

FEB-16-2004 01:37PM FROM-ACF SAFETY

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T-848 P.002/010 F-007

File FLAM LIQ.

999-001023

KOCH**MATERIAL SAFETY DATA SHEET****1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION**

TRADE NAME(S) **ASPHALT CEMENT**
CAS NUMBER **8052-42-4**
MSDS NUMBER **9085**
PRODUCT CODE **ND**
SYNONYM(S) **ALL PG AND AC SPECIFICATION
ASPHALT PRODUCTS**
MANUFACTURER /
SUPPLIER **Koch Supply & Trading, L.P.
P.O. Box 2302
Wichita, KS
67201-2302 USA**

TELEPHONE NUMBERS - 24 HOUR ASSISTANCE

Chemtec: **800-424-9300**
Reference Koch Subsidiary:
Koch Supply & Trading, L.P.

TELEPHONE NUMBERS - GENERAL ASSISTANCE

8-5 (M-F, CST) MSDS **316-828-8468**
Assistance

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	Concentration*	Exposure Limits / Health Hazards
PETROLEUM ASPHALT	8052-42-4	100 %	Asphalt Fumes: 0.5 mg/m3 8-Hour TWA (ACGIH)
ANTI-STRIP	PROPRIETARY	0 - 0.5 %	ND
HYDROGEN SULFIDE	7783-06-4	< 1 %	20 ppm CEILING (OSHA) 10 ppm 8-Hour TWA (ACGIH) 15 ppm 15-Min STEL (ACGIH)

*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 MSDS.

Asphalt products can contain hydrogen sulfide, because it is naturally occurring in crude oil from which asphalt is derived. Hydrogen sulfide can also be present as a by-product of asphalt processing.

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3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING!

HEALTH HAZARDS

MAY RELEASE TOXIC HYDROGEN SULFIDE VAPORS - DO NOT RELY ON ODOR FOR WARNING
FUMES FROM HEATED MATERIAL MAY BE IRRITATING AND HAZARDOUS
MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT
CONTAINS MATERIAL WHICH CAN CAUSE CANCER
MAY CAUSE ALLERGIC SKIN REACTION
HEATED MATERIAL MAY CAUSE THERMAL BURNS
SEE "TOXICOLOGICAL INFORMATION" (SECTION 11) FOR MORE INFORMATION

FLAMMABILITY HAZARDS

UNDEFINED (FLASH POINT > 200 F)
PER OSHA GUIDELINES, 29 CFR 1910.1200(c)

REACTIVITY HAZARDS

STABLE

POTENTIAL HEALTH EFFECTS, SKIN

May cause skin irritation. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

May cause photoirritation in some individuals.

Contact with heated material may cause thermal burns.

Contains a component(s) that may cause allergic skin reactions in some individuals.

No significant effects are expected to occur following short term exposure. Repeated or prolonged contact with large amounts of this material may result in absorption through the skin to produce toxic effects.

POTENTIAL HEALTH EFFECTS, EYE

Direct contact may cause irritation, redness, tearing and blurred vision. Exposure to vapors, fumes or mists may cause irritation. Prolonged or repeated exposure may cause irritation and conjunctivitis.

Contact with heated material may cause thermal burns, destruction of eye tissue and possible permanent injury or blindness.

POTENTIAL HEALTH EFFECTS, INHALATION

Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs. Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure. Fumes or vapors from the heated material may be irritating to the respiratory tract.

May release hydrogen sulfide gas which is highly toxic. 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. See Storage & Handling (Section 7) for more information.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

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POTENTIAL HEALTH EFFECTS, INGESTION

Ingestion of large amounts may cause gastrointestinal disturbances. Ingestion of large amounts may cause gastrointestinal blockage.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

4 FIRST AID MEASURES**SKIN**

For hot material, immerse or flush skin with large amounts of the coldest water possible. Cover with clean cotton sheeting or gauze. Remove clothing if not sticking to skin. DO NOT try to remove solidified material from the skin as the damaged flesh can be easily torn. DO NOT try to dissolve with solvents or thinners. GET IMMEDIATE MEDICAL ATTENTION.

For cold material, immediately wash skin with plenty of soap and water while 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

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION.

Burns due to contact with heated material require immediate medical attention.

INHALATION

Safely remove the victim from exposure. DO NOT ATTEMPT TO RESCUE WITHOUT ADEQUATE PROTECTIVE GEAR AND PROPER TRAINING. Remove to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure airway is clear and give oxygen.

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

INGESTION

If large quantities of this material are accidentally ingested, do not induce vomiting. If spontaneous vomiting occurs keep head below hips to prevent aspiration and monitor for breathing difficulty. Gastric lavage should be performed only by qualified medical personnel.

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

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NOTES TO PHYSICIAN

Gastric lavage may be indicated if ingested. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

Hydrogen sulfide is primarily a respiratory toxin inhibiting the cytochrome oxidase system; it is probably more potent than HCN. The lifetime of sulfide in oxygenated blood is short and sulfmethemoglobin is rapidly detoxified by red blood cells and the liver. If nitrites have been used for detoxification, check methemoglobin levels. Follow fluid and electrolyte balance carefully since metabolic acidosis may occur from increased anaerobic metabolism. Watch for pulmonary edema and aspiration pneumonia during convalescence.

For skin contact with hot asphalt material, do not peel the solidified material from the skin, or use solvents such as gasoline, kerosene, or paint thinner to remove. Cooled asphalt may adhere so tenaciously to the skin that attempted removal may cause severe distress to the patient. Covering the affected area using commercially available preparations containing the emulsifying agent polysorbate (Tween 80), or an antibiotic cream in a polysorbate base is the most effective method to dissolve the solidified asphalt. Asphalt can also be slowly dissolved with vegetable oil, baby oil or mineral oil.

5 FIRE FIGHTING MEASURES**HAZARDOUS COMBUSTION PRODUCTS**

Combustion may produce COx, NOx, SOx, reactive hydrocarbons and hydrogen sulfide.

EXTINGUISHING MEDIA

Use dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire.

BASIC FIRE FIGHTING PROCEDURES

Material will burn in a fire. 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.

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 MSHA/NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

UNUSUAL FIRE & EXPLOSION HAZARDS

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.

Flash Point

> 400 F (>204 C) PENSKY-MARTENS
CLOSED CUP

Autoignition Temperature

ND

Flammability Limits in Air, Lower, % by Volume

ND

Flammability Limits in Air, Upper, % by Volume

ND

6 ACCIDENTAL RELEASE MEASURES**EMERGENCY ACTION**

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. (See Exposure Controls/Personal Protection in Section 8.)

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ENVIRONMENTAL PRECAUTIONS

If product is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released product. Notify local authorities and the National Response Center, if required.

SPILL OR LEAK PROCEDURE

Keep ignition sources out of area and shut off all ignition sources. For spills on land, dike ahead of spill to contain. Scrape up spilled material for disposal. To reclaim, mix with gravel, dirt or rock. 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. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

7 HANDLING & STORAGE**HANDLING**

Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

Do not eat, drink or smoke in areas of use or storage.

STORAGE

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 oxidizers.

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

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

When entering a storage vessel that has previously contained any type of asphalt product, it is recommended that the atmosphere be monitored for the presence of hydrogen sulfide. See Composition Information (Section 2) for exposure limits.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION**ENGINEERING CONTROLS**

Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

Consult NIOSH (National Institute for Occupational Safety and Health) for more information on guidelines for engineering controls for asphalt pavers.

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Wear chemical safety goggles and face shield. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Use appropriate chemical protective gloves when handling at room temperature. Use gloves that protect against thermal burns when handling at high temperatures. At a minimum, wear long-sleeved cotton shirt buttoned at the collar and full-length cotton pants. Synthetic fibers tend to melt and adhere to the skin when heated. Do not fold back or roll up cuffs.

Use good personal hygiene.

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RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

A NIOSH/MSHA approved air purifying respirator with an appropriate cartridge, canister, and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. The use of air purifying respirators is not recommended where hydrogen sulfide levels may exceed exposure limits. Protection provided by air purifying respirators is limited. 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.

9 PHYSICAL & CHEMICAL PROPERTIES**ODOR AND APPEARANCE****DARK BROWN TO BLACK VISCOUS LIQUID WITH ASPHALT ODOR**

Boiling Point	> 700 F (> 371 C)
Specific Gravity	> 1
Melting Point	ND
Percent Volatile	ND
Vapor Pressure	ND
Vapor Density	ND
Bulk Density	ND
Solubility in Water	INSOLUBLE
Octanol/Water Partn	ND
Volatile Organic	ND
Pour Point	ND
pH Value	ND
Freezing Point	ND
Viscosity	ND
Evaporation Rate	ND
Molecular Formula	MIXTURE
Molecular Weight	NA
Chemical Family	ASPHALT CEMENT
Odor Threshold	ND

10 STABILITY & REACTIVITY**STABILITY/INCOMPATIBILITY**

Incompatible with oxidizing agents. See precautions under Handling & Storage (Section 7).

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

Combustion may produce COx, NOx, SOx, reactive hydrocarbons and hydrogen sulfide.

11 TOXICOLOGICAL INFORMATION**ROUTES OF EXPOSURE**

Inhalation, ingestion, skin and eye contact.

TOXICOLOGICAL DATA

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: skin and lung.

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: fatigue, loss of appetite and melanosis.

Irritating and toxic hydrogen sulfide gas may be found in confined vapor space. WARNING - "rotten egg" odor of hydrogen sulfide is not a reliable indicator for warning of exposure since odor fatigue readily occurs. Odor sensation lost immediately at concentrations greater than 150 ppm. Avoid exposures to hydrogen sulfide gases. Hydrogen sulfide causes rapid death due to metabolic asphyxiation. Case reports suggest that toxic amounts can enter the body through a punctured eardrum, even while wearing some types of respiratory protective equipment.

CARCINOGENICITY

This material contains petroleum asphalt. IARC has determined that there is inadequate evidence that undiluted, air-refined asphalt is carcinogenic to experimental animals, and there is only limited evidence that undiluted steam-refined and cracking-residue asphalts are carcinogenic to animals. Additionally, IARC has concluded that there is inadequate evidence that asphalts alone are carcinogenic to humans.

In solution, solvent extracts of asphalts can produce skin cancer in animals following prolonged and repeated contact. IARC has concluded that there is sufficient evidence for the carcinogenicity of asphalt extracts in experimental animals. Therefore, "cutbacks" (asphalts that are diluted, dissolved, or liquefied in hydrocarbon solvents), may also be implicated as potentially carcinogenic. While brief or intermittent skin contact with this type of product is not expected to cause harm, those workers who do not practice good personal hygiene and who are exposed repeatedly via skin contact may be at risk. It is important that all precautionary measures outlined in this MSDS be followed.

Asphalt fumes from heated material may cause eye, respiratory tract and skin irritation, as well as nausea and headaches. These fumes may cause dermatitis and acne-like lesions as well as mild keratoses on prolonged and repeated exposure. Condensed asphalt fumes, which have been generated under laboratory conditions and which are chemically different from those found during typical asphalt operations, have been reported to cause bacterial mutations as well as cause skin tumors in animals following repeated, lifetime skin contact without washing. However, inhalation of asphalt fumes by laboratory animals, during controlled studies, did not produce lung cancer. Additionally, human studies to date have not established a link between lung cancer and asphalt fume exposure.

This material may contain trace amounts of polynuclear aromatic hydrocarbons (PAHs) as naturally occurring constituents of crude oils from which asphalt is derived. Repeated or prolonged exposure to some PAHs has been associated with effects to the liver, kidneys, immune system and skin with warty growths, skin burns, pigmentation of the bare skin and cornification of the surface layers. They have also been associated with anemia, photosensitivity, leukoplakia (white patches on the tongue, cheek or gums), edema of the eyelids, conjunctival hyperemia, lacrimation, photophobia, headache, loss of appetite, vital powers and strength, cough, bronchitis and nausea. Some PAHs have been shown to be carcinogenic after prolonged or repeated skin contact in laboratory animals.

PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE

Pre-existing medical conditions which may be aggravated by exposure include disorders of the skin and respiratory system.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

ND

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13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

This product, 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 product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 266 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

14 TRANSPORT INFORMATION

BILL OF LADING - BULK (U. S. DOT)

Elevated Temperature Liquid, N.O.S. (Asphalt), 9, UN3257, PG III

STCC
2911610

HAZMAT CODE
4961519

U. S. Department of Transportation (DOT) Requirements

General Transportation Information for Bulk Shipments

Proper Shipping Name	Elevated Temperature Liquid, N.O.S., (Asphalt)		
Hazard Class	9	UN/NA Code	UN3257
Packaging Group	PG III		
Labels Required	Class 9		
Placards Required	Class 9, UN3257, HOT		
Reportable Quantity	NA		

General Transportation Information for Non-Bulk Shipments

Proper Shipping Name	Non-Regulated		
Hazard Class	NA	UN/NA Code	NA
Packaging Group	NA		
Labels Required	NA		
Placards Required	NA		
Reportable Quantity	NA		

The above description may not cover shipping in all cases, please consult 49 CFR 172.101 for specific shipping information.

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15 REGULATORY INFORMATION

FEDERAL REGULATIONS

All known major components of this product are listed on the TSCA Inventory.

A release of this product, as supplied, is exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) 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). Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to report may result in substantial civil and criminal penalties.

This product contains one or more components designated as hazardous substances or toxic pollutants pursuant to the Federal Clean Water Act (40 CFR 115.4 Table A; 40 CFR 401.15). Any unpermitted introduction of this product into a facility stormwater or wastewater discharge may constitute a violation of the Clean Water Act. Facilities must notify the appropriate permitting agency prior to introducing this product into the aforementioned discharges.

This product contains one or more substances listed as hazardous, toxic or flammable air pollutants under Section 112 of the Clean Air Act.

There may be specific regulations at the local, regional or state/provincial level that pertain to this product.

STATE REGULATIONS

WARNING: This product contains a chemical known to the State of California to cause cancer.

SARA TITLE III RATINGS

Immediate Hazard: X Delayed Hazard: X Fire Hazard: - Pressure Hazard: -
Reactivity Hazard: -

NFPA RATINGS

Health 0 Flammability 1 Reactivity 0 Special Hazards -

HMIS RATINGS

Health 1 Flammability 1 Reactivity 0

Following Ingredients of this product are listed in SARA313

SARA Listed Ingredient Name	CAS Number	Maximum %
HYDROGEN SULFIDE	7783-06-4	1.0

16 OTHER INFORMATION

DISCLAIMER

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

Current Revision Date 11-Dec-2001

Replaces Sheet Dated

Completed By Safety and Emergency Response, Koch Industries, Inc.