1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identification
Bituminous road materials comprise of bituminous mixtures and other proprietary products.

Identified uses of the substance or mixture
Public and private road surfacing and resurfacing.

Company Identification
Aggregate Industries UK Ltd
Bardon Hall
Copt Oak Road
Markfield
Leicestershire
LE67 9PJ
United Kingdom

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Not classified as hazardous according to Regulation (EC) No.1272/2008.

The product will be supplied as a hot semi-solid, which can give rise to the following hazards:

- Can cause burns to any exposed skin.
- Can set alight any combustible materials.
- In confined areas, concentrations of Asphalt fumes and vapours may build up. This can in high concentrations cause acute and chronic health effects.
- Any asphalt fume may contain small trace amounts of Hydrogen Sulphide from the bitumen binder.

Emergency Contact Details
Telephone: 01530 510066
(Mon. to Fri. 8 am to 5pm) ask for H&S Team
Email: health.safety.team@aggregate.com

This product may contain low levels of respirable crystalline silica within the aggregates present in the material but the bituminous binder will prevent these from being an inhalation hazard. If the product is drilled, cut, sawn, crushed or broken up this may release dust which may contain respirable crystalline silica. Prolonged inhalation of respirable dust can constitute a long term health hazard such as lung fibrosis and in excessive amounts may cause silicosis.

Labelling
The product does not need to be labelled in accordance with EC directives or respective national laws.
3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures
Bituminous road material is a mixture of natural and recycled aggregates, sand, filler with a bitumen binder and can include additives. Aggregate (Natural & Recycled), sand and filler are inert minerals. Bitumen is a high molecular hydrocarbon derived from crude oil distillation, which bonds the other ingredients into a homogenous stable material.

Other materials such as cellulose fibres, latex and other additives may be added.

Bitumen Binder and Respirable Crystalline Silica has the following hazard information:

<table>
<thead>
<tr>
<th>Bitumen Binder</th>
<th>Respirable Crystalline Silica (Quartz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No</td>
<td>8052-42-4</td>
</tr>
<tr>
<td>EC No</td>
<td>232-490-9</td>
</tr>
<tr>
<td>Index No</td>
<td>[-]</td>
</tr>
<tr>
<td>Classification</td>
<td>Not Classified</td>
</tr>
<tr>
<td>Concentration</td>
<td>&lt;10%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Description of first aid measures

Inhalation
Remove to fresh air and allow person to rest. If recovery is not rapid obtain prompt medical attention.

Eye Contact
Do not rub eyes, as the material is abrasive and may scratch the surface of the eye. Immediately and thoroughly irrigate with water. Seek medical attention if irritation persists.

Skin Contact
Remove any contaminated clothing. Wash with soap/cleanser and rinse with plenty of water. If irritation persists, obtain prompt medical attention.

Ingestion
Ingestion of Bituminous material is unlikely. Hot material will burn mouth and throat. If ingestion occurs, rinse out mouth and give water to drink. Seek medical advice immediately.
5. FIREFIGHTING MEASURES

Suitable/Unsuitable extinguishing media
Use media such as aqueous film foaming foam (AFFF), dry chemical, or water fog. Do not use direct water jets. Carbon Dioxide is also not suitable.

Special hazards arising in a fire
May produce toxic fumes, combustion products and dense smoke if involved in a fire.

Special Advice for fire fighters
Do not breathe decomposition products and fumes. Use approved self-contained breathing apparatus. Wear fire retardant clothing. Use water spray to cool containers. Prevent runoff from fire control from entering waterways. Large fires should only be dealt with by trained personnel.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Avoid breathing dusts and excessive physical contamination.

Environmental precautions
Entry into watercourses should be avoided so far as is possible.

Methods and materials for containment and cleaning up
Spray with water to prevent the generation of dust. Do not dry sweep residues. Contain so as to avoid the generation of dust (i.e. cover or enclose).

7. HANDLING AND STORAGE

Precautions for safe handling
• Skin contact with the product should be avoided.
• Inhalation of fumes should be avoided as far as is reasonably practicable. Use of material in open areas is preferred.
• If the formation of vapours is a risk, such as working in enclosed areas, then additional ventilation should be provided.

Safe storage
• No special requirements.
• Handle away from sources of ignition and heat.
• Do not smoke, eat or drink during use.
• Ensure hardened material is handled so as to prevent the generation of dust.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Components with workplace exposure limits (WELs)

<table>
<thead>
<tr>
<th>Component</th>
<th>WEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Fume</td>
<td>5 mg/m(^3) (8Hr TWA)</td>
</tr>
<tr>
<td>Asphalt Fume</td>
<td>10 mg/m(^3) (15 Min STEL)</td>
</tr>
<tr>
<td>Total Inhalable Dust</td>
<td>10 mg/m(^3) (8Hr TWA)</td>
</tr>
<tr>
<td>Respirable Dust</td>
<td>4 mg/m(^3) (8Hr TWA)</td>
</tr>
<tr>
<td>Respirable Crystalline Silica</td>
<td>0.1 mg/m(^3) (8Hr TWA)</td>
</tr>
</tbody>
</table>

It is recommended that occupational monitoring be completed to determine exposure.

Exposure controls

**Appropriate engineering controls**
Use in well ventilated areas. Use mechanical ventilation in poorly ventilated areas.

**Eye/face Protection**
Eye Protection in the form of safety glasses and/or goggles is required.

**Hand Protection**
Handle with gloves. Recommend use of impervious heavy duty gloves. Gloves should be removed and hands thoroughly washed before handling or eating any food or drink.

**Respiratory Protection**
Suitable dust masks should be worn in enclosed spaces where adequate ventilation is not provided. The Chemical Agents Directive shows a requirement for respirators as a means of control should use a particulate filter type P3 or equivalent and an inorganic vapour type B or equivalent.

**Skin Protection**
Overalls/Impervious clothing, selected according to the workplace conditions.
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties will vary dependent source, but generic properties are as follows:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Black coated granular solid</td>
</tr>
<tr>
<td>Odour</td>
<td>Strong characteristic bitumen odour</td>
</tr>
<tr>
<td>pH</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Point / Range</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Melting Point / Range</td>
<td>90-100°C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt;200°C</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Auto Flammability</td>
<td>&gt;230°C</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Relative Density</td>
<td>Above 2.0</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Fat Solubility</td>
<td>Not Determined</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity and Chemical stability
Stable at normal temperatures and under recommended storage conditions.

Conditions to avoid
Temperatures in excess of 230°C can lead to thermal decomposition of the bitumen binder.

Incompatible materials
Strong mineral acids and oxidizing agents.

Hazardous decomposition products
Thermal decomposition of the bitumen binder in asphalt may release the following: Hydrogen Sulphide, Carbon Dioxide, Carbon Monoxide, Water, Particulate Matter, Sulphur Oxides, Polycyclic Aromatic Hydrocarbons, Unburnt Hydrocarbons, Nitrogen Oxides and Vanadium Pentoxide.
11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

**Acute toxicity**
None.

**Eye Damage**
Long term contact with eyes can cause eye irritation and damage.

**Skin corrosion/irritation**
Long term contact with skin may cause mechanical skin irritation and possible dermatitis.

**Respiratory sensitisation**
Chronic exposure by inhalation may cause cough, breathlessness and respiratory irritation. Long term exposure to asphalt fume can lead to respiratory damage and lung fibrosis.

**Specific target organ toxicity - repeated exposure**
Prolonged exposure of Respirable Crystalline Silica fraction by inhalation may lead to silicosis in lungs.

**Carcinogenicity**
IARC classified respirable crystalline silica as a Group 1 carcinogen, therefore long term exposure may cause cancer.

**Ingestion**
Not likely to cause long term problems.

12. ECOLOGICAL INFORMATION

**Environmental Assessment**
When used and disposed of as intended, no adverse environmental effects are foreseen. However the bituminous binder may pose a low environmental hazard and should be prevented from entering watercourses or drains as it can cause blockages.

**Mobility**
Hardened bituminous materials are immobile.

**Persistence and Degradability**
Hardened bituminous materials are resistant to degradation and will persist in the environment.

**Ecotoxicity**
Not expected to be toxic to aquatic organisms.

**Bioaccumulative potential**
Not applicable.

**Results of PBT and vPvB assessment**
Will not meet PBT or vPvB criteria.
13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product
Hardened Bituminous Materials are classified as an inert waste and can be disposed of as normal industrial waste in accordance with waste regulations.

It is recommended that it be disposed of via recycling or reuse.

Contaminated packaging
Not Applicable.

14. TRANSPORT INFORMATION

Special Carriage Information
None. This product is NOT classified as dangerous for transport.

15. REGULATORY INFORMATION

Classification: Not classified as dangerous.

Safety, health and environmental regulations/legislation specific for the substance or mixture

Health & Safety at Work etc. Act 1974

Control of Substances Hazardous to Health Regulations 2002 (as amended)

Classification, Labelling and Packaging of Substances and Mixtures Regulations 2008 (as amended)

EH40/2005 Workplace Exposure Limits (as amended)

HSE Crystalline Silica EH59
16. OTHER INFORMATION

Training and Advice
Wear and use appropriate PPE

Recommended restrictions on use
Use in accordance with manufacturer’s technical instructions.

Further Information
Contact the Aggregate Industries Health & Safety Team.

Key Data used to compile data sheet
Classification, Labelling and Packaging of Substances and Mixtures Regulations 2008 (as amended) EH40/2005
Workplace Exposure Limits (as amended) HSE Crystalline Silica EH59.