

**CSS-1**

**CATIONIC SLOW-SETTING ASPHALT EMULSION**

**PRODUCT DESCRIPTION**

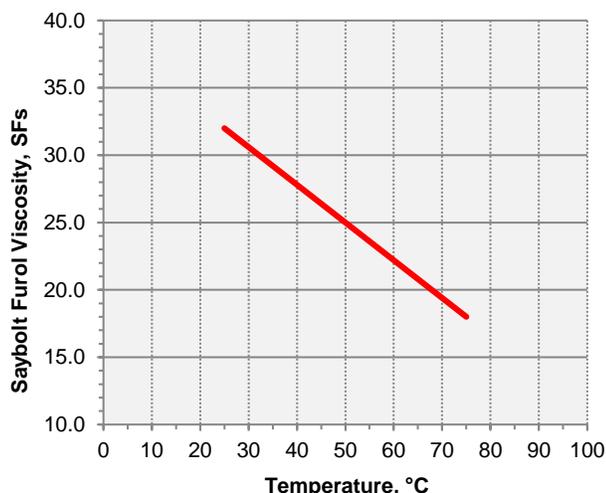
**CSS-1** is a slow-setting cationic asphalt emulsion that is designed for various paving and industrial uses.

Asphalt emulsions are classified according to the electric charge that surrounds the emulsion's asphalt particles (i.e. whether it is a cationic or an anionic emulsion) and how quickly the suspended asphalt particles separate from the surrounding water ("breaking"). A slow-setting emulsion is designed to maximize the mixing time with aggregates. Longer workability times ensure a good coating on dense-graded aggregates with a high fines content. Longer workability times ensure good coating with dense graded, high fines content aggregates. The setting speed of any emulsion is relative to atmospheric conditions at the time of construction.

**RECOMMENDED USE**

**CSS-1** can be used successfully for tack coats, fog seals, and as a dust suppressant. Long workability times make it ideal for dense graded emulsion base mixes and base stabilization. One non-paving use is the mulch treatment of soil that has been seeded and fertilized.

**TEMPERATURE VISCOSITY CHART**



**SPECIFICATIONS AND TYPICAL RESULTS**

TEST	TYPICAL DATA	SPEC.	
		Max	Min
<b>Tests on Emulsion</b>			
SF Viscosity, 25°C, SFs	<b>28</b>	20	100
Sieve Test, 850 µm, %	<b>0.04</b>	-	0.1
Settlement, 5 days, %	<b>1.3</b>	-	5.0
Distillation Residue, 260°C, %	<b>60.8</b>	57	-
Oil Portion of Distillate, %	<b>Trace</b>	-	5
Particle Charge	<b>(+)</b>	<b>(+)</b>	
<b>Tests on Residue</b>			
Penetration, 25°C, dmm	<b>120</b>	100	250
Solubility in TCE, %	<b>99.55</b>	97.5	-
Ductility, 25°C, cm	<b>88.9</b>	60	-

**APPLICATION GUIDELINES**

- May be further diluted with potable water (max 50%)
- Do not apply **CSS-1** if precipitation is anticipated.
- Do not dilute product with any cutter stock.
- Contact your local **MCA Marketing** representative for guideline application temperatures.

**TACK COATS**

**CSS-1** applied to an existing pavement surface will eliminate slippage planes and provide a bond with the new asphalt lift. It will deliver a strong bond and it will not track under construction traffic. Spray rates range from 0.25 to 0.70 L/m<sup>2</sup> (0.05 to 0.15 gal/yd<sup>2</sup>).

**FOG SEALS**

**CSS-1** is applied to an existing asphalt surface that has become oxidized with age in order to renew it and to seal narrow cracks and surface voids. Because of its quick cure and non-tracking properties, conventional sand blotting is often not required. A spray rate in the order of 0.45 to 0.70 L/m<sup>2</sup> (0.10 to 0.15 gal/yd<sup>2</sup>) is typical but depends on the surface texture and degree of cracking.



**MCASPHALT INDUSTRIES LIMITED**

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 ISO 9001/14001/45001

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#### DUST CONTROL

**CSS-1** is ideal for spraying on low volume, unpaved roads as a means of dust control. This emulsion is usually diluted with water to further decrease its viscosity in order to enhance its penetration into the existing surface. The diluted **CSS-1** is sprayed in repeated light applications at a rate of 0.45 to 2.25 L/m<sup>2</sup> (0.1 to 0.5 gal/yd<sup>2</sup>) depending on the condition of the existing surface.

#### DENSE GRADED EMULSION MIXES

Dense-graded emulsion mixes are produced at a central plant or in-place by mixing **CSS-1** using dense-graded aggregates with a relatively high fines content. **CSS-1** provides a mix that is workable on the job site immediately after mixing or when the mix is produced at a plant and trucked to the site. Application rates will vary depending on aggregate type and gradation. A mix design is highly recommended.

#### BASE STABILIZATION

Base stabilization is an insitu rehabilitation process for pavements composed of asphalt concrete over a granular base. The process involves the pulverization of asphalt concrete and mixing it with the base course. This is followed by the stabilization of the resulting granular material with **CSS-1**. A mix design is highly recommended to determine the appropriate asphalt emulsion content.

#### **CERTIFICATION OF QUALITY**

**McAsphalt Industries Limited** is accredited to the quality management standard **ISO 9001**, the environmental management standard **ISO 14001**, and the occupational health and safety standard **ISO 45001**.

Each lot of **CSS-1** 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 is delivered with a Certificate of Analysis.

#### **PACKAGING, STORAGE AND HANDLING**

- **CSS-1** should be stored in bulk tanks, ideally vertical to minimize surface area
- Do not allow **CSS-1** to either freeze or boil: it will break. Safe storage temperatures range from 10°C (50°F) to 85°C (185°F).
- In bulk storage, mix the **CSS-1** every 1 to 2 weeks (more frequently in cold weather). Mixing may be done by paddle agitator (slow), loose gear pump, slow centrifugal pump, or other suitable low shear pump.
- Do not bubble air through **CSS-1** to agitate it: this creates excessive foam and may cause the **CSS-1** to break
- Always use clean storage containers. Make sure prior contents are compatible with **CSS-1** or the emulsion may break

#### **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, and greater environmental and health benefits, the **MCA Advantage** provides significant long-term cost savings, resulting in lower total cost of ownership.



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