



# Blue Diamond Materials

## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Asphalt Emulsion SS-1h  
Trade Names: Asphalt Emulsion SS-1h  
Common Names: Water-based asphalt emulsion, Anionic asphalt emulsion  
Manufacturer: Blue Diamond Materials  
1100 E. Orangethrope Ave., Suite 250  
Anaheim, CA 92801  
Tel: (714) 578-9600 (Monday – Friday 8:00am to 5:00pm PST)  
**For Emergency Information Call: 3E Company at 1-800-451-8346  
(24 hours / day, 7 days / week)**  
Date Issued: August 4, 2009  
Revision Number 1, General updates were made to the original MSDS.

### SECTION 2: HAZARD IDENTIFICATION

**Emergency Overview:** This product is a brown to black liquid with bland lignin color. Some sensitive individuals can have mild irritation of the eyes, skin and respiratory tract. This material may be hot (approximately 140- 170°F), and is alkaline (pH approximately 10-11). Therefore, contact with eyes and skin should be avoided. Significant airborne emissions (fumes, mists, vapors) from this product are considered unlikely under normal use and working conditions. It is not considered a carcinogen by NTP, IARC, or OSHA but does contain chemical(s) known to the State of California to cause cancer.

NFPA Classification: Health: 2 Fire: 1 Reactivity: 0 Other: None

**Primary Routes of Entry:** Eyes, skin, inhalation.

**Primary Target Organs:** Respiratory system and skin.

#### Potential Health Effects:

**Inhalation:** Emissions from the heated material may have unpleasant odor. Toxic hydrogen sulfide gas may be released. Do not depend upon sense of smell for warning of overexposure. Since the gas causes rapid olfactory fatigue which deadens the sense of smell at levels as low as 50 ppm. Unconsciousness and asphyxiation may occur in poorly ventilated or confined spaces.

**Skin Contact:** May produce irritation and/or chemical (alkali) burns. Direct contact with hot material can cause severe thermal burns. There may be an increased sensitivity to the sun (photosensitization) when the skin is exposed to petroleum asphalt emissions (fumes, vapors or mists). May scratch the skin causing irritation.

**Eye Contact:** Working in close proximity to product has been reported to cause mild irritation of the eyes of sensitive individuals.

**Ingestion:** Not Applicable.

#### Signs and Symptoms of Exposure:



**Eyes:** Tearing, redness or a stinging sensation.

**Skin:** Redness, an itching or burning sensation, and/or swelling of the skin. Repeated or prolonged exposure may cause skin disorders such as dermatitis (reddening, itching, cracking, inflammation), folliculitis, acne-like lesions, bronchitis, pneumonitis (inflammation of the lungs), reduced appetite, abnormal fatigue.

**Inhalation:** Moderate to severe irritation of the mucous membranes and upper respiratory tract, headaches, nausea and dizziness.

**Medical Conditions Generally Aggravated by Exposure:** Existing abnormal conditions of the skin and/or respiratory tract may be aggravated by exposure to hot mix asphalt by some individuals.

**Carcinogenicity:** This product is not on the NTP, IARC, or OSHA list of carcinogens. This product contains chemical(s) known to the state of California to cause cancer (Proposition 65).

### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name, Chemical Compound	CAS Number	Typical % By Weight
Asphalt	8052-42-4	<10%
Water	7732-18-5	36-45%
Alkaline Emulsifying Agent (Natural Fatty Acids Soap or Lignin Soap)	Mixture	1-5%

### SECTION 4: FIRST AID MEASURES

**Eyes:** Immediately flush eye(s) with plenty of water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid (s) to ensure thorough rinsing. Beyond flushing; do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops. Thermal burns require immediate medical attention.

**Inhalation:** Remove to fresh air. Get prompt medical attention if breathing is difficult.

**Skin:** If hot, molten material contacts skin, immerse asphalt covered skin in cool water until material cools and hardens for at least 15 minutes. Asphaltic concrete contains rock and aggregate which may retain heat for extended periods of time. Do not remove rocks because this may result in further injury. When clothing becomes contaminated with asphalt, quickly remove the contaminated clothing. Do not attempt to brush off material with exposed hands as this may result in further injury.

#### DO NOT DELAY

**DO NOT ATTEMPT TO REMOVE THE ASPHALT** with products containing solvents or ammonia. Natural separation will occur in about 48-72 hours. If necessary, for early removal, soak bandage in mineral oil and place over affected area for 2 to 3 hours.

**USE ANY AVAILABLE WATER THAT IS COOLER THAN BODY TEMPERATURE TO COOL THE ASPHALT AND AFFECTED PARTS OF THE BODY IMMEDIATELY.**

Methods of cooling (in order of preference):

- Submerge affected area in ice water;
- Completely submerge affected area in tap water; and
- Place affected area under running water.

Once the asphalt is being cooled with water, then call a physician. Do not attempt to

remove solidified product because removal may cause further tissue injury. Leave cooled asphalt on affected area.

- Do not use solvents or thinners to remove product from skin.
- Do not apply ice directly to affected area.
- Seek medical attention for extensive burns.

**For Minor Asphalt Cement Burns:** Follow the above procedure to treat minor burns. Medical treatment should be sought if there is injury to the head, face, or extremities; injury when large amounts of asphalt cement are involved or in the evidence of nausea or faintness.

### **Treatment for Shock**

In the event shock occurs, do the following:

- Keep victim lying down and quiet;
- Keep victim covered with a blanket to keep body temperature at normal 98.6°F.
- Keep victim's head lower than feet to promote blood supply to head and chest.

**\*\*\*Note to Physicians\*\*\*** Cooled asphalt may adhere so tenaciously to the skin that attempted removal may cause severe distress to patient. Covering the affected area using commercially available preparations containing the emulsifying agent polysorbate 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.

## **SECTION 5: FIRE FIGHTING MEASURES**

**Flashpoint:** Product: Not available Asphalt: 375°F (min). COC Method

**Flammable Limits:** None Available

**Extinguishing Media:** CO<sub>2</sub>, Dry Chemical, Foam

**Special Fire Fighting Procedures:** Dry chemical or foam preferred. Water fog may be used on flat surfaces such as roads. Use water spray to keep fire-exposed containers cool. Adding water to hot asphalt presents an explosion hazard. Follow established confined entry procedures/precautions. (NFPA 1500/OSHA 29 CFR 1910.146).

**Unusual Fire and Explosion Hazards:** Do not heat above flash point of asphalt cement component.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Spills:** Use shovels or other equipment to clean up debris and place in acceptable containers for recycle or disposal. Use effective housekeeping to prevent HMA materials from entering streams, drainage or sewer. See personal protective equipment (PPE) specified in SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION.

**Waste Disposal Methods:** This product is not a hazardous waste and should be disposed of in accordance with federal, state and local regulations. See SECTION 13.

## **SECTION 7: HANDLING AND STORAGE**

**Precautions During Handling and Use:** Use control measures and appropriate PPE as discussed in SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION. Use caution when handling hot material and avoid contact with skin. Wash clothing that has come in contact with asphalt. Follow confined space regulations for entry into areas



qualifying as confined space under OSHA 29 CFR 1910.147. Avoid contact with eyes.

**Storage Requirements:** Do not store near food and beverages or smoking materials.

**Special Sensitivity or Incompatibility:** None. See SECTION 10: STABILITY AND REACTIVITY.

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering and Administrative Controls:** Use general dilution and local exhaust ventilation as required to maintain exposure below appropriate exposure limits. A fresh water supply should be available for first aid and washing facilities should be readily available. A safe oil-dissolving skin cleanser and cold packs should be available.

Tripping accidents sometimes occur due to build-up of HMA on the bottom of shoes and boots. Frequent removal of the buildup can assist in the prevention of accidents. Do not use solvents or thinners to clean footwear.

**Respiratory Protection:** Respiratory protection is not normally required under normal use and working conditions because of low exposures and use of engineering controls. In the unlikely event that air contaminant concentrations exceed, or will likely exceed, applicable TLV's, use NIOSH approved purifying respirator or positive pressure self-contained breathing apparatus. Follow all respirator use standards and regulations including OSHA 29 CFR 1910.134.

**Eye Protection:** Wear safety glasses with side shields that comply with ANSI Standard 287.1 as minimal protection when eye exposure to airborne particles exists.

**Skin Protection:** Non-synthetic long pants and appropriate boots should be used to prevent burns. When the handling of HMA increases the likelihood of burns to the hands, arms or face then protective gloves, non-synthetic long-sleeved shirts and/or a face shield may be required.

**Hygiene:** Normal hygiene practices are recommended.

**Ventilation:** Use general dilution and local exhaust ventilation as required to maintain exposure below appropriate exposure limits. Consult NIOSH Engineering Control Guidelines for more information on engineering controls for pavers.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (at 1 atm):	100 °C
Specific Gravity (H <sub>2</sub> O = 1):	1.0-1.1 @ 60°F
Vapor Pressure (at 300°F):	Not available
% Volatility by Volume at 68°F:	None
Solubility in Water:	Appreciable
Appearance:	Brown to black liquid with bland lignin color
Odor:	Slight petroleum odor
Taste:	None

### SECTION 10: STABILITY AND REACTIVITY

Stability: Stable



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

Hazardous Polymerization: Will not occur.

Hazardous Decomposition: Silica-containing dust particles may be produced by recycle operations and other destructive operations.

## SECTION 11: TOXICOLOGICAL INFORMATION

Asphalt (Bitumen) Fumes

OSHA TLV = 5 mg/m<sup>3</sup>

ACGIH TLV= .5 mg/m<sup>3</sup>

### ACUTE TOXICITY:

Hot mix asphalt is typically at temperatures in the range of 280-325 °F which can cause severe thermal burns. Working in close proximity to the product has been reported to cause mild irritation of the eyes, skin, and respiratory tract of some sensitive individuals. American Journal of Industrial Medicine 20:737-744 (1991).

A more recent study of acute effects relating to petroleum asphalt fume exposure concluded, "There were no practically significant findings from these data to relate any of the symptoms to any of the measure exposure to asphalt fumes with the use of any of the statistical methods." (Gamble, Scand. J. Work Environ Health 1999, vol. 25, no. 3, p. 202).

### CHRONIC TOXICITY:

Petroleum-derived asphalt products should not be confused with "tar" products, which are derived from coal.

**California Proposition 65:** This product contains chemical(s) known to the State of California to cause cancer.

Recycling processing operations and other destructive operations to HMA pavements may create respirable dust. This dust may contain trace amounts of crystalline silica which has been designated by OSHA as a cause of silicosis. While engineering controls are typically applied at the point of destruction, prudence is called for. For respirable quartz levels that exceed, or are likely to exceed an 8-hour TWA of 0.1mg/m<sup>3</sup>, the appropriate NIOSH/Mine Safety and Health Administration (MSHA) approved air-purifying respirator must be worn (NIOSH Guide to Industrial Respiratory Protection, NIOSH (1982a), Pub. No. 87-116). If respirable levels exceed, or are likely to exceed an 8-hour TWA of 5 mg/m<sup>3</sup>, a NIOSH/MSHA approved, positive pressure, full-face respirator is required. Respirator use must comply with applicable OSHA standards. Including 29 CFR 1910.134 and 1926.103.

## SECTION 12: ECOLOGICAL INFORMATION

This product is not known to be ecotoxic (i.e. there is no data which suggests that this product is toxic to birds, fish, invertebrates, microorganisms or plants).

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Methods:** Avoid skin contact with heated materials. Recycle materials as appropriate. Materials should be disposed of according to all applicable federal, state, and local laws and regulations.

## SECTION 14: TRANSPORT INFORMATION



**US DOT Shipping Name:** Not Regulated **DOT LABEL:** None **UN/NA Number:** None

This product not listed as a hazardous substance by U.S. Department of Transportation. Label as required by the OSHA Hazard Communication Standard [29 CFR 1910.1200 (f)] and applicable state and local laws and regulations.

**SECTION 15: REGULATORY INFORMATION**

**OSHA Regulatory Status:** Respirable crystalline silica is an OSHA carcinogen.

**TSCA/CEPA Status:** Components of this product is included in the TSCA and CEPA Chemical Inventories.

**CERCLA:** N/A

**RCRA:** N/A

**NTP:** N/A

**California Proposition 65:** This product contains chemical(s) known to the state of California to cause cancer.

**SARA Title III:**

**Section 302 Extremely Hazardous:** N/A

**Section 311/312 Hazard Categories:** Reportable as a hazardous substance. Check with your Local Emergency Planning Committee for reportable quantities.

**Section 313 Toxic Chemicals:** N/A

**SECTION 16: DISCLAIMER**

Blue Diamond Materials believes the information contained herein is accurate; however, Blue Diamond Materials Co. makes no guarantees with respect to such accuracy and assumes no liability in connection with the use of the information contained herein by any party. The provision of the information contained herein is not intended to be and should not be construed as legal advice or as ensuring compliance with any federal, state, local laws and regulations. Any party using this product should review all such laws, rules or regulations prior to use.

**No warranty is made, express or implied, of merchantability, fitness for particular purpose or otherwise.**

**SECTION 17: OTHER INFORMATION**

**Acronyms:**

ACGIH	American Conference of Governmental Industrial Hygienists	N/A	Not Applicable
ANSI	American National Standards Institute	NFPA	National Fire Protection Association
atm	atmospheres	NIOSH	National Institute for Occupational Safety and Health
CAS	Chemical Abstract Service	NTP	National Toxicology Program
CEPA	Canadian Environmental Protection Act	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	PPE	Personal Protective Equipment
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery



HMA	Hot Mix Asphalt	SARA	Act Superfund Amendments and Reauthorization Act
DOT	Department of Transportation	TLV	Threshold Limit Value
IARC	International Agency for Research on Cancer	TSCA	Toxic Substance Control Act
mmHg	Millimeters Mercury	TWA	Time Weighted Average (8 hour)
MSDS	Material Safety Data Sheet	UN/NA	United Nations/North America Hazardous Materials Code
MSHA	Mine Safety and Health Administration		