

# EXHIBIT B



Asphalt Emulsions for chip seal

## Asphalt Materials, Inc.

MWS-60, MWS-90, MWS-150, MWS-300, MWS-90 Modified, AES

SDS Number: AMI-217

Revision Date:

Page 1 of 5

1	<b>PRODUCT AND COMPANY IDENTIFICATION</b>
---	---

**Manufacturer**

Asphalt Materials, Inc.  
5400 West 86th Street  
Indianapolis, Indiana 46268

**Vendor**

Asphalt Materials, Inc.  
5400 West 86th Street  
Indianapolis, Indiana 46268

**Emergency:** CHEMTREC: 800-424-9300  
**Contact:** Douglas Lozier  
**Phone:** 317-872-6010  
**Fax:** 317-875-4673  
**Email:** doug.lozier@asphalt-materials.com  
**Web:** www.asphalt-materials.com

**Emergency:** CHEMTREC: 800-424-9300  
**Contact:** Douglas Lozier  
**Phone:** 317-872-6010  
**Fax:** 317-875-4673  
**Email:** doug.lozier@asphalt-materials.com  
**Web:** www.asphalt-materials.com

**Product Name:** MWS-60, MWS-90, MWS-150, MWS-300, MWS-90 Modified, AES  
**SDS Number:** AMI-217  
**Common Name:** Asphalt Emulsion Anionic  
**CAS Number:** Mixture  
**Chemical Family:** Emulsified complex petroleum hydrocarbon and water  
**Synonyms:** Anionic Asphalt Emulsion, Emulsified Asphalt  
**Product Use:** Highway Paving Applications and Mixtures

2	<b>HAZARDS IDENTIFICATION</b>
---	-------------------------------

**Classification of the substance or mixture**

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Acute toxicity, 5 Dermal  
Health, Serious Eye Damage/Eye Irritation, 2 B

**GHS Label elements, including precautionary statements**

GHS Signal Word: WARNING

GHS Hazard Pictograms:

no GHS pictograms indicated for this product

GHS Hazard Statements:

H313 - May be harmful in contact with skin  
H320 - Causes eye irritation

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

**Hazards not otherwise classified (HNOC) or not covered by GHS**

**Inhalation:** Breathing vapors, fumes, or mists may cause irritation to nasal and respiratory tract and central nervous system effects. Symptoms may include labored breathing, sore throat, coughing, wheezing, headache, and nausea.

**Skin Contact:** Contact with hot emulsified asphalt can cause minor thermal burns. Prolonged exposure to vapors, fumes, or mists may cause irritation and redness.

**Eye Contact:** Contact with hot emulsified asphalt can cause thermal burns to the eyes. Prolonged exposure to vapors, fumes, or mists may cause irritation, redness, and tearing.

**Ingestion:** Ingestion is not likely. Ingestion may cause thermal burns. If ingestion of molten material occurs, keep victim's head below their hips to prevent asphalt from reaching the lungs. Take victim to obtain medical assistance immediately.





# Asphalt Materials, Inc.

**MWS-60, MWS-90, MWS-150, MWS-300, MWS-90 Modified, AES**

SDS Number: AMI-217

Revision Date:

Page 2 of 5

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients:

Cas#	%	Chemical Name
8052-42-4	55-75%	Asphalt (typical)
0	<2%	Antistrip Adhesion Promoter, Proprietary
65997-01-5	1-5%	Tall oil, sodium salt
7732-18-5	25-45%	Water
68476-30-2	<25%	Fuel oil no. 2

Asphalt: Asphalt is a complex mixture of high molecular weight hydrocarbons produced from crude petroleum. Composition varies depending on the source of the crude and the specifications of the final product.

ACGIH: The American Conference of Governmental Industrial Hygienists recommends an exposure limit of 0.5 mg/m<sup>3</sup> as benzene-extractable inhalable particulate (or equivalent method) to avoid irritation of the conjunctive mucous membranes. Historical information on exposure of asphalt workers used methods different than those recommended by ACGIH, so comparisons to the recommended exposure limits are not known.

## 4 FIRST AID MEASURES

- Inhalation:** If irritation occurs from inhalation overexposure, immediately remove victim from source to fresh air and seek medical attention.
- Skin Contact:** Hot Emulsified Material: Cool the affected body parts immediately by submerging in cold water until the material has cooled. Do not attempt to remove solidified material from burn area as this may further tissue damage. Take the victim to obtain medical assistance immediately.
- Cold Emulsified Material: Remove cold emulsified asphalt by soaking dressing in mineral oil and place over affected area for 2-3 hours. If irritation occurs, call a physician.
- Eye Contact:** Never try to remove material with solvents. Gently flush immediately with cold water for 15 minutes. Do not attempt to remove solidified material from the eye, as this may further injury. Take victim to obtain medical assistance.
- Ingestion:** Ingestion is not likely. If large amounts are swallowed, do not induce vomiting and immediately call a physician.

## 5 FIRE FIGHTING MEASURES

- Flash Point:** Not Applicable
- Autoignition Temp:** >400°F
- LEL:** Not Applicable
- UEL:** Not Applicable
- Extinguishing Media:** Foam, Carbon Dioxide, Dry Chemical, and water spray may all be suitable in extinguishing fires involving this product.
- Fire Fighting Instructions:** Avoid water streams to prevent frothing. Use water spray to cool exposed surfaces.

## 6 ACCIDENTAL RELEASE MEASURES

Stop source of leak if safe to do so. Eliminate sources of ignition. Contain by diking or impounding. Absorbents can be used to contain small spills. After containment, emulsified asphalt can be collected for disposal. Advise authorities if product has entered a drainage sewer or a water source. Assure conformity with local, state, and federal government regulations for disposal.





# Asphalt Materials, Inc.

MWS-60, MWS-90, MWS-150, MWS-300, MWS-90 Modified, AES

SDS Number: AMI-217

Revision Date:

Page 3 of 5

## 7 HANDLING AND STORAGE

### Handling Precautions:

When opening covers and outlet caps on storage tanks, monitor the vapor space for hydrogen sulfide levels. Use faceshield and gloves to avoid possible injury from pressurized asphalt. Long sleeved shirts and pants should be worn to minimize thermal burns. Stay upwind and vent storage tanks before unloading. Keep heating units and flues in storage tanks covered with at least 12 inches of asphalt. Do not overheat.

Empty Container Warning: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY BURN OR EXPLODE AND CAUSE INJURY OR DEATH.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Controls:

Local or general exhaust required if in an enclosed area to remain below the TLV. If workplace exposure limits are exceeded, a NIOSH/MSHA-approved air-supplied respirator is advised in the absence of proper environmental engineering controls.

### Personal Protective Equipment:

Eye and Face Protection: Safety glasses or chemical splash goggles with faceshield if splashing is anticipated.

Skin Protection: Oil-impervious gloves, such as Neoprene, if frequent or prolonged contact is expected. Long-sleeve shirts and long pants should be worn at all times around asphalt to prevent thermal burns.

Respiratory Protection: Respiratory protection is not normally required under normal conditions and adequate ventilation. If high vapors are expected, use a respirator approved for organic vapors. Observe respirator protection factor criteria cited in ANSI Z88.2 (1980) and other OSHA requirements found in 29 CFR 1910.134. Use air-supplied respirators or self-contained breathing apparatus for fire fighting and in confined spaces when asphalt vapor or Hydrogen Sulfide gas exceeds permissible limits.

Work/Hygienic Practices: Skin contact and the breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects. Thoroughly wash exposed skin areas after work to avoid dermatitis. Consider the use of lanolin skin treatments before handling or working around asphalt mixtures.

Other Protection: Wear body-covering clothes to avoid prolonged or repeated exposure. Launder before reuse.

### PETROLEUM ASPHALT:

OSHA PEL: Not established for this material.  
ACGIH TLV: 0.5 mg/m<sup>3</sup> as benzene-extractable inhalable particulate (or equivalent method)  
NIOSH REL: 5.0 mg/m<sup>3</sup> as a 15-minute ceiling limit measured as total particulates.

### ANTISTRIP ADHESION PROMOTER, Proprietary:

OSHA PEL: Not established for this material.

### TALL OIL SODIUM SALT:

OSHA PEL: Not established for this material.

### No. 2 FUEL OIL:

OSHA PEL: Not established for this material.



# Asphalt Materials, Inc.

**MWS-60, MWS-90, MWS-150, MWS-300, MWS-90 Modified, AES**

SDS Number: AMI-217

Revision Date:

Page 4 of 5

## 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Brown Liquid	Odor:	Characteristic asphalt odor
Physical State:	Liquid	Solubility:	Completely
Spec Grav./Density:	0.92 - 1.05	Flash Point:	Not Applicable
Boiling Point:	212°F	Vapor Density:	>1.0
Flammability:	Aqueous, Non-Flammable	Auto-Ignition Temp:	>400°F
Vapor Pressure:	1.9 E-9 psia	UFL/LFL:	Not Applicable
pH:	7 - 11		
Molecular weight:	280		

## 10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Contact with oxidizers
Materials to Avoid:	Strong Oxidizing Agents.
Hazardous Decomposition:	Fumes, smoke, carbon monoxide, hydrogen sulfide, aldehydes, and hydrocarbons.
Hazardous Polymerization:	Will not occur.

## 11 TOXICOLOGICAL INFORMATION

### International Agency for Research on Cancer Ruling

#### Occupational exposures to straight-run bitumens and their emissions during road paving:

On the basis of an earlier meta-analysis, the IARC multi-center study and several more recent independent studies, the Working Group concluded that there was inadequate evidence in humans for the carcinogenicity of occupational exposures during road paving with straight-run bitumens. Also, there was inadequate evidence in experimental animals for the carcinogenicity of extracts and of fume condensates of this type of bitumens. However, studies of workers exposed to bitumen emissions during paving with straight-run bitumens showed mutagenic and genotoxic/cytogenetic effects in these workers. Similar effects were also observed in experimental systems under controlled conditions. This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as "possibly carcinogenic to humans" (Group 2B).

#### Health Hazard Characterization:

Uncertainties exist in the hazard characterization of asphalt fumes by many factors including its chemical complexity, limitation of the information, the inclusion of coal tar in asphalts in past decades, other confounders and mixed results of human studies. Concise International Chemical Assessment Documents relating to asphalt and fumes can be obtained on the internet at <http://linchem.org/documents/cicads/cicads/cicad59.htm>. Despite conflicting reports, the following bullet points should be noted:

- Currently classified as A4 (not classifiable as a human carcinogen). Asphalt Coal Tar Free
- Breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects.
- Asphalt and asphalt fumes contain trace levels of polynuclear aromatic hydrocarbons that are known carcinogens.
- Chronic health effects would not be expected as long as good hygiene and proper safety precautions are practiced and exposures are less than the TLVs/RELs.
- After using material or being around fumes, wash exposed areas thoroughly with soap and water. Showering immediately after work is a good personal hygiene practiced.

#### No. 2 FUEL OIL:

Lifetime skin painting studies in animals with similar distillate fuels have produced weak carcinogenic activity following prolonged and repeated exposure. Repeated dermal application has produced severe irritation and systematic toxicity in subacute toxicity studies. Some components of distillate fuels, i.e., paraffins and olefins, have been shown to produce a species-specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Jet fuel and No. 1 fuel oil were found to be positive in a few mutagenicity tests while negative in the majority of others. The exact relationship between these results and human health is not known. Chronic human health effects would not be expected as long as good personal hygiene and proper safety precautions are practiced.





# Asphalt Materials, Inc.

**MWS-60, MWS-90, MWS-150, MWS-300, MWS-90 Modified, AES**

SDS Number: AMI-217

Revision Date:

Page 5 of 5

## 12 ECOLOGICAL INFORMATION

May cause fouling of water. May be toxic to aquatic animals. Once solidified, this product will no longer exhibit these characteristics.

## 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. After cooling, waste or contaminated asphalt mixtures may be scooped and stockpiled for later recycling into asphalt pavement mixtures, pugmilled into cold mix, or disposed in an approved special waste, industrial waste, or construction debris landfill.

### RCRA Information:

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261). Along with properly characterizing all waste materials, consult state and local regulations regarding proper disposal of this material.

## 14 TRANSPORT INFORMATION

This product as produced and shipped is not considered a hazardous material by the U.S. Department of Transportation.

## 15 REGULATORY INFORMATION

### Component (CAS#) [%] - CODES

Asphalt (typical) (8052-42-4) [55-75%] MASS, NRC, PA, TSCA, TXAIR

Antistrip Adhesion Promoter, Proprietary (0) [<2%]

Tall oil, sodium salt (65997-01-5) [1-5%] TSCA

Water (7732-18-5) [25-45%] TSCA

Fuel oil no. 2 (68476-30-2) [<25%] TSCA

### Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List

NRC = Nationally Recognized Carcinogens

PA = PA Right-To-Know List of Hazardous Substances

TSCA = Toxic Substances Control Act

TXAIR = TX Air Contaminants with Health Effects Screening Level

## 16 OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Asphalt Materials, Inc.