CRS-2
CATIONIC RAPID SETTING ASPHALT EMULSION

PRODUCT DESCRIPTION

CRS-2 is a rapid setting cationic asphalt emulsion that reacts quickly with the aggregate to revert from emulsion to asphalt. Asphalt emulsions are classified according to the electric charge that surrounds the asphalt particles (i.e. cationic, anionic emulsions) and how quickly the suspended asphalt particles break. A rapid setting emulsion is one that will destabilize quickly when in contact with aggregate. The setting speed is relative because it is affected by atmospheric conditions at time of construction.

GENERAL PRODUCT FEATURES

- Due to the higher viscosity than CRS-1, this product may be sprayed in thicker films
- Thicker coatings on aggregates - increased durability
- Traffic can be restored very shortly after application
- Ideal for use in hot temperatures
- No run-off
- Seals narrow cracks against moisture penetration
- Prevents slippage plane between layers

TEMPERATURE-VISCOSITY CHART

CRS-2

<table>
<thead>
<tr>
<th>TEST</th>
<th>TYPICAL DATA</th>
<th>SPEC RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Viscosity, 50°C, SFs</td>
<td>230</td>
<td>100 - 400</td>
</tr>
<tr>
<td>Sieve Test, 850 µm, %</td>
<td>0.04</td>
<td>… - 0.1</td>
</tr>
<tr>
<td>Settlement, 5 days, %</td>
<td>2.1</td>
<td>… - 5.0</td>
</tr>
<tr>
<td>Demuls., DOSS 0.8%, %</td>
<td>67</td>
<td>40 - …</td>
</tr>
<tr>
<td>Dist. Residue, 260°C, %</td>
<td>68.8</td>
<td>67 - …</td>
</tr>
<tr>
<td>Oil Portion of Dist., %</td>
<td>trace</td>
<td>… - 3</td>
</tr>
<tr>
<td>Particle Charge</td>
<td>(+)</td>
<td>(+)</td>
</tr>
</tbody>
</table>

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<tr>
<th>TEST</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Penetration, 25°C, dmm</td>
<td>125</td>
<td>100 - 250</td>
</tr>
<tr>
<td>Solubility in TCE, %</td>
<td>99.91</td>
<td>97.5 - …</td>
</tr>
<tr>
<td>Ductility, 25°C, cm</td>
<td>68</td>
<td>60 - …</td>
</tr>
</tbody>
</table>

APPLICATION GUIDELINES

- Clean/prime/tack pavement surface prior to application
- Do Not apply if precipitation is anticipated
- Contact your local MCA Marketing representative for guideline application temperatures
**CRS-2**

**CATIONIC RAPID SETTING ASPHALT EMULSION**

**DESIGN GUIDELINES**

Designs should be formulated prior to initial production, and each time aggregate sources are changed. Testing of final product is highly recommended to ensure a quality seal. *MCA Technical Services* offers complete design services and product quality analysis.

**POTHOLE PATCHING**

When repairing potholes in pavement, the edges surrounding the pothole being patched should be tack coated to ensure a bond between the asphalt edge and the patching material. Apply an even coating of CRS-2 to all the sides of the hole (approx. 0.20 - 0.25 L/m²).

**SPRAY PATCHING**

Spray patching consists of alternate applications of CRS-2 and aggregate to repair deteriorated areas in the pavement surface. Alternate layers of CRS-2 and aggregate may also be used to repair depressions in the road due to rutting or ravelling.

**SINGLE AND MULTIPLE CHIP SEALS**

A uniform application of CRS-2 asphalt emulsion to a prepared surface followed by a uniform application of cover aggregate (per lift). Aggregates used should be one sized, washed chip whose size ranges from 6 mm (¼”), 9.5 mm (3/8”) to 19 mm (¾”).

**PACKAGING, STORAGE AND HANDLING**

- CRS-2 should be stored in bulk tanks, vertical if possible to minimize surface area
- Do not allow CRS-2 to either freeze or boil – it will break. Storage temperature should not be allowed to fall below 10°C or exceed 85°C
- In all bulk storage, mix the CRS-2 every 1–2 weeks (more frequently in cold weather). Mixing may be by paddle agitator (slow), loose gear pump, slow centrifugal pump, or other suitable low shear pump
- Do not bubble air through CRS-2 to agitate it, this creates excessive foam and may cause the emulsion to break
- Always use clean containers. Make sure prior contents are compatible with CRS-2 or the emulsion may break

**CERTIFICATION OF QUALITY**

McAsphalt Industries Limited is accredited to the quality standard ISO 9001 and to the environmental standard ISO 14001.

Each lot of CRS-2 is produced using the strictest quality, safety and environmental guidelines. Each production lot is tested to ensure it meets or exceeds all performance requirements, and it is delivered with a Certificate of Analysis.

**PRODUCT SUPPORT**

With the *MCA Advantage*, you get a partner and advisor who will consult with you about designs, specifications, technical services, processes and material selection. By developing innovative, custom-designed products that offer additional benefits, such as peak performance in unique conditions, improved field performance, greater environmental and health benefits, the *MCA Advantage* provides significant long-term cost savings, resulting in lower “total cost of ownership.”