



Material Safety Data Sheet

MSDS No. SST-6422

Section 1: PRODUCT AND COMPANY INFORMATION

Product Name(s): Performance Grade Asphalt Binder(s)

Product Identifiers: Asphalt Cement; Asphalt Binder; PG 58-22; PG 58-28; PG 64-22; PG 64-28; PG 70-22; PG 70-28 Asphalt Flux; AC-10; AC-20; AC-30; AC-40;

**Manufacturer:
and/or Marketer:** S&S Terminal, Inc.
1731 Old State Route #7
P.O. Box 66
Rayland, Ohio 43943

Information Telephone Number:
1-740-453-0127 (8am to 4:30pm EST)

For Chemical Emergency ONLY:
(spill, leak, fire, exposure or accident)

CHEMTREC
1-800-424-9300 24 HOURS / 7 Days

Product Use: Asphalt cement is used in HMA for paving roads, driveways, parking lots, school yards, and other surface, base, or sub-base applications.

Note: This MSDS covers many types of Asphalt cement. Individual composition of hazardous constituents will vary between asphalt cement grades

Section 2: COMPOSITION / INFORMATION ON INGREDIENTS

Component	Percent (% wt)	CAS Number	ACGIH TWA	OSHA PEL
Asphalt	97-100	8052-42-4	0.5 mg/m ³	N/A
Sulfur Compounds	0-3	mixture	N/A	N/A
Anti-Stripping Additive	0-1.5	mixture	N/A	N/A
Hydrogen Sulfide	0-0.5	7783-06-4	10 ppm	21 mg/m ³

Note: Asphalt Cement is a solid carbon material produced from high temperature vacuum distillation of crude oil. Composition varies depending on source of crude and specifications of final product. Can contain minor amounts of sulfur, nitrogen and oxygen compounds as well as trace amounts of heavy metals such as nickel, vanadium and lead. Composition varies depending on source of crude. Polycyclic aromatic hydrocarbons (3-7 ring), such as benzo(a)pyrene, are present in trace concentrations (<0.1%). Different asphalt grades may also contain an anti-strip additive.

Section 3: HAZARD IDENTIFICATION

	WARNING!!!	
	<p>Hot product can cause Severe Burns!!!</p> <p>Toxic – Harmful by inhalation Hot Product can release Hydrogen Sulfide gas;</p> <p>Irritant: Causes eye, skin, and inhalation irritation.</p> <p>Use proper engineering controls, work practices, and personal protective equipment.</p> <p>Read the MSDS for details</p>	

Section 3: HAZARD IDENTIFICATION (continue)

Emergency Overview: ASPHALT PRODUCTS ARE DARK BROWN TO BLACK, SOLID OR SEMI-SOLID MATERIALS. ASPHALT IS MOLTEN ABOVE 200 DEGREES F AND SKIN CONTACT WILL CAUSE THERMAL BURNS. WHEN HEATED THIS MATERIAL MAY VENT TOXIC LEVELS OF HYDROGEN SULFIDE (H₂S) VAPORS THAT ACCUMULATE IN THE VAPOR SPACES OF STORAGE AND TRANSPORT COMPARTMENTS. H₂S VAPORS CAN CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION AND ASPHYXIATION. THIS PRODUCT IS NOT A COMBUSTIBLE LIQUID PER THE OSHA HAZARD COMMUNICATION STANDARD, BUT WILL IGNITE AND BURN AT TEMPERATURES EXCEEDING THE FLASH POINT.

OSHA Warning Label:

WARNING !!
HOT ASPHALT MATERIAL
MAY PRODUCE SEVERE BURNS
MAY VENT HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H₂S) GAS
WHICH CAN CAUSE RESPIRATORY IRRITATION AND ASPHYXIATION.

Potential Health Effects:

Eye Contact: Hot product will cause severe thermal burns. Eye contact with asphalt cement fumes can cause moderate eye irritation, redness, and itching. Eye exposures require immediate first aid to prevent damage to the eye.

Skin Contact: Direct contact with asphalt cement will cause severe thermal burns. Repeated or prolonged contact to cold asphalt cement may cause dry skin, discomfort, irritation, and dermatitis.

Inhalation: Hot asphalt cement releases irritating fumes or vapors such as smoke, carbon dioxide, carbon monoxide, unburned hydrocarbons. Hydrogen sulfide and other sulfur-containing gases can evolve from this product at elevated temperatures. Exposure to fumes or vapors may cause irritation of the nose and throat, and symptoms such as headache, dizziness, loss of coordination, and drowsiness. Cutting, crushing, or grinding hardened asphalt will release dust. Breathing dust may cause nose, throat, or lung irritation, including choking, depending on the degree of exposure.

Carcinogenicity: Asphalt cement is not listed as a carcinogen by ACGIH. Presently, the IARC has determined that there is inadequate evidence that bitumens alone are carcinogenic to humans.

Ingestion: Do not chew or ingest asphalt cement. Hot product will cause thermal burns. Ingestion may result in nausea, vomiting, diarrhea, and restlessness. Chewing asphalt has caused gastrointestinal effects. Stomach obstructions have been reported in individuals who have chewed and swallowed asphalt.

Notes to Physician: Recommended practice is to not attempt to remove hot material associated with a burn. Allow the solidified material to remain in place until cooled so it can naturally fall off. Natural separation will occur in 48-72 hours. If removal is attempted, mineral oil may be used to remove asphalt once it is cooled. For best results, work it into the skin around the material and allow the material to "float" off.

Medical Conditions

Aggravated by Exposure: Individuals with preexisting skin conditions can be aggravated by exposure.

Section 4: FIRST AID MEASURES

Eye Contact: For contact with hot material, flush with large amounts of cool water for at least 15 minutes. Immediately call a physician. For contact with cold material or dust, rinse eyes thoroughly with water for at least 15 minutes, including under the lids, to remove all particles. Seek medical attention for immediately.

Section 4: FIRST AID MEASURES (CONTINUED)

Skin Contact:	Wash with cool water and a pH neutral soap or a mild skin detergent. Do not use solvents or thinners to remove material from skin. Seek medical attention for burns, rash, irritation, and dermatitis. For contact with hot material, immerse or flush skin with cold water for at least 15 minutes. Call a physician. Do not attempt to remove solidified material, since removal may cause further tissue injury. Remove contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse.
Inhalation:	Move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. Seek medical attention for discomfort or if coughing or other symptoms do not subside.
Ingestion:	Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention and/or contact poison control center immediately.

Section 5: FIREFIGHTING MEASURES

Flashpoint:	500-660 F
Auto-Ignition Temp.	905 F
Specific Hazards:	This product is not a combustible solid per the OSHA Hazard Communication Standard, but will ignite and burn at temperatures exceeding the flash point.
Extinguishing Media:	For small fires, Class B fire extinguishing media such as CO ₂ , dry chemical, foam (AFFF/ATC) can be used. For larger fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment
Firefighting Equipment:	A SCBA is recommended to limit exposure to combustion products when fighting any fire.
Combustion Products:	Toxic gases produced in a fire include by not limited to CO, CO ₂ , and H ₂ S.
Flammable Lower Limit:	1.0 % in air
Flammable Upper Limit:	6.0% in air
NFPA Rating:	Health: 1 Flammability: 1 Reactivity: 1 Other: ---

Section 6: ACCIDENTAL RELEASE MEASURES

General:	Dike or contain spill with soil, floor-dry, sand, etc. Pump hot liquid to containers or storage vessel. Use a shovel to scrape up cooled material and place material into suitable containers for recovery or disposal. Do not wash asphalt cement down sewage and drainage systems or into bodies of water (e.g. streams). Wear appropriate protective equipment as described in Section 8.
Waste Disposal Method:	Dispose of asphalt cement according to Federal, State, Provincial, and Local regulations.

Section 7: HANDLING AND STORAGE

General:	Handle with care and use appropriate control measures. Avoid contact with skin, eyes, and clothing. Use additional precautions when handling hot material. Maintain employee exposure levels below established regulatory limits. Do not allow hot material to contact skin. Use all appropriate Personal Protective Equipment (PPE) described in Section 8.
Usage:	Protect the body with long sleeve shirts, long pants, and use Personal Protective Equipment (PPE) described in Section 8.

Section 7: HANDLING AND STORAGE (continued)

- Storage:** Concentrations of hydrogen sulfide (H₂S) can be generated and accumulated in storage tanks and bulk transport compartments which may require additional precautions and procedures during loading and unloading. Do not expose open flames, strong oxidizers or other source of ignition.
- Clothing:** Remove and launder clothing that is soiled with asphalt. Thoroughly wash hands and exposed skin after exposure to asphalt cement.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Engineering Controls:** Use local exhaust or general dilution ventilation when using at elevated temperatures or during activities that fumes, to maintain levels below exposure limits.

Personal Protective Equipment (PPE):

- Respiratory Protection: Under ordinary conditions no respiratory protection is required. Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust or fumes above exposure limits.
- Eye Protection: Wear ANSI approved glasses, safety goggles, or face shield when handling asphalt cement to prevent contact with eyes.
- Skin Protection: Wear leather or cloth work gloves to prevent skin contact and insulated gloves when handling hot material. Thoroughly wash hands and exposed skin after exposure to asphalt cement.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

- Physical State:** Liquid.
- Appearance:** Black-Dark Brown Solid or Semi-solid
- Odor:** Slight Petroleum / Tar Odor
- Vapor Pressure:** Negligible @ 77°F
- Vapor Density:** No Data Available
- Specific Gravity:** 1.05 - 1.13
- Evaporation Rate:** No Data Available
- pH (In Water):** Neutral
- Boiling Point:** > 700⁰ F
- Melting Point:** 115⁰ – 199⁰ F
- Freezing Point:** Solid @ ambient temperature
- Density:** 7.9 – 9.4 lbs/gal
- Viscosity:** Varies with temperature
- Solubility in Water:** Insoluble

Section 10: STABILITY AND REACTIVITY

- Stability:** Stable. Avoid contact with incompatible materials, excessive heat, sources of ignition and open flames.
- Incompatibility:** HMA is incompatible with strong acids or bases, and oxidizing agents such as nitrates, chlorates, and peroxides.
- Hazardous Polymerization:** None
- Hazardous Decomposition:** When heated, may release hydrogen sulfide and various hydrocarbons.

Sections 11: TOXICOLOGICAL INFORMATION

This product can contain a significant concentration of hydrogen sulfide (H₂S). Hydrogen sulfide gas (H₂S) is toxic by inhalation. Prolonged breathing of 50-100 ppm H₂S vapors can produce eye and respiratory tract irritation. Higher concentrations (250-600 ppm) for 15-30 minutes can produce headache, dizziness, nervousness, nausea and pulmonary edema or bronchial pneumonia. Concentrations of >1000 ppm will cause immediate unconsciousness and death through respiratory paralysis. Rats and mice exposed to 80 ppm H₂S, 6 hrs/day, 5 days/week for 10 weeks, did not produce any toxicity except for irritation of nasal passages. H₂S did not affect reproduction and development (birth defects or neurotoxicity) in rats exposed to concentrations of 75-80 ppm or 150 ppm H₂S, respectively. Over the years a number of acute cases of H₂S poisonings have been reported. Complete and rapid recovery is the general rule. However, if the exposure was sufficiently intense and sustained causing cerebral hypoxia (lack of oxygen to the brain), neurologic effects such as amnesia, intention tremors or brain damage are possible.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity Effects: If spilled, hot product and/or the coating action of the oil components could harm plant life. This product does not concentrate or accumulate in the food chain. This product is not expected to cause any acute or chronic toxicity to aquatic organisms due to its extremely low water solubility.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of waste and containers according to Federal, State, Provincial, and Local regulations.

Section 14: TRANSPORTATION INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

Section 15: REGULATORY INFORMATION

Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA / MSHA Hazard Communication Standard:

This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product contains the following component(s) that have been Listed on the EPA's Extremely Hazardous Substance (EHS) List:
- Hydrogen Sulfide (H₂S) -

SARA Section 304: This product is not listed as a CERCLA hazardous substance.

SARA Section 311/312: The following EPA hazard categories apply to this product:
- Acute - Health – Hazard -

SARA Section 313: This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

RCRA: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal,

whether a material containing the product or derived from the product should be classified as a hazardous waste.

California Proposition 65:

Crystalline silica (airborne particulates of respirable size) is known by the State of California to cause cancer.

Section 16: OTHER INFORMATION

Abbreviations:

AC	Asphalt Cement	NIOSH	National Institute for Occupational Safety and Health
ACGIH	American Conference of Governmental Industrial Hygenists	NTP	National Toxicology Program
(B)	Inhalable fraction, as benzene – soluble aerosol	OSHA	Occupational Safety and Health Administration
CAS No	Chemical Abstract Service number	PEL	Permissible Exposure Limit
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	PG	Performance Grade
CFR	Code of Federal Regulations	pH	Negative log of hydrogen ion
CO	Carbon Monoxide	PPE	Personal Protective Equipment
CO ₂	Carbon Dioxide	ppm	Parts per million
CPR	Cardiopulmonary resuscitation	(RP)	Respirable Particulate
DOT	U. S. Department of Transportation	RCRA	Resource Conservation and Recovery Act
EST	Eastern Standard Time	SARA	Superfund Amendments and Reauthorization Act
EPA	Environmental Protection Agency	SCBA	Self-Contained Breathing Apparatus
F	Fahrenheit	(TP)	Total Particulate
HMA	Hot Mix Asphalt	TDG	Transportation of Dangerous Goods
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
MG/M ³	Milligrams per cubic meter	TSCA	Toxic Substances Control Act
MSDS	Material Safety Data Sheet	TWA	Time Weighted Average (8 hour)
MSHA	Mine Safety and Health Administration	U.S.	United States
N/A	Not Available	wt	weight
NFPA	National Fire Protection Association		

Section 16: OTHER INFORMATION

This MSDS (Sections 1-16) was revised on April 8, 2009.

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