1. Identification

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product Identity</th>
<th>Gilsonite Asphaltum – C8002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate Names</td>
<td>Gilsonite Asphaltum – C8002</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

| Intended use | Commercial mirroring. |

1.3. Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Angel Gilding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1945 Gardner Rd.</td>
</tr>
<tr>
<td></td>
<td>Broadview IL 60155 USA</td>
</tr>
</tbody>
</table>

Emergency

<table>
<thead>
<tr>
<th>24 hour Emergency Telephone</th>
<th>708-383-3340</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Service: Angel Gilding</td>
<td>708-383-3340</td>
</tr>
</tbody>
</table>

2. Hazard(s) identification

<table>
<thead>
<tr>
<th>Physical hazards</th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazards</td>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>OSHA defined hazards</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Label elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal word</td>
</tr>
<tr>
<td>Hazard statement</td>
</tr>
<tr>
<td>Precautionary statement</td>
</tr>
<tr>
<td>Prevention</td>
</tr>
<tr>
<td>Response</td>
</tr>
<tr>
<td>Storage</td>
</tr>
<tr>
<td>Disposal</td>
</tr>
</tbody>
</table>

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

Mixture

<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>Vacuum tower bottoms</td>
<td>64741-56-6</td>
<td>0-100</td>
</tr>
<tr>
<td>Distillates petroleum residues vacuum</td>
<td>68955-27-1</td>
<td>0-15</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>7783-06-4</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Polycrylic 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.

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: In case of contact with hot or molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily. Remove contaminated clothing and shoes. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.

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.

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.


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
Thermal decomposition or combustion may liberate toxic gases or fumes.

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 until well after the fire is out. 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. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment

Methods and materials for containment and cleaning up
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Extinguish all flames in the vicinity. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible

Small Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Cover with plastic sheet to prevent spreading. Collect spillage. Following product recovery, flush area with water. Prevent product from entering drains. Do not allow material to contaminate ground water system. Clean surface thoroughly to remove residual contamination. Wipe up with absorbent material (e.g. cloth, fleece).
Environmental precautions
If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.

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. Wash thoroughly after handling. Do not handle, store or open near an open flame or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use only non-sparking tools. When using, do not eat, drink or smoke. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities
Material is normally stored in closed tanks at 250 to 375F. Do not handle, store or open near an open flame or sources of ignition. Protect material from direct sunlight. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children.

8. Exposure controls and personal protection

<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></td>
<td>TWA</td>
<td>1 ppm</td>
<td></td>
</tr>
<tr>
<td>Vacuum tower bottoms (CAS 64741-56-6)</td>
<td>TWA</td>
<td>0.5 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>
Safety Data Sheet
Gilsonite Asphaltum - C8002
SDS Revision Date: 6/2/2017

U.S. 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></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Vacuum tower bottoms (CAS 64741-56-6)</td>
<td>Ceiling</td>
<td>5 mg/m³</td>
<td>Fume</td>
</tr>
</tbody>
</table>

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  
Avoid exposure - obtain special instructions before use. Wear protective gloves.

Other  
Wear chemical-resistant, impervious gloves. Flame retardant protective clothing is recommended.

Respiratory protection  
Wear a NIOSH-approved (or equivalent) respirator as needed.

Thermal hazards  
Wear appropriate thermal protective clothing, when necessary

General hygiene considerations  
Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice

9. Physical and chemical properties

Appearance  
Dark brown to black liquid at normal use temperatures above 300°F  
Semi-solid at 70°F

Physical state  
Liquid.

Form  
Semi-Solid at 70°F

Color  
Brown/black.

Odor  
Strong petroleum

Odor threshold  
Not available

pH  
Not available

Melting point/freezing point  
100 - 150 °F (37.78 - 65.56 °C) (Softening point)

Initial boiling point and boiling range  
700 - 1100.1 °F (371.11 - 593.39 °C)

Flash point  
> 350.1 °F (> 176.7 °C) Closed Cup

Evaporation rate  
Not available

Flammability (solid, gas)  
Not available
Upper/lower flammability or explosive limits

Flammability limit – lower (%) > 0.9
Flammability limit - upper (%) < 7
Explosive limit - lower (%) Not available.
Explosive limit - upper (%) Not available.
Vapor pressure < 0.01 kPa @ 20 °C
Vapor density > 1.6 (Air = 1)
Relative density 1 - 1.2 (Water=1)
Solubility (water) Not available.
Partition coefficient (n-octanol/water) Not available.

10. Stability and reactivity

Reactivity Not available
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. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials Strong oxidizing agents
Hazardous decomposition products No hazardous decomposition products are known

11. Toxicological information

Information on likely routes of exposure

Ingestion May be harmful if swallowed.
Inhalation May be harmful if inhaled. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact May cause skin irritation.
Eye contact May cause eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 0.38 mg/l, 960 Minutes</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation

Based on available data, the classification criteria are not met

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met

Respiratory or skin sensitization

Based on available data, the classification criteria are not met

Respiratory sensitization

Based on available data, the classification criteria are not met

Skin sensitization

Based on available data, the classification criteria are not met

Germ cell mutagenicity

Based on available data, the classification criteria are not met

Carcinogenicity

Suspected of causing cancer. Contains polycyclic aromatic compounds (PACs). Prolonged and/or repeated skin contact with certain PACs has been shown to cause skin cancer. Prolonged and/or repeated exposures by inhalation of certain PACs may also cause cancer of the lung and of other sites of the body. Occupational exposure to straight-run asphalts and their emissions roadpaving: 2B Possibly carcinogenic to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

- Asphalt (CAS 8052-42-4) 2B Possibly carcinogenic to humans.
- Vacuum tower bottoms (CAS 64741-56-6) 2B Possibly carcinogenic to humans.

Reproductive toxicity

Based on available data, the classification criteria are not met

Specific target organ toxicity - single exposure

Based on available data, the classification criteria are not met

Specific target organ toxicity - repeated exposure

Based on available data, the classification criteria are not met

Aspiration hazard

Based on available data, the classification criteria are not met

Further information

Symptoms may be delayed.
12. Ecological information

Ecotoxicity  The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide (CAS 7783-06-4)</td>
<td>Aquatic</td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Lake whitefish (Coregonus clupeaformis)</td>
</tr>
</tbody>
</table>

Persistence and degradability Not available
Bioaccumulative potential Not available
Mobility in soil Not available
Other adverse effects Not available

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference
Hydrogen sulfide (CAS 7783-06-4) U135
Waste from residues / unused products Dispose of in accordance with local regulations
Contaminated packaging Offer rinsed packaging material to local recycling facilities.

14. Transport information

<table>
<thead>
<tr>
<th></th>
<th>DOT</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN/ID</td>
<td>UN1993</td>
<td>UN1993</td>
<td>UN1993</td>
</tr>
<tr>
<td>14.2 Proper shipping name</td>
<td>Flammable liquids, n.o.s.</td>
<td>Flammable liquids, n.o.s.</td>
<td>Flammable liquids, n.o.s.</td>
</tr>
<tr>
<td>14.3 Hazard Class</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>14.4 Packing Group</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>
15. Regulatory information

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
- Asphalt (CAS 8052-42-4) LISTED
- Hydrogen sulfide (CAS 7783-06-4) LISTED

16. Other information

<table>
<thead>
<tr>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Prepared By: Product Stewardship
Revision Date: June 2, 2017

Disclaimer
The information on this Safety Data Sheet (SDS) is based on the present state of our knowledge, current national legislation and guidelines. As the specific conditions of use of the product are outside the supplier's knowledge and control the user is responsible for ensuring that the requirements of relevant legislation are complied with. This SDS should not be construed as any guarantee of the technical performance or suitability for particular applications. UNLESS SUPPLIER AGREES OTHERWISE IN WRITING, SUPPLIER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. SUPPLIER WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

End of Safety Data Sheet