



# CATIONIC SPRAY GRADE

## Colas Material Safety Data Bulletin

2013/05

### 1. IDENTIFICATION OF SUBSTANCE

- Product name** : Cationic Spray Grade 60%; Cationic Spray Grade 65%;  
Cationic Spray Grade 70%.
- Product identifier/synonyms** : CRS 60; CRS 65; CRS 70.
- Product description** : A brown coloured dispersion of bitumen particles in water in the presence of a cationic emulsifier.
- Intended use** : Cationic Spray Grade emulsions are used as a tack coat or an enrichment spray in the surfacing of roads.

### 2. HAZARDS IDENTIFICATION

- Health hazards** : Avoid skin contact with hot emulsion.  
: Emulsions are non-toxic.  
: No harmful fumes are emitted by bitumen emulsions and exposure is thus not considered to be a problem.
- Environmental hazards** : Emulsions are dispersible in water and should thus be stored away from natural water sources containing aquatic life. The dispersed bitumen droplets will block the respiratory organs of fish and prevent assimilation of oxygen.  
: Once the water phase of the emulsion has evaporated, the black, residual binder is totally insoluble in water and non-toxic.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

- Preparation description** : CRS type bitumen emulsions are prepared by dispersing molten bitumen in an aqueous, mildly acid solution of long chain amines.

**Hazardous substances present on their own:**  
(present in the preparation at a sufficient concentration to give it the toxicological characteristics it would have in a 100% pure state).

INDEX	CAS	EC	NAME	CLASSIFICATION	%
649-422-00-2	64742-47-8	265-149-8	Distillates - hydrocarbon	GHS08, Dgr, Xn, H:304, R65	0 <= % < 4,0
	84082-43-9	281-990-3	Amides, C8-22,N-[3-(dimethylamino)propyl]	GHS05, Dgr, C, H:314, 1B-317, R: 43-34	0 <= % < 1,0

- Additional information** : Not classified as dangerous under EC criteria.

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## 4. FIRST AID MEASURES

<b>Skin burns</b>	: Not considered to be a major problem as the product is used at a maximum temperature at 80°C.
<b>Eye contact</b>	: The product contains a small quantity of excess inorganic acid and may cause minor eye irritation. Rinse eyes with cold water for 10 minutes and seek medical attention.
<b>Inhalation</b>	: Not expected to be a problem.
<b>Ingestion</b>	: Not expected to be a problem.

## 5. FIRE-FIGHTING MEASURES

Cationic Spray Grade bitumen emulsions are non-flammable because they contain 30-40% water. In the event that all the water has evaporated and the residual bitumen has caught alight, the following extinguishing media can be used:

Dry chemical powder.  
Carbon dioxide.  
Foam.  
Sand or earth may be used for small fires only.  
Water may be used to cool the surrounding areas.

<b>Protective equipment for fire-fighters</b>	: If the residue has caught alight, proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.
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## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	: If a large quantity of material is released, evacuate area of non-essential personnel and public. Shut off leak.
<b>Personal protection</b>	: Wear protective clothing specified for normal operations.
<b>Environmental precautions</b>	: Spillages should be prevented from entering drains, ditches or rivers.
<b>Clean-up methods</b>	: Use sand and spill control material to contain and/or absorb spills. Allow product to solidify. Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.
<b>Additional advice</b>	: Local authorities should be advised if significant spillages cannot be contained.

## 7. HANDLING AND STORAGE

<b>General precautions</b>	: Store in an area where spillages will not be allowed to enter dams and rivers.
<b>Handling</b>	: The product is generally handled at ambient temperature. : Safety footwear and protective gloves should be worn.
<b>Storage</b>	: Store in a dry, well ventilated place. : Prevent contamination with other types of emulsions. : Emulsions stored in tanks must be circulated on a weekly basis to prevent settlement. : Drums must be rolled prior to use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Exposure controls</b>	: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Where material is heated, sprayed or mist formed, there is a greater potential for airborne concentrations to be generated. Eye wash and showers for emergency use.
<b>Personal protective equipment</b>	: If the product is handled cold, plastic chemical-resistant gloves with close-fitting cuffs will be sufficient. If used hot (80°C maximum), heat-resistant gloves with close-fitting cuffs are advisable. : Overalls with close-fitting cuffs. : Goggles or safety visor. : Respirators are generally not required, unless a fine mist is generated during spraying operations. Avoid breathing fine mists. : Avoid unnecessary skin contact.
<b>Respiratory protection</b>	: No respiratory protection is ordinarily required under normal conditions of use.
<b>Eye protection</b>	: Goggles or safety visor.
<b>Protective clothing</b>	: Wear protective overalls and safety boots.
<b>Environmental exposure controls</b>	: Minimise release to the environment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	: Brown liquid
<b>Odour</b>	: Mild odour
<b>Viscosity at 50°C</b>	: 20-400 SFs
<b>Viscosity at 100°C</b>	: N/A
<b>Relative density (g/cm<sup>3</sup>)</b>	: 1,01-1,02
<b>Solubility in water at 20°C</b>	: Water dispersible
<b>pH</b>	: 2-4
<b>Melting point °C</b>	: N/A
<b>Pour point °C</b>	: N/A
<b>Boiling point °C</b>	: 100
<b>Flash point °C</b>	: N/A
<b>Vapour pressure @ 20°C</b>	: < 0,1
<b>Solids content % m/m</b>	: 60-70

## 10. STABILITY AND REACTIVITY DATA

<b>Stability</b>	: Stable.
<b>Conditions to avoid</b>	: Cationic and Anionic Emulsions are not compatible. If contamination should occur, lumps of solid bitumen will be formed in the storage tanks, with separation of the water phase.
<b>Hazardous decomposition products</b>	: None expected under normal use conditions.

## 11. TOXICOLOGICAL INFORMATION

<b>Basis of assessment</b>	: Toxicological data has not been determined specially for this product. Information given is based on data on the components and toxicology of similar products.
<b>Acute oral toxicity</b>	: Expected to be low toxicity: LD50 > 2000 mg/kg.
<b>Acute dermal toxicity</b>	: Expected to be low toxicity: LD50 > 2000 mg/kg.
<b>Acute inhalation toxicity</b>	: Not considered to be an inhalation hazard under normal conditions of use. Avoid vapours from heated materials to prevent exposure to potentially toxic/irritating fumes.
<b>Skin irritation</b>	: Expected to be slightly irritating.
<b>Eye irritation</b>	: Expected to be slightly irritating.
<b>Sensitisation</b>	: Not expected to be a skin sensitiser.
<b>Repeated dose toxicity</b>	: Not expected to be a hazard.
<b>Mutagenicity</b>	: Not expected to be a mutagenicity hazard.
<b>Carcinogenicity</b>	: There is no evidence that bitumen is carcinogenic.
<b>Reproductive and developmental toxicity</b>	: Does not impair fertility. Not a development toxicant.

## 12. ECOLOGICAL INFORMATION

<b>Acute toxicity</b>	: Cationic emulsions are dispersible in water.
<b>Mobility</b>	: Emulsions are mobile because they are liquid at ambient temperature. : Once the water phase has evaporated, a solid bitumen residue is deposited.
<b>Persistence/degradability</b>	: Expected to be not inherently biodegradable.
<b>Bioaccumulation</b>	: Emulsions do not bioaccumulate.

## 13. DISPOSAL CONSIDERATIONS

<b>Material disposal</b>	: If liquid bitumen emulsion is spilled, the water phase should preferably be allowed to evaporate. During the evaporation phase, the liquid emulsion should be prevented from entering drains or water courses.  : The resultant residual bitumen is non-toxic and will be deposited as a black skin on the surface of the substrate. Neither the liquid emulsion, nor the residue will penetrate the substrate and contaminate the ground water. As the residual bitumen is non-toxic to the environment, it can be removed to an approved landfill site.
<b>Container disposal</b>	: Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
<b>Local legislation</b>	: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

## 14. TRANSPORT INFORMATION

### Environmentally Hazardous Substance

UN Classification : UN 3082  
Class : 9  
Packaging group : 3

## 15. REGULATORY INFORMATION

**National legislation** : SABS 0229 - 1990 Code of practice for packaging of dangerous goods for road and rail transportation in SA.

**Classification by** : So-called 'all preparations' Directive 1999/45/EC and its adaptations.  
EC regulation 1272/2008 (CLP) and its adaptations.  
(EC regulation 790/2009).

### Preparation classification



Irritant

**Contains** : 265-149-8 Distillates - Hydrocarbon.  
281-990-3 Amides, C8-22,N-[3-(Dimethylamino)propyl].

**Particular hazards associated with the product and safety recommendations** : R43 - May cause sensitisation by skin contact.  
R36/38 - Irritating to eyes and skin.  
S 24 - Avoid contact with skin.  
S 37 - Wear suitable gloves.  
S 26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S 60 - This material and its container must be disposed of as hazardous waste.

## 16. OTHER INFORMATION

**Other information** : No specific notes on this product.

To the best of our knowledge, the information contained herein is correct. We do not assume any liability for the consequences of its use, since the information may be applied under conditions beyond our control and with which we may not be familiar, and since data made available following the issuance of this document could suggest modification of this information. Final determination of the suitability of any material is the responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. All materials may present unknown hazards and should be used with caution.