

Material Safety Data Sheet

Section 1: PRODUCT AND COMPANY INFORMATION

Product Name(s): Asphalt Cement (Asphalt)

Product Identifiers: Asphalt Cement, Petroleum Asphalt, Unmodified Asphalt Cement, Polymer Modified Asphalt Cement, Neat Asphalt Cement, Bitumen, 40-50, 60-70, 85-100, 120-150, 150-200, 160-180, 200-300, 300-400, AC-10, AC-20, PG 46-34, PG 52-28, PG 52-34, PG 52-34 PMA, PG 52-40, PG 52-40 PMA, PG 58-22, PG 58-28, PG 58-34, PG 58-34 PMA, PG 58-40, PG 58-40 PMA, PG 64-22, PG 64-22 PMA, PG 64-28, PG 64-28 PMA, PG 64-34, PG 64-34 PMA, PG 64-40, PG 64-40 PMA, PG 70-22, PG 70-22 PMA, PG 70-28, PG 70-28 PMA, PG 70-34, PG 70-34 PMA, PG 76-22, PG 76-22 PMA, PG 76-28, PG 76-28 PMA.

Manufacturer:
Lafarge North America Inc.
12018 Sunrise Valley Drive, Suite 500
Reston, VA 20191

Information Telephone Number:
703-480-3600 (9am to 5pm EST)

Emergency Telephone Number:
1-800-451-8346 (3E Hotline)

Product Use: 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.

Note: This MSDS describes the health hazards of Asphalt Cements. It applies to Paving Grade Asphalt Cement products including: Penetration Grades, AC (Asphalt Cement graded by original viscosity at 140°F), AR (Asphalt Cement graded by viscosity of residue from Rolling Thin Film Oven Test), PG (Performance Graded), PBA (Performance Based Asphalts), and PMA (Polymer Modified Asphalt Cement) products. Individual composition of hazardous constituents will vary between types of asphalt.

This MSDS does not apply to Industrial Asphalts (roofing grades), Emulsified Asphalts, or Cutback Asphalts.




Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	Percent (By Weight)	CAS Number	OSHA PEL – TWA (mg/m ³)	ACGIH TLV-TWA (mg/m ³)	LD ₅₀ (rat, oral)	LC ₅₀ (Inhalation)
Asphalt Cement (as Fume)	80-100	8052-42-4	NA	0.5 (I)	NA	NA
Polymer	0-12	Various	NA	NA	71.3 mg/kg	NA
Sulfur	0-7	7704-34-9	NA	NA	>3000 mg/kg	1.7 g/m ³

Note: Asphalt is produced from high temperature vacuum distillation of crude oil. Composition varies depending on source of crude and specifications of final product. It can contain trace amounts of sulfur, nitrogen and oxygen compounds as well as trace amounts of heavy metals. Different asphalt grades may contain an anti-stripping additive.

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.

Section 3: HAZARD IDENTIFICATION

WARNING		
	<p>Hot product can cause burns.</p> <p>Toxic - Harmful by inhalation.</p> <p>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 MSDS for details.</p>	 Eye Protection  Gloves

Section 3: HAZARD IDENTIFICATION (continued)

Emergency Overview: Asphalt is a dark brown to black colored solid or semi-solid material that has a petroleum odor. Hot product will cause severe thermal burns. If burned by hot product, cool affected area immediately with cool water. Do not attempt to remove solidified product from skin. Seek medical attention. When heated, this product may release toxic hydrogen sulfide (H₂S). Prolonged or repeated skin contact can cause drying of the skin which may produce irritation or dermatitis.

Potential Health Effects: Risk of injury depends on duration and level of exposure.

Eye Contact: Hot product will cause severe thermal burns. Eye contact with asphalt 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 hot asphalt will cause severe thermal burns. Repeated or prolonged contact to asphalt may cause dry skin, discomfort, irritation, and dermatitis.

Inhalation: Hot asphalt releases irritating fumes or vapors such as smoke, carbon dioxide, carbon monoxide, and 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.

Hydrogen sulfide and other sulfur-containing gases can evolve from this product at elevated temperatures. Hydrogen sulfide can cause respiratory paralysis and death, depending on concentrations 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 and signs of nervous system depression.

Carcinogenicity: Asphalt is not listed as a carcinogen by IARC or NTP.

Ingestion: Do not chew or ingest asphalt. 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.

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 product, flush with large amounts of cool water for at least 15 minutes, including under lids. Seek medical attention for burns and severe irritation.

Skin Contact: Wash with cool water and a pH neutral soap or a mild skin detergent. Do not use solvents or thinners to remove product from skin. Seek medical attention for burns, rash, irritation, and dermatitis.

For contact with hot product, immerse or flush skin with cold water for at least 15 minutes. Call a physician. Do not attempt to remove solidified product, since removal may cause further tissue injury.

Inhalation: Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.

Section 4: FIRST AID MEASURES (continued)

Ingestion: Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

Note to Physician: No attempt should be made to remove firmly adhering asphalt from the skin. Once the asphalt has cooled, it will do no further harm and it provides a sterile covering over the burned area. As healing takes place, the asphalt will detach itself, usually after a few days.

Section 5: FIREFIGHTING MEASURES

Flashpoint & Method:	> 230°C (> 446°F) Cleveland Open Cup	Firefighting Equipment:	A SCBA is recommended to limit exposures to combustion products when fighting any fire.
General Hazard:	Combustible solid. Avoid breathing fumes.		
Upper/Lower Flammable Limit:	NA.		
Auto-Ignition Temperature:	> 370°C (> 698°F)	Combustion Products:	Toxic gases produced in fire, such as CO, CO ₂ , and H ₂ S.
Extinguishing Media:	Use appropriate extinguishing media for the size of the fire. Water spray and foam can cause frothing. Use of water on product above 100°C (212°F) can cause product to expand with explosive force.		
Specific Hazards:	If tank, rail car or tanker truck is involved in fire, isolate for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. Shut off fuel to fire if possible to do so without hazard. Cool containing vessels with water spray in order to prevent pressure buildup, autoignition or explosion. Avoid flushing spilled product into sewers, streams or other bodies of water.		

Section 6: ACCIDENTAL RELEASE MEASURES

General: Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. Remove all potential ignition sources. Isolate the area of the spill and restrict access. For small spills, soak up released asphalt with inert absorbent material, remove with shovels and place spilled material into a container. Contain large spills with inert materials. Avoid using combustive absorbers such as sawdust. Transfer liquids and solid material to suitable containers for recovery or disposal. Do not allow spills and cleaning runoff to enter drains, sewers, groundwater, drainage ditches or surface waters. Wear appropriate protective equipment as described in Section 8.

Waste Disposal Method: Dispose of asphalt according to Federal, State, Provincial and Local regulations.

Section 7: HANDLING AND STORAGE

- General:** Handle with care and use appropriate control measures. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other source of ignition. Do not cut, drill, grind or weld on empty containers since they may contain flammable residues.
- Significant concentrations of hydrogen sulfide (H₂S) gas can be generated and accumulate in storage tanks and bulk transport compartments which may require additional precautions and procedures during loading and unloading. When opening covers and outlet caps on storage tanks, use face shield and gloves to avoid possible injury from pressurized product. Stay upwind and vent open hatches before unloading. Keep heating coils and flues in storage tanks, trucks and kettles covered with product. Do not overheat.
- Usage:** 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 product to contact skin. Ensure adequate ventilation. Use all appropriate engineering controls and Personal Protective Equipment (PPE) described in Section 8 below.
- Storage Temperature:** Store away from all ignition sources and open flames. Avoid freezing.
- Storage:** Do not expose to open flames, strong oxidizers or other source of ignition. Consult appropriate Federal, State, Provincial and Local authorities before reusing, recycling or disposing of empty containers or waste residues of this product.

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 generate vapors or mists, to maintain levels below exposure limits. Ensure that an emergency eye wash station and safety shower is located near the work area.
- 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 vapors above exposure limits.
 - Eye Protection: Wear ANSI approved glasses, safety goggles, or face shield when handling asphalt to prevent contact with eyes.
 - Skin Protection: Wear chemical resistant gloves (e.g. neoprene or butyl rubber) to prevent skin contact and insulated gloves when handling hot product. Do not rely on barrier creams, in place of impervious gloves. Additional protection may be necessary to prevent skin contact including use of apron, arm covers, face shield or boots. Remove and launder clothing that is soiled with asphalt. Thoroughly wash hands and other exposed skin after exposure to asphalt.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid or semi-solid.	Evaporation Rate:	NA.
Appearance:	Black or brown.	pH (in water):	NA.
Odor:	Slight petroleum odor.	Boiling Point:	> 400°C.
Vapor Pressure:	NA.	Freezing Point:	NA.
Vapor Density:	NA.	Viscosity:	139-3000 cP at 135°C (275°F).
Specific Gravity:	0.95 – 1.13	Solubility in Water:	Insoluble

Section 10: STABILITY AND REACTIVITY

Stability:	Stable. Avoid contact with incompatible materials, excessive heat, sources of ignition and open flame.
Incompatibility:	Asphalt is incompatible with strong acids or bases, and oxidizing agents such as nitrates, chlorates and peroxides.
Hazardous Polymerization:	None.
Hazardous Decomposition:	When heated may liberate carbon monoxide, carbon dioxide, hydrogen sulfide, trace oxides of sulfur and nitrogen, and various hydrocarbons.

Section 11 and 12: TOXICOLOGICAL AND ECOLOGICAL INFORMATION

For questions regarding toxicological and ecological information refer to contact information in Section 1.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of waste and containers in compliance with applicable Federal, State, Provincial and Local regulations.

Section 14: TRANSPORT INFORMATION

This product is classified as a Hazardous Material under U.S. DOT regulations when it is shipped at temperatures above 212°F (100°C). This product is deemed as non-hazardous when shipped at ambient temperatures.

Section 15: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication:	This product is considered by OSHA/MSHA to be a hazardous chemical and should be included in the employer's hazard communication program.
CERCLA/SUPERFUND:	This product is not listed as a CERCLA hazardous substance.
EPCRA SARA Title III:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 and is considered to be an acute health hazard (irritation).
EPRCA 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.

Section 15: REGULATORY INFORMATION (continued)

TSCA: This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.

California Proposition 65: This product and/or its components are not listed in California's Proposition 65.

WHMIS/DSL: Products containing asphalt are classified as D2B and are subject to WHMIS requirements.


Section 16: OTHER INFORMATION
Abbreviations:

>	Greater than	NA	Not Applicable
ACGIH	American Conference of Governmental Industrial Hygienists	NFPA	National Fire Protection Association
CAS No	Chemical Abstract Service number	NIOSH	National Institute for Occupational Safety and Health
CBI	Confidential Business Information	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	OSHA	Occupational Safety and Health Administration
		PEL	Permissible Exposure Limit
CFR	Code for Federal Regulations	pH	Negative log of hydrogen ion
CL	Ceiling Limit	PPE	Personal Protective Equipment
DOT	U.S. Department of Transportation	R	Respirable Particulate
EST	Eastern Standard Time	RCRA	Resource Conservation and Recovery Act
HEPA	High-Efficiency Particulate Air	SARA	Superfund Amendments and Reauthorization Act
HMIRC	Hazardous Materials Information Review Commission	SCBA	Self-Contained Breathing Apparatus
HMIS	Hazardous Materials Identification System	T	Total Particulate
IARC	International Agency for Research on Cancer	TDG	Transportation of Dangerous Goods
LC ₅₀	Lethal Concentration	TLV	Threshold Limit Value
LD ₅₀	Lethal Dose	TWA	Time Weighted Average (8 hour)
mg/m ³	Milligrams per cubic meter	WHMIS	Workplace Hazardous Materials Information System
MSHA	Mine Safety and Health Administration		

This MSDS (Sections 1-16) was revised on March 1, 2011.

An electronic version of this MSDS is available at: www.lafarge-na.com under the Sustainability section.

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