

MATERIAL SAFETY DATA SHEET

SECTION 1 - Product and Company Identification

Product Name: Asphalt Flux (Petroleum, Vacuum Tower Bottoms)
Product Code: ASPHALT FLUX
Intended Use: Asphalt
Responsible Party: Bango Oil, LLC
22211 Bango Road
Fallon NV 89426
Phone Number: 775-867-5082

The intended use of this product is indicated above. If any additional use is known, please contact us.

EMERGENCY OVERVIEW

24-Hour Emergency Telephone Numbers:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800) 424-9300
California Poison Control System:
(800) 356-3129

Health Hazards/Precautionary Measures: May contain or liberate poisonous hydrogen sulfide gas. Harmful if inhaled.

Physical Hazards/Precautionary Measures: Contact with hot asphalt will result in thermal burns. Avoid contact with hot material.

Hydrogen sulfide and other hazardous vapors can collect in the headspace of storage tanks or other enclosed vessels. Hydrogen sulfide is extremely flammable and poisonous. Avoid breathing vapors, fumes or mist. Wear respiratory protection when venting tanks.

Appearance: Black
Physical Form: Viscous Semi-Solid
Odor: Asphalt

NFPA Hazard Class:	HMIS Hazard Class:
Health: 1 (Slight)	Health: 1* (Slight)
Flammability: 1 (Slight)	Flammability: 1 (Slight)
Reactivity: 0 (Least)	Physical Hazard: 0 (Least)

* Indicates possible chronic health effects.

SECTION 2 - Composition/Ingredients Information

<u>HAZARDOUS COMPONENTS</u>	<u>% WEIGHT</u>	<u>EXPOSURE GUIDELINE</u>		
		<u>Limits</u>	<u>Agency</u>	<u>Type</u>
Vacuum Tower Bottoms CAS# 64741-56-6	100 (See: Bitumen)			

<u>HAZARDOUS COMPONENTS</u>	<u>% WEIGHT</u>	<u>EXPOSURE GUIDELINE</u>
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		<u>Limits</u>	<u>Agency</u>	<u>Type</u>
Hydrogen Sulfide CAS# 7783-06-4	Variable (<1)	10 ppm	ACGIH	TWA
		15 ppm	ACGIH	STEL
		20 ppm	OSHA	CEIL
		100 ppm	NIOSH	IDLH
		50 ppm	OSHA	10 min. peak; once per 8-hr. shift

REFERENCE

		<u>EXPOSURE GUIDELINE</u>		
		<u>Limits</u>	<u>Agency</u>	<u>Type</u>
Bitumen CAS# 8052-42-4		0.5 mg/m3 **** as benzene-soluble aerosol	ACGIH	TWA

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

****Fume

All components are listed on the TSCA inventory

SECTION 3 - Hazards Identification

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness. Contact with the heated material may cause thermal burns. Vapors or fumes may cause watering of the eyes.

Skin: Contact may cause mild to moderate skin irritation. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin leading to dermatitis (inflammation). Long term skin exposure can increase sensitivity to the sun and cause discoloration. Contact with the heated material may cause thermal burns. Fumes from the heated material can also cause irritation. No harmful effects from skin absorption have been reported.

Inhalation (Breathing): No information available on acute toxicity. See signs and symptoms.

May contain or liberate hydrogen sulfide - see Other Comments section below.

Ingestion (Swallowing): No harmful effects reported from ingestion. See signs and symptoms.

Signs and Symptoms: Ingestion may cause irritation of the digestive tract, nausea, vomiting, and Diarrhea. Breathing vapors or fumes from the hot material may cause headaches, dizziness, and lung irritation. Long term exposure to high concentrations of asphalt fumes may cause chronic bronchitis and pneumonitis (inflammation of the lungs).

Target Organs: No data available for this material.

Developmental: No data available for this material.

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema

(fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain polynuclear aromatic hydrocarbons (PNAs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), and skin eruptions (pimples).

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders

SECTION 4 - First Aid Measures

Eye: If irritation or redness develops from exposure to fumes generated move victim away from exposure and into fresh air. Flush eyes with clean water. If irritation or redness persists, seek medical attention. For contact with the molten material, gently open eyelids and flush affected eye(s) with cold, not icy, water. Seek immediate medical attention.

Skin: For contact with hot asphalt, leave material on skin and immediately flush or immerse affected area(s) using cold, not icy, water for up to 10 minutes. No attempt should be made to remove the asphalt from the skin. Contaminated clothing may be removed provided it is not adhering to the skin. Seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): First aid is not normally required for the solid material; however, if molten material is swallowed, seek immediate medical attention.

Note To Physicians: Once cooled, adhered asphalt is not harmful to the skin, and in fact, provides a sterile cover over the affected area. The asphalt will detach itself within a few days as healing occurs. If it is necessary to remove the asphalt, only medically approved solvents or warm paraffin should be used to prevent further skin damage.

This material may contain or liberate hydrogen sulfide. In high doses hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. If unresponsive to supportive care, nitrites (amyl nitrite by inhalation or sodium nitrite IV) may be an effective antidote, if delivered within the first few minutes of exposure.

SECTION 5 - Fire Fighting Measures

Flammable Properties: Flash Point: 470-550°F/243-287°C CC
OSHA Flammability Class: Not Regulated
LEL/UEL%: No Data
Auto-ignition Temperature: No Data

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. Vapors are heavier than air and can accumulate in low areas. Hot asphalt may ignite flammable mixtures on contact. If water is applied to heated material, it can cause violent foaming and boil over.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water fog may be used on flat surfaces such as roads. Water or foam may cause frothing of materials heated above 212°F. Do not use water on asphalt fire in tank or other containers since it may cause violent eruption and spreading of burning asphalt. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Water or foam can cause frothing. Avoid spreading burning liquid with water used for cooling purposes.

SECTION 6 - Accidental Release Measures

This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

SECTION 7 - Handling & Storage

Handling:

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks, which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage:

In a tank, barge, or other closed container, the vapor space above materials that contain hydrogen sulfide (H₂S) may result in concentrations immediately dangerous to life or health (IDLH). Use and store this material in dry, well-ventilated areas away from all sources of ignition. Hot asphalt must never be added to a tank or other container that is not completely dry. Contact with water results in violent expansion as the

water turns to steam. This can lead to dangerous boil over and may cause damage or rupture of the tank or container. Keep away from any incompatible material (see Section 10).

SECTION 8 - Exposure Controls and Personal Protection

Engineering controls:

If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required.

Personal Protective Equipment (PPE):

Respiratory:

Wear a positive pressure air supplied respirator in situations where there may be potential for airborne exposure to H₂S above exposure limits (see Section 2). If exposure concentration is unknown or if conditions immediately dangerous to life or health (IDLH) exist, use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode.

A NIOSH certified air-purifying respirator with an organic vapor cartridge in combination with a Type 95 particulate filter may be used under conditions where H₂S is not detected, and airborne concentrations of asphalt fumes are expected to exceed exposure limits. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide).

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of thermally resistant gloves is recommended.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

SECTION 9 - Physical and Chemical Properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance: Black

Physical State: Viscous semisolid

Odor: Asphalt

PH: Not applicable

Vapor Pressure (mm Hg): <1

Vapor Density (air=1): >1

Boiling Point/Range: >900°F / >482°C

Freezing/Melting Point: 75°F/24°C

Solubility in Water: Negligible

Specific Gravity: 1.00

Evaporation Rate (nBuAc=1): <1

Bulk Density: 8.33 lbs/gal

Flash Point: 470-550°F / 243-287°C CC
Flammable/Explosive Limits (%): No Data

SECTION 10 - Stability and Reactivity

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7). Toxic fumes can be released on heating. Do not allow contact of molten product with water or liquids as violent eruptions, splatter of hot material or ignition of flammable materials may result.

Materials to Avoid (Incompatible Materials): Avoid contact with fluorine, nitric acid, and strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon, nitrogen and sulfur oxides and hydrogen sulfide.

Hazardous Polymerization: Will not occur.

SECTION 11 - Toxicological Information

Vacuum Tower Bottoms .C34+ (CAS# 64741-56-6)

Carcinogenicity: No ingredients of this product, present at equal to or greater than 0.1% of the product, are listed by OSHA, NTP, or IARC as suspected carcinogens.

SECTION 12 - Ecological Information

Not evaluated at this time.

SECTION 13 - Disposal Considerations

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for toxicity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

SECTION 14 - Transport Information

DOT Shipping Description:	Elevated Temperature Liquid, NOS, 9, UN3257, III
Non-Bulk Package Marking:	None
Non-Bulk Package Label:	None
Bulk Package Placard/Marking:	None/3257, HOT
Hazardous Substance/RQ:	None
Packaging References:	49 CFR 173.247
Emergency Response Guide:	128

Note: The product is regulated by DOT only when shipped in bulk packages at temperatures >212 degrees F (100 degrees C). The word HOT must be marked on the bulk package on two opposing sides.

SECTION 15 - Regulatory Information

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: No
Chronic Health: Yes
Fire Hazard: No
Pressure Hazard: No
Reactive Hazard: No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
-- None Known --		

California Proposition 65:

Warning: This material contains the following chemicals, which are known to the State of California to cause cancer, birth defects, or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5).

Component	Effect
Mineral Oils	Skin Cancer
Various Polycyclic Aromatic Hydrocarbons	Skin Cancer

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP or OSHA. See Section 11 for Carcinogenicity Information of individual components, if any. Untreated vacuum distillates have been identified as a carcinogen by IARC.

EPA (CERCLA) REPORTABLE QUANTITY:

-- None --

Canada – Domestic Substances List: Listed

WHMIS Class:

D2B-Materials causing other toxic effects – Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 - Other Information

Issue Date: 02/01/2005
Product Code: ASPHALT FLUX
Status: Final

Disclaimer of Expressed and Implied Warranty Disclaimer:

The information presented in the Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER**

WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.