

# MATERIAL SAFETY DATA SHEET

# GRANITE

P. O. BOX 50085  
WATSONVILLE, CA 95077-5085  
831/724-1011

PREPARED DATE: 08-05-04  
REPLACES: 08-19-02

## SECTION I MATERIAL IDENTIFICATION

<b>CHEMICAL NAME</b> Not Applicable	<b>CHEMICAL FORMULA</b> Mixture	<b>MOLECULAR WEIGHT</b> Not Applicable
<b>TRADE NAME(S)</b> Petroleum Asphalt Mixes		
<b>SYNONYMS</b> Slurry Seal, Chip Seal	<b>DOT IDENTIFICATION NO.</b> Unclassified	

## SECTION II PRODUCT AND COMPONENT DATA

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO.	% (APPROX.) (optional)	OSHA PEL	ACGIH TLV - TWA
Mineral Aggregate (crushed stone, sand and gravel)	None	> 85	NA	NA
Silica, crystalline – Typically Quartz (content typically greater than 1% and can be higher than 20%) Other possible forms of crystalline silica	14808-60-7	>1-20	See Section X	0.05 mg/m <sup>3</sup>
Cristobalite	14464-46-1		See Section X	0.05 mg/m <sup>3</sup>
Tridymite	15468-32-3		See Section X	0.05 mg/m <sup>3</sup>
Petroleum Asphalt	8052-42-4	>5%	NE	0.5 mg/m <sup>3</sup>

## SECTION III PHYSICAL DATA

<b>APPEARANCE AND ODOR</b> Black, viscous, granular. Petroleum odor.		<b>SOLUBILITY IN WATER</b> Negligible	
<b>BOILING POINT</b>	470 °C	<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1 @ 39.2 F)</b>	2.0-2.5
<b>VAPOR PRESSURE (mm Hg)</b>	NA	<b>MELTING POINT</b>	100-135 °F
<b>VAPOR DENSITY IN AIR (AIR = 1)</b>	>1	<b>EVAPORATION RATE (Butyl Acetate = 1)</b>	NA

## SECTION IV PHYSICAL HAZARDS (FIRE AND EXPLOSION HAZARD DATA)

<b>FLASHPOINT (METHOD USED)</b> Product: NE; petroleum asphalt: >400 °F (TOC); kerosene: 100-180 °F (TCC); diesel fuel: 150 °F	<b>FLAMMABLE LIMITS IN AIR (% Vol. in air)</b> Product: NE; kerosene: 0.5-7.5%; diesel fuel: 1-5%; petroleum asphalt: NE	<b>LEL</b> NE	<b>UEL</b> NE
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### EXTINGUISHING AGENTS

Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, steam), and water fog. Avoid use of straight-stream water. Use water to keep fire-exposed containers cool.

### UNUSUAL FIRE AND EXPLOSION HAZARDS

Do not heat above flash point. Petroleum distillates, including kerosene and diesel fuel, are flammable and may burn if an ignition source is provided. Petroleum asphalt fumes can explode when concentrated in an enclosed environment and supplied with an ignition source. Never use welding or cutting torch on or near containers (especially empty) because vapors can ignite explosively.

## SECTION V REACTIVITY DATA

<b>STABILITY</b>	Unstable	NA	<b>CONDITIONS TO AVOID</b> Keep away from ignition sources. Avoid contact with incompatible materials.
	Stable	X	

### INCOMPATIBILITY (MATERIALS TO AVOID)

Strong oxidizers may react with hydrocarbons. Contact with fluorine may cause burning or explosion. Adding water to hot asphalt presents an explosion hazard.

### HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide and other compounds (such as aldehydes, amines, nitrogen dioxide, sulfur dioxide, ozone, hydrogen sulfide, and various hydrocarbons) may be released by

thermal decomposition. Hazardous vapors may collect in enclosed vessels or areas if not properly ventilated.

<b>HAZARDOUS POLYMERIZATION</b>	May Occur	NA	<b>CONDITIONS TO AVOID</b> Not Applicable
	Will Not Occur	NA	

## SECTION VI TOXICITY AND FIRST AID

<b>PRIMARY ROUTE(S) OF EXPOSURE</b>	Inhalation? Yes	Skin? Yes	Ingestion? No
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### HEALTH HAZARDS (ACUTE AND CHRONIC)

Eye Contact: Heated material can cause severe thermal burns. Contact with petroleum distillates may cause a burning sensation with temporary irritation. Asphalt emissions may cause eye irritation.

Skin Contact: Heated material can cause severe thermal burns. Emissions may cause mild irritation. There may be an increased sensitivity to sunburn when the skin is exposed to petroleum asphalt emissions. Continued or prolonged contact with kerosene or diesel fuel may defat the skin, which may lead to irritation, infection, and dermatitis.

Ingestion: Direct contact with heated material can produce thermal burns on contacted tissues. Petroleum asphalt has a low toxicity when ingested. However, petroleum distillates (including kerosene and diesel fuel) may be absorbed from the gastrointestinal tract, with possible systemic effects (gastrointestinal irritation, vomiting, diarrhea, and CNS depression) and possible aspiration into the lungs. Aspiration of petroleum distillates has caused pulmonary edema and chemical pneumonitis.

Inhalation: Emissions from heated petroleum asphalt may have an unpleasant odor, and may produce nausea and irritation of the upper respiratory tract. Several compounds have been measured in hot-mix asphalt emissions. Of these, only sulfur dioxide and ozone concentrations approached their exposure limits (lower of 1989 ACGIH or OSHA 8-Hr. TWAs). Human exposure to ozone in excess of appropriate TLVs has caused severe irritation of the eyes and respiratory system. Concentrations of 3-10mg/M; (=2.3-7ppm) have caused eye irritation within 6 minutes. More severe effects have occurred at higher exposures.

Chronic exposure to petroleum asphalt has caused skin disorders such as dermatitis, folliculitis, or oil acne. There may be an increased sensitivity to sunburn when the skin is exposed to petroleum asphalt emissions (fumes, mists, vapors).

Chronic inhalation of petroleum asphalt emissions may contribute to respiratory irritation. If hardened asphalt concrete is subjected to mechanical forces (such as in demolition or asphalt recycling work) which generate dust particles, exposure to respirable silica (quartz) dust is possible. Chronic exposure to respirable dust in excess of appropriate exposure limits has caused pneumoconiosis (lung disease). Chronic exposure to respirable silica-containing dust in excess of appropriate exposure limits has caused silicosis, a progressive pneumoconiosis. Chronic tobacco smoking may further increase the risk of developing chronic lung problems.

### CARCINOGENICITY

Petroleum asphalt, kerosene, and diesel fuel are not listed on the NTP, IARC, or OSHA lists of carcinogens. Crystalline silica is listed by IARC but not by OSHA. IARC has determined that there is sufficient evidence for carcinogenicity to experimental animals exposed to crystalline silica and limited evidence for carcinogenicity to humans. "limited evidence" means that a causal relationship is possible; however, other explanations such as chance, bias or confounding factors cannot adequately be excluded. NTP has listed silica as reasonably anticipated to be a human carcinogen (RAHC).

**NTP**  
Silica - RAHC

**IARC**  
Silica –  
Carcinogen  
(Group 1)

**OSHA**  
NA

### CALIFORNIA PROPOSITION 65

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

### STATE LISTED COMPONENT(S)

Crystalline silica

### SIGNS AND SYMPTOMS OF EXPOSURE

Symptoms of petroleum asphalt via inhalation include irritation of the nose and throat. It also may cause nausea and dizziness if inhaled. Other symptoms include eye irritation, dermatitis, and possible loss of consciousness.

Symptoms of silicosis (but not limited to): Shortness of breath, difficulty breathing with or without exertion, coughing, diminished work capacity, diminished chest expansion, reduction in lung volume, right heart enlargement or failure.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Existing abnormal conditions of the skin and/or respiratory system may be aggravated by exposure to asphalt fumes and by petroleum distillates. Exposure to dust from disrupted hardened asphalt concrete may aggravate respiratory diseases or dysfunctions, and skin and eye conditions.

### EMERGENCY AND FIRST AID

Eyes: Flush eye(s) with plenty of water for 15 minutes, while holding eyelid(s) open. Beyond flushing, do not attempt to remove material from eyes except under medical supervision. Contact physician.

Skin: **Hot Material**- Remove contaminated clothing and immediately flush in cool water for at least 15 minutes. Apply iced water or cold packs to burned area if burned area is less than 10% of the body surface. Do not attempt to remove material from a burn. Get prompt medical attention. **Cold Material**- Clean exposed skin with oil-dissolving skin cleaner. Do not use solvents or thinners to remove material from skin.

Ingestion: Do not induce vomiting. If conscious, give large amounts of water. Contact a physician immediately.

Dust inhalation: Remove to fresh air if breathing is difficult. Get prompt medical attention if breathing remains difficult or if irritation persists.

## SECTION VII PRECAUTIONS FOR SAFE HANDLING AND USE

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Personnel involved in cleanup processes should implement controls as identified in Section VIII as appropriate. Keep all ignition sources at least 50 feet away. Avoid personal contact with heated material. Prevent materials from entering streams, drainages, or sewers. Spills entering surface waters (or any other watercourse or sewers entering/leading to surface waters) that cause a sheen must be reported to the National Response Center 800/424-8802. None of the components in these products are subject to the reporting requirements of Title III of SARA, 1986, and 40 CFR 372.

**WASTE DISPOSAL METHOD**

Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

**STORAGE AND HANDLING PRECAUTIONS**

Store away from all ignition sources and open flames, in accordance with applicable laws and regulations. Storage containers should be ventilated to reduce fire and explosion hazard, and possible overexposure of personnel to fumes and vapors. Do not weld, heat, or drill container. Emptied container may contain hazardous material which may ignite explosively if heated sufficiently. When petroleum asphalt products are heated, potentially irritating emissions (fumes, mists, vapors) may be released. Respirable dust may be generated when hardened asphalt concrete is subjected to mechanical forces, such as in demolition work, surface treatment (sanding, grooving, chiseling, etc.), and recycling of pavement. Tripping accidents have occurred because of asphalt buildup on bottoms of shoes and boots. Materials should be removed regularly to prevent such accidents.

Do not store near food and beverages or smoking material. Avoid incompatible materials.

**OTHER PRECAUTIONS****SECTION VIII PERSONAL PROTECTION AND CONTROL MEASURES****RESPIRATORY PROTECTION**

Not required under normal use and working conditions. For air contaminant concentrations which exceed or are likely to exceed applicable exposure limits, use a NIOSH-MSHA approved, contaminant-specific, air-purifying respirator. If such concentrations are sufficiently high that the air-purifying respirator is inadequate, or if oxygen adequate to sustain life is not present, use a positive pressure self-contained breathing apparatus. Consult an industrial hygienist for evaluation of exposures. Follow all applicable respirator use, fitting, and training standards and regulations.

**VENTILATION**

Local exhaust or general ventilation adequate to maintain exposures below appropriate exposure limits. Use only in well ventilated areas.

**Local Exhaust** As required

**Special**

**Mechanical (General)** As required

**Other**

**PROTECTIVE GLOVES**

Resistant gloves

**EYE PROTECTION**

Safety glasses with side shields should be worn as minimum protection. Wear chemical safety goggles to prevent eye contact with material.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT**

Protective clothing should be worn to prevent skin contact.

**HYGIENE**

Use normal good hygiene practices. Cloths saturated from contact with petroleum distillates should be removed promptly to prevent continued contact with skin. Wash hands with soap and water before eating, drinking, smoking, and using toilet facilities. Wash work clothes after each use. Clean skin with soap and water, or an oil-dissolving skin cleaner. Do not use solvents or thinners to remove material from skin.

**OTHER CONTROL MEASURES**

A fresh water supply for emergency first aid and washing facilities should be readily available. An oil-dissolving skin cleaner should be available. Workers should station themselves on the windward side of asphalt emissions when possible. It is recommended that asphalt emissions be monitored regularly to determine exposure levels. Respirable dust levels should be monitored regularly to determine exposure levels. Respirable dust levels should be monitored regularly for activities which generate dust from hardened asphalt concrete. Dust levels in excess of the PEL should be reduced by engineering controls such as wet suppression, ventilation, process enclosure or employee isolation.

**SECTION IX TRANSPORTATION****DOT HAZARD CLASS**

None

**PLACARD REQUIRED**

None

**LABEL REQUIRED**

If the shipping temperature of a solid equals or exceeds 464 °F, D.O.T. regulations classify the solid as an "Elevated Temperature Material", and a "HOT" label is required. Label as required by the OSHA and MSHA Hazard Communication standards [29 CFR 1910.1200 (f) and 30 CFR Part 42], and applicable state and local regulations.

**SECTION X EXPOSURE LIMITS**

<b>PARTICULATES (DUST)</b>	<b>MSHA PEL</b> (Permissible Exposure Level)	<b>OSHA PEL</b> (Permissible Exposure Level)	<b>NIOSH REL</b> (Recommended Exposure Limit)	<b>ACGIH TLV</b> (Threshold Limit Value)
<b>TWA</b> (Time-weighted Average)		15 mg/m <sup>3</sup> (Total) 5 mg/m <sup>3</sup> (Respirable)	NE	10 mg/m <sup>3</sup> (Inhalable) 3 mg/m <sup>3</sup> (Respirable)
<b>STEL</b> (Short-term Exposure Limit)		NA	NA	NA
<b>C</b> (Ceiling)		NA	NA	NA
<b>IDLH</b> (Immediate Dangerous to Life and Health)		NA	NA	NA

	<b>MSHA PEL</b> (Permissible Exposure Level)	<b>OSHA PEL</b> (Permissible Exposure Level)	<b>NIOSH REL</b> (Recommended Exposure Limit)	<b>ACGIH TLV</b> (Threshold Limit Value)
<b>PETROLEUM ASPHALT (ASPHALT FUMES)</b>	<b>TWA</b> (Time-weighted Average)	NE	5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>
	<b>STEL</b> (Short-term Exposure Limit)	NA	NA	NA
	<b>C</b> (Ceiling)	NA	NA	NA
	<b>IDLH</b> (Immediate Dangerous to Life and Health)	NA	NA	NA
<b>KEROSENE OR DIESEL FUEL</b>	<b>TWA</b> (Time-weighted Average)	NE	100 mg/m <sup>3</sup> (Kerosene) NE (Diesel Fuel)	NE (Kerosene) 100 mg/m <sup>3</sup> (Diesel Fuel)
	<b>STEL</b> (Short-term Exposure Limit)	NA	NA	NA
	<b>C</b> (Ceiling)	NA	NA	NA
	<b>IDLH</b> (Immediate Dangerous to Life and Health)	NA	NA	NA
<b>QUARTZ (CRYSTALLINE SILICA)</b>	<b>TWA</b> (Time-weighted Average)	30 mg.m <sup>3</sup> / (%SiO <sub>2</sub> +2) total 10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) respirable	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
	<b>STEL</b> (Short-term Exposure Limit)	NA	NA	NA
	<b>C</b> (Ceiling)	NA	NA	NA
	<b>IDLH</b> (Immediate Dangerous to Life and Health)	NA	50 mg/m <sup>3</sup>	NA
<b>CRISTOBALITE</b>	<b>TWA</b> (Time-weighted Average)	½ [30 mg.m <sup>3</sup> / (%SiO <sub>2</sub> +2)] total ½ [10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2)] respirable	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
	<b>STEL</b> (Short-term Exposure Limit)	NA	NA	NA
	<b>C</b> (Ceiling)	NA	NA	NA
	<b>IDLH</b> (Immediate Dangerous to Life and Health)	NA	25 mg/m <sup>3</sup>	NA