314 can be added as a third part or added to the resin within eight hours of usage. It will lose its effectiveness after eight hours. Factors requiring an increase in resin content are sand with a high grain fineness number, angularity, impurities, and use of dry sand additives.

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Batch, low speed continuous, or high speed continuous mixes may be used with the Envirotherm 08-76B resin system. Typical mixing times for a batch mixer are two (2) minutes for the catalyst, then an additional two (2) to three (3) minutes after the resin and release agent addition, but mixing times depend on the equipment being used. With any type of mixer, the final sand mix should be free of resin balls and uncoated sand.

Curing times are dependant on core size, configuration, sand type and ADV, and core box temperature. Typical cure times range from 10 seconds to 60 seconds or more. Because curing of the core continues after ejection from the box, cores should not be poured on for 1-2 hours after manufacture, depending on their size. If cores are to be washed with a water-based coating, they should be coated immediately after ejections, and dried in an oven.

The typical properties of Envirotherm 08-76B Warm Box Resin are defined in the table below.

<b>Typical Properties - Envirotherm 08-76B</b>	
<b>Viscosity, cps</b>	30-90
<b>Free Formaldehyde, %</b>	<0.9
<b>Specific Gravity</b>	1.20
<b>Karl Fischer Water, %</b>	8
<b>pH</b>	5.2
<b>Refractive Index</b>	1.498

### **Storage Guidelines**

Recommended storage temperature is between 60 - 80 ° F. At lower temperatures, viscosity will increase, making pumping and mixing more difficult. At higher temperatures, the shelf life of this product will be reduced. Drum storage should be in a dry area, out of direct sunlight. Partially used drums should be tightly closed to prevent contamination.

### **Safe Handling**

Chemically resistant gloves and eye protection should be used when handling or using chemical binders. Material Safety Data Sheets are available for all products. Drum labels also contain handling information. This material will react with acid materials or the acid catalyst.

### **Technical Service**

The information presented in this bulletin cannot anticipate all requirements that may be encountered in specific applications within your foundry. Proper selection of a binder system that meets your specific needs is key to achieving maximum performance benefits. HA International, LLC provides in-depth technical assistance and a range of binder systems. Both our in-house and field experts are available to assist you in your most challenging foundry applications. Please contact your HA International representative so that we may assist you in putting together a binder system and foundry team that will help you achieve your goals.

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