1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier
Product name: ASPHALT
Synonym(s): AC • ASPHALTIC CONCRETE • BITUMINOUS CONCRETE • BTB • DGA • DURAPAVE • EME • HOT MIXED ASPHALT • NOVACHIP • OGA • PORTMIX • SMA • WARM MIX ASPHALT • WARMPAVE

1.2 Uses and uses advised against
Use(s): ROAD MAKING
Road, industrial and airport pavements and surfacings.

1.3 Details of the supplier of the safety data sheet
Supplier name: BORAL ASPHALT
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 material is applied at elevated temperatures (typically 110°C to 175°C) with a special purpose paving machine or by hand spreading. Contact with hot material can result in burns. The cured, inert semi 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>MINERAL AGGREGATE(S)</td>
<td>Not Available</td>
<td></td>
<td>88 to 96%</td>
</tr>
<tr>
<td>BITUMEN</td>
<td>CAS: 8052-42-4</td>
<td></td>
<td>3 to 8%</td>
</tr>
<tr>
<td></td>
<td>EC: 232-490-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLYMERS(S)</td>
<td>Not Available</td>
<td></td>
<td>&lt;8%</td>
</tr>
<tr>
<td>HYDRATED LIME</td>
<td>Not Available</td>
<td></td>
<td>&lt;5%</td>
</tr>
<tr>
<td>ADDITIVE(S)</td>
<td>Not Available</td>
<td></td>
<td>&lt;0.1%</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

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. 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. Eliminate all ignition sources.

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. Fuming occurs at application temperatures but can be reduced if handled at temperatures below 150°C.

7.2 Conditions for safe storage, including any incompatibilities
Store in a well-ventilated area removed from ignition sources, oxidising agents and foodstuffs. Keep storage vessels closed when not in use. Take precautionary measures against static electricity discharges.

7.3 Specific end use(s)
Not applicable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

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

Eye / Face
Wear a face-shield or splash-proof goggles when handling hot material. Wear safety glasses when handling cold material.

Hand
Wear heat resistant leather or insulated gloves when handling hot material. Wear chemical resistant gloves (i.e. Nitrile) when handling cold material.

Body
Avoid contact with skin and clothing. Wear impervious coveralls and heat resistant boots when handling hot material. When the risk of skin exposure is high, an impervious chemical suit may be required.

Respiratory
Where an inhalation risk exists in enclosed or partly enclosed environments (i.e. 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>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>BLACK HOT LOOSE COATED SOLID PARTICLES (IN USE); BLACK SOLID THERMOPLASTIC MATERIAL (WHEN CURED)</td>
</tr>
<tr>
<td>Odour</td>
<td>BITUMEN-LIKE ODOR</td>
</tr>
<tr>
<td>Flammability</td>
<td>COMBUSTIBLE</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 250°C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>NOT RELEVANT</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>NOT AVAILABLE</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>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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected temp. when cured</td>
<td>Between ambient and 20°C above ambient</td>
</tr>
<tr>
<td>Avg weight when cured</td>
<td>2.5 T/m3</td>
</tr>
<tr>
<td>Max temp. in use</td>
<td>175°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 (eg. hypochlorites) and acids (eg. nitric acid). Do not allow hot material to contact liquids or water.

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**
Contact with hot material can result in skin burns. Exposure to asphalt fumes may cause dermatitis and photosensitisation. Once cured, the inert semi solid material is considered non-hazardous.

**Eye**
Contact with hot material can result in eye burns. Exposure to asphalt fumes may cause irritation, redness or pain. Once cured, the inert semi solid material is unlikely to penetrate the eye and considered non hazardous.

**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 may cause headache, nausea and respiratory tract irritation. This material may release trace quantities of hydrogen sulphide within storage facilities.

**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. 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. Spillages are unlikely to penetrate the soil.

**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</th>
<th>SEA TRANSPORT</th>
<th>AIR TRANSPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ADG)</td>
<td>(IMDG / IMO)</td>
<td>(IATA / ICAO)</td>
</tr>
</tbody>
</table>

14.1 UN number None Allocated
14.2 UN proper shipping name None Allocated
14.3 Transport hazard classes
   DG class / division None Allocated
   Subsidiary risk(s) None Allocated

14.4 Packing group None Allocated
14.5 Environmental hazards None Allocated
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 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