Lafarge Hot Mix Asphalt (HMA)

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 05/15/2015 Date of Issue: 04/24/2015 Supersedes Date: 03/01/2014 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Lafarge Hot Mix Asphalt (HMA)

Synonyms: Lafarge Hot Mix Asphalt, HMA, Hot Mix Asphalt Concrete (HMAC), Blacktop, Tarmac, Hot Mix Paving Material, Hot Laid Asphaltic Cement, Bituminous Concrete, SuperPave Mixes, DuraPhaltTM, DuraPhaltTM HM, DuraWayTM, DuraToughTM, DuraPlayTM, DuraTintTM, DuraWhisperTM, DuraCycleTM, DuraClimeTM, Dense Friction Course (DFC), Heavy Duty Binder Course (HDBC), Medium Duty Binder Course (MDBC), Open Friction Course (OFC), Stone Matrix Asphalt (SMA).

Note: This MSDS covers many types of HMA. Individual composition of hazardous constituents will vary between types of asphalt.

1.2. Intended Use of the Product

HMA is used for paving roads, driveways, parking lots and other surface, base, or sub-base applications.

1.3. Name, Address, and Telephone of the Responsible Party

Company

Lafarge North America Inc.
8700 West Bryn Mawr Avenue, Suite 300
Chicago, IL 60631
Information: 773-372-1000 (9am to 5pm CST)
email: SDSinfo@Lafarge.com
Website: www.lafarge-na.com

1.4. Emergency Telephone Number

Emergency Number : 1-800-451-8346 (3E Hotline)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Carc. 2 H351

Full text of H-phrases: see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GHS08

Signal Word (GHS-US) : Warning

Hazard Statements (GHS-US) : H351 - Suspected of causing cancer.

Precautionary Statements (GHS-US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing, and eye protection.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Product contains crystalline silica; repeated inhalation of crystalline silica causes damage to organs and may cause cancer. Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure. Dust may cause mechanical irritation to eyes, nose, throat, and lungs. Direct contact may result in corneal injury.
Additionally, the product contains low levels of polynuclear aromatics (PNAs), which may cause skin lesions and skin cancer.
At elevated temperatures, this product will cause thermal burns and may release toxic hydrogen sulfide (H_2S). Hydrogen sulfide is a fatal and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Explosion can occur if hydrogen sulfide is allowed to accumulate in the headspace of closed systems in the presence of an ignition source.

2.4. Unknown Acute Toxicity (GHS-US) No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable

3.2. Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Limestone	(CAS No) 1317-65-3	50 - 100	Not classified
Carbonic acid, magnesium salt (1:1)	(CAS No) 546-93-0	<= 50	Not classified
Quartz	(CAS No) 14808-60-7	<0.1, 0.1 - 1, 1 - 5, 5 - 10, 10 - 15	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372
Asphalt	(CAS No) 8052-42-4	<0.1, 0.1 - 1, 1 - 5, 5 - 10	Carc. 2, H351

More than one of the ranges of concentration prescribed by the Controlled Products Regulations has been used where necessary, due to varying composition.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Keep at rest and in a position comfortable for breathing. If you feel unwell, seek medical advice.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists. Seek immediate medical attention for thermal burns.

Eye Contact: Do not rub. Rinse eyes thoroughly with water for at least 15 minutes, including under lids, to remove all particles. Obt medical attention if irritation develops or persists. Seek immediate medical attention for thermal burns.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Emissions from asphalt are suspected of causing cancer. Dust may cause immediate or delayed irritation to eyes, skin and respiratory tract. During processing, inhalation of fumes may cause dizziness and/or irritation to the eyes, nose, and throat. This product if heated, may release asphalt fumes that may cause irritation to the throat, nose and skin irritation. If inhaled, the fumes may cause nausea, headache, or dizziness. Prolonged and repeated contact with cold asphalt may cause dermatitis and other skin problems, while contact with hot product will cause thermal burns. If ingested, the product may cause internal organ irritation and may cause possible nausea, vomiting, and diarrhea. Hot asphalt droplets or particles can cause eye burns or irritation. A splash in the eye of hot asphalt can cause serious eye injury. Hot molten product will cause thermal burns to the skin.

Inhalation: Exposure to fumes, vapors, or dust may cause irritation of the nose, throat, and respiratory system. Hot HMA releases irritating fumes or vapors; symptoms may include headache, dizziness, loss of coordination, and drowsiness. Cutting, crushing or grinding hardened asphalt will release dust. Breathing dust may cause irritation and silicosis. The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.

WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.

Skin Contact: HMA dust may cause dry skin, discomfort, irritation and dermatitis. When this product is subject to high heat RAP will cause severe burns.

Eye Contact: Eye contact to airborne dust may cause immediate or delayed irritation or inflammation. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Ingestion: Do not ingest HMA. Ingestion of small quantities of HMA is not known to be harmful; ingesting large quantities can cause intestinal distress. May cause nausea, vomiting, and diarrhea.

Chronic Symptoms: Emissions from asphalt are suspected of causing cancer. If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Repeated or prolonged skin contact may cause dermatitis. Product may contain polynuclear aromatic hydrocarbons (PNAs). Evidence from animal studies indicates that prolonged exposure to various PNAs can cause cancer of the lungs, skin, and other organs.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If burned by hot product, cool affected area immediately with cool water. Do not attempt to remove solidified material from skin or eyes. Seek medical attention immediately. If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container, label, or SDS at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO_2).

Unsuitable Extinguishing Media: Do not use water when molten material is involved. Use of water on hot/molten product will result in a violent expansion as the water turns to steam causing explosion with massive force.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Combustible. May release flammable gases/vapors. Flammable vapors can accumulate in head space of closed systems and in areas of insufficient ventillation.

Explosion Hazard: Product is not explosive. However, thermal decomposition may generate fumes that are flammable or explosive. Heating the product or containers can cause thermal decomposition of the product and release hydrogen sulfide. Hydrogen sulfide is a highly flammable, toxic gas.

Reactivity: May release poisonous hydrogen sulfide.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Do not breathe fumes from fires or vapors from decomposition. Do not allow run-off from firefighting to enter drains or water sources.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO2). Hydrocarbons. Hydrogen sulfide..

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not breathe dust, vapor, or gas. Avoid all contact with skin, eyes, or clothing.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Cool molten material to limit spreading.

Methods for Cleaning Up: Allow liquid material to solidify before cleaning up. Place spilled material into a container. Avoid actions that cause dust to become airborne. Avoid inhalation of dust. Wear appropriate protective equipment as described in Section 8. Do not wash HMA down sewage and drainage systems or into bodies of water (e.g. streams).

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: If stored under heat for extended periods or significantly agitated, this material might evolve or release hydrogen sulfide, a flammable gas. Hydrogen sulfide is a toxic gas that can be fatal. Exercise caution and ensure adequat ventilation. Cutting, crushing or grinding hardened asphalt or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression and Personal Protective Equipment (PPE) described in Section 8.

Precautions for Safe Handling: Do not handle until all safety precautions have been read and understood. Protect skin and eyes from contact with molten material. Do not breathe dust or fumes.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible Materials: Fluorine, magnesium, acids, alum, ammonium salts, strong acids, formaldehyde.

7.3. Specific End Use(s)

HMA is used for paving roads, driveways, parking lots and other surface, base, or sub-base applications.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Limestone (1317-65-3)		
Mexico	OEL TWA (mg/m³)	10 mg/m³
Mexico	OEL STEL (mg/m³)	20 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
Alberta	OEL TWA (mg/m³)	10 mg/m³
British Columbia	OEL STEL (mg/m³)	20 mg/m³ (total dust)

British Columbia	OEL TWA (mg/m³)	10 mg/m³ (total dust) 3 mg/m³ (respirable fraction)
New Brunswick	OEL TWA (mg/m³)	10 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nunavut	OEL TWA (mg/m³)	5 mg/m³ (respirable mass) 10 mg/m³ (total mass)
Northwest Territories	OEL TWA (mg/m³)	5 mg/m³ (respirable mass) 10 mg/m³ (total mass)
Québec	VEMP (mg/m³)	10 mg/m³ (Limestone, containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³
Yukon	OEL STEL (mg/m³)	20 mg/m³
Yukon	OEL TWA (mg/m³)	30 mppcf 10 mg/m³

Carbonic acid, magnesium salt (1:1) (546-93-0)		
USA NIOSH	NIOSH REL (TWA) (mg/m³)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
British Columbia	OEL TWA (mg/m³)	10 mg/m³ (total dust) 3 mg/m³ (respirable fraction)
New Brunswick	OEL TWA (mg/m³)	10 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Ontario	OEL TWA (mg/m³)	10 mg/m³ (containing no Asbestos and <1% Crystalline silica-total dust)
Québec	VEMP (mg/m³)	10 mg/m³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³

Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m³)	0.1 mg/m³ (respirable fraction)
USA ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
USA ACGIH	ACGIH chemical category	A2 - Suspected Human Carcinogen
USA OSHA	OSHA PEL (STEL) (mg/m³)	250 mppcf/%SiO_2+5, 10mg/m³/%SiO_2+2
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³ (respirable dust)
USA IDLH	US IDLH (mg/m³)	50 mg/m³ (respirable dust)
Alberta	OEL TWA (mg/m³)	0.025 mg/m³ (respirable particulate)
British Columbia	OEL TWA (mg/m³)	0.025 mg/m³ (respirable)
Manitoba	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
New Brunswick	OEL TWA (mg/m³)	0.1 mg/m³ (respirable fraction)
Newfoundland & Labrador	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Nova Scotia	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Nunavut	OEL TWA (mg/m³)	0.1 mg/m³ (respirable mass) 0.3 mg/m³ (total mass)
Northwest Territories	OEL TWA (mg/m³)	0.1 mg/m³ (respirable mass) 0.3 mg/m³ (total mass)
Ontario	OEL TWA (mg/m³)	0.10 mg/m³ (designated substances regulation-respirable)
Prince Edward Island	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Québec	VEMP (mg/m³)	0.1 mg/m³ (respirable dust)
Saskatchewan	OEL TWA (mg/m³)	0.05 mg/m³ (respirable fraction)
Yukon	OEL TWA (mg/m³)	300 particle/mL

Asphalt (8052-42-4)		
Mexico	OEL TWA (mg/m³)	5 mg/m³

Mexico	OEL STEL (mg/m³)	10 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³ (fume, inhalable fraction)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen fume, coal tar-free
USA NIOSH	NIOSH REL (ceiling) (mg/m³)	5 mg/m³ (fume)
Alberta	OEL TWA (mg/m³)	5 mg/m³ (Petroleum; Bitumen-fume)
British Columbia	OEL TWA (mg/m³)	0.5 mg/m³ (inhalable fume)
Manitoba	OEL TWA (mg/m³)	0.5 mg/m³ (fume, inhalable fraction)
New Brunswick	OEL TWA (mg/m³)	5 mg/m³ (petroleum fumes)
Newfoundland & Labrador	OEL TWA (mg/m³)	0.5 mg/m³ (fume, inhalable fraction)
Nova Scotia	OEL TWA (mg/m³)	0.5 mg/m³ (fume, inhalable fraction)
Nunavut	OEL STEL (mg/m³)	10 mg/m³ (Petroleum fumes)
Nunavut	OEL TWA (mg/m³)	5 mg/m³ (Petroleum fumes)
Northwest Territories	OEL STEL (mg/m³)	10 mg/m³ (Petroleum fumes)
Northwest Territories	OEL TWA (mg/m³)	5 mg/m³ (Petroleum fumes)
Ontario	OEL TWA (mg/m³)	0.5 mg/m³ (fume, inhalable)
Prince Edward Island	OEL TWA (mg/m³)	0.5 mg/m³ (fume, inhalable fraction)
Québec	VEMP (mg/m³)	5 mg/m³ (fume)
Saskatchewan	OEL STEL (mg/m³)	1.5 mg/m³ (fumes-inhalable fraction)
Saskatchewan	OEL TWA (mg/m³)	0.5 mg/m³ (fume and inhalable fraction)
Yukon	OEL STEL (mg/m³)	10 mg/m³ (fume)
Yukon	OEL TWA (mg/m³)	5 mg/m³ (fume)
Particulates not otherwise classified (PNOC) (RR-00072-6)		
USA ACGIH	ACGIH TWA (mg/m³)	3 mg/m³ Respirable fraction 10 mg/m³ Total Dust
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ Respirable fraction 15 mg/m³ Total Dust
Alberta	OEL TWA (mg/m³)	10 mg/m³ (total) 3 mg/m³ (respirable)
British Columbia	OEL TWA (mg/m³)	10 mg/m³ (total dust) 3 mg/m³ (respirable fraction)
Manitoba	OEL TWA (mg/m³)	10 mg/m³ (inhalable particles, recommended) 3 mg/m³ (respirable particles, recommended)
New Brunswick	OEL TWA (mg/m³)	3 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica, respirable fraction) 10 mg/m³ (particulate matter containing no Asbestos and <1% Crystalline silica, inhalable fraction)
Newfoundland & Labrador	OEL TWA (mg/m³)	10 mg/m³ (inhalable particles, recommended) 3 mg/m³ (respirable particles, recommended)
Nova Scotia	OEL TWA (mg/m³)	10 mg/m³ (inhalable particles, recommended) 3 mg/m³ (respirable particles, recommended)
Nunavut	OEL TWA (mg/m³)	5 mg/m³ (respirable mass) 10 mg/m³ (total mass)
Northwest Territories	OEL TWA (mg/m³)	5 mg/m³ (respirable mass) 10 mg/m³ (total mass)
Ontario	OEL TWA (mg/m³)	10 mg/m³ (inhalable) 3 mg/m³ (respirable)
Prince Edward Island	OEL TWA (mg/m³)	10 mg/m³ (inhalable particles, recommended) 3 mg/m³ (respirable particles, recommended)
Québec	VEMP (mg/m³)	10 mg/m³ (including dust, inert or nuisance particulates; containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m³)	20 mg/m³ (insoluble or poorly soluble-inhalable fraction)

		6 mg/m³ (insoluble or poorly soluble-respirable fraction)
Saskatchewan	OEL TWA (mg/m³)	10 mg/m³ (insoluble or poorly soluble-inhalable fraction) 3 mg/m³ (insoluble or poorly soluble-respirable fraction)

8.2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment: Gloves. Protective goggles. Protective clothing. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Suitable materials with adequate protection.

Hand Protection: Wear gloves in situations where abrasions may occur.

Eye Protection: Chemical goggles or safety glasses. Wearing contact lenses under dusty conditions is not recommended.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: When first opening tank trucks, railcars, or other containers, it is recommended to wear appropriate NIOSH approved respiratory protection. Appropriate NIOSH approved respiratory protection must be worn if material is heated and/or generates asphalt fumes and/or hydrogen sulfide above the OSHA and ACGIH recommended limits.

Thermal Hazard Protection: If material is hot, wear thermally resistant protective gloves. Protect skin and eyes from contact with molten material.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	Black granular solid
Odor	:	Slight petroleum odor
Odor Threshold	:	Not available
pH	:	Not available
Evaporation Rate	:	Not available
Melting Point	:	Not available
Freezing Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	> 93.3 °C (200 °F)
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 20 °C	:	Not available
Relative Density	:	Not available
Specific Gravity	:	2.0 - 2.5
Solubility	:	Insoluble in Water
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: May release poisonous hydrogen sulfide.

10.2. Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

10.4. Conditions to Avoid: Open flame. Sources of ignition. Extremely high or low temperatures. Incompatible materials.

10.5. Incompatible Materials: Fluorine, magnesium, acids, alum, ammonium salts, strong acids, formaldehyde.

10.6. Hazardous Decomposition Products: Thermal decomposition generates: Carbon oxides (CO, CO_2). Hydrocarbons. Hot asphalt can release toxic Hydrogen Sulfide. Hydrogen Sulfide can accumulate in vapor space of tanks and vessels during transfer and storage of this material. Hydrogen sulfide is a toxic gas that can be fatal.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: Suspected of causing cancer

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Exposure to fumes, vapors, or dust may cause irritation of the nose, throat, and respiratory system. Hot HMA releases irritating fumes or vapors; symptoms may include headache, dizziness, loss of coordination, and drowsiness. Cutting, crushing or grinding hardened asphalt will release dust. Breathing dust may cause irritation and silicosis. The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.

WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.

Symptoms/Injuries After Skin Contact: HMA dust may cause dry skin, discomfort, irritation and dermatitis. When this product is subject to high heat HMA will cause severe burns.

Symptoms/Injuries After Eye Contact: Eye contact to airborne dust may cause immediate or delayed irritation or inflammation. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Symptoms/Injuries After Ingestion: Do not ingest Limestone and Dolomite. Ingestion of small quantities of HMA is not known to be harmful; ingesting large quantities can cause intestinal distress. May cause nausea, vomiting, and diarrhea.

Chronic Symptoms: Emissions from asphalt are suspected of causing cancer. If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Repeated or prolonged skin contact may cause dermatitis. Product may contain

polynuclear aromatic hydrocarbons (PNAs). Evidence from animal studies indicates that prolonged exposure to various PNAs can cause cancer of the lungs, skin and other organs.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Carbonic acid, magnesium salt (1:1) (546-93-0)	
LD50 Oral Rat	> 2000 mg/kg

Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg

Asphalt (8052-42-4)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg

Quartz (14808-60-7)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

Asphalt (8052-42-4)	
IARC Group	2B
National Toxicology Program (NTP) Status	Twelfth Report - Items under consideration.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity No additional information available

12.2. Persistence and Degradability Not available

12.3. Bioaccumulative Potential

Asphalt (8052-42-4)	
BCF Fish 1	No bioaccumulation expected
Log Pow	> 6

12.4. Mobility in Soil Not available

12.5. Other Adverse Effects Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Additional Information: Where possible, recycling of used and unused uncontaminated substance is recommended.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT

Proper Shipping Name : ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100 C and below its flash point (Asphalt)
Hazard Class : 9
Identification Number : UN3257
Label Codes : 9
Packing Group : III
ERG Number : 128

14.2. In Accordance with IMDG

Proper Shipping Name : ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100 C and below its flash point (Asphalt)
Hazard Class : 9
Identification Number : UN3257
Packing Group : III
Label Codes : 9
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-P

14.3. In Accordance with IATA

Proper Shipping Name : ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100 C and below its flash point (Asphalt)
Identification Number : UN3257
Hazard Class : 9
Label Codes : 9
ERG Code (IATA) : 9L

14.4. In Accordance with TDG

Proper Shipping Name : ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100 C and below its flash point (Asphalt)
Packing Group : III
Hazard Class : 9
Identification Number : UN3257
Label Codes : 9

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Lafarge Hot Mix Asphalt (HMA)	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard
Limestone (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Carbonic acid, magnesium salt (1:1) (546-93-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Asphalt (8052-42-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard

15.2. US State Regulations

Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Limestone (1317-65-3)	
U.S. - Massachusetts - Right To Know List	

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Carbonic acid, magnesium salt (1:1) (546-93-0)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List

Quartz (14808-60-7)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Asphalt (8052-42-4)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

15.3. Canadian Regulations

Lafarge Hot Mix Asphalt (HMA)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Limestone (1317-65-3)	
Listed on the Canadian NDSL (Non-Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Carbonic acid, magnesium salt (1:1) (546-93-0)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Quartz (14808-60-7)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Asphalt (8052-42-4)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/15/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Carc. 1A	Carcinogenicity Category 1A
Carc. 2	Carcinogenicity Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H335	May cause respiratory irritation
H350	May cause cancer

H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure

Party Responsible for the Preparation of This Document

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An electronic version of this SDS is available at: www.lafarge-na.com under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to SDSinfo@Lafarge.com.

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