

# SAFETY DATA SHEET

## SECTION 1: IDENTIFICATION

- 1.1 Name of Substance:** **Asphalt, Asphalt Cement**
- 1.2 Product Names:** Performance Graded Asphalt Binder  
AASHTO M320 and AASHTO M332 Asphalt Binders,  
PG64-16, PG64-22, PG70-22, PG76-22
- 1.3 Intended Use:** Road paving; PG asphalt binder is asphalt cement that may be mixed with additives including polyphosphoric acid, paraffin waxes, ground rubber, or styrene butadiene styrene [SBS] block copolymer.
- 1.4 Company Name:** Asphalt Hawaii
- 1.5 Address:** P.O. Box 78  
Honolulu, Hawaii 96810
- 1.6 Telephone:** (808) 682-2490 (office)
- 1.7 Emergency Telephone:** (808) 864-7000  
(808) 497-5670

## SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**  
OSHA HCS (29 CFR 1910.1200) / GHS Classification

**GHS Classifications:** No classified hazards.

**Other Hazards:** Water contact with hot material can cause violent eruption.  
Contact with hot product will cause thermal burns.  
May contain or release poisonous hydrogen sulfide gas.

### Label Elements

**Hazard Pictograms:**



**Signal Word:**

**Warning**

**Hazard Statement(s):**

H314 Molten material may cause severe skin burns and eye damage.  
H335 May cause respiratory irritation.



H331 May release toxic hydrogen sulfide gas that could accumulate at toxic concentrations inside containers of heated asphalt.

**Prevention Statement(s):** P223 Do not allow contact with water because of violent reaction.

P260 Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 Wash hands thoroughly after handling.

P271 Use only in well ventilated area.

P280 Wear protective gloves/protective clothing/ eye protection/ face protection.

**Response Statement(s)** P307 +311 If exposed: get medical attention.

If on Skin (or hair): P303 + 361 + 353. See Section 4 for additional skin contact first aid measures.

If Inhaled: P304 + 340 Remove person to fresh air and keep comfortable for breathing.

If in Eye: P305 +351 + 338 Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

If on clothing: P306 + 360. Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

- 3.1 **Substance/Mixture:** Mixture
- 3.2 **CAS number/other identifiers:** Not available
- 3.3 **Product code:** Not available

**Component Information:**

Component	CAS number/Unique Identifier	Weight %
Asphalt	8052-42-4	94-100

**Additional Additives Information:**

Potential Additives	CAS number/Unique Identifier	Weight %
SBS Block Copolymer	9003-55-8	0-6
Polyphosphoric Acid	8017-16-1	0-1.5
Paraffin Wax	8002-74-2	0-1.5
Ground Rubber	139497-04-4	0-6
Sulfur	7704-34-9	<1
Fatty amine derivatives used in anti-stripping adhesion promoters (e.g., PAVE BOND® LITE)	Proprietary	0.2-0.3
Polyalkylene glycol mixture and glycol ether mixture used in warm-mix additive (e.g., Evotherm® M1 and Evotherm® J1)	Proprietary	0.2-0.3

**3.4 Composition comments:**

- The composition of the asphalt cement varies depending on the source of crude petroleum and the specifications of the final product.
- Asphalt cement contains: <0.05% of 3 -7 ring Polycyclic Aromatic Hydrocarbons (PAHs).
- Other substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below. Please see Section 8 of SDS for more details.
  - Contains <0.1% hydrogen sulfide.
  - Hydrogen sulfide gas can accumulate in the head space of containers.
  - Heated product releases asphalt fume.

<b>SECTION 4: FIRST AID MEASURES</b>
--------------------------------------

**4.1 Description of First Aid Measures**

**Inhalation:** If inhaled, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or CPR. If symptoms or irritation occur with exposure, call a physician.

**Skin Contact:** Remove contaminated clothing. Flush burned area with cold water after contact with hot asphalt until emergency personnel arrive. Do not attempt to remove solidified material that adheres to skin before obtaining medical assistance, because removal may cause further tissue injury.

Remove cold material (not associated with a burn) with waterless hand-cleaner and then wash with soap and water. If symptoms or irritation occur, call a physician. Mineral oil may be used to remove cold asphalt. For best results, work it into the skin around the material and allow the material to "float" off.

**Ingestion:** Ingestion of hot asphalt is unlikely. If large amounts of cold asphalt are swallowed, immediately call a physician.



**Eye Contact:**

For contact with hot asphalt, hold eyelids apart and flush eyes gently with cool water for at least 15 minutes. Seek immediate medical attention.

**4.2 Most Important Symptoms and Effects**

**Acute:**

Hot asphalt will cause severe skin burns. Inhalation of H<sub>2</sub>S can produce eye and respiratory tract irritation and lead to headache, dizziness, nervousness, nausea, pulmonary edema, bronchial pneumonia, and death.

**Delayed:**

Skin burns, permanent eye damage (corneal burns). Asphalt fumes or vapors are classified as possibly carcinogenic to humans.

**4.3 Indications of Any Immediate Medical Attention and Special Treatment**

Burning of eyes, skin, or respiratory system.

<b>SECTION 5: FIRE FIGHTING MEASURES</b>
--

**5.1 Suitable Extinguishing Media:**

For small fires, Class B fire extinguishing media such as CO<sub>2</sub>, dry chemical, foam (AFFF/ATC), or water spray can be used. For large fires, water spray, fog, or foam (AFFF/ATC) can be used.

**5.2 Unsuitable Extinguishing Media:**

Do not use water jet.

**5.3 Specific Hazards Arising from the Chemical:**

This product is not a combustible liquid in accordance with the OSHA Hazard Communication Standard, but will ignite and burn at temperatures exceeding the flash point.

**5.4 Special Protective Equipment and Precautions for Fire-Fighters:**

Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment. SCBA is recommended to limit exposure to combustion products when fighting a fire. Toxic gases produced in a fire include but are not limited to CO, CO<sub>2</sub>, and H<sub>2</sub>S.

Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and splattering and from as far a distance as possible. Avoid using straight water streams. Avoid excessive water spray application. Keep run-off water out of sewers and water sources.

**5.5 NFPA Rating**

Health: 0      Flammability: 1      Reactivity: 0      Other: ---  
(0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Extreme) .

## SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions, Protective Equipment and Emergency Procedures:** Avoid contact with skin and eyes. Keep unauthorized personnel away. Stay upwind. Shut off source if safe to do so.
- 6.2 Environmental Precautions:** If safe, contain spill to prevent runoff into drains and waterways. If the product has entered a water course or sewer, advise appropriate authorities and the **National Response Center (800-424-8802)**.
- 6.3 Methods and Material for Containment and Clean-Up:** Stop spill if it can be done safely. Contain liquid with sand or soil by dyking and allowing to cool and solidify and pick up as a solid. Do not flush to sewer or allow to enter waterways.

## SECTION 7: HANDLING & STORAGE

- 7.1 Precautions for Safe Handling:** Comply with applicable EPA, OSHA, NFPA, state, and local requirements. Do not handle until all safety precautions have been read and understood. Handle with care and use appropriate control measures. Avoid contact with skin, eyes, and clothing. Use additional precautions when handling hot asphalt. Wear appropriate PPE as described in Section 8. Exercise good personal hygiene following asphalt-handling activities, including washing hands before eating, drinking, or smoking.
- Maintain employee exposure levels below exposure limits. H<sub>2</sub>S vapors can be emitted and can accumulate in storage tanks and bulk transport compartments, which may require additional precautions and procedures during loading and unloading. Use a face shield and neoprene gloves to avoid possible injury from pressurized product when opening covers and outlet caps on storage tanks. Stay upwind and vent open hatches before unloading. Keep heating coils and flues in storage tanks, trucks, and kettles covered with product (8 inches). Do not overheat.
- 7.2 Conditions for Safe Storage, Including any Incompatibilities:** Use appropriate grounding and bonding practices. Asphalt contains trace amounts of H<sub>2</sub>S, which can accumulate in storage tanks and containers. Store in properly closed containers that are appropriately labeled and in a well-ventilated area. Do not expose to heat, open flames, strong oxidizers, or other sources of ignition.

<b>SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
---

**8.1 Control Parameters**

Component	Exposure Limits
Asphalt	TLV (ACGIH): 0.5 mg/m <sup>3</sup> (8 hr TWA) for asphalt fumes  PEL (OSHA): None established  NIOSH: 5 mg/m <sup>3</sup> (REL) during any 15-min period for asphalt fumes
Hydrogen Sulfide (H <sub>2</sub> S)	TLV (ACGIH): 10 ppm (8 hr TWA); 15 ppm (STEL) PEL (OSHA): 10 ppm (8 hr TWA); 20 ppm (ceiling); 50 ppm (peak) (Maximum duration: 10 minutes once only if no other measurement of exposure occurs).  NIOSH: 10 ppm (15 mg/m <sup>3</sup> ) (REL); 100 ppm (150 mg/m <sup>3</sup> ) IDLH
Polycyclic Aromatic Hydrocarbons	TLV (ACGIH) : Exposure by all routes (for benz[a]anthracene) should be carefully controlled to levels as low as possible.  PEL (OSHA): 0.2 mg/m <sup>3</sup> (8 hr TWA) <sup>(1)</sup>  NIOSH: None established
Sulfur	TLV (ACGIH): 10 mg/m <sup>3</sup> (8 hr TWA) (Inhalable); 3 mg/m <sup>3</sup> (8 hr TWA) (Respirable); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified.  PEL (OSHA): 15 mg/m <sup>3</sup> (Total dust) (8 hr TWA); 5 mg/m <sup>3</sup> (Respirable fraction) (8 hr TWA); For Particulates Not Otherwise Specified.  NIOSH: None established
Other Potential Additives listed in Section 2	None established

<sup>(1)</sup> Inhalable benzene-soluble fraction.

ACGIH American Conference of Industrial Hygienists  
 IDLH Immediately Dangerous to Life or Health  
 OSHA Occupational Safety and Health Administration  
 REL Recommended Exposure Level  
 STEL Short-Term Exposure Limit.  
 TLV Threshold Limit Value.  
 TWA 8 hour time-weighted average.

**8.2 Engineering Controls:** Use ventilation adequate to keep exposures below recommended exposure limits. Local or general exhaust required in an enclosed area or where there is inadequate ventilation.

### 8.3 Personal Protective Equipment [PPE]

- Eye/Face Protection:** When handling hot asphalt, wear a full-face shield and chemical safety goggles. When handling product at ambient temperatures, wear chemical splash goggles in compliance with OSHA regulations. Keep a suitable eye wash station immediately available to the work area.
- Hand Protection:** Wear leather or thick textile gloves to prevent skin contact and long-cuffed insulated gloves when handling hot asphalt. When handling product at ambient temperatures, wear chemical-resistant gloves (heavy nitrile rubber) if frequent or prolonged contact is expected.
- Skin and Body Protection:** To prevent repeated or prolonged skin contact, wear long sleeved shirts and long pants, and boots. When handling hot asphalt, wear insulated, heat-resistant clothing appropriate to withstand contact with product heated to 350°F or more (e.g., nomex or equivalent).
- Respiratory Protection:** Respiratory protection is not required under normal conditions and with adequate ventilation. If workplace exposure limit(s) of product or any component is exceeded (see Section 3), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (consult an industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.
- Other Protective Recommendations:** **Provide an eye wash station and washing facilities in areas of storage, use, handling, and loading and unloading of asphalt cement.**



## SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

<b>9.1 Physical State:</b>	Liquid
<b>9.2 Appearance:</b>	Black-brown solid or semi-solid
<b>9.3 Odor:</b>	Tar
<b>9.4 Odor Threshold:</b>	Not Available
<b>9.5 pH:</b>	Not Available
<b>9.6 Melting Point:</b>	>100 °F
<b>9.7 Boiling Point:</b>	>700 °F
<b>9.8 Flash point:</b>	>450 °F
<b>9.9 Evaporation Rate:</b>	Not Available
<b>9.10 Flammable Lower Limit:</b>	1.0 %
<b>9.11 Flammable Upper Limit</b>	6.0%
<b>9.12 Vapor Pressure:</b>	Negligible at 77°F
<b>9.13 Vapor Density:</b>	Not Available
<b>9.14 Specific Gravity:</b>	0.95 - 1.05
<b>9.15 Density:</b>	7.9 - 8.7 lbs/gal at 60°F
<b>9.16 Water Solubility:</b>	Negligible
<b>9.17 Octanol/Water Partition Coefficient:</b>	Not Available



9.18 Auto-ignition Temperature: Not Available  
9.19 Decomposition Temperature: Not Applicable  
9.20 Viscosity: Varies with temperature

**SECTION 10: STABILITY & REACTIVITY**

- 10.1 Chemical Stability:** Stable under normal storage conditions.
- 10.2 Possibility of Hazardous Reaction:** Hazardous polymerization will not occur.  
**Contact between hot asphalt and water can cause a violent eruption and splattering.**
- 10.3 Conditions to Avoid:** Excessive heat, sources of ignition, open flame, incompatible materials.
- 10.4 Incompatible Materials:** Strong oxidizers such as nitrates, chlorates, and peroxides.
- 10.5 Hazardous Decomposition Products:** Combustion produces toxic oxide vapors of carbon, sulfur, and nitrogen. Hydrogen sulfide. Styrene. Aldehydes. Temperatures exceeding 185°C for 24 hours will begin the decomposition of the polymer portion of this product.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Exposure routes:** Inhalation, Skin Contact, Eye Contact.

**Target Organs:** Skin, eyes, gastrointestinal tract. respiratory system, nervous system.

**11.1 Information on Toxicological Effects:** Toxicity data are not available for asphalt mixtures. Current data are considered insufficient for quantifying the acute and chronic health risks of exposure to asphalt or asphalt fumes and vapors. The complex chemical composition of asphalt makes it difficult to identify the specific component(s) responsible for adverse health effects observed in exposed workers.

**Acute Toxicity:** Asphalt fumes have been associated with irritation of eyes, nose, and throat, headache, and coughing. These health effects appear to be mild in severity and transient in nature. Also, lower respiratory effects have been reported.

LD50 (rat): >5000 mg/kg body weight  
LD50 (dermal): >2000 mg/kg body weight  
LD50 (inhalation, fume): >94.4 mg/m<sup>3</sup>





**Inhalation:**

Asphalt fumes may cause eye and respiratory tract irritation. Symptoms may include coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product contains H<sub>2</sub>S which may accumulate in confined spaces. Inhalation of H<sub>2</sub>S may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, fluid buildup in the lungs (pulmonary edema), which can be fatal, and acute poisoning. This product can contain a significant concentration of H<sub>2</sub>S. H<sub>2</sub>S is toxic by inhalation. Prolonged breathing of 50 to 100 ppm H<sub>2</sub>S vapors can produce eye and respiratory tract irritation. At 300 ppm, unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm, H<sub>2</sub>S may cause immediate loss of consciousness; death is rapid, and possibly immediate.

**Ingestion:**

Hot product will cause severe burns to nose, mouth, throat, and digestive tract. Ingestion of hot asphalt is unlikely. If large amounts of cold asphalt are swallowed, immediately call a physician.

**Skin:**

Exposure to hot asphalt will cause severe burns if splashed onto exposed skin. Exposure to asphalt fumes may cause dermatitis and photosensitization. Once cured, the inert semi-solid material is considered non-hazardous.

**Eye:**

Contact with hot asphalt will result in eye burns. Exposure to asphalt fumes may cause irritation, redness, swelling, pain, tearing, and blurred or hazy vision.

**Irritation/ Corrosivity:**

May cause irritation to skin, eyes and respiratory system.

**Sensitization:**

Not to be expected.

**Repeated Dose Toxicity:**

NOAEL (rat): 28 mg/m<sup>3</sup>

LOAEL (rat): 149 mg/m<sup>3</sup>

**Carcinogenicity:**

Data regarding the potential carcinogenicity of paving asphalt fumes in humans are limited. Data from studies of humans indicate that some workers exposed to asphalt fumes are at an elevated risk of lung cancer; however, it is uncertain whether this excess risk is related to asphalt or to other carcinogens in the workplace. Asphalt fumes generated at high temperatures are probably more likely to generate carcinogenic PAHs than fumes generated at lower temperatures. The International Agency for Research on Cancer [IARC] concluded that there is inadequate evidence in humans for the carcinogenicity of occupational exposures to bitumen emissions

during road paving and in experimental animals for the carcinogenicity of straight-run bitumens and fume condensates from straight-run bitumens. In 2011, The IARC rated the asphalt fumes for paving asphalt in Group 2B as possibly carcinogenic to humans.

Skin-painting studies have demonstrated that certain high temperature asphalt fume condensates can produce cancers in mice. The agent is thought to be 4 to 6 ring polycyclic aromatic hydrocarbons. These compounds have been identified in asphalt fumes generated at temperatures exceeding normal storage and application temperatures of paving asphalt.

OSHA	IARC	NTP	ACGIH
-	Group 2B: Possibly carcinogenic to humans	-	A4 - Not classifiable as a human carcinogen

**Mutagenicity:** Insufficient data available to classify as a mutagen.

**Reproductive Toxicity:** Not to be expected.

**11.2 Effects of Chronic Exposure:** Can cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can lead to skin irritation, cracking, and dermatitis. Additional studies of workers exposed to asphalt fumes or vapors are needed to better characterize exposures and to evaluate the risk of chronic disease, including lung cancer.

**Chronic Toxicity from Short-Term Exposure:**

Exposure to asphalt fumes for short periods of time can cause irritation of the eyes and upper respiratory tract (i.e., nose and throat). Irritation, if it does occur, is usually mild and temporary. Other effects sometimes reported by workers include headache, nausea, decreased appetite, fatigue, skin irritation, and acute lower respiratory tract (i.e., lungs) effects such as coughing, wheezing, and shortness of breath.

**Chronic Toxicity from Long-Term Exposure:**

Long-term exposure to hot asphalt may cause rashes and other skin conditions, possibly including skin cancers. Chronic lower respiratory tract effects such as chronic bronchitis have been reported in a few studies of workers exposed to hot asphalt, but conflicting results have been found in animal studies. Most regulatory and authoritative scientific bodies say the available data are limited and at present do not support the conclusion that long-term exposures to asphalt fumes produce these effects.

**Epidemiology:**

Pre-existing skin conditions including dermatitis might be aggravated by exposure to contact with this asphalt at ambient temperature and hot asphalt fumes.

**SECTION 12: ECOLOGICAL INFORMATION**

- 12.1 Ecotoxicity (aquatic/terrestrial):** If spilled, hot asphalt could harm plant life. This product is not expected to cause acute or chronic toxicity to aquatic organisms due to its extremely low water solubility. The material is inert when cured, and should not present an environmental hazard under normal conditions.
- 12.2 Persistence and Degradability:** Poorly biodegradable.
- 12.3 Bioaccumulation Potential:** This product is not expected to bioaccumulate through food chains in the environment.
- 12.4 Mobility in Water and Soil:** Emulsifies in water. Spills are unlikely to penetrate the soil.
- 12.5 Other Adverse Effects:** Prevent contamination of drains or waterways.

**SECTION 13: DISPOSAL INFORMATION**

- 13.1 Disposal Considerations:** This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste. This material could become a hazardous waste if mixed with or contaminated by a hazardous waste or other hazardous substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state, and local regulations.

**SECTION 14: TRANSPORT INFORMATION**

- 14.1 Transport Information:** This material when transported via U.S. commerce is regulated by DOT Regulations [49 CFR 172.101]. 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.
- 14.2 UN Number:** UN 3257
- 14.3 UN Proper Shipping Name:** Elevated temperature liquid; n.o.s.
- 14.4 Transport Hazard Class:** 9
- 14.5 Packing Group:** III
- 14.6 Marine Pollutant:** Not a DOT Marine Pollutant per 49 CFR 171.18
- 14.7 Special Precautions for User in Terms of Compliance During Transport:** This material must not be transported when heated at or above its flash point.

<b>SECTION 15: REGULATORY INFORMATION</b>
---

**15.1 Health, Safety, and Environmental Regulations Specific for the Substance/Mixture:**
**US Federal Regulatory Information:**

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

**CERCLA/Superfund:** This product is not listed as a CERCLA hazardous substance.

**EPA Superfund Amendment & Reauthorization Act [SARA]:**

**SARA Section 302:** This product does not contain components that have been listed on the EPA's Extremely Hazardous Substances [EHS] List.

**SARA Section 304:** This product does not contain components identified either as an EHS or a CERCLA hazardous substance that in case of a spill or release, may be subject to SARA reporting requirements.

**SARA Section 311/312:** This product is not classified under the SARA 311/312 Hazard Categories.

**SARA Section 313:** This product contains the following component that may be subject to reporting on the Toxic Release Inventory [TRI] Form R:

Asphalt:	= 0.1% de minimis concentration
	= 1.0 % de minimis concentration

**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.

**State Regulatory Information:**

**Hawaii Emergency Planning and Community Right-To-Know [HEPCRA].** The following component(s) of this material are identified on the regulatory lists below:

Asphalt:	Not listed
SBS Copolymer:	Not listed
Polyphosphoric Acid:	Not listed
Paraffin Wax	Not listed
Ground Rubber	Not listed
Sulfur	Not Listed

<b>SECTION 16: OTHER INFORMATION</b>
--------------------------------------

**16.1 Additional Information:**

The pronounced and easily-recognized rotten egg odor of hydrogen sulfide (H<sub>2</sub>S) gas can be detected at concentrations as low as 0.003 to 0.13 ppm. Because higher H<sub>2</sub>S concentrations (100 to 200 ppm) cause olfactory fatigue and other hydrocarbon odors can mask H<sub>2</sub>S, the sense of smell cannot be used as a reliable indicator of H<sub>2</sub>S exposure.

**Revision Date:** 6/12/2015. Revised from previous MSDS No. ESI 2009001.

**Abbreviations:**

<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists
<b>AFFF/ ATC</b>	Aqueous Film Forming Foams/Alcohol Type Concentrate
<b>AASHTO</b>	American Association of State Highway and Transportation Officials
<b>CAS No.</b>	Chemical Abstract Service number
<b>CERCLA</b>	Comprehensive, Environmental Response, Compensation and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CO</b>	Carbon Monoxide
<b>CO<sub>2</sub></b>	Carbon Dioxide
<b>CPR</b>	Cardiopulmonary Resuscitation
<b>DOT</b>	U.S. Department of Transportation
<b>EHS</b>	Extremely Hazardous Substances
<b>EPA</b>	Environmental Protection Agency
<b>°F</b>	Fahrenheit
<b>GHS</b>	Globally Harmonized System
<b>H<sub>2</sub>S</b>	Hydrogen Sulfide
<b>HEPCRA</b>	Hawaii Emergency Planning and Community Right-To-Know
<b>HNOC</b>	Hazard Not Otherwise Classified
<b>IARC</b>	International Agency for Research on Cancer
<b>IDLH</b>	Immediately Dangerous to Life and Health
<b>mg/m<sup>3</sup></b>	Miligrams per cubic meter
<b>LOAEL</b>	Lowest Observed Adverse Effect Level
<b>NFPA</b>	National Fire Protection Association
<b>NOAEL</b>	No Observed Adverse Effect Level
<b>NIOSH</b>	National Institute for Occupational Safety and Health
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Level
<b>NTP</b>	National Toxicological Program
<b>PG</b>	Performance Grade
<b>pH</b>	Negative log of hydrogen ion



<b>PPE</b>	Personal Protective Equipment
<b>ppm</b>	Parts per million
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>REL</b>	Recommended Exposure Limit
<b>SARA</b>	Superfund Amendments and Reauthorization Act
<b>SCBA</b>	Self-Contained Breathing Apparatus
<b>SBS</b>	Styrene-Butadiene-Styrene
<b>STEL</b>	Short-Term Exposure Limit
<b>UN</b>	United Nations
<b>TRI</b>	Toxic Release Inventory
<b>TSCA</b>	Toxic Substances Control Act
<b>TWA</b>	Time Weighted Average

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, Asphalt Hawaii LLC does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. Users should make their own investigations to determine the suitability of the information for their particular purposes. Asphalt Hawaii LLC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. The information contained herein is not intend to be and should not be construed as legal advice or as insuring compliance with any federal, state, or local laws or regulations. Any party using this product should review all such laws, rules, or regulations prior to use, including but not limited to U.S. Federal, State, and local laws and regulations.