SAFETY DATA SHEET

1. Identification

Product identifier Asphalt Cement (AC), PG Grade Asphalt, Pen Grade Asphalt, VTB, Saturant, Flux
Other means of identification

SDS number AC2014001
Recommended use Industrial use.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Asphalt & Fuel Supply
Address 4200 E. Skelly Drive, STE 600 Tulsa, OK 74135
United States
Telephone number 918-488-1339
e-mail matt@asphalt-fuelsupply.com
Contact person Matt Roberts
Emergency telephone number 1-800-424-9300 (CHEMTREC) CCN632693

2. Hazard(s) identification

Not classified.

Physical hazards

Health hazards
Acute toxicity, inhalation Category 4
Carcinogenicity Category 1B
Reproductive toxicity Category 2
Specific target organ toxicity, repeated exposure Category 2 (blood, liver, thymus)
Aspiration hazard Category 1

Environmental hazards
Hazardous to the aquatic environment, acute hazard Category 1
Hazardous to the aquatic environment, long-term hazard Category 1

OSHA defined hazards
Not classified.

Label elements

Signal word Danger
Hazard statement Harmful if inhaled. May cause cancer. Suspected of damaging the unborn child. May cause damage to organs (blood, liver, thymus) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response If exposed or concerned: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Collect spillage.

Storage Store locked up.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.
3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td>8052-42-4</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Distillates, petroleum residues</td>
<td>68955-27-1</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Vacumm Tower Bottoms</td>
<td>64741-56-6</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>7783-06-4</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>130498-29-2</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

**Composition comments**

Dangerous amounts of hydrogen sulfide, a highly toxic gas, may be present, especially in the headspace of containers. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

**Inhalation**

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Skin contact**

If hot product contacts skin, cool under running water and get medical attention. Remove contaminated clothing and shoes. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact**

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. If hot product contacts eye, flush with water for at least 15 minutes and seek medical attention immediately.

**Ingestion**

Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.

**Most important symptoms/effects, acute and delayed**


**Indication of immediate medical attention and special treatment needed**

In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General information**

If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use.

5. Fire-fighting measures

**Suitable extinguishing media**


**Unsuitable extinguishing media**

Do not use water jet.

**Specific hazards arising from the chemical**

By heating and fire, toxic vapors/gases may be formed.

**Special protective equipment and precautions for firefighters**

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

**Fire fighting equipment/instructions**

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.
6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use non-sparking tools and explosion-proof equipment. Local authorities should be advised if significant spillages cannot be contained. Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. This material and its container must be disposed of as hazardous waste.

**Environmental precautions**

Do not release into the environment. Environmental manager should be informed of all releases, as necessary.

7. Handling and storage

**Precautions for safe handling**

Wear personal protective equipment. Avoid breathing mist or vapor from heated material. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only with adequate ventilation. Hydrogen sulfide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning. Observe good industrial hygiene practices. Wash thoroughly after handling. When using, do not eat, drink or smoke. Avoid release to the environment.

**Conditions for safe storage, including any incompatibilities**

The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability. Keep away from food, drink and animal feedingstuffs.

8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-2 (29 CFR 1910.1000)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>Ceiling</td>
<td>20 ppm</td>
</tr>
</tbody>
</table>

**US. ACGIH Threshold Limit Values**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (CAS 8052-42-4)</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>STEL</td>
<td>5 ppm</td>
<td></td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>TWA</td>
<td>1 ppm</td>
<td></td>
</tr>
<tr>
<td>Vaccum Tower Bottoms (CAS 64741-56-6)</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>

**US. NIOSH: Pocket Guide to Chemical Hazards**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (CAS 8052-42-4)</td>
<td>Ceiling</td>
<td>5 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>Ceiling</td>
<td>15 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>Vaccum Tower Bottoms (CAS 64741-56-6)</td>
<td>Ceiling</td>
<td>10 ppm</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Eye wash fountain and emergency showers are recommended.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

**Skin protection**

**Hand protection**

Wear chemical-resistant, impervious gloves. Suitable gloves can be recommended by the glove supplier.

**Other**

Wear protective clothing appropriate for the risk of exposure.
9. Physical and chemical properties

Appearance
Black cementitious material.

Physical state
Liquid.

Form
Liquid.

Color
Black or dark brown.

Odor
Asphalt.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
Not available.

Initial boiling point and boiling range
600 °F (315.56 °C)

Flash point
> 450.0 °F (> 232.2 °C) Cleveland Open Cup

Evaporation rate
Not available.

Flammability (solid, gas)
Not applicable.

Upper/lower flammability or explosive limits
  Flammability limit - lower (%)
  Not available.

  Flammability limit - upper (%)
  Not available.

Vapor pressure
Not available.

Vapor density
Not available.

Relative density
0.9 - 1.5

Solubility(ies)

  Solubility (water)
  Negligible.

Partition coefficient
Not available.

(n-octanol/water)

Auto-ignition temperature
> 900 °F (> 482.22 °C)

Decomposition temperature
Not available.

Viscosity
50 - 3000 P

Viscosity temperature
140 °F (60 °C)

10. Stability and reactivity

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Stable under normal temperature conditions and recommended use.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

Conditions to avoid
Flames and sparks. Ignition sources. Contact with incompatible materials.

Incompatible materials
Strong oxidizing agents.

Hazardous decomposition products

11. Toxicological information

Information on likely routes of exposure

Inhalation
Harmful if inhaled.

Skin contact
May cause skin irritation. Prolonged or repeated skin contact may cause drying, cracking, or irritation. Contact with hot product may cause severe burns.

Eye contact
May cause eye irritation. Exposure to hot material may cause thermal burns.

Ingestion
Ingestion may cause irritation and malaise.
Symptoms related to the physical, chemical and toxicological characteristics


Information on toxicological effects

Acute toxicity

Harmful if inhaled. In high concentrations, vapors are narcotic and may cause headache, fatigue, dizziness and nausea. Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. May be fatal if swallowed and enters airways.

Skin corrosion/irritation

May cause skin irritation. Prolonged or repeated skin contact may cause drying, cracking, or irritation. Skin contact with hot metal can cause burns.

Serious eye damage/eye irritation

May cause eye irritation.

Respiratory or skin sensitization

Respiratory sensitization

No data available.

Skin sensitization

No data available.

Germ cell mutagenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a mutagen by OSHA.

Carcinogenicity

May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Asphalt (CAS 8052-42-4) 2B Possibly carcinogenic to humans.
Vacum Tower Bottoms (CAS 64741-56-6) 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity

Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

May cause damage to organs (blood, liver, thymus) through prolonged or repeated exposure.

Aspiration hazard

May be fatal if swallowed and enters airways.

Chronic effects

May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May cause damage to target organs.

Further information

Symptoms may be delayed.

12. Ecological information

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

The product is insoluble in water.

Other adverse effects

Not available.

13. Disposal considerations

Disposal instructions

Dispose in accordance with all applicable regulations.

Hazardous waste code

Not regulated.

Waste from residues / unused products

Dispose of in accordance with local regulations.

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number UN3257
<table>
<thead>
<tr>
<th><strong>UN proper shipping name</strong></th>
<th>Elevated temperature liquid, n.o.s. (Asphalt)</th>
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</thead>
<tbody>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Label(s)</td>
<td>9</td>
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<tr>
<td>Packing group</td>
<td>III</td>
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<tr>
<td>Environmental hazards</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td><strong>Special provisions</strong></td>
<td>IB1, T3, TP3, TP29</td>
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<tr>
<td><strong>Packaging exceptions</strong></td>
<td>None</td>
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<tr>
<td><strong>Packaging non bulk</strong></td>
<td>None</td>
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<tr>
<td><strong>Packaging bulk</strong></td>
<td>247</td>
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</table>

**IATA**

<table>
<thead>
<tr>
<th><strong>UN number</strong></th>
<th>UN3257</th>
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<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>Elevated temperature liquid, n.o.s. (Asphalt)</td>
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<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Label(s)</td>
<td>9</td>
</tr>
<tr>
<td>Packing group</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>ERG Code</strong></td>
<td>9L</td>
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<tr>
<td><strong>Special precautions for user</strong></td>
<td>Passenger and Cargo Aircraft Quantity limitation: Forbidden.</td>
</tr>
</tbody>
</table>

**IMDG**

<table>
<thead>
<tr>
<th><strong>UN number</strong></th>
<th>UN3257</th>
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<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>ELEVATED TEMPERATURE LIQUID, N.O.S. (Asphalt)</td>
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<tr>
<td><strong>Transport hazard class(es)</strong></td>
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<td>Class</td>
<td>9</td>
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<td>9</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>EmS</strong></td>
<td>F-A, S-P</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

**15. Regulatory information**

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.


Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (CAS 8052-42-4)</td>
<td>LISTED</td>
</tr>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>LISTED</td>
</tr>
</tbody>
</table>

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

<table>
<thead>
<tr>
<th>Hazard categories</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Delayed Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>
SARA 302 Extremely hazardous substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Reportable quantity (pounds)</th>
<th>Threshold planning quantity (pounds)</th>
<th>Threshold planning quantity, lower value (pounds)</th>
<th>Threshold planning quantity, upper value (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide</td>
<td>7783-06-4</td>
<td>100</td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous chemical

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act (SDWA)

US state regulations

WARNING: This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List
Asphalt (CAS 8052-42-4)
Hydrogen sulfide (CAS 7783-06-4)
Vacuum Tower Bottoms (CAS 64741-56-6)

US. New Jersey Worker and Community Right-to-Know Act
Asphalt (CAS 8052-42-4)
Hydrogen sulfide (CAS 7783-06-4)
Vacuum Tower Bottoms (CAS 64741-56-6)

US. Pennsylvania Worker and Community Right-to-Know Law
Asphalt (CAS 8052-42-4)
Hydrogen sulfide (CAS 7783-06-4)
Vacuum Tower Bottoms (CAS 64741-56-6)

US. Rhode Island RTK
Hydrogen sulfide (CAS 7783-06-4)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Bitumens, extract of steam refined and air refined (CAS -)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date: 11-April-2014
Revision date: 10-April-2015
Version #: 02
Disclaimer: The information in the sheet was written based on the best knowledge and experience currently available.