FLINT HILLS resources®

# SAFETY DATA SHEET

## 1. Identification

| | |
|---|---|
| **Product identifier** | **ASPHALT BINDER** |
| **Other means of identification** | |
| **SDS number** | 9569 |
| **Synonym(s)** | ASPHALT FLUX * ALL ASPHALT CEMENT BINDERS * ALL POLYMER MODIFIED ASPHALT CEMENT BINDERS |
| **Recommended use** | Hot mix asphalt production |
| **Recommended restrictions** | Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled. |

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

| | |
|---|---|
| **Manufacturer** | Flint Hills Resources Pine Bend, LLC<br>P.O. Box 2917<br>Wichita, KS<br>67201-2917<br>United States |
| **Telephone numbers – 24 hour emergency assistance** | |
| **Chemtrec** | 800-424-9300 |
| **Telephone numbers – general assistance** | |
| **8-5 (M-F, CST) MSDS Assistance** | 316-828-7988 |
| **Email:** | msdsrequest@fhr.com |

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Not classified. | |
| **Health hazards** | Skin corrosion/irritation | Category 2 |
| | Carcinogenicity | Category 1B |
| | Specific target organ toxicity, single exposure | Category 3 narcotic effects |
| | Specific target organ toxicity, repeated exposure | Category 2 (liver, thymus, bone marrow) |
| **OSHA defined hazards** | Not classified. | |
| **Environmental hazards** | Hazardous to the aquatic environment, acute hazard | Category 3 |
| | Hazardous to the aquatic environment, long-term hazard | Category 3 |

**Label elements**

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|---|---|
| **Signal word** | Danger |
| **Hazard statement** | May cause cancer. Causes skin irritation. May cause drowsiness or dizziness. May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects. |
| **Prevention** | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.<br><br>Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment. |

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| **Response** | If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.<br><br>If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.<br><br>If exposed or concerned: Get medical advice/attention. Specific treatment (See first aid instructions on this label). Take off contaminated clothing and wash before reuse. |
| **Storage** | Store in a well-ventilated place. Keep container tightly closed. Store locked up. |
| **Disposal** | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| **Hazard(s) not otherwise classified (HNOC)** | Not classified. |

**Supplemental information**

| | |
|---|---|
| **Hazard statement** | Contains or releases hydrogen sulfide, an extremely flammable and toxic gas. Gas may evolve from this material and accumulate in confined spaces.<br><br>When it is heated, this material may cause thermal burns. |
| **Prevention** | Use personal protective equipment as required. Wear protective gloves/eye protection/face protection. |

## 3. Composition/information on ingredients

| Components | Common name and synonyms | CAS number | % |
|---|---|---|---|
| PETROLEUM ASPHALT | | 8052-42-4 | 0 - 100 % |
| OIL DISTILLATES | | Mixture | 0 - 20 % |
| POLYMER MODIFIER | | Proprietary | 0 - 12 % |

**Additional components**

| Chemical name | CAS number | % |
|---|---|---|
| ADDITIVE | Proprietary | 0 - 3 |
| ANTISTRIP | Mixture | 0 - 3 |
| VULCANIZING AGENT | Proprietary | 0 - 2 |
| HYDROGEN SULFIDE | 7783-06-4 | 0.01 - 0.1 |
| POLYCYCLIC AROMATIC COMPOUNDS | 130498-29-2 | < 0.08 |

**Composition comments**

Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

The specific identities of some of the components of this product are being withheld as trade secrets. However, all pertinent hazards are addressed in this SDS.

This Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Flint Hills Resources, LP representative.

## 4. First-aid measures

**Inhalation**

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR).

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

**Skin contact**

If hot material gets on skin, immediately flush affected area with large amounts of cool water. Do not attempt to remove the material from the skin, or to remove contaminated clothing. Get immediate medical attention.

For cold material, immediately wash skin with plenty of soap and water after removing contaminated clothing and shoes. Get medical attention if irritation persists.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

**Eye contact**

If hot material comes in contact with eyes hold the eyelids apart and flush the eye with a large amount of cool water for at least 15 minutes. Get immediate medical attention.

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| **Ingestion** | If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty.<br><br>Never give anything by mouth to an unconscious person.<br><br>Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION. |
| **Most important symptoms/effects, acute and delayed** | INHALATION:<br>Contains hydrogen sulfide gas. Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since odor fatigue rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting, diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions.<br><br>Fumes or vapors from the heated material may be irritating to the respiratory tract. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.<br><br>SKIN:<br>Contact may cause reddening, itching and inflammation. Prolonged skin contact may defat the skin and cause drying, cracking and/or dermatitis.<br><br>Skin contact may cause harmful effects in other parts of the body.<br><br>EYES:<br>May cause slight to mild eye irritation with tearing, redness, or a stinging or burning sensation. May cause temporary swelling of the eyes with blurred vision.<br><br>Effects may become more serious with repeated or prolonged contact.<br><br>Vapors may cause eye irritation and sensitivity to light.<br><br>INGESTION:<br>Ingestion may cause gastrointestinal irritation and diarrhea. Ingestion of large amounts may cause gastrointestinal blockage. |
| **Indication of immediate medical attention and special treatment needed** | INHALATION: Inhalation exposure can produce toxic effects. Treat intoxications as hydrogen sulfide exposures. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis.<br><br>SKIN: Hot material may cause skin burns. Immerse skin covered with hot material in cool water to limit tissue damage and prevent spread of liquid material. Consider leaving cooled material on skin unless contraindicated by contamination or potential for tattooing. If removal is necessary, mineral oil may be of assistance in minimizing skin loss when removing cool, hardened asphalt.<br><br>EYES: Hot material may cause burns to the eyes. Early ophthalmologic evaluation is recommended. |

## 5. Fire-fighting measures

| | |
|---|---|
| **Suitable extinguishing media** | Use water spray, dry chemical, carbon dioxide or fire-fighting foam for Class B fires to extinguish fire. |
| **Unsuitable extinguishing media** | Do not use a solid water stream as it may scatter and spread fire. |
| **Specific hazards arising from the chemical** | Combustion may produce COx, SOx, NOx, reactive hydrocarbons, irritating vapors, and other decomposition products in the case of incomplete combustion. Fires involving this product may release hydrogen sulfide.<br><br>Fires involving this product may release hydrogen sulfide.<br><br>Material will burn in a fire.<br><br>Hydrogen sulfide can react with the iron in an asphalt storage tank to form iron sulfide. Iron sulfide is pyrophoric. When exposed to air, iron sulfide is capable of igniting spontaneously. |

**Special protective equipment and precautions for firefighters**

Evacuate area and fight fire from a safe distance.

Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow, if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire. Always stay away from tanks engulfed in flame.

Exercise extreme care when using water spray on asphalt tank fires. When water is mixed with hot asphalt, steam may rapidly develop resulting in violent asphalt foaming and possible tank eruptions from increased pressure.

Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

## 6. Accidental release measures

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

Keep unnecessary people away; isolate hazard area and deny entry. For spills in confined areas, ensure adequate ventilation. For spills outdoors, stay upwind. IF TANK, RAILCAR OR TANK TRUCK IS INVOLVED IN A FIRE, isolate for 800 meters (1/2 mile) in all directions. Evacuate area endangered by release as required. Wear appropriate personal protective equipment. See Exposure Controls/Personal Protection (Section 8).

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

Keep unnecessary people away. Isolate area for at least 50 meters (164 feet) in all directions to preserve public safety. For large spills, if downwind consider initial evacuation for at least 300 meters (1000 feet).

For spills on land, scrape up spilled material for disposal. For large spills, dike ahead of spill to contain. For spills on water, contain as much as possible with booms and begin recovery as soon as possible. If material sinks or becomes dispersed, consult with local, state and regional authorities for approved clean up procedures.

Use vapor suppressing foam to reduce vapors. Do not touch or walk through spilled material. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

**Environmental precautions**

Prevent entry into water ways, sewers, basements or confined areas. Notify local authorities and National Response Center, if required.

## 7. Handling and storage

**Precautions for safe handling**

Avoid contact with strong oxidizing agents. Prevent small spills to minimize slip hazard or release to the environment. Do not cut, grind, drill, weld (or introduce any other ignition source) on empty containers or reuse containers unless adequate precautions are taken. Avoid extreme temperatures to minimize product degradation.

Avoid personal contact with this material. Always observe good personal hygiene measures, such as removing contaminated clothing and protective equipment, washing after handling the material and before entering public areas. Restrict eating, drinking and smoking to designated areas to prevent personal chemical contamination. Routinely wash work clothing and protective equipment to remove contaminants. Do not breathe fumes, vapor or gas.

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

Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizing agents.

Empty containers may contain material residue. Do not reuse without adequate precautions.

Hydrogen sulfide can build up in the head space of storage vessels containing this material. Use appropriate respiratory protection to prevent exposure. See Exposure Controls/Personal Protection (Section 8).

When entering a storage vessel that has previously contained this material it is recommended that the atmosphere be monitored for the presence of hydrogen sulfide. See Occupational exposure limits (Section 8) for exposure limits.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

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

| Additional components | Type | Value | Form |
|---|---|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | Ceiling | 20 ppm | |

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

| Additional components | Type | Value | Form |
|---|---|---|---|
| POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2) | TWA | 0.2 mg/m3 | Coal tar pitch volatiles (benzene soluble fraction) |

**U.S. - Minnesota (MNOSHA)**

| Additional components | Type | Value | Form |
|---|---|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | STEL | 15 ppm | |
| | TWA | 10 ppm | |
| POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2) | TWA | 0.2 mg/m3 | Coal tar pitch volatiles (benzene soluble fraction) |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| PETROLEUM ASPHALT (CAS 8052-42-4) | TWA | 0.5 mg/m3 | Inhalable fraction (as benzene-soluble aerosol) |
| **Additional components** | **Type** | **Value** | **Form** |
| HYDROGEN SULFIDE (CAS 7783-06-4) | STEL | 5 ppm | |
| | TWA | 1 ppm | |
| POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2) | TWA | 0.2 mg/m3 | Coal tar pitch volatiles (benzene soluble fraction) |

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

| Components | Type | Value | Form |
|---|---|---|---|
| PETROLEUM ASPHALT (CAS 8052-42-4) | Ceiling | 5 mg/m3 | Fume. |
| **Additional components** | **Type** | **Value** | |
| HYDROGEN SULFIDE (CAS 7783-06-4) | Ceiling | 10 ppm | |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines**

**US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants**

| | |
|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | 14 MGM3 - 10 PPM |
| PETROLEUM ASPHALT (CAS 8052-42-4) | 5 MGM3 |

**Appropriate engineering controls** Consider the following when employing engineering controls and selecting personal protective equipment: potential hazards of the material, applicable exposure limits, job activities, and other substances in the work place.

Ventilation and other forms of engineering controls are the preferred means for controlling exposures below occupational exposure limits and guidelines.

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

**Eye/face protection** Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles and/or face shield. Have eye washing facilities readily available where eye contact can occur.

**Hand protection** Avoid skin contact with this material. Use chemical resistant gloves when handling this material. Contact the glove manufacturer for specific advice on glove selection regarding permeability and breakthrough times for your use conditions. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

When handling hot material, use heat resistant gloves.

**Other** Avoid skin contact with this material. Additional protective clothing may be necessary.

**Respiratory protection** The use of air purifying respirators is not recommended where hydrogen sulfide levels may exceed exposure limits. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. See OSHA 29 CFR 1910.134 for more information regarding respiratory protection and Assigned Protection Factors (APFs).

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|---|---|
| **Thermal hazards** | Contact with hot material can cause thermal burns which may result in permanent damage. Wear appropriate thermal protective clothing. Additional protection may be necessary to prevent skin contact including use of apron, arm covers, face shield, or boots. |

## 9. Physical and chemical properties

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|---|---|
| **Appearance** | |
| **Physical state** | Liquid. |
| **Form** | Viscous |
| **Color** | Dark brown to black |
| **Odor** | Asphalt |
| **Odor threshold** | Not available. |
| **pH** | Not available |
| **Melting point/freezing point** | Not available |
| **Initial boiling point and boiling range** | > 600 °F (> 315.6 °C) |
| **Flash point** | > 450 °F (> 232.22 °C) COC (ASTM D92) |
| **Evaporation rate** | Not available |
| **Flammability (solid, gas)** | Not applicable. |
| **Upper/lower flammability or explosive limits** | |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available |
| **Vapor density** | Not available |
| **Relative density** | 0.9 - 1.1 at 60/60 °F (15.6/15.6 °C) |
| **Solubility(ies)** | Insoluble |
| **Partition coefficient n-octanol/water)** | Not available |
| **Auto-ignition temperature** | Not available |
| **Decomposition temperature** | Not available. |
| **Viscosity** | 250 - 24000 P at 140 °F (60 °C) |

## 10. Stability and reactivity

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|---|---|
| **Reactivity** | See statements below. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | Not anticipated under normal conditions. |
| **Conditions to avoid** | Avoid overheating, emissions generation, unventilated areas, heat, open flames. |
| **Incompatible materials** | Incompatible with strong oxidizing agents. See precautions under Handling & Storage (Section 7). |
| **Hazardous decomposition products** | Not anticipated under normal conditions. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Ingestion** | Likely route of exposure |
| **Inhalation** | Likely route of exposure |
| **Skin contact** | Likely route of exposure |
| **Eye contact** | Likely route of exposure |

**Symptoms related to the physical, chemical and toxicological characteristics**

INHALATION:
Contains hydrogen sulfide gas. Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since odor fatigue rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting, diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions.

Fumes or vapors from the heated material may be irritating to the respiratory tract. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

SKIN:
Contact may cause reddening, itching and inflammation. Prolonged skin contact may defat the skin and cause drying, cracking and/or dermatitis.

Skin contact may cause harmful effects in other parts of the body.

EYES:

May cause slight to mild eye irritation with tearing, redness, or a stinging or burning sensation. May cause temporary swelling of the eyes with blurred vision. Effects may become more serious with repeated or prolonged contact.

Vapors may cause eye irritation and sensitivity to light.

INGESTION:
Ingestion may cause gastrointestinal irritation and diarrhea. Ingestion of large amounts may cause gastrointestinal blockage.

**Information on toxicological effects**

**Acute toxicity** Not classified.

| **Components** | **Species** | **Test Results** |
|---|---|---|
| OIL DISTILLATES (CAS Mixture) | | |
| **Acute** | | |
| *Inhalation* | | |
| LC50 | | 4.1 mg/l |
| PETROLEUM ASPHALT (CAS 8052-42-4) | | |
| **Acute** | | |
| *Dermal* | | |
| LD50 | Rat | > 2000 mg/kg |
| *Inhalation* | | |
| LC50 | | > 94.4 mg/m³ |
| *Oral* | | |
| LD50 | Rat | > 5000 mg/kg |

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Not classified.

**Respiratory sensitization** Not classified.

**Skin sensitization** Not classified.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** May cause cancer.

**ACGIH Carcinogens**

| | |
|---|---|
| ASPHALT (BITUMEN) FUME, AS BENZENE-SOLUBLE AEROSOL, INHALABLE FRACTION (CAS 8052-42-4) | A4 Not classifiable as a human carcinogen. |

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| PETROLEUM ASPHALT (CAS 8052-42-4) | 2B Possibly carcinogenic to humans. |

**Reproductive toxicity** Not classified.

**Specific target organ toxicity - single exposure** May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**

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

**Aspiration toxicity**

Not classified.

**Toxicological data**

HYDROGEN SULFIDE: Hydrogen sulfide gas has an unpleasant odor that diminishes with increased exposure. Eye irritation may occur at levels above 4 ppm. Olfactory fatigue occurs rapidly at levels of 50 ppm or higher. Odor is not a reliable warning property. Respiratory effects include irritation with possible pulmonary edema at levels above 50 ppm. At 500 ppm immediate loss of consciousness and death can occur.

NIOSH has determined that 100 ppm hydrogen sulfide is immediately dangerous to life and health (IDLH).

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs): Cancer is the most significant endpoint for PAHs. Certain PAHs are weak carcinogens which become carcinogenic after undergoing metabolism. Chronic or repeated exposure increases the likelihood of tumor initiation. Increased incidence of tumors of the skin, bladder, lung and gastrointestinal tract have been described in individuals overexposed to certain PAHs. Overexposure to PAHs has also been associated with photosensitivity and eye irritation. Inhalation overexposure of PAHs has been associated with respiratory tract irritation, cough, and bronchitis. Dermal overexposure has been associated with precancerous lesions, erythema, dermal burns, photosensitivity, acneiform lesions and irritation. Oral overexposure to PAHs has been associated with precancerous growths of the mouth (leukoplakia). Mild nephrotoxicity, congestion and renal cortical hemorrhages and elevated liver function tests, changes in the immune system and other effects have been observed in rats exposed to high levels of PAHs by ingestion.

ASPHALT/ASPHALT LIKE PRODUCTS: Asphalt fumes from heated material have been reported to cause eye, respiratory tract and skin irritation, as well as nausea and headaches. Symptoms may include coughing, wheezing and shortness of breath. An adverse effect on pulmonary function has not been conclusively demonstrated. Studies in humans to determine the potential long-term health effects of asphalt also have had inconsistent results. Epidemiological studies in European paving asphalt worker populations indicated a slight positive association between lung cancer mortality and exposure to asphalt fumes. A case-control examination of these data found no consistent evidence of an association between bitumen and lung cancer risk, possibly due to the confounding effects of potential exposure to coal tar cigarette smoking, and other substances. Additional studies of workers exposed to asphalt emissions during paving with straight-run asphalt showed mutagenic and genotoxic/cytogenetic effects in these workers.

Studies in experimental animals have not established a link between lung cancer and asphalt fume exposure. However, an increase in skin tumors was observed in lifetime studies of laboratory rodents exposed to extracts of asphalt (bitumen) as well as "cutbacks" of asphalt (asphalts that are diluted, dissolved or liquefied in hydrocarbon solvents).

An increased incidence of skin tumors was also observed in lifetime dermal bioassays of laboratory rodents exposed to distillates of fumes generated from roofing flux, an asphalt that is further processed or oxidized. These condensed fumes were collected from an oxidized roofing asphalt at high temperatures (>450 degrees F). Follow up studies suggest that the roofing asphalt distillates act as tumor initiators, involving a genotoxic mechanism. No increases in skin tumors were found in a lifetime study of rodents dermally exposed to distillates of fumes generated from paving asphalt.

The International Agency for Research on Cancer (IARC) recently determined that occupational exposures to oxidized asphalt and their emissions during roofing applications are "probably carcinogenic to humans" (Group 2A). They also determined that occupation exposures to hard asphalts and their emissions during mastic asphalt work and occupational exposures to straight-run asphalts and their emissions during paving operations are "possibly carcinogenic to humans" (Group 2B).

## 12. Ecological information

**Ecotoxicity**

Harmful to aquatic life with long lasting effects.

| Components | | Species | Test Results |
|---|---|---|---|
| PETROLEUM ASPHALT (CAS 8052-42-4) | | | |
| *Acute* | | | |
| Algae | EC50 | Algae | > 1000 mg/l, 96 hr |

| Components | | Species | Test Results |
|---|---|---|---|
| Crustacea | EC50 | Daphnia magna | > 1000 mg/l, 48 hr |
| Fish | LC50 | Fish | > 1000 mg/l |
| *Chronic* | | | |
| Crustacea | NOEL | Daphnia | > 1000 mg/l |
| Fish | NOEL | Fish | > 1000 mg/l |

**Persistence and degradability** Not readily biodegradable.

**Bioaccumulative potential** May bioaccumulate in aquatic organisms.

**Mobility in soil** May partition into soil and water.

**Other adverse effects** No other adverse effects expected.

## 13. Disposal considerations

**Disposal instructions** This material, as supplied, when discarded or disposed of, is not a hazardous waste according to Federal Regulations (40 CFR 261). Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the material to characterize and determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of waste material must be conducted in compliance with federal, state, and local regulations. Under RCRA it is the responsibility of the user of the material to determine, at the time of disposal, whether this material meets RCRA criteria for hazardous waste. For additional handling information and protection of employees, see Section 7 (Handling and Storage) and Section 8 (Exposure Controls/Personal Protection).

**Hazardous waste code** The proper waste code must be evaluated at the time of disposal and should be determined by the user and waste disposal company.

**Waste from residues / unused products** Dispose of this material in accordance with all applicable local and national regulations.

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with government regulations. Packaging may contain residue that can be hazardous.

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN number** | UN3257 |
| **UN proper shipping name** | Elevated Temperature Liquid, n.o.s. (Asphalt) |
| **Transport hazard class(es)** | 9 |
| **Subsidiary class(es)** | Not available. |
| **Packing group** | III |
| **Special precautions for user** | Not available. |
| **Labels required** | Class 9 |
| **Placards required** | Class 9, UN3257, HOT |
| **ERG number** | 128 |

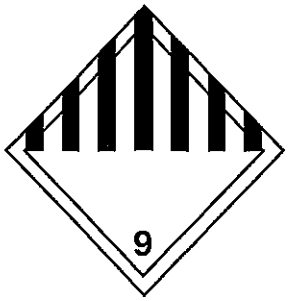
**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not classified for MARPOL. Please contact the Transportation Compliance CSO if transportation mode is ship or vessel to determine the need for a MARPOL classification.

**General information** This description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).

In accordance with US DOT, bulk and non-bulk shipments of this product, which are offered for transportation below 212 °F (100 °C), are not regulated.

BILL OF LADING - NON-BULK (U. S. DOT): Non-regulated by DOT

**DOT**



## 15. Regulatory information

**US federal regulations**

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

A release of this material, as supplied, may be exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA - 40 CFR 302) by the petroleum exclusion. Releases may be reportable to the National Response Center (800-424-8802) under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5).

This material does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to comply may result in substantial civil and criminal penalties.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

| | |
|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | 1.0 % |
| POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2) | 0.1 % N590 Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements. |

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Reportable threshold**

| | |
|---|---|
| POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2) | LBS 100 N590 |

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

| | |
|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | Listed. |
| POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2) | N590 Listed. |

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

| | |
|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | LISTED |
| PETROLEUM ASPHALT (CAS 8052-42-4) | LISTED |

**US CERCLA Hazardous Substances: Reportable quantity**

| | |
|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | 100 LBS |
| PETROLEUM ASPHALT (CAS 8052-42-4) | 100 LBS |

**US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity**

| | |
|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | 500 LBS |

**US EPCRA (SARA Title III) Section 304 - Extremely Hazardous Spill: Reportable quantity**

| | |
|---|---|
| HYDROGEN SULFIDE (CAS 7783-06-4) | 100 LBS |

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

**Hazard categories**

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

HYDROGEN SULFIDE (CAS 7783-06-4)

**US state regulations**

**US. California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause cancer. Proposition 65, CAL. HSC. §25249.5.

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

| | |
|---|---|
| PETROLEUM ASPHALT (CAS 8052-42-4) | Listed: January 1, 1990 |

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

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|---|---|
| **Issue date** | 03-24-2015 |
| **Version #** | 01 |
| **Further information** | Not available. |

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|---|---|
| **HMIS® ratings** | Health: 2*<br>Flammability: 1<br>Physical hazard: 0<br>* Indicates chronic health hazard |
| **NFPA ratings** | Health: 2<br>Flammability: 1<br>Instability: 0 |
| **Disclaimer** | THIS SDS HAS BEEN PREPARED TO COMPLY WITH FEDERAL REGULATIONS THAT ARE INTENDED TO QUICKLY PROVIDE USEFUL INFORMATION TO THE USER(S) OF THIS MATERIAL OR PRODUCT - IT IS NOT INTENDED TO SERVE AS A COMPREHENSIVE DISCUSSION OF ALL POSSIBLE RISKS OF HAZARDS, BUT RATHER PROVIDES INFORMATION GENERALLY ACCEPTED IN THE SCIENTIFIC COMMUNITY AS RELEVANT REGARDING THE POTENTIAL HAZARDS OF THIS PRODUCT. ADEQUATE TRAINING, INSTRUCTION, WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS. USERS SHOULD REVIEW THE INFORMATION IN THE SDS, AND SATISFY THEMSELVES AS TO ITS SUITABILITY AND COMPLETENESS, INCLUDING ENSURING THAT THIS IS THE MOST CURRENT SDS. |
| **Revision Information** | Product and Company Identification: Synonyms<br>Composition / Information on Ingredients: Ingredients<br>Physical & Chemical Properties: Multiple Properties<br>Transport Information: Material Transportation Information<br>Regulatory Information: United States<br>HazReg Data: International Inventories<br>GHS: Classification |
| **Completed by** | Flint Hills Resources, LP - Operations EH&S |