

Safety Data Sheet – Asphalt Emulsion

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Section 1 – Identification:

GHS product identifier:	Asphalt Emulsion
Recommended Use:	SS-1, SS-1h, RS-1, RS-1h, RS-2, HFRS-2, MS-2, HFMS-2, HFMS-2h, HFMS-2s, HFMS-2h TC (Diluted Tack Coat), Asphalt Emulsion Prime (AEP). Construction Material/road surfacing
Supplier's Details:	Callanan Industries, Inc. 8 Southwoods Blvd. 4th Floor Albany, NY 12211 (518) 374-2222 www.callanan.com
Emergency telephone number:	(518) 374-2222

Section 2 – Hazards Identification:

GHS Hazard Classification(s):	Skin Corrosion Irritation – Category 2 Serious Eye Damage / Eye Irritation – Category 2A Skin Sensitization – Category 1A Carcinogenicity – Category 2 Acute Aquatic Toxicity – Category 3
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Pictogram(s):



Signal Word:	Warning
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Hazard Statement(s):	H351 - Suspected of causing cancer. May release toxic hydrogen sulfide gas that could accumulate at toxic concentrations inside containers of heated asphalt H304 May be fatal if swallowed and enters airways. H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H316 Causes mild skin irritation. Harmful to aquatic life
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Precautionary Statement(s):	Blended asphalt products are molten when heated above 200 OF and heated material may cause thermal burns. The cured, inert semi solid material is considered non-hazardous. P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260: Do not breathe dust/fume/gas/mist/vapors/spray P264: Wash hands thoroughly after handling P271: Use only in well-ventilated area. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P262 Do not get in eyes, on skin, or on clothing. P280 Wear protective gloves/protective clothing/eye protection/face protection. Keep away from sparks/open flames/hot surfaces. No smoking. Avoid release to the environment
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Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands and any contacted skin thoroughly after handling. Wear protective gloves of materials such as leather or thick rubber, and long sleeved clothing. Wear safety eye glasses with side shields, and if needed to prevent splattering onto face, wear face shield.
Response	If exposed or concerned: Get medical advice or attention. If on skin: Wash with plenty of water and hand cleaner. . If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage:	Store locked up.
Disposal:	Dispose of contents/containers in accordance with local, state and national regulations
Hazard(s) not otherwise classified (HNOC):	Hot Liquid May Cause Thermal Burns May Release Hydrogen Sulfide Gas

Section 3 – Composition and Information on Ingredients:

Substance and Mixture: Asphalt Emulsion

Component	CAS Number	Weight %
Asphalt	8052-42-4	20-80%
Water	7732-18-15	0-60%
Polymer Modifier (proprietary)	Mixture	<12%
Fuels, diesel, No2 Mineral Spirits Biodiesel	68476-34-6 8052-41-3 mixture	0-10%
Tall Oil	8002-26-4	0-3%
Sodium Hydroxide	1310-73-2	0-2%
Hydrochloric Acid (20 Baume)	7647-01-0	0-2%
Cationic Emulsifier	Mixture	0-2%
Anionic Emulsifier	Mixture	0-2%
Anti-Strip (proprietary)	Mixture	0-1%
Hydrogen Sulfide	7783-06-4	<1%

Section 4 – First Aid Measures:

Description of Necessary First Aid Measures:

Eye Contact	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 clear airway and give oxygen. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.
Skin Contact	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 for 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, remove cold material with waterless hand cleaner and wash with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation persists.
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. GET IMMEDIATE MEDICAL ATTENTION.

Most Important Symptoms and Effects, both Acute and Delayed:

SPECIAL TOXIC EFFECTS:

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: skin and lung. Exposure may cause the following specific symptoms, depending on the concentration and duration of exposure: fatigue, reduced appetite and respiratory effects.

Irritation 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 20 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 ear drum, even while wearing some types of respiratory protective equipment.

This material contains petroleum asphalt. IARC has determined asphalt cement to have a 2B Classification; possibly carcinogenic to humans.

In solution, asphalts can produce skin cancer in animals following prolonged and repeated contact. Therefore, IARC has concluded that there is sufficient evidence for the carcinogenicity of asphalt extracts or cutbacks (asphalts that are diluted, dissolved or liquefied in hydrocarbon solvents) in experimental animals, implication these products as potentially carcinogenic to humans. While brief or intermittent skin contact with this 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. These fumes may cause dermatitis and acne-like lesions as well as mild keratoses on prolonged and repeated exposure. However, inhalation studies on inhaled asphalt fumes in laboratory animals did not produce lung cancer. To date, human studies also have not established a link between lung cancer and asphalt fume exposure.

This material may contain polynuclear aromatic hydrocarbons (PNAs). Repeated or prolonged exposure to some PNAs 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.

This material may contain untreated or mildly treated mineral oils. This material may contain solvent extract oils. IARC has determined that there is sufficient evidence for the carcinogenicity of these oils in experimental animals.

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

Indication of any Immediate Medical Attention and Special Treatment:

NOTES TO PHYSICIAN - 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.

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.

General information - HEALTH HAZARDS - Emulsified asphalt is a dark brown to black liquid emulsion. This asphalt is fluid at 150-200 degrees F. This product is not a flammable or combustible material per the OSHA hazard communication standard, but will burn when heated to extremely high temperatures. When heated, this product 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. Heated material may cause thermal burns. May cause allergic skin reaction. Aspiration hazard if swallowed-can enter lungs and cause damage Contains material which can cause cancer * * SEE SPECIAL TOXIC EFFECTS SECTION FOR MORE INFORMATION

Section 5 – Firefighting Measures:

Extinguishing Media:

Suitable extinguishing media	Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂), Class B
Unsuitable extinguishing media	Do not use water when molten material is involved. Use of water on hot/molten product will result in a violent expansion as the water turns to steam causing explosion with massive force
Fire Hazard	Combustible at high temperatures. May release flammable gases/vapors. Flammable vapors can accumulate in head space of closed systems and in areas of insufficient ventilation.
Protection during firefighting	Combustible at high temperatures. May release flammable gases/vapors. Flammable vapors can accumulate in head space of closed systems and in areas of insufficient ventilation.

Section 6 – Accidental Release Measures:

Personal Precautions, Protective Equipment and Emergency Procedures:

General Measures:	Do not breathe dust, vapor, or gas. Avoid all contact with skin, eyes, or clothing.
For Non-Emergency Personnel	Protective Equipment: Use appropriate personal protection equipment (PPE). Emergency Procedures: Evacuate unnecessary personnel
For Emergency Personnel	Protective Equipment: Equip cleanup crew with proper protection. Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.
Environmental Precautions	Prevent entry to sewers and public waters.
Methods and Material for Containment and Cleaning Up	For Containment: Cool molten material to limit spreading. Methods for Cleaning Up: Allow liquid material to solidify before cleaning up. Place spilled material into a container. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate protective equipment as described in Section 8. Do not wash asphalt down sewage and drainage systems or into bodies of water (e.g. streams).

Section 7 – Handling and Storage:

Additional hazards when processed	If stored under heat for extended periods or significantly agitated, this material might evolve or release hydrogen sulfide, a flammable gas. Hydrogen sulfide is a toxic gas that can be fatal. Exercise caution and ensure adequate ventilation.
Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Protect skin and eyes from contact with molten material. Do not breathe dust or fumes.
Conditions for safe storage, including incompatibilities	Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Incompatible Materials: Strong acids. Strong bases. Strong oxidizers (such as nitrates, chlorates, and peroxides). Fluorine. Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Store in a well-ventilated area. Avoid storage near incompatible materials. Hydrogen sulfide may accumulate in tanks and bulk transport compartments. Consider appropriate respiratory protection (see Section 8). Stand upwind. Avoid vapors when opening hatches and dome covers. Confined spaces should be ventilated prior to entry.
Specific end use(s)	Asphalt is used as a binder in asphalt paving applications such as paving roads, driveways, parking lots and other surface, base, or sub-base applications.

Section 8 – Exposure Controls Personal Protections:

Product Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits	OSHA – Vacated PELs – Time Weighted Ave
Petroleum Asphalt	8052-42-4	>60%	=0.5 mg/m ³ TWA	
Asphalt	8052-42-4	20-80%	=0.5 mg/m ³ TWA (inhalable fraction, as benzene-soluble aerosol)	
Water	7732-18-15	0-40%	ND	
Polymer Modifier (proprietary)	Mixture	<12%	ND	
Sodium Hydroxide	1310-73-2	0-2%	2 mg/m ³ Ceiling	2 mg/m ³ TWA
Anionic Emulsifier (proprietary)	Mixture	0-2%	ND	
Hydrochloric Acid (20 Baume)	7647-01-0	0-0.5%	ND	
Cationic Emulsifier	Mixture	0-2%	ND	
Anti-Strip (proprietary)	Mixture	0-1%	ND	

Name	CAS Number	Weight %	ACGIH Exposure Limits	OSHA – Vacated PELs – Time Weighted Ave
Hydrogen Sulfide	7783-06-4	<1%	= 1 ppm TWA =5 ppm STEL	=10 ppm TWA =15 mg/m ³ TWA =10 ppm REL (ceiling) =100 ppm (IDLH)
Fuels, diesel, No2 Mineral Spirits Biodiesel	68476-34-6 64742-47-8 mixture	0-10%	Distillates (petroleum), TWA 100 mg/m ³	

ND= Not Determined

*Values do not reflect absolute minimums and maximums; these are typical values 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.

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.

Exposure Controls:

Appropriate Engineering Controls	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.
Personal Protective Equipment	Gloves. Protective goggles. Protective clothing. Insufficient ventilation: wear respiratory protection.
Materials for Protective Clothing	Suitable materials with adequate protection.

Hand Protection	Protective Gloves.
Eye Protection	Chemical goggles. Wearing contact lenses under dusty conditions is not recommended.
Skin and Body Protection	Wear suitable protective clothing
Respiratory Protection	When first opening tank trucks, railcars, or other containers, it is recommended to wear appropriate NIOSH approved respiratory protection. Appropriate NIOSH approved respiratory protection must be worn if material is heated and/or generates asphalt fumes and/or hydrogen sulfide above the OSHA and ACGIH recommended limits.

Section 9 – Physical and Chemical Properties:

Information on Basic Physical and Chemical Properties:

Appearance:	Dark brown to black viscous elastic liquid with asphalt odor. Dark brown to black viscous elastic liquid with pungent odor
Physical State:	Liquid
Color:	Black – Brown
Odor:	Tar
Boiling Point:	>212 F (>100C)
Specific Gravity:	0.95 – 1.04
Melting Point:	N/A
Percent Volatile:	< 1 %
Vapor Pressure	< 0.01 mmHg @ 300 F (149 C)
Vapor Density:	ND
Bulk Density:	ND
Solubility in Water:	INSOLUBLE
Octanol/Water Partn:	ND
Volatile Organic:	ND
Pour Point:	N/A
PH Value:	ND
Freezing Point:	N/A
Viscosity:	1-3500 SUS @ 120 F (50 C)
Evaporation Rate:	ND
Molecular Formula:	NA
Molecular Weight	ND
Chemical Family	ASPHALT EMULSION

Odor Threshold:	ND
Flash Point:	> 400 F PENSKY-MARTENS CLOSED CUP
Auto Ignition Temperature	ND
Flammability Limits in Air, Lower (LEL), % by Volume	ND
Flammability Limits in Air, Lower (UEL), % by Volume	ND

Section 10 – Stability and Reactivity:

Reactivity	<i>Incompatible with oxidizing agents. Charring may occur followed by ignition of unreactive material and other nearby combustibles. If heated sufficiently or ignited in the presence of air, oxygen or strong oxidizing agents, can burn exothermically. May be ignited by strong oxidizing agents.</i>
Chemical Stability	Stable under normal storage conditions.
Possibility of hazardous reactions	Combustion may produce CO, NOx, SOx, and reactive hydrocarbons. Combustion may produce hydrogen sulfide, toxic and irritating vapors.
Conditions to avoid	Excessive heat, sources of ignition, open flame. Extremely high or low temperatures. Incompatible materials.
Incompatible materials	Strong acids. Strong bases. Strong oxidizers (such as nitrates, chlorates, and peroxides). Fluorine.
Hazardous decomposition	Combustion may produce CO, NOx, SOx, and reactive hydrocarbons. Combustion may produce hydrogen sulfide, toxic and irritating vapors

Section 11 – Toxicological Information:

Information on Toxicological Effect:

LD50 and LC50 Data:	Not available
Skin Corrosion/Irritation:	Not classified
Serious Eye Damage/Irritation:	Not classified
Respiratory or Skin Sensitization:	Not classified
Germ Cell Mutagenicity:	Not classified
Teratogenicity:	Not available
Carcinogenicity:	Suspected of causing cancer
Specific Target Organ Toxicity (Repeated Exposure):	Not classified
Reproductive Toxicity:	Not classified
Specific Target Organ Toxicity (Single Exposure):	Not classified

Aspiration Hazard:	Not classified
Symptoms/Injuries After Inhalation:	Exposure to fumes, vapors, or dust may cause irritation of the nose, throat, and respiratory system. Hot material releases irritating fumes or vapors; symptoms may include headache, dizziness, loss of coordination, and drowsiness. WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.
Symptoms/Injuries After Skin Contact:	Dust may cause dry skin, discomfort, irritation and dermatitis. Hot product will cause severe burns.
Symptoms/Injuries After Eye Contact:	Eye contact to airborne dust may cause immediate or delayed irritation or inflammation. Hot product will cause severe burns. Eye exposures may require immediate first aid and medical attention to prevent significant damage to the eye.
Symptoms/Injuries After Ingestion:	Do not ingest asphalt. Ingestion of small quantities of asphalt is not known to be harmful; ingesting large quantities can cause intestinal distress. May cause nausea, vomiting, and diarrhea.
Chronic Symptoms:	Emissions from asphalt are suspected of causing cancer. Product may contain polynuclear aromatic hydrocarbons (PNAs). Evidence from animal studies indicates that prolonged exposure to various PNAs can cause cancer of the lungs, skin, and other organs.

Information on Toxicological Effect – Ingredient(s):

Asphalt (8052-42-4)	LD50 Oral Rat > 5000 mg/kg LD50 Dermal Rabbit > 2000 mg/kg LC50 Inhalation Rat > 94.4 mg/m ³
Hydrogen Sulfide (7783-06-4)	Acute Inhalation LC50 Mouse: > 0.024 mg/L 960 minutes Acute Inhalation LC50 Rat: > 0.38 mg/L 960 minutes Acute Inhalation LC50 Monkey: 0.7 mg/L 35 minutes Inhalation LC50 Rat: 712 ppm (1-hour exposure) Inhalation LC50 Mouse: 634 ppm (1-hour exposure)
Sodium Hydroxide (1310-73-2)	irritation data: skin, rabbit: 500 mg / 24 h severe; eye rabbit: 50 ug / 24 h severe Investigated as a mutagen.
Asphalt (8052-42-4)	IARC Group 2B National Toxicology Program (NTP) Status: Twelfth Report - Items under consideration. OSHA Hazard Communication Carcinogen List: In OSHA Hazard Communication Carcinogen list.

Section 12 – Ecological Information:

Toxicity	No Additional Information Available
Hydrogen Sulfide (7783-06-4)	Very toxic to aquatic organisms.
Sodium Hydroxide (1310-73-2)	EC50 Water flea (Ceriodaphnia dubia): 34.59 mg/l 48 h LC50 Western mosquitofish (Gambusia affinis): 125 mg/l 96 h

Persistence and Degradability	Not available
Bioaccumulative Potential	BCF Fish 1: (no bioaccumulation expected) Log Pow: > 6
Mobility in Soil	Not available
Other Adverse Effects	Not available

Section 13 – Disposal Considerations:

Disposal methods	This product, as shipped, when discarded or disposed of, will not be a hazardous waste according to Federal regulations. 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, 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.
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Section 14 – Transportation Information:

In accordance with DOT	Not regulated
TDG (Canada)	N/A
UN proper shipping name	Not regulated
UN/Identification No.	N/A
Transport hazard class	N/A
Packing group	N/A

Section 15 – Regulatory Information:

US Federal Regulations:

Asphalt (8052-42-4)	Listed on the United States TSCA (Toxic Substances Control Act) inventory SARA Section 311/312 Hazard Classes: Delayed (chronic) health hazard
Hydrogen Sulfide (7783-06-4)	CERCLA/SARA Section 302 EHS: 500 lb TPQ CERCLA/SARA 313: 1.0% de minimis concentration
Sodium Hydroxide (1310-73-2)	CERCLA 10000

US State Regulations:

Asphalt (8052-42-4)	Right to know list
Hydrogen Sulfide (7783-06-4)	Right to know list
Sodium Hydroxide (1310-73-2)	Right to know list

Section 16 – Other Information:

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