Biocure 815 UCB Pt1

Product Features

Biocure 815 (BC 815) Phenolic Urethane Part 1 Resin has been designed to offer superior bulk cure speeds in high production ferrous applications. Higher bulk cure rates translates into lower amine usage. BC815 also provides excellent release characteristics performance and compatibility with all refractory coatings. The BC 815 contains no reportable formaldehyde and can be used with several different Part 2 Isocyanate components, chosen depending upon the desired performance features. Features available when using BC 815 with the appropriate Part 2 component include the following:

- Lower VOC as compared to standard PUCB systems as tested by OCMA
- 30% lower HAP emissions compared to standard PUCB systems (CERP data)
- Less odor than conventional PUCB systems at mixing, core-making, and storage.
- Renewable plant-based methyl ester solvents
- Reduced amine usage (improved productivity and lower operational cost)
- Superior release and low resin wipe off
- Excellent resistance to aqueous coatings (enhanced dip and dry strengths)
- Excellent humidity resistance
- High tensile and hot strengths

Product Description

Biocure 815 is a phenolic resin used in conjunction with an MDI-type isocyanate resin, such as Biocure 315. 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

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<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Refractive Index</td>
<td>1.524</td>
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<tr>
<td>Viscosity @ 25°C (cps)</td>
<td>140</td>
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<tr>
<td>Flash Point (°F TCC)</td>
<td>&gt;200</td>
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<tr>
<td>Density (pounds per gallon)</td>
<td>9.30</td>
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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 and 90 °F. At lower temperatures, viscosity will increase, making pumping and mixing more difficult. Freezing temperatures should be avoided. At high temperatures, solvent loss can occur. 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 resins. 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.

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