

Section 1 – Identification

PRODUCT: Hot Mix Asphalt and Warm Mix Asphalt (all course and grade types)

SYNONYMS: HMA, WMA, TEMPERA®, asphalt concrete

RECOMMENDED USE(S): Paving material for roadways, parking lots, walkways, pathways, sports surfaces (e.g. - tennis courts.)

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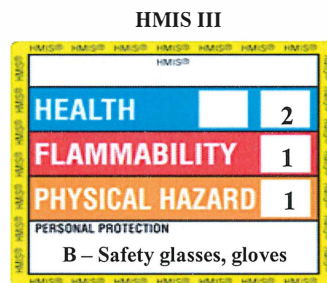
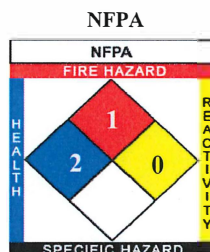
Section 2 – Hazards Identification

Globally Harmonized System (GHS) Classification(s):

- Carcinogenicity: Category 2
- Serious Eye Damage/Eye Irritation (hot material): Category 2
- Aquatic Toxicity (chronic): Category 4
- Skin Corrosion/Skin Irritation (hot material): Category 2
- Specific Target Organ Toxicity – Single Exposure: Category 3



WARNING



Scale for NFPA (USA) and HMIS III (USA) ratings:
0=Least, 1=Slight, 2=Moderate, 3=High, 4=Extreme

Hazard statement(s):

- Causes skin irritation.
- Causes serious eye irritation.
- May cause respiratory irritation.
- Possibly carcinogenic to humans (see *Section 11 – Toxicological Information* for more information).
- May cause long lasting harmful effects to aquatic life (see *Section 12 – Ecological Information* for more information).

Precautionary statement(s):

- Do not handle until all safety precautions have been read and understood.
- Eye Contact: Hot material can cause thermal burns to the eye. Avoid direct contact with hot material.
- Skin Contact: Hot material can cause thermal burns to the skin. Avoid direct contact with hot material.
- Inhalation: Do not breathe dust, fumes, mists, vapors or spray.
- Ingestion: Contact with hot material may cause thermal burns.
- Wear appropriate personal protective equipment (PPE) when handling (see *Section 8 – Exposure Controls/Personal Protection* for more information).
- Other Health Warnings: Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists, or fumes should be minimized.

Section 3 – Composition/information on ingredients:

Mixture Components:

<u>Common Name</u>	<u>CAS Number</u>	<u>Concentration</u>
Asphalt (bitumen)	8052-42-4	2-10%
Aggregate (crushed stone, sand, gravel)	None	90-98%
Silica, crystalline (as respirable dust in aggregate)	14808-60-7	0-1%

The exact formulation of Blythe Construction's HMA and WMA mixtures is proprietary and considered a trade secret.

Trace elements: Hot Mix Asphalt and Warm Mix Asphalt are made from materials mined from the earth and are processed using energy provided by fuels. Trace amounts of naturally occurring, potentially harmful chemicals might be detected during chemical analysis.

Section 4 – First Aid Measures

Emergency and First Aid Procedures:

- Eyes: Gently flush with cool water for 15 minutes. DO NOT attempt to remove any material from eye(s). Obtain medical treatment immediately.
- Skin: Remove contaminated clothing and immediately flush in cool water for at least 15 minutes. If burns are present, DO NOT attempt to remove material from the burned area. Seek medical treatment immediately.
- Inhalation: Remove victim from exposure. Obtain medical treatment immediately.
- Ingestion: If swallowed, DO NOT induce vomiting; Obtain medical treatment immediately.

Section 5 – Firefighting Measures

- Extinguishing Media: Agents approved for Class B hazards.
- NFPA Class IIIB combustible material (liquid asphalt component).
- Hazardous chemical code: none allocated.
- Special Firefighting Procedures: None.
- Unusual Fire and Explosion Hazards: Volatile components can burn when supplied with an ignition source. Concentrated vapors can explode.

Section 6 – Accidental Release Measures

Clean up Procedures

- Wear appropriate PPE (safety glasses, gloves). Use any additional PPE as your existing conditions dictate.
- Avoid personal contact with heated material.
- Keep all ignition sources at least 50 feet away.
- Keep product from entering sewers and waterways.
- Advise applicable authorities (NRC/EPA/DNR/etc.) if spilled product enters sewers or waterways and causes a sheen.
- Notify applicable emergency personnel as necessary.
- Contact local authorities for regulations regarding disposal requirements.

Section 7 – Handling and Storage

- Wear appropriate PPE when handling (safety glasses, gloves). Avoid contact with skin, eyes or clothing.
- Respirable dust may be generated when hardened Hot Mix Asphalt is subjected to mechanical forces, such as in demolition work, surface treatment and recycling of pavement. Consult an industrial hygienist for evaluation of exposures in determining the selection of the correct NIOSH approved respiratory protection for your work environment.
- Keep this product from exposure to ignition sources and strong oxidizing agents.
- Observe good personal hygiene, including washing hands before eating, drinking or smoking. Prohibit eating, drinking or smoking in handling and storage areas.
- Do not expose this product to heat sources that exceed the flash point (see *Section 9 – Physical and Chemical Properties* for flash point information).

Section 8 – Exposure Controls/Personal Protection

- Asphalt: ACGIH TLV (United States) - TWA 0.5mg/ m³ for 8 hours.
- Asphalt (fumes): NIOSH - 5 mg/m³ (15 minutes); OSHA PEL - none
- Aggregate: ACGIH TLV - 10 mg/m³ (total) and 3 mg/m³ (respirable); OSHA PEL - 15 mg/m³ (total) and 5 mg/m³ (respirable).
- Crystalline silica: ACGIH TLV - 0.025 mg/m³ (respirable quartz and cristobalite); OSHA PEL - 10 mg/m³ / %SiO₂ +2 (as respirable quartz); NIOSH REL - TWA 0.05 mg/m³ (respirable silica).
- Use only in well ventilated areas. Natural ventilation is generally adequate to maintain exposure below the applicable exposure limits under anticipated use conditions.
- Respiratory Protection: Not required under normal conditions and adequate ventilation. If working conditions dictate, use NIOSH-approved contaminate specific air-purifying respirator suitable for dusts, fumes, and mists.
- Eye protection: Safety glasses with side shields or safety goggles can prevent eye contact when handling hot material.
- Protective Gloves: Insulated gloves for handling of hot material; Cloth or similar gloves for cooler material.
- Other Protective Clothing: Standard work clothing; shirts with long sleeves, pants. Use any other necessary PPE when work conditions dictate.
- General Hygiene Practices: Wash hands and other exposed areas of skin with mild soap and water before eating, drinking, smoking, use of restroom facilities, or leaving work. Clean exposed skin with oil dissolving skin cleaner. Do not use gasoline, kerosene, solvents, or other harsh abrasive skin cleaners. Launder work clothes after use.

Section 9 – Physical and Chemical Properties

- Appearance: Black coarse material
- Odor: Characteristic petroleum asphalt odor
- Odor Threshold: Not established
- pH: Not established
- Melting point/freezing point: Not established
- Initial boiling point / boiling range: 350°F (177°C) and above (liquid asphalt component)
- Flash point: Greater than 400°F (200°C)
- Evaporation rate: Not established
- Flammability: Liquid hydrocarbon component (asphalt) is combustible
- Upper Explosion Limit: Not applicable
- Lower Explosion Limit: Not applicable
- Vapor pressure: (mm Hg): Not applicable
- Vapor density: Not established
- Relative density: Specific Gravity range at 77°F (25°C) where water = 1: 2.250 – 2.750
- Solubility: Insoluble
- Partition coefficient (n-octanol/water): Not established
- Auto-ignition temperature: Not established
- Decomposition temperature: Not established
- Viscosity: Not applicable
- Other information: No additional relevant information

Section 10 – Stability and Reactivity

Reactivity:

- Avoid extreme heating of this product (above flash point of 400°F, or 200°C).
- Strong oxidizers may react with hydrocarbons.
- Silica can react violently with strong oxidizing agents such as fluorine, trifluorides (e.g. - boron, chlorine, and manganese), oxygen difluoride and hydrogen peroxide yielding possible fire and/or explosions.
- Hot liquid asphalt (above 230°F, or 110°C) in contact with water can cause a sudden evolution of steam, which could cause pressure buildup and possibly rupture a tank or vessel.

Stability:

- This product is stable in normal usage and storage conditions at recommended or environmental temperatures

Other information:

- Thermal decomposition or burning may release oxides of carbon, oxides of nitrogen, oxides of sulfur, and other toxic gases or vapors.

Section 11 – Toxicological Information

- Major Route(s) of Entry: Skin, Eyes, Ingestion
- May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. Effects may become more serious with repeated or prolonged contact. Skin contact may cause harmful effects in other parts of the body.
- Asphalt: Oral (LD50): Acute >5000mg/kg [Rat], Dermal (LD50): Acute >2000mg/kg [Rabbit]
- Water: Oral LD₅₀: Acute: 42,900 m/kg [Human]
- Asphalt fumes may cause eye irritation with tearing, redness, stinging or a burning feeling. Effects may become more serious with repeated or prolonged contact.
- Ingestion of heated material can produce thermal burns on contacted tissues. Petroleum asphalt has a low toxicity when ingested. However, petroleum distillates 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.
- Once cured, this inert mixture is considered non-hazardous. However, breathing fumes caused by heating of the cured product can irritate the mucous membranes of the nose, throat, bronchi, and lungs.
- Petroleum asphalt emissions (fumes and vapors) may produce nausea and irritation of the upper respiratory tract. Elevated concentrations of thermal decomposition products may result in various health effects, including respiratory irritation (nitrogen oxides, sulfur oxides, hydrogen sulfide, hydrocarbons), CNS depression (hydrocarbons), and chemical asphyxiation (carbon monoxide, hydrogen sulfide). Systemic effects associated with trace components (less than 1%) are not anticipated during normal use.
- Medical Conditions Aggravated By Exposure: Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin, Eyes, Respiratory Tract
- Other Health Warnings: Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists, or fumes should be minimized.

Carcinogenic Categories:

- NTP (National Toxicology Program): This mixture is not listed.
- OSHA: 29 CFR 1910, Subpart Z – Toxic and Hazardous Substances: This mixture is not listed.
- IARC (International Agency for Research on Cancer): IARC Group 2B. See IARC Monographs Volume 103, Bitumens and Bitumen Emulsions, and Some N- and S- Heterocyclic Polycyclic Aromatic Hydrocarbons. IARC also lists crystalline silica and 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.
- California Office of Environmental Health Hazard Assessment (OEHHA), Proposition 65: asphalt (bitumen) ingredient(s) listed, crystalline silica listed.

Section 12– Ecological Information

- Aquatic toxicity: If spilled, this product and any contaminated water may be harmful to aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.
- Persistence and degradability: This product is estimated to have a slow rate of biodegradation.
- Bioaccumulation potential: This product is not expected to bioaccumulate through food chains in the environment.
- Mobility in soil: Spillages are unlikely to penetrate soil. Once cured, no leaching from soil to groundwater should occur.
- Do not directly introduce this product into ground water, water course, storm drains and sewage systems.

Section 13 – Disposal Considerations

- This product can be recycled through milling and crushing into RAP (recycled asphalt pavement).
- Maintain all product and components within specified containment areas until disposal.
- Keep any run off product from entering sewers and waterways via diking or containment barriers/channels.
- To minimize exposure, refer to Section 8 of this document (Exposure Controls/Personal Protection) for more information.
- Dispose of this product in accordance with all of your local regulations and guidelines. Contact your local authorities for information on the requirements and regulations in your area.

Section 14 – Transportation Information

THIS PRODUCT IS NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	Land Transport (ADG)	Sea Transport (IMDG / IMO)	Air Transport (IATA / ICAO)
UN Number	None Allocated	None Allocated	None Allocated
Proper Shipping Name	None Allocated	None Allocated	None Allocated
Transport Hazard Class	None Allocated	None Allocated	None Allocated
Packing Group	None Allocated	None Allocated	None Allocated

- o Environmental hazard(s) – marine pollutant: Refer to Section 12 – Ecological Information (aquatic toxicity).
- o United States Department of Transportation (US DOT): Non-regulated material
- o Bulk transportation guidance: No further relevant information available.
- o Special precautions: No further relevant information is available.

Section 15 – Regulatory Information

United States Environmental Protection Agency (EPA), Toxics Release Inventory (TRI) Chemicals, RY 2013:

- o Ingredient components in this product are on the Toxic Substances Control Act (TSCA) TRI Chemicals list.

Superfund Amendments and Reauthorization Act of 1986 (SARA):

- o SARA 302/304: SARA Title III requires facilities subject to subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQ's) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. This mixture is not listed in 40 CFR 355.
- o SARA 311/312: SARA Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This product is not subject to these reporting requirements.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

- o CERCLA requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substances" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.

Section 16 – Other Information

- o Date of Preparation/last revision: August 16, 2016
- o The recommendations for personal protective equipment (PPE) contained within this safety data sheet (SDS) are provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.
- o It should be noted that health effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a safety data sheet (SDS) which would encompass all possible scenarios, it is anticipated that users will assess their risk and apply control measures where appropriate.
- o Some abbreviations not previously noted that were used in this document:
 - ACGIH: American Conference of Governmental Industrial Hygienists
 - PEL: Permissible Exposure Limit
 - CAS: Chemical Abstracts Services (division of the American Chemical Society)
 - TLV: Threshold Limit Value
 - HMIS: Hazardous Materials Identification System (USA)
 - N/A: Not applicable
 - LD50: Lethal Dose, 50% / Medial Lethal Dose
 - Mg/m³: Milligrams per cubic meter
 - pH: relates to hydrogen ion concentration using a scale of 0 (highly acidic) to 14 (highly alkaline)

Disclaimer: The information and recommendations contained herein are, to the best of Blythe Construction's knowledge and belief, accurate and reliable as of the date issued. However, no warranty or guarantee, expressed or implied, is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy itself as to the suitability and completeness for his/her own particular use. Some information presented and conclusions drawn herein are from sources other than direct test data on the product itself. If the product is used as a component in another product, this SDS information may not be applicable. Users should make their own investigations to determine the suitability of the information or product for their particular purpose(s). The conditions or methods of handling, storage, use and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product.