


Performance Grade Asphalt Oil

1. Identification	
Product name: Performance Grade Asphalt Oil	
Other means of identification/Synonyms/Common Names: Liquid Asphalt, Asphalt Binder, Asphalt Cement	
Recommended use: Performance Grade Asphalt Oil is used in asphalt paving.	
Recommended restrictions: None Known	
Manufacturer/Contact info: Vulcan Materials Company and its subsidiaries and affiliates 1200 Urban Center Drive Birmingham, AL 35242	General Phone Number: 1.866.401.5424 Emergency Phone Number: 1.866.401.5424 (3E Company, 24hours/day, 7 Days/week) Website: www.vulcanmaterials.com

2. Hazard(s) Identification	
Physical hazards: Not Classified	Health hazards: Carcinogenicity-Category 2 Serious eye irritation -Category 2 Hazard Not Otherwise Classified
	Signal word: <h1 style="text-align: center;">Warning</h1>
	Hazard statement May cause cancer (Inhalation) May cause eye irritation Contact with hot product will cause thermal burns. Water contact with hot material can cause violent eruption.

Precautionary statement:
Prevention
<ul style="list-style-type: none"> Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection. Product may contain or release hydrogen sulfide, which is highly toxic and is a flammable gas. Assessment of storage tanks, transport vessels and other confined spaces should be made to determine potential exposures and appropriate controls
Response
<ul style="list-style-type: none"> If exposed or concerned: Immediately call a Poison Center or doctor/physician. Get medical advice/attention. Specific treatment (see the following information on this safety data sheet). IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Remove/Take off immediately all contaminated clothing. Rinse cautiously with water for several minutes. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest position comfortable for breathing.

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Wash contaminated clothing before reuse.

Storage

- Store in a well-ventilated place.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:

Heated material can cause thermal burns. Fumes from heated asphalt oil may be irritating to the eye, nose and throat.

3. Composition/information on ingredients		
Chemical name	CAS number	%
Asphalt	8052-42-4	>70
May contain:		
Heavy Naph. Petroleum distillates	64741-53-3	<30
Heavy Naphthenic Extract	64742-11-6	<30
Hydrogen sulfide	7783-06-4	<1
Additives	Mixture	<1

4. First-aid measures
<p>Inhalation: Remove person to fresh air. If lung irritation persists or later develops, contact a physician. If not breathing, initiate rescue breathing, give oxygen by trained personnel and get immediate medical attention. Do not attempt to rescue victim from confined spaces without adequate protective equipment.</p>
<p>Eyes: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops. Thermal burns require immediate medical attention.</p>
<p>Skin: Hot Material: Remove contaminated clothing, if possible, and immediately flush skin in cool water for at least 15 minutes. Iced water or cold packs may be applied to burned area. Do not attempt to remove material from a burn. Get immediate medical attention. Cold Material: Clean exposed skin with soap or mild detergent and large amounts of water until all material is removed from the skin. Do not use solvents or thinners to remove material from skin.</p>
<p>Ingestion: If swallowed, do not induce vomiting. Drink a large volume of water and get immediate medical attention. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration.</p>
<p>Most important symptoms/effects, acute and delayed: Emissions from the heated material may have an unpleasant odor and may cause moderate to severe irritation of the mucous membranes and upper respiratory tract, headaches, nausea and dizziness. Toxic hydrogen sulfide gas may be released. Do not depend upon sense of smell for warning of overexposure, since the gas causes rapid olfactory fatigue which deadens the sense of smell at levels as low as 50 ppm. Unconsciousness and asphyxiation may occur in poorly ventilated or confined spaces. See Section 11 for additional information.</p>

Indication of immediate medical attention and special treatment needed:

In general, emesis induction is unnecessary in high viscosity, low volatility products. Inhalation exposure of hydrogen sulfide may result in pulmonary congestion. Patients may be predisposed to pneumonia during convalescence, and should be kept under observation. Contact a Poison Center for additional treatment information.

For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:

Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, and steam) and water fog.

Unsuitable extinguishing media:

Avoid use of straight-stream water. Adding water to hot asphalt presents an eruption hazard.

Specific hazards arising from the chemical:

Do not heat above flash point.

Fumes/vapors can explode when concentrated in an enclosed environment and supplied with an ignition source. Never weld or use a cutting torch or open flame on a full, partially full or empty bin, hopper, or other container that holds or has held asphaltic material unless precautions are taken to prevent explosion. **WARNING:** Hydrogen sulfide (H₂S) and other hazardous gases/vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels, and can create an explosive, toxic, or oxygen deficient atmosphere. H₂S gas is extremely flammable and can explode if an ignition source is provided. See Section 11 for health effects of H₂S gas.

Special protective equipment and precautions for firefighters:

Avoid breathing irritating and potentially toxic fumes, including hydrogen sulfide gas. Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Fire-fighting equipment/instructions:

Adding water to hot asphalt presents an eruption hazard.

Specific methods:

Use water spray to keep fire-exposed containers cool.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ventilate area and avoid emission inhalation or skin contact by using appropriate precautions outlined in this SDS (see Section 8). Keep all sources of ignition at least 50 feet away. Prevent materials from entering streams, drainages, or sewers. Spills entering surface waters or sewers entering/leading to surface waters must be reported to the National Response Center 1-800-424-8802. Based on volume and use, components of this product may be subject to reporting requirements of Title III of SARA, 1986, and 40 CFR 372.

For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week).

Environmental precautions:

Stop leak and contain spilled material with sand, aggregate fines, or another inert adsorbent. Collect adsorbed product and clean up materials in appropriate container for proper disposal. Notify proper authorities.

Methods and materials for containment and cleaning up:

Dispose of waste materials in accordance with applicable federal, state and local laws and regulations.

7. Handling and storage

Precautions for safe handling:

Follow personal protection and protective controls set forth in Section 8 of this SDS when handling this product. If personnel must enter a tank or other confined space that contained this material, follow the OSHA Confined Space Entry Program as specified in 29 CFR 1910.146. Do not store near food, beverages or smoking materials. Avoid personal contact with heated material.

Do not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition as they may explode and cause injury or death. Tripping accidents have occurred because of asphalt buildup on bottoms of shoes and boots; buildup should be removed regularly to prevent such accidents. Do not use solvents or thinners to clean footwear.

Conditions for safe storage, including any incompatibilities:

Store away from all ignition sources and open flames in accordance with applicable laws and regulations. Vapors containing hydrogen sulfide may accumulate during storage or transport of asphaltic materials. When petroleum asphalt products are heated, potentially irritating emissions (fumes, mists, vapors) may be released.

8. Exposure controls/personal protection

Legend:

NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; STEL = Short Term Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Asphalt Fumes	NE	0.5 mg/m ³ (as benzene-soluble aerosol)	Ceiling 5 ppm
Ammonia (NH ₃)	50 ppm	25 ppm STEL 35 ppm	25 ppm Ceiling 35 ppm
Carbon Monoxide (CO)	50 ppm	25 ppm	35 ppm Ceiling 200 ppm
Heavy Naphthenic Distillate	5 mg/m ³	5 mg/m ³ (as oil mist)	
Heavy Naphthenic Extract	5 mg/m ³	5 mg/m ³ (as oil mist)	
Hydrogen Sulfide (H ₂ S)	Ceiling 20 ppm	10 ppm STEL 5 ppm	Ceiling 10 ppm
Nitrogen Dioxide (NO ₂)	Ceiling 5 ppm	3 ppm STEL 5 ppm	STEL 1 ppm
Ozone (O ₃)	0.1 ppm	0.05 ppm	Ceiling 0.1 ppm
Sulfur Dioxide (SO ₂)	5 ppm	STEL 0.25 ppm	2 ppm

Exposure Guidelines:

Workers should station themselves on the upwind side of asphalt emissions when possible. It is recommended that asphalt emissions be monitored regularly to determine exposure levels. Exposure levels in excess of appropriate exposure limits must be reduced by all feasible engineering controls, including (but not limited to), ventilation, process enclosure, and/or enclosed employee workstations.

Engineering Controls:

General dilution or local exhaust ventilation is required to maintain exposures below appropriate exposure limits. Use only in well-ventilated areas.

Eye Protection:

Use a full-face shield and chemical safety goggles if handling heated material. Safety glasses with side shields should be worn as minimum protection at ambient temperatures. Contact lens should not be worn when eye contact with product is possible.

Skin Protection (Protective Gloves/Clothing):

Avoid skin contact with material by wearing impervious gloves and protective clothing. When handling hot material, use heat-resistant gloves. Use insulated; heat-resistant clothing as necessary.

Respiratory Protection:

Not expected to be necessary under normal use and working conditions. All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. For air-contaminant concentrations which exceed or are likely to exceed applicable exposure limits, use a NIOSH-approved, contaminant-specific, air purifying respirator. If such conditions are sufficiently high that the air-purifying respirator is inadequate, or if oxygen adequate to sustain life is not present, use a positive-pressure, self-contained breathing apparatus.

Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:

Black, viscous.

Odor:

Petroleum odor.

PH:

Not applicable

Decomposition temperature:

Not applicable

Melting point/freezing point:

Not applicable

Initial boiling point and boiling range:

815°F

Flash point:

>450°F (min). COC

Evaporation rate:

Not applicable

Flammability:

Not applicable

Upper/lower flammability or explosive limits:

Not applicable

Vapor pressure:

Not applicable

Vapor density:

>1

Solubility:

Negligible

Partition coefficient: n-octanol/water.

≥10

Autoignition temperature:

500°F

Specific Gravity (H₂O = 1):

1.01

10. Stability and reactivity

Reactivity:

Not reactive under normal use.

Chemical stability:

Stable under normal temperatures and pressures.

Possibility of hazardous reactions:

None under normal use. Contact between heated Asphalt and water can cause a violent eruption.

Conditions to avoid (e.g., static discharge, shock or vibration):

Keep away from direct flame/ignition sources. Contact with incompatible materials should be avoided (see below). See Sections 5, 6 and 7 for additional information.

Incompatible materials:

Strong oxidizers may react with hydrocarbons. Contact with fluorine may cause burning or explosion. Adding water to hot asphalt presents an eruption hazard.

Hazardous decomposition products:

Carbon monoxide and other compounds (such as amines, ammonia, nitrogen dioxide, sulfur dioxide, ozone, hydrogen sulfide, and various hydrocarbons) may be released by thermal decomposition. Hazardous vapors can collect in enclosed vessels or areas if not properly ventilated. If hydrogen sulfide is present, the flammable limits range from 4.3 to 45.5% by volume and its presence may promote the formation of pyrophoric (spontaneously igniting) iron compounds (See 29 CFR 1910.146).

11. Toxicological information**Primary Routes of Exposure:**

Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics**Inhalation:**

Fumes, mists or vapors may cause respiratory irritation. Contains or may release hydrogen sulfide gas (H₂S), which may accumulate in confined spaces. H₂S fumes and vapors may be harmful or fatal if inhaled.

Eye Contact:

Direct contact with hot material can cause severe thermal burns. Hardened material may scratch the eye causing tearing, redness and a stinging sensation. Fumes, vapors or mists may be irritating.

Skin Contact:

Direct contact with hot material can cause severe thermal burns. Hardened material may cause irritation due to abrasive effects.

Ingestion:

Direct contact with heated material can cause severe thermal burns. Asphalt has a low toxicity when ingested, however, chewing and swallowing asphalt may cause gastrointestinal effects. Gastric masses (Bezoars) and stomach (pyloric) obstructions have been reported in individuals who have chewed and swallowed asphalt.

Medical Conditions Aggravated by Exposure:

Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and/or lung (Including asthma and/or other breathing disorders).

Delayed and immediate effects and also chronic effects from short- and long-term exposure:

Prolonged and repeated exposure to asphalt may cause skin disorders such as dermatitis, folliculitis, and acne-like lesions, or more rarely, pigmentation of the skin. Chronic inhalation of high concentrations of asphalt emissions may cause chronic bronchitis and pneumonitis (inflammation of the lungs). In mice, there was damage to the lungs, including bronchitis, pneumonitis, and abscess formation. Guinea pigs and rats showed pneumonitis, peribranchial adenomatosis, and some squamous cell metaplasia.

This material contains heavy vacuum distillates/aromatic extract oils. Repeated dermal application of these oils to experimental animals has been reported to cause skin disorders, effects on the adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus as well as fetal death and birth defects.

Repeated exposure to low levels of H₂S may cause eye effects including conjunctivitis and corneal injury. There is no evidence that H₂S will accumulate in the body tissue.

Carcinogenicity:

Skin application of asphalt fume condensate fractions caused skin tumors in laboratory mice. When asphalt was dissolved or mixed with a solvent prior to exposing laboratory animals, the carcinogenicity results were weakly positive. The causal agent is thought to be 4 to 6 ring polycyclic aromatic compounds (PAH). Trace amounts of these materials may be present in asphalts and can be generated upon excessive heating. Some PAHs have been identified as causing carcinogenic and reproductive effects. Currently, epidemiological evidence does not support a link between asphalt exposure and human skin cancer.

Repeated breathing of asphalt emissions has not resulted in a carcinogenic response in laboratory animal testing. Although epidemiological studies on asphalt workers have suggested a possible link between asphalt fumes and certain types of cancer, confounding factors such as smoking and concomitant exposure to other agents in the workplace may have influenced the results of these studies. Asphalt is not listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). IARC states that there is sufficient evidence that extracts (asphalts dissolved in hydrocarbon solvents) are carcinogenic to laboratory animals and recently the agency determined that occupational exposures to oxidized asphalt and their emissions during roofing applications are “probably carcinogenic to humans” (Group 2A). They also determined that occupational 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)

This material contains heavy vacuum distillates/aromatic extract oils. IARC has determined that there is sufficient evidence in experimental animals for their carcinogenicity, and has classified these oils as Group 1, or human carcinogens.

Additional information on toxicological-effects:

Acute toxicity: Not classified

No specific data on product. Based on components, not expected to be classified for acute toxicity.

Asphalt:

Acute Oral, rat: LD50 >5000 mg/kg

Acute Dermal, rat: LD50 >2000 mg/kg

Skin corrosion/irritation: Not classified

Serious eye damage/eye irritation: Not classified

Respiratory sensitization: Not classified.

Skin sensitization: May cause photosensitization (contact), but not classified as a skin sensitizer.

Germ cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Reproductive toxicity: Not classified.

Specific target organ toxicity - single exposure: Not classified

Specific target organ- toxicity – repeated exposure: Causes damage to organs (lungs, respiratory system, adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not classified (not applicable- solid material)

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

No specific data on this product. Large spills may cause damage to aquatic organisms through fouling of the shoreline.

Persistence and degradability:

Expected to be resistant to biodegradation.

Bioaccumulative potential.

Significant migration into the environment and bioaccumulation are unlikely.

Mobility in soil. Not determined
Other adverse effects. Not determined

13. Disposal considerations
Safe handling and disposal of waste: Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, or bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information
UN Number: UN3257
UN Proper shipping name: UN3257, Elevated Temperature Liquid, N.O.S. (Asphalt)
Transport Hazard class: 9
Packing group, if applicable: III
Marine pollutant (Yes/No): Not applicable.

15. Regulatory information
Toxic Substances Control Act (TSCA): The components in this product are listed on the TSCA Inventory or are exempt.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): Releases of this material to water may be reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act. (See Section 6)
Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III: <u>Section 302 extremely hazardous substances:</u> None <u>Section 311/312 hazard categories:</u> Delayed Health <u>Section 313 reportable ingredients at or above de minimus concentrations:</u> None
California Proposition 65: This product contains a chemical (bitumen, various aromatic hydrocarbons) known to the State of California to cause cancer and birth defects or other reproductive harm.
State Regulatory Lists: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other informationDisclaimer

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

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**Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242**