1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier
Product name: ANIONIC BITUMEN EMULSION
Synonym(s): ANIONIC SLOW SET • ASS 60 • ASS/170 - 60 • GROWMULCH

1.2 Uses and uses advised against
Use(s): ROAD MAINTENANCE • SOIL STABILISATION

1.3 Details of the supplier of the safety data sheet
Supplier name: BORAL CONSTRUCTION MATERIALS LTD.
Address: Level 3, 40 Mount Street, Nth Sydney, NSW, 2060, AUSTRALIA
Telephone: (02) 9220 6300
Email: sds@rmt.com.au
Website: www.boral.com.au

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

2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA
NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

2.1 Classification of the substance or mixture
GHS classifications: Skin Corrosion/Irritation: Category 3

2.2 Label elements
Signal word: WARNING
Pictograms: None allocated.
Hazard Statement(s): H316 Causes mild skin irritation.
Prevention Statement(s): P262 Do not get in eyes, on skin, or on clothing.
Response Statement(s): P332 + P313 If skin irritation occurs: Get medical advice/ attention.
Storage Statement(s): P403 Store in a well-ventilated place.
Disposal Statement(s): 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. Contact with hot material can result in burns. 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>Identification</th>
<th>Classification</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>CAS: 7732-18-5</td>
<td></td>
<td>40 to 70%</td>
</tr>
<tr>
<td></td>
<td>EC: 231-791-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BITUMEN</td>
<td>CAS: 8052-42-4</td>
<td></td>
<td>30 to 60%</td>
</tr>
<tr>
<td></td>
<td>EC: 232-490-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMULSIFIER(S)</td>
<td>Not Available</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 Poison 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

Contact with hot product may cause burns. Bitumens, occupational exposure to straight-run bitumens and their emissions during road paving, are classified as possibly carcinogenic to humans (IARC Group 2B). Once cured, the inert solid material is considered non hazardous.

4.3 Immediate medical attention and special treatment needed

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. FIREFIGHTING 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/ nitrogen oxides, hydrogen sulphide, 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 this SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions
Contain material and prevent product from entering drains and waterways. Collect and seal in properly labelled containers for disposal. If contamination of sewers or waterways has occurred, contact local emergency services.

6.3 Methods of cleaning up
Contain spillage, then 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 well-ventilated area removed from ignition sources, oxidising agents and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end use(s)
Not applicable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Reference</th>
<th>TWA ppm</th>
<th>STEL ppm</th>
</tr>
</thead>
<tbody>
<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 vapour levels below the recommended exposure standard.

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

<table>
<thead>
<tr>
<th>Eye / Face</th>
<th>Hand</th>
<th>Body</th>
<th>Respiratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear safety glasses or splash-proof goggles when handling material to avoid contact with eyes.</td>
<td>Wear chemical resistant gloves (eg. neoprene or nitrile) when handling material to prevent skin contact.</td>
<td>Wear long sleeved shirt and full-length trousers.</td>
<td>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.</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>BROWN LIQUID (IN USE); BLACK 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 (Approximately)</td>
</tr>
<tr>
<td>Melting point</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>pH</td>
<td>&gt; 10</td>
</tr>
<tr>
<td>Vapour density</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>EMULSIFIES</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>Decomposition temperature</td>
<td>&gt; 300°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>NOT EXPLOSIVE</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>NON OXIDISING</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>NOT AVAILABLE</td>
</tr>
</tbody>
</table>

9.2 Other information

- Expected temp. when cured: Between ambient and 20°C above ambient
- Avg weight when cured: 1 Kg/L
- Max temp. in use: Ambient to 70°C

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 (eg. hypochlorites) and acids (eg. nitric acid).

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

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

- Acute toxicity: 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.

- Skin: Classified as a mild skin irritant. Contact may result in mild irritation, drying and defatting of the skin, rash and dermatitis. Contact with hot material can result in skin burns.
Product name: ANIONIC BITUMEN EMULSION

Eye
Not classified as an eye irritant. However, contact may result in mild irritation, lacrimation, pain and redness. Contact with hot material can result in eye burns.

Sensitization
This product is not known to be a skin or respiratory sensitiser.

Mutagenicity
Insufficient data available to classify as a mutagen.

Carcinogenicity
Bitumens, occupational exposure to straight-run bitumens and their emissions during road paving, and to hard bitumens and their emissions during mastic asphalt work, are classified as possibly carcinogenic to humans (IARC Group 2B).

Reproductive
Insufficient data available to classify as a reproductive toxin.

STOT – single exposure
Not classified as causing organ effects from single exposure. However, inhalation of bitumen fumes when heated may cause headache, nausea and respiratory tract irritation.

STOT – repeated exposure
Not classified as causing organ effects from repeated exposure.

Aspiration
This product is not expected to present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
There is currently insufficient data to classify the ecotoxicity of this product. However, the bulk of the bitumen dispersed in asphalt is fairly inert when set, and should not present an environmental hazard under normal conditions.

12.2 Persistence and degradability
Can be expected to biodegrade slowly.

12.3 Bioaccumulative potential
This product is not expected to bioaccumulate through food chains in the environment.

12.4 Mobility in soil
Emulsifies in water.

12.6 Other adverse effects
Prevent contamination of drains or waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste disposal
For small amounts dispose of to an approved landfill site. Contact the manufacturer for additional information if larger amounts are involved. 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>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>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>None Allocated</td>
<td>None Allocated</td>
</tr>
<tr>
<td>14.3 Transport hazard classes</td>
<td>None Allocated</td>
<td>None Allocated</td>
</tr>
<tr>
<td>DG class / division</td>
<td>None Allocated</td>
<td>None Allocated</td>
</tr>
<tr>
<td>Subsidiary risk(s)</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>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>None Allocated</td>
<td>None Allocated</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>None Allocated</td>
<td>None Allocated</td>
</tr>
<tr>
<td>Hazchem code</td>
<td>None Allocated</td>
<td>None Allocated</td>
</tr>
</tbody>
</table>
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  None allocated.

Risk phrases  None allocated.

Safety phrases  None allocated.

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

16. OTHER INFORMATION

Abbreviations  ACGIH - American Conference of Industrial Hygienists.
ADG - Australian Dangerous Goods.
BEI - Biological Exposure Indice(s).
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
CNS - Central Nervous System.
EC No - European Community Number.
IARC - International Agency for Research on Cancer.
mg/m3 - Milligrams per Cubic Metre.
NOS - Not Otherwise Specified.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
STEL - Short Term Exposure Limit.
STOT-RE - Specific target organ toxicity (repeated exposure)
STOT-SE - Specific target organ toxicity (single exposure)
SWA - Safe Work Australia.
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').

The information presented herein is based on data considered to be accurate as of the date of preparation of this SDS. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorisation given or implied to practice any patented invention without a licence. In addition, no responsibility can be assume by the vendor for any damage or injury resulting from abnormal use, without a risk assessment for safe use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the products.

This Safety Data Sheet (SDS) applies only to the formulated material as supplied by Boral Asphalt. It does not apply where the formulation has been altered. In this case a new SDS may be required to reflect the modified material. Contact Boral Asphalt for further information.

Printed documents are uncontrolled. Refer to www.boral.com.au regularly for a more recent copy of the SDS where it exists.

Prepared by  Risk Management Technologies
5 Ventnor Avenue, West Perth, Western Australia, 6005.
Phone: +61 8 9322 1711
Facsimile: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

Revision History  Revision Number: v1.0
Description: Initial release

SDS Date: 29 October 2013

End of Report