



# SAFETY DATA SHEET

MATERIAL: HOT MIX ASPHALT

## Section 1 – Product Identification

### Product Identifier

**Product Name:** Hot Mix Asphalt

**Product Codes:** Paving Grades S, SX and SG, C, CX, F, G, Fines and Spec

This SDS covers several products. Individual constituents will vary.

**Synonyms:** HMA, HMAC, Blacktop, Asphalt concrete, Bituminous concrete, Hot mix blacktop, Paving asphalt, Tarmac

**Product Form:** Solid

**Intended Use of Product:** Hot mix asphalt is used as a roadway and parking lot surface material and for road repairs.

### Name, Address and Telephone of Responsible Party

Aggregate Industries  
24 Crosby Drive  
Bedford, MA 01730  
(888) 646-5246

### Emergency Contact Information:

CHEMTREC: 1-800-424-9300

## Section 2 – Hazards Identification

### Classification of the Substance or Mixture

#### Classification (GHS-US)

Eye Irritant 2B  
Carcinogen 1A  
Specific Target Organ Toxicity: Single Exposure 3  
Specific Target Organ Toxicity: Repeat Exposure 1

#### Label Elements

##### Hazard Pictograms



##### Signal Word

Danger

##### Hazard Statements

Causes eye irritation.  
May cause respiratory irritation.  
May cause cancer (lungs).  
Causes damage to organs (lungs) through prolonged or repeated exposure.

##### Precautionary Statements

- Prevention** Do not breathe fumes or dust. Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Do not eat, drink or smoke when using this product. Wash thoroughly after handling.  
Do not handle until all safety precautions have been read and understood.
- Response** **If inhaled:** Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell. If exposed or concerned, call a doctor.  
**If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.  
**If on skin:** Material can cause thermal burns when heated. Apply first aid measures for burns.  
**If swallowed:** Rinse mouth. Call a doctor if you feel unwell.
- Storage** Store in a well-ventilated place. Keep containers tightly closed.
- Disposal** Dispose of contents/container in accordance with local/state/national regulations.

##### Other Hazards

Exposure may aggravate pre-existing eye or respiratory conditions or illness.

### Section 3 – Composition/Information on Ingredients

Component/Ingredient	CAS #	Percent Present (Range)
Mineral aggregates	None	90 - 95
Asphalt cement (bitumens)	8052-42-4	5 - 10
Crystalline Silica (Quartz)	14808-60-7	0.5 - 3

#### Other Components

When heated, this product may release hydrogen sulfide (H<sub>2</sub>S) as well as minute quantities of aromatic hydrocarbons which are suspected carcinogens. It contains quantities of other hazardous materials, including small amounts of crystalline silica. Crystalline silica (quartz – respirable) has been classified by IARC and NTP as a known human carcinogen. When applied as a paving material exposure to silica is unlikely, however when the material is crushed or ground trace amounts of respirable silica could be released. See Section 16 for more information.

### Section 4 – First Aid Measures

#### Description of First Aid Measures

- Eyes** Rinse eyes and under lids cautiously with clean water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
- Skin** Hot material can cause serious thermal burns. Do not attempt to remove material stuck to skin. Cool burned area with plenty of water. Get immediate medical advice/attention.
- Inhalation** Remove person to fresh air away from dust and fumes and keep comfortable for breathing. Call a doctor if you feel unwell.
- Ingestion** Do not induce vomiting. If subject is conscious, rinse the mouth with water to remove any material and drink plenty of water to dilute any swallowed material. Do not give drink or attempt to force water to an unconscious person. Get medical advice/attention.

#### Important Symptoms and Effects (Acute and Delayed)

- Eyes** Causes eye irritation and may scratch eye surface due to particle abrasion.
- Skin** Exposure to hot material will result in thermal burns to skin, possibly severe.
- Inhalation** Irritates nose and throat if fumes are inhaled. Prolonged or repeated inhalation of fumes may create dizziness, shortness of breath, and loss of appetite.
- Ingestion** May cause irritation and burns of mouth, throat, stomach and digestive tract if swallowed.

#### Recommendations for Immediate Medical Care or Special Treatment

Seek immediate medical attention for inhalation of large quantities of fumes or contact with hot material over large areas of skin. Seek immediate medical attention if material comes into contact with eyes and cannot be immediately removed.

### Section 5 – Fire Fighting Measures

- General Fire Hazards** Combustible solid.
- Extinguishing Media** Use foam, AFFF, carbon dioxide or dry chemical to extinguish fires involving this material.
- Extinguishing Media to Avoid** Do not use water as water may cause fire to spread.
- Hazards of Combustion** Decomposition products of fires include carbon monoxide, carbon dioxide and hydrogen sulfide.
- Fire Fighting Recommendations** Firefighters should always wear full protective gear, including SCBA, to fight any fire. Refer to Section 9 for flammability information.

### Section 6 – Accidental Release Measures

- Precautions** Avoid breathing fumes. Prevent material from entering sewers, drains, ditches or waterways.
- Personal Protection** Wear respiratory protection and protective eyewear/clothing to avoid eye or skin contact.
- Emergency Procedures** Ventilate area. Remove unnecessary persons from area.
- Containment Procedures** Barricade solid material to prevent additional spillage.
- Clean Up Procedures** Scoop up spilled material and place in approved containers.

## Section 7 – Handling and Storage

<b>Safe Handling Practices</b>	Avoid contact with skin or eyes. Do not breathe fumes. Use only in well ventilated areas. Avoid contact with heated material. Wear appropriate personal protective equipment to prevent eye or skin contact and use respiratory protection equipment in poorly ventilated areas.
<b>Safe Storage Measures</b>	Store in well-ventilated areas away from incompatible materials. If stored in containers, keep containers closed when not in use.
<b>Incompatible Materials</b>	Keep away from high heat and open flames. Keep away from strong acids, alkalines and oxidizers. May release hydrogen sulfide gas when heated.

## Section 8 – Exposure Controls & Personal Protection

### Exposure Limits for Individual Components (T= Total Respirable, R=Respirable fraction, I=Inhalable-aerosol)

Component	OSHA PEL	ACGIH TLV	NIOSH REL
Mineral aggregates	Not established	Not established	Not established
Asphalt cement (bitumens)	Not established	5 mg/m3 [fumes]	5 mg/m3 (15 m) [fumes]
Crystalline Silica (Quartz)	10 mg/m3 (R) /(% SiO2 + 2) 30 mg/m3 (T) /(% SiO2 + 2)	0.025 mg/m3 (R)	0.05 mg/m3 (R)

### Exposure Controls

**Engineering Controls** Use outdoors in well-ventilated areas; otherwise employ natural or mechanical ventilation to maintain exposure within applicable limits.

### Personal Protection

**Face and Eyes** Do not breathe fumes. Avoid contact with skin or eyes. Avoid creating or breathing dust. Safety glasses with side shields or protective goggles should be worn while using this product. For extremely dusty conditions, non-vented goggles or goggles with indirect venting are recommended. Avoid contact lens wear when using this product.

**Body** Long sleeved shirts and trousers should be worn while using this material. Wear water-proof boots. If working in dusty conditions, impervious over garments are recommended.

**Respiratory** If exposure levels cannot be maintained below acceptable limits, suitable respirators approved by MSHA/NIOSH should be worn in accordance with the user's respiratory protection program and OSHA/MSHA guidelines.

**Hands** Protective, heat-resistant gloves with wrist/arm cuffs should be worn to avoid direct contact with skin.

## Section 9 – Physical and Chemical Properties

<b>Physical State</b>	Solid	<b>Specific Gravity</b>	2.4 – 2.7
<b>Appearance &amp; Color</b>	Black granular material	<b>Flash Point/Method</b>	> 200°F (93°C)
<b>Odor</b>	Petroleum-like	<b>Auto Ignition Temperature</b>	Not determined
<b>pH</b>	Not applicable	<b>Lower Flammability Limit</b>	Not determined
<b>Boiling Point</b>	>427°C	<b>Upper Flammability Limit</b>	Not determined
<b>Solubility (Water)</b>	Negligible (<1%)	<b>Octanol/H2O Coefficient</b>	Not determined
<b>Evaporation Rate</b>	Not applicable	<b>Viscosity</b>	Not applicable
<b>Melting Point</b>	Not determined	<b>Freezing Point</b>	Solid at room temperature
<b>Vapor Density</b>	Not applicable	<b>Explosion Risk: Static</b>	Not considered a hazard
<b>Vapor Pressure</b>	Not applicable	<b>Explosion Risk: Shock</b>	Not considered a hazard

## Section 10 – Stability and Reactivity

<b>Reactivity</b>	Not considered reactive.
<b>Chemical Stability</b>	Stable at standard temperature and pressures.
<b>Hazardous Reactions</b>	None. Hazardous polymerization will not occur.
<b>Conditions to Avoid</b>	Do not expose to open flames.
<b>Incompatible Materials</b>	Avoid contact with strong acids, alkalines, and oxidizers.
<b>Decomposition Hazards</b>	May release hydrogen sulfide gas when heated. Releases sulfur oxides, carbon monoxide and carbon dioxide on combustion.

## Section 11 – Toxicological Information

**Product: Hot mix asphalt**

<b>Acute Toxicity</b>	Not classified.
<b>LD50/LC50 Data</b>	Not classified.
<b>Skin Corrosion/Irritation</b>	Not classified.
<b>Critical Eye Damage/Irritation</b>	Causes eye irritation due to fumes.
<b>Respiratory or Skin Sensitization</b>	Not reported/no data available.
<b>Germ Cell Mutagenicity</b>	Not reported/no data available.
<b>Teratogenicity</b>	Not reported/no data available.
<b>Carcinogenicity</b>	Material may release crystalline silica (when cut, crushed or ground) and aromatic hydrocarbons (when heated), which may cause lung cancer through repeated or prolonged exposure to fumes or dust.
<b>Specific Organ Toxicity (Single Exposure)</b>	May cause respiratory and nasal irritation if fumes are inhaled.
<b>Specific Organ Toxicity (Repeated Exposure)</b>	May cause damage/disease to lungs through repeated or prolonged exposure.
<b>Reproductive Toxicity</b>	Not reported/no data available.
<b>Aspiration Respiratory Hazard</b>	Not reported/no data available.
<b>Symptoms: Inhalation</b>	Coughing, sneezing, mucous discharge and dyspnea.
<b>Symptoms: Skin Contact</b>	Contact with hot material will result in thermal burns, possibly severe.
<b>Symptoms: Eye Contact</b>	Redness, watering and itching.
<b>Symptoms: Ingestion</b>	Irritation of mouth and throat.
<b>Other Toxicological Information</b>	No additional data available.

**Components**
**Toxicity**
**Carc: IARC**
**Carc: NTP**
**Carc: OSHA**

Components	Toxicity	Carc: IARC	Carc: NTP	Carc: OSHA
Mineral aggregates	No data	Not listed	Not listed	Not listed
Asphalt cement (bitumens)	No data	Group 2B	Not listed	Not listed
Crystalline Silica (Quartz) (refer to Section 16 for more information)	Oral LD50 Rat >22,500 mg/kg LC50 Carp >10,000 mg/L (72 hr)	Group 1	Known	Not listed

## Section 12 – Ecological Information

<b>General Ecotoxicity</b>	Not classified.
<b>Persistence and Degradability</b>	Not reported/no data available.
<b>Bioaccumulation Potential</b>	Not reported/no data available.
<b>Mobility in Soil to Groundwater</b>	Not reported/no data available.
<b>Environmental Fate</b>	Not reported/no data available.
<b>Other Environmental Precautions or Information</b>	Avoid release to the environment. Prevent material from entering sewers, drains, ditches or waterways.

## Section 13 – Disposal Considerations

<b>Disposal Methods</b>	Dispose of waste material in accordance with applicable federal, state, and local regulations.
<b>Special Considerations</b>	Avoid creation or breathing fumes or dust during disposal. Avoid contact with skin and eyes.
<b>Other Disposal Information</b>	Prevent material from entering sewers, drains, ditches or waterways.

## Section 14 – Transport Information

<b>Proper Shipping Name</b>	N/A – not regulated.
<b>Hazard Class</b>	N/A – not regulated.
<b>UN Shipping ID Number</b>	N/A – not regulated.
<b>Packing Group</b>	N/A – not regulated.
<b>Environmental/IMDG Codes</b>	N/A – not regulated.

## Section 15 – Regulatory Information

### Federal

This product contains one or more chemical components or ingredients that may require identification and/or reporting under SARA Section 302, SARA Section 311/312/313, CERCLA and/or TSCA. An examination of the components of this product should be conducted by a qualified environmental professional to determine if such identification or reporting is required by federal law.

- Components: Asphalt cement (bitumens), Silica (Crystalline)

### State

This product contains one or more chemical components or ingredients that are included or listed on the hazardous substances lists for one or more of the following states: California, Maine, Minnesota, New Jersey, Pennsylvania and Rhode Island. An examination of the components of this product should be conducted by a qualified environmental or safety and health professional to determine the specific requirements for those states.

- Components: Asphalt cement (bitumens), Silica (Crystalline)

The state of California requires the following statement (Proposition 65) in regards to this material:

- WARNING! This product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

## Section 16 – Other Information

**Date of last revision:** May 27, 2015

**Prepared and reviewed by:** Holcim (US) Inc. Occupational Safety & Health

### Additional information regarding asphalt and asphaltic materials:

Asphalt fumes are created when asphalt materials are heated. Fumes contain very small, solid, airborne particles which are easily inhaled by the worker. Inhalation of asphalt fumes can cause irritation to the nose, throat and lungs. Prolonged exposure to fumes or vapors may cause headache, dizziness, loss of appetite, loss of coordination, and drowsiness. Asphalt particles left on the hands may accidentally get into the eyes causing severe irritation to the eyes. Hot asphalt materials may also cause severe burns when in contact with exposed skin.

Fumes may also contain hydrogen sulfide vapors, which are very toxic, as well as the vapors generated by the solvents used to "cut" the asphalt, which can also present serious health hazards. The emissions from heated asphalt and its cutting solvents may contain small amounts of aromatic hydrocarbons, some of which are suspected carcinogens. Solvents will evaporate out of the mix at a wide range of temperatures. Heating of the asphalt mix speeds up the evaporation process. The faster the solvent evaporates, the easier it is to inhale. Therefore, asphaltic materials should only be heated to the temperatures necessary to apply them properly and never overheated or left heated for extended or prolonged periods of time where avoidable.

The conclusion of the IARC working group was that "there is inadequate evidence in humans for the carcinogenicity of occupational exposure to bitumens and bitumen emissions during road paving." Further, that "there is inadequate evidence in experimental animals for the carcinogenicity of straight-run bitumen class 1 and fume condensate generated from straight-run bitumen class 1." Therefore, the IARC working group concluded that "occupational exposures to straight-run bitumens and their emissions during road paving are possibly carcinogenic to humans (Group 2B)."

Finally, in the 2013 edition of the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values book, asphalt (bitumen) fume as a benzene-soluble aerosol is categorized as Group A4, which is "not classifiable as a human carcinogen." This goes on to state "agents which cause concern that they could be carcinogenic in humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indication of carcinogenicity which are sufficient to classify the agent into one of the other categories." Neither the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA) classify bitumens, asphalt cement or asphalt fumes as cancer-causing.

### Additional information regarding crystalline silica:

The major concern is silicosis, caused by the inhalation and retention of respirable (extremely small) crystalline silica dust particles. Silicosis can exist in several forms. Chronic or ordinary silicosis (often referred to as simple silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low concentrations of airborne respirable crystalline silica dust. Complicated silicosis or progressive massive fibrosis (PMF) may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease. Acute silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis can be fatal.

IARC: The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs."

NTP: The National Toxicology Program (NTP), in its Thirteenth Annual Report on Carcinogens, classified "silica, crystalline (respirable)" as a known human carcinogen.

OSHA: Crystalline silica (quartz) is not regulated as a human carcinogen by the Occupational Safety and Health Administration.

**Other important information:**

While the information provided in this document is believed to provide a useful summary of the hazards of hot mix asphalt, the information in this document cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product.

The data furnished in this document do not address hazards that may be posed by other materials when mixed with hot mix asphalt. Users should review other relevant safety data sheets before working with this product.

The information presented in the Safety Data Sheet is based on current knowledge and publications and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not be interpreted as guaranteeing any specific property of the product.

**SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY AGGREGATE INDUSTRIES, EXCEPT THAT THE PRODUCT SHALL CONFORM TO CONTRACTED SPECIFICATIONS.**

--END OF SAFETY DATA SHEET--