1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name: CATIONIC BITUMEN EMULSION
Synonyms: CAT SPRAY EMULSION ● CRS 60 ● CRS 62 ● CRS 65 ● CRS/170 - 60

1.2 Uses and uses advised against

Uses: ROAD MAINTENANCE ● TACK COATING

1.3 Details of the supplier of the product

Supplier name: BORAL AUSTRALIA
Address: Level 3, 40 Mount Street, Nth Sydney, NSW, 2060, AUSTRALIA
Telephone: (02) 9220 6300
Email: sds@rmt.com.au
Website: http://www.boral.com.au

1.4 Emergency telephone numbers

Emergency: 1800 555 477 (8am – 5pm WST)
Emergency (A/H): 13 11 26 (Poisons Information Centre)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classifications: Skin Corrosion/Irritation: Category 3

2.2 GHS Label elements

Signal word: WARNING

Pictograms
None allocated.

Hazard statements
H316 Causes mild skin irritation.

Prevention statements
P262 Do not get in eyes, on skin, or on clothing.

Response statements
P332 + P313 If skin irritation occurs: Get medical advice/ attention.

Storage statements
P403 Store in a well-ventilated place.

Disposal statements
P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

This product is expected to be applied without heating, however can be heated up to 70°C to assist with application if sprayed. Avoid direct contact with heated material. Once cured, the inert solid material is considered non hazardous.

Please see package labelling or manufacturer’s literature for more detail on usage, handling, storage and disposal under different applications.
3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>BITUMEN</td>
<td>8052-42-4</td>
<td>232-490-9</td>
<td>30 to 65%</td>
</tr>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>35 to 75%</td>
</tr>
<tr>
<td>EMULSIFIER(S)</td>
<td>-</td>
<td>-</td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

**Eye**

If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

**Inhalation**

If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

**Skin**

If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

**Ingestion**

For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities

Eye wash facilities and safety shower are recommended.

4.2 Most important symptoms and effects, both acute and delayed

Burns caused by bitumen require special medical treatment. Consultation with a burns specialist experienced in bitumen burns is advisable in the first instance.

Refer to the Australian Asphalt Pavement Association (AAPA) bitumen burns card for further information (http://www.aapa.asn.au).

Bitumen burns: If hot bitumen contacts the skin, flush immediately with water and make no attempt to remove it. Use wet, cold towels if face, neck, shoulder or back etc are burnt. Cool burn areas for 30 minutes and seek immediate medical attention. Where bitumen completely circles a limb, it may have a tourniquet effect and should be split longitudinally as it cools. If eye burns result flush with water for 15 minutes, pad and seek immediate medical attention.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (carbon/ sulphur oxides, sulphides, hydrocarbons) when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.
6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses
Not applicable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Reference</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Bitumen fume</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>5</td>
</tr>
</tbody>
</table>

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls
Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain fume levels below the recommended exposure standard.

PPE
Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye / Face
Wear safety glasses or splash-proof goggles when handling material to avoid contact with eyes.

Hands
Wear chemical resistant gloves (eg. neoprene or nitrile) when handling material to prevent skin contact.

Body
Wear long sleeved shirt and full-length trousers.

Respiratory
Where an inhalation risk exists in enclosed or partly enclosed environments (ie. underground carparks, large tanks, tunnels etc), wear a Type A-Class P1 (Organic gases/vapours and Particulate) respirator, dependent on a site specific risk assessment.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>BROWN LIQUID (IN USE); BLACK SEMI-SOLID THERMOPLASTIC MATERIAL (WHEN CURED)</td>
</tr>
<tr>
<td>Odour</td>
<td>BITUMEN-LIKE ODOUR</td>
</tr>
<tr>
<td>Flammability</td>
<td>NON FLAMMABLE</td>
</tr>
<tr>
<td>Flash point</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Boiling point</td>
<td>100°C</td>
</tr>
<tr>
<td>Melting point</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>NOT AVAILABLE</td>
</tr>
</tbody>
</table>
9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>&lt; 4</td>
</tr>
<tr>
<td>Vapour density</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.05</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>INSOLUBLE</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 300°C</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 300°C</td>
</tr>
<tr>
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<td>NOT RELEVANT</td>
</tr>
<tr>
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<tr>
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<td>Decomposition temperature</td>
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<td>Vapour pressure</td>
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<tr>
<td>Upper explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>NOT RELEVANT</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 300°C</td>
</tr>
</tbody>
</table>

9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg weight/m² when cured</td>
<td>1 kg/m²</td>
</tr>
<tr>
<td>Expected temp. when cured</td>
<td>Between ambient and 20°C above ambient</td>
</tr>
<tr>
<td>Max temp. in use</td>
<td>Ambient to 70°C</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization will not occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

10.6 Hazardous decomposition products
May evolve toxic gases (carbon/ sulphur oxides, sulphides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>No known toxicity data is available for this product. Based on available data, the classification criteria are not met. Inhalation may cause headache, nausea and respiratory tract irritation. Once cured, the inert solid material is considered non hazardous.</td>
</tr>
<tr>
<td>Skin</td>
<td>Causes mild skin irritation. Contact may result in mild irritation, drying and defatting of the skin, rash and dermatitis.</td>
</tr>
<tr>
<td>Eye</td>
<td>Not classified as an eye irritant. However, direct contact may result in mild irritation, lacrimation, pain and redness.</td>
</tr>
<tr>
<td>Sensitisation</td>
<td>Not classified as causing skin or respiratory sensitisation.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Insufficient data available to classify as a mutagen.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Bitumens, occupational exposure to straight-run bitumens and their emissions during road paving, and hard bitumens and their emissions during mastic asphalt work, are classified as possibly carcinogenic to humans (IARC Group 2B).</td>
</tr>
<tr>
<td>Reproductive</td>
<td>Insufficient data available to classify as a reproductive toxin.</td>
</tr>
<tr>
<td>STOT - single exposure</td>
<td>Not classified as causing organ damage from single exposure. However, high level exposure may result in headache, nausea and respiratory tract irritation.</td>
</tr>
<tr>
<td>STOT - repeated exposure</td>
<td>Not classified as causing organ damage from repeated exposure.</td>
</tr>
<tr>
<td>Aspiration</td>
<td>Not expected to present an aspiration hazard.</td>
</tr>
</tbody>
</table>
12. ECOLOGICAL INFORMATION

12.1 Toxicity
There is currently insufficient data to classify the ecotoxicity of this product.

12.2 Persistence and degradability
Can be expected to biodegrade slowly.

12.3 Bioaccumulative potential
This product is not expected to bioaccumulate.

12.4 Mobility in soil
Emulsifies in water.

12.5 Other adverse effects
Avoid uncured emulsion run off into storm water drainage system.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste disposal: For small amounts, dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information if disposing of large quantities (if required). Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

Legislation: Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

<table>
<thead>
<tr>
<th></th>
<th>LAND TRANSPORT (ADG)</th>
<th>SEA TRANSPORT (IMDG / IMO)</th>
<th>AIR TRANSPORT (IATA / ICAO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN Number</td>
<td>None allocated.</td>
<td>None allocated.</td>
<td>None allocated.</td>
</tr>
<tr>
<td>14.2 Proper Shipping Name</td>
<td>None allocated.</td>
<td>None allocated.</td>
<td>None allocated.</td>
</tr>
<tr>
<td>14.3 Transport hazard class</td>
<td>None allocated.</td>
<td>None allocated.</td>
<td>None allocated.</td>
</tr>
<tr>
<td>14.4 Packing Group</td>
<td>None allocated.</td>
<td>None allocated.</td>
<td>None allocated.</td>
</tr>
</tbody>
</table>

14.5 Environmental hazards
No information provided.

14.6 Special precautions for user
Hazchem code: None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Poison schedule: A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications: Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Inventory listings: AUSTRALIA: AICS (Australian Inventory of Chemical Substances)
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information
CATIONIC BITUMEN EMULSION

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists
CAS # Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS Central Nervous System
EC No. EC No - European Community Number
EMS Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS Globally Harmonized System
GTEPG Group Text Emergency Procedure Guide
IARC International Agency for Research on Cancer
LC50 Lethal Concentration, 50% / Median Lethal Concentration
LD50 Lethal Dose, 50% / Median Lethal Dose
mg/m³ Milligrams per Cubic Metre
OEL Occupational Exposure Limit
pH relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm Parts Per Million
STEL Short-Term Exposure Limit
STOT-RE Specific target organ toxicity (repeated exposure)
STOT-SE Specific target organ toxicity (single exposure)
SUSMP Standard for the Uniform Scheduling of Medicines and Poisons
SWA Safe Work Australia
TLV Threshold Limit Value
TWA Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ("SDS"). It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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[ End of SDS ]