

## Sigma Cure™ 110 UCB Pt1

### Product Features

Sigma Cure 110 (SC 110) Phenolic Urethane Part 1 Resin has been designed to offer high tensile strength development and good bench life performance, particularly at elevated sand temperatures. SC 110 can be used with several different Part 2 Isocyanate components, chosen depending upon the desired performance features. When used with Sigma Cure 210 Part 2 Resin, a system with particularly good performance at high ambient and sand temperatures is obtained. SC 110 is best used for non-ferrous applications. Features available when using SC 110 with the appropriate Part 2 component include the following:

- Superior performance on hot sand
- High tensile strength development
- Extended bench life of mixed sand (minimal down time)
- Good hot strength and humidity resistance
- Fast cure speeds (high productivity)
- Good release (reduced resin build-up)

### Product Description

Sigma Cure 110 is a phenolic resin used in conjunction with an MDI-type isocyanate resin, such as Sigma Cure 210. Both the Part 1 and Part 2 resin components are mixed with a new silica or lake sand, or a reclaimed sand, in ratios ranging from 50/50 to 60/40, and at a total resin content in the range of 0.8 % to 2.0 % based on the weight of the sand. The resulting sand mix is then blown into a core box and subsequently cross linked by passage of a vaporized tertiary amine catalyst such as, dimethylisopropylamine (DMIPA) or dimethylpropylamine (DMPA), to produce a urethane bond.

### Typical Physical Properties

<b>Refractive Index</b>	<b>1.564</b>
<b>Viscosity, cps</b>	<b>110</b>
<b>Flash Point, ° F, TCC</b>	<b>&gt;156</b>
<b>Density (pounds per gallon)</b>	<b>9.09</b>

## Performance Characteristics

Tensile strength development occurs almost instantaneously before the core is ejected from the core box. Initial tensile strength at ejection typically ranges from 60 to 80% of the ultimate tensile strength at 24 hours. The value is adversely affected by clay and other alkaline contaminants, and by moisture in the sand or high dew points in the compressed purge air. Tensile strength values will vary as a function of the sand angularity and the AFS grain fineness number of the selected sand.

## Storage Guidelines

Recommended storage temperature is between 60 - 90°F. At lower temperatures, viscosity will increase, making pumping and mixing more difficult. Freezing temperatures should be avoided. Drum storage should be in a dry area, out of direct sunlight. Partially used drums should be tightly closed to prevent contamination, primarily from water, which can adversely affect performance. The recommended stock rotation is six months when properly stored.

## 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 the Part 2 component, without catalyst, in an exothermic reaction, to give a solid polymer. Do not mix Part 1 and Part 2 except on sand during use. Refer to the Material Safety Data Sheet for additional information.

## Technical Service

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