Carbophen 100

Product Features

Carbophen 100 is a water-soluble phenolic resin system cured by passing carbon dioxide (CO2) gas into a sealed core box. The resin is the sole binder component added to the sand for making molds and cores. Carbophen 100 has been formulated to contain no reportable formaldehyde making this system more environmentally friendly and offering the following benefits:

- Low odor inside and outside of the foundry
- Only a single component is metered
- No scrubber is required
- The resin contains no nitrogen, sulfur or phosphorous
- No lustrous carbon is formed
- Lowest VOC and HAP emissions at pouring, cooling, and shakeout of cold box systems
- Good humidity resistance and Tensile Strength
- No odor, non-flammable curing agent.

Product Description

Carbophen 100 is a water based phenolic resin system cured by the use of CO2 gas. Typically, the resin is mixed with a grade of silica sand or lake sand, at a resin content of 1.5-3.0% based on the weight of the sand. The actual resin percentage used, which may vary by application, is a function of the type of sand used, as well as other factors. The resulting sand mix is then blown into a core box and is subsequently cured by passage of CO2 through the core.

Typical Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity @ 25°C, cps</td>
<td>400</td>
</tr>
<tr>
<td>Free Formaldehyde, %</td>
<td>&lt; 0.1</td>
</tr>
<tr>
<td>Free Phenol, %</td>
<td>&lt; 1.0</td>
</tr>
<tr>
<td>Density, pounds per gallon</td>
<td>11.0</td>
</tr>
<tr>
<td>pH</td>
<td>14.0</td>
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</tbody>
</table>
Performance Characteristics

Tensile strength development occurs almost instantaneously upon gassing and before the core is ejected from the core box. Tensile strength values will vary as a function of the degree of angularity and the AFS grain fineness number of the sand that is selected. The graph given below indicates some typical tensile strengths for Carbophen 100 on a 55 AFS silica sand.

Storage Guidelines

Recommended storage temperature is between 60 and 90°F. The recommended stock rotation is nine months for properly stored product. At lower temperatures, viscosity will increase, making pumping and mixing more difficult. The product should not be allowed to freeze. 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.

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. Refer to the Material Safety Data Sheet for additional information.

Technical Service

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