



TECHNICAL DATA

Enviroset 40E FNB

Product Features

Enviroset 40E Furan Nobake Resin is a low nitrogen, low water furan resin that offers a number of features that set it apart from conventional furan resins on the market. The following product features characterize this binder:

- Low Nitrogen, Low Water
- Non-reportable Formaldehyde
- Low Viscosity
- High Tensile Strength
- High Furfuryl Alcohol

Product Description

Enviroset 40E is a thermosetting furan resin that will react in the presence of a strong acid catalyst, at ambient temperatures, to form a cured binder. It is suitable for use in the production of cores or molds, and can be used with all types of metal. Typically the amount of Enviroset resin applied to the sand will range between 0.8% to 1.2% resin, based on the weight of the sand.

The quantity of acid used in the sand mix is dependent upon the type and strength of the acid, but normally ranges between 20% - 50% based on the weight of the Enviroset resin.

Recommended practice when using Enviroset resins is to start with a clean, washed and dried silica sand. Reclaimed sands are also widely used with this type of product. Mechanically reclaimed sand that is low in fines and residual binder (Loss on Ignition) is preferred. In continuous or batch-type mixers, the acid should be the first component added to the sand, with the resin added after the acid has been dispersed. Caution should be exercised to prevent the liquid resin and acid components from coming into direct contact with one another since the resulting reaction can be very exothermic.

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The typical properties of the Enviroset 40E are defined in the table below.

Typical Properties - Enviroset 40E	
Viscosity, cps	10-40
% Water	4.0 max
% Nitrogen	0.4
% Free Formaldehyde	<0.1
% Furfuryl Alcohol	87
pH	6.7
Specific Gravity	1.13

Tensile Strength Development

Measurable tensile strength begins to develop shortly after the sand mix containing the Enviroset resin and acid catalyst is discharged into a core box or pattern. The rate of strength development is related to the chemistry of the resin, the catalyst used, and the core geometry. Tensile strength will vary due to the many factors known to affect binder performance, e.g. sand quality, sand temperature, mixing efficiency, etc.

Storage Guidelines

Recommended storage temperature is between 60 - 90 ° F. At lower temperatures, viscosity will increase, making pumping and mixing more difficult. At higher temperatures, shelf life can be adversely affected. 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. Furan resins will react in a violent exothermic reaction with the acid catalysts or other acids. Do not mix furan resin with any acid except on sand during use.

Technical Service

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 wide range of furan nobake resins and catalysts. For additional information relating to the selection of resins or catalysts, 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. Both our in-house and field experts are available to assist you with your most challenging foundry application.

DJH
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