

## CMS-2

### CATIONIC MEDIUM-SETTING ASPHALT EMULSION

#### PRODUCT DESCRIPTION

**CMS-2** is a medium-setting cationic asphalt emulsion that reacts quickly with the aggregate to convert from an emulsion to asphalt.

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 medium-setting emulsion is one that will break moderately fast when in contact with aggregate.

**CMS-2** emulsion can be used for chip sealing when using dirtier aggregate. However, because it is medium-setting, traffic control may have to be adjusted. The setting speed of any emulsion is relative to atmospheric conditions at the time of construction.

#### GENERAL PRODUCT FEATURES

- Thicker asphalt films on aggregate surfaces means more durable mixes and better resistance to long-term aging.
- Traffic can be restored shortly after application.
- No runoff
- Seals narrow cracks against moisture penetration

#### RECOMMENDED USE

**CMS-2** cures quickly and produces a heavy asphalt film. Its high viscosity permits higher application rates without the danger of runoff. This emulsion is ideal for spray applications such as single or multiple chip seals.

#### SPECIFICATIONS AND TYPICAL RESULTS

TEST	TYPICAL DATA	SPEC.	
		Min	Max
<b>Tests on Emulsion</b>			
SF Viscosity, 50°C, SFS	<b>298.7</b>	50	400
Sieve Test, 850 µm, %	<b>0.05</b>	-	0.1
Settlement, 5 days, %	<b>0.2</b>	-	5
Distillation Residue, %	<b>66.3</b>	65	-
Oil Portion of Distillation, %	<b>2.38</b>	-	10
Particle Charge	<b>(+)</b>	<b>(+)</b>	
<b>Tests on Residue</b>			
Penetration, 25°C, dmm	<b>117</b>	100	250
Ductility, 25°C, cm	<b>60+</b>	60	-
Solubility, %	<b>99.99</b>	97.5	-

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



#### MCASPHALT INDUSTRIES LIMITED

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mcasphalt.com  
 ISO 9001/14001/45001

**CMS-2****CATIONIC MEDIUM-SETTING ASPHALT EMULSION**

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**APPLICATION GUIDELINES**

- Clean/prepare pavement surface prior to application.
- Do not apply if precipitation is anticipated.
- Contact your local **MCA Marketing** representative for application temperature guidelines.

**DESIGN GUIDELINES**

Designs should be formulated prior to initial production and each time aggregate sources are changed. Testing of the final product is highly recommended to ensure a quality seal.

**MCA Technical Services** offers complete design services and product quality analysis.

**SPRAY PATCHING**

Spray patching consists of alternate applications of **CMS-2** and aggregate to repair deteriorated areas in the pavement surface. Alternating layers of **CMS-2** and aggregate may also be used to repair depressions in the road due to rutting or ravelling. Excellent adhesion means longer lasting repairs.

**SINGLE OR MULTIPLE CHIP SEALS**

A controlled application of **CMS-2** asphalt emulsion to a prepared surface followed by a controlled application of cover aggregate (per lift). Aggregates should be single-sized, washed chip with sizes ranging from 6 mm (¼ in) to 19 mm (¾ in). **CMS-2** provides durable, longer-lasting surface treatments with an increased resistance to rutting and low-temperature cracking.

**PACKAGING, STORAGE AND HANDLING**

- **CMS-2** should be stored in bulk tanks, ideally vertical to minimize surface area.
- Do not allow **CMS-2** 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 **CMS-2** 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 **CMS-2** to agitate it: this creates excessive foam and may cause the **CMS-2** to break.
- Always use clean storage containers. Make sure prior contents are compatible with **CMS-2** or the emulsion may break.
- Only use approved and sealed containers for sampling the emulsion.

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