

Limestone Rock Asphalt (LRA) Premixes

1. Identification

Product name:

Limestone Rock Asphalt (LRA) Premixes

Other means of identification/Synonyms/Common Names:

CMHB (all types), PHVT (all types), Premix (all types, Premix Special), Trap Mix

Recommended use:

Limestone Rock Asphalt (LRA) Premixes are used as a construction material.

Recommended restrictions:

None Known

Manufacturer/Contact info:

Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

General Phone Number:

1.866.401.5424

Emergency Phone Number:

1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

Website:

www.vulcanmaterials.com

2. Hazard(s) Identification

Physical hazards:

Not Classified

Health hazards:

Carcinogenicity-Category 1A

Reproductive Toxicity- Category 2

Specific target organ toxicity, repeated exposure- Category 2

Signal word:

Danger

Hazard statement

May cause cancer (Inhalation)

Suspected of damaging the unborn child

Causes damage to organs (lung/respiratory system, adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus) through prolonged or repeated exposure

Precautionary statement:

Prevention

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Do not breathe dust, fume, or vapors. Use only outdoors or in a well ventilated area.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.
- Product may contain or release hydrogen sulfide, which is highly toxic and is a flammable gas. Assessment of storage tanks, transport vessels and other confined spaces should be made to determine potential exposures and appropriate controls

Response

- If exposed or concerned: Immediately call a Poison Center or doctor/physician. Get medical advice/attention
- Specific treatment (see the following information on this label).
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- IF ON SKIN: Remove/Take off immediately all contaminated clothing. Rinse cautiously with water for several minutes. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.
- IF INHALED: Remove victim to fresh air and keep at rest position comfortable for breathing.

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Wash contaminated clothing before reuse.

Storage

- Store in a well ventilated place.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:

Limestone Rock Asphalt (LRA) Premix products contain aggregate, a naturally occurring mineral complex with varying quantities of quartz (crystalline silica). Respirable Crystalline Silica (RCS) may cause cancer. Hardened Limestone Rock Asphalt (LRA) Premixes products may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC, NTP; ACGIH states that it is a suspected cause of cancer.

3. Composition/information on ingredients

Chemical name	CAS number	%
Limestone	1317-65-3	53-98
Quartz (crystalline silica)	14808-60-7	>1
Native Asphalt Bitumen	8052-42-4	5-7
Traprock	Mixture	0-40
Fluxing Agent (asphalt cement, light catalytic-cracked petroleum distillate, and aromatic oil)	Mixture	≤4
Water	7732-18-5	≤3
Additives	Mixture	<1

4. First-aid measures

Inhalation:

Remove person to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or if breathing is difficult. If lung irritation persists or later develops, contact a physician. If not breathing, initiate rescue breathing, give oxygen by trained personnel and get immediate medical attention. Do not attempt to rescue victim from confined spaces without adequate protective equipment.

Eyes:

Immediately flush eye(s) with plenty of clean 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 eye(s). Contact a physician if irritation persists or later develops.

Skin:

Clean exposed skin with soap or mild detergent and large amounts of water until all material is removed from the skin. Do not use solvents or thinners to remove material from skin. Get medical attention if irritation develops or persists.

Ingestion:

If swallowed, do not induce vomiting. Drink a large volume of water and get immediate medical attention. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration.

Most important symptoms/effects, acute and delayed:

Emissions from the material may have an unpleasant odor and may cause moderate to severe irritation of the mucous membranes and upper respiratory tract, headaches, nausea and dizziness. 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. See Section 11 for additional information.

Dust from hardened, dry product may irritate the eyes, skin, and respiratory tract. Breathing silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished

work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.

Indication of immediate medical attention and special treatment needed:

In general, emesis induction is unnecessary in high viscosity, low volatility products. Inhalation exposure of hydrogen sulfide may result in pulmonary congestion. Patients may be predisposed to pneumonia during convalescence, and should be kept under observation. Contact a Poison Center for additional treatment information.

Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:

Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, and steam) and water fog.

Unsuitable extinguishing media:

Avoid use of straight-stream water. Adding water to hot asphalt presents an explosion hazard.

Specific hazards arising from the chemical:

Do not heat above flash point. Fumes/vapors can explode when concentrated in an enclosed environment and supplied with an ignition source. Never weld or use a cutting torch or open flame on a full, partially full or empty bin, hopper, or other container that holds or has held asphaltic material unless precautions are taken to prevent explosion. **WARNING:** Hydrogen sulfide (H₂S) and other hazardous gases/vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels, and can create an explosive, toxic, or oxygen deficient atmosphere. H₂S gas is extremely flammable and can explode if an ignition source is provided. See Section 11 for health effects of H₂S gas.

Special protective equipment and precautions for firefighters:

Avoid breathing irritating and potentially toxic fumes, including hydrogen sulfide gas. Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Fire-fighting equipment/instructions:

Adding water to hot asphalt presents an explosion hazard.

Specific methods:

Use water spray to keep fire-exposed containers cool.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ventilate area and avoid emission inhalation or skin contact by using appropriate precautions outlined in this SDS (see Section 8). Keep all sources of ignition at least 50 feet away. Prevent materials from entering streams, drainages, or sewers. Spills entering surface waters or sewers entering/leading to surface waters must be reported to the National Response Center 1-800-424-8802. Based on volume and use, components of this product may be subject to reporting requirements of Title III of SARA, 1986, and 40 CFR 372.

For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week).

Environmental precautions:

Stop leak and contain spilled material with sand, aggregate fines, or other inert adsorbent. Collect adsorbed product and clean up materials in appropriate container for proper disposal. Notify proper authorities.

Methods and materials for containment and cleaning up:

Contact the asphalt plant to determine feasibility of recycling material. Dispose of waste materials in accordance with applicable federal, state and local laws and regulations.

7. Handling and storage

Precautions for safe handling:

Follow personal protection and protective controls set forth in Section 8 of this SDS when handling this product. If personnel must enter a tank or other confined space that contained this material, follow the OSHA Confined Space Entry Program as specified in 29 CFR 1910.146. Do not store near food, beverages or smoking materials. Avoid personal contact with heated material. Respirable crystalline silica-containing dust may be generated when hardened asphalt mix

is subjected to mechanical forces, such as demolition work, surface treatment (sanding, grooving, chiseling, etc.), and/or recycling of pavement.

Do not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition as they may explode and cause injury or death.

Tripping accidents have occurred because of asphalt buildup on bottoms of shoes and boots; buildup should be removed regularly to prevent such accidents. Do not use solvents or thinners to clean footwear.

Conditions for safe storage, including any incompatibilities:

Store away from all ignition sources and open flames in accordance with applicable laws and regulations.

Vapors containing hydrogen sulfide may accumulate during storage or transport of asphaltic materials. When petroleum asphalt products are heated, potentially irritating emissions (fumes, mists, and vapors) may be released.

8. Exposure controls/personal protection

Legend:

NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; STEL = Short Term Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Asphalt Fumes	NE	0.5 mg/m ³ (as benzene-soluble aerosol)	Ceiling 5 ppm
Limestone (Calcium Carbonate)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	10 mg/m ³ (total dust as Calcium Carbonate)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
Particulates not otherwise classified	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	10 mg/m ³ (inhalable fraction) 3 mg/m ³ (respirable fraction)	NE
Respirable dust containing silica	10 mg/m ³ ÷ (% silica + 2)	Use Respirable Silica TLV	Use Respirable Silica TLV
Total dust containing silica	OSHA: 30 mg/m ³ ÷ (% silica + 2) MSHA: 30 mg/m ³ ÷ (% silica + 3)	NE	NE
Respirable Crystalline Silica (quartz)	NE - Use respirable dust containing silica PEL	0.025 mg/m ³	0.05 mg/m ³
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	½ of OSHA and MSHA respirable dust containing silica PEL	0.025 mg/m ³	0.05 mg/m ³
Ammonia (NH ₃)	50 ppm	25 ppm STEL 35 ppm	25 ppm Ceiling 35 ppm
Carbon Monoxide (CO)	50 ppm	25 ppm	35 ppm Ceiling 200 ppm
Hydrogen Sulfide (H ₂ S)	Ceiling 20 ppm	10 ppm STEL 15 ppm	Ceiling 10 ppm
Nitrogen Dioxide (NO ₂)	Ceiling 5 ppm	3 ppm STEL 5 ppm	STEL 1 ppm
Ozone (O ₃)	0.1 ppm	0.05 ppm	Ceiling 0.1 ppm
Sulfur Dioxide (SO ₂)	5 ppm	STEL 0.25 ppm	2 ppm STEL 5 ppm

Exposure Guidelines:

Workers should station themselves on the upwind side of asphalt emissions when possible. It is recommended that asphalt emissions be monitored regularly to determine exposure levels. Respirable dust and quartz levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of appropriate exposure limits must be reduced by all feasible engineering controls, including (but not limited to), ventilation, process enclosure, and/or enclosed employee workstations.

Wash hands before eating, drinking, smoking and/or using toilet facilities. A clean water supply for emergency first aid and washing facilities should be readily available. Laundering clothing between uses is recommended.

Engineering Controls:

General dilution or local exhaust ventilation is required to maintain exposures below appropriate exposure limits. Use only in well-ventilated areas. Activities with dried/hardened product that generate dust require the use of general ventilation, local exhaust and/or wet suppression methods to maintain exposures below appropriate exposure limits.

Eye Protection:

Safety glasses with side shields should be worn as minimum protection at ambient temperatures. Contact lens should not be worn when eye contact with product is possible.

Skin Protection (Protective Gloves/Clothing):

Avoid skin contact with material by wearing impervious gloves and protective clothing. With product at ambient temperatures, use disposable nitrile, neoprene or butyl rubber material. When handling hot material, use heat-resistant gloves. Use insulated, heat-resistant clothing as necessary.

Respiratory Protection:

Not expected to be necessary under normal use and working conditions.

All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. For air-contaminant concentrations which exceed or are likely to exceed applicable exposure limits, use a NIOSH-approved, contaminant-specific, air purifying respirator. If such conditions are sufficiently high that the air-purifying respirator is inadequate, or if oxygen adequate to sustain life is not present, use a positive-pressure, self-contained breathing apparatus. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica levels that exceed or are likely to exceed an 8-hour Time Weighted Average (TWA) of 0.5 mg/m³, a high-efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica levels exceed or are likely to exceed an 8-hour TWA of 5.0 mg/m³ a positive-pressure, full-face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:

Black, viscous, granular.

Odor: Petroleum odor.	PH: Not applicable	Decomposition temperature: Not applicable
Melting point/freezing point: 100-135°F	Initial boiling point and boiling range: 470°C	Flash point: Product: Not available Asphalt Cement: >425°F Light Catalytic Cracked Petroleum Distillate: 165° - 222°F (PM)
Evaporation rate: Not applicable	Flammability: Not applicable	Upper/lower flammability or explosive limits: Product: Not available Asphalt Cement: LEL: 0.9; UEL: 7 Light Catalytic Cracked Distillates: LEL:0.9; UEL 6
Vapor pressure: Not applicable	Vapor density: >1	Solubility: Negligible

Partition coefficient: n-octanol/water. Not applicable	Autoignition temperature: Not applicable	Specific Gravity (H₂O = 1): 2.0 -2.5
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10. Stability and reactivity

Reactivity:

Not reactive under normal use. Contact with fluorine may cause burning or explosion. Adding water to hot asphalt presents an explosion hazard.

Chemical stability:

Stable under normal temperatures and pressures.

Possibility of hazardous reactions:

None under normal use. Keep away from direct flame/ignition sources.

Conditions to avoid (e.g., static discharge, shock or vibration):

Keep away from direct flame/ignition sources. Contact with incompatible materials should be avoided (see below). See Sections 5, 6 and 7 for additional information.

Incompatible materials:

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

Silica ignites on contact with fluorine and is incompatible with acids, aluminum, ammonium salts and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.

Hazardous decomposition products:

Carbon monoxide and other compounds (such as amines, ammonia, nitrogen dioxide, sulfur dioxide, ozone, hydrogen sulfide, and various hydrocarbons) may be released by thermal decomposition. Hazardous vapors can collect in enclosed vessels or areas if not properly ventilated. If hydrogen sulfide is present, the flammable limits range from 4.3 to 45.5% by volume and its presence may promote the formation of pyrophoric (spontaneously igniting) iron compounds (See 29 CFR 1910.146). Silica-containing respirable dust particles can be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F). Both tridymite and cristobalite are other forms of crystalline silica and are considered more fibrogenic to the lungs than quartz.

11. Toxicological information

Primary Routes of Exposure:

Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics Inhalation:

Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion. Coughing sneezing and shortness of breath may occur. Symptoms of silicosis caused by chronic exposure to dust may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Contains or may release hydrogen sulfide (H₂S) gas when heated. Exposure to H₂S concentrations above the permissible exposure limit causes irritation of the mucous membranes, headache, dizziness, vomiting, coughing, nasal discharge and pulmonary edema. At levels between 500 and 700 ppm, respiratory paralysis, loss of consciousness and possibly death can occur within 30 to 60 minutes. Exposure to higher concentrations can result in immediate death. Repeated exposure to low levels may also cause eye effects including conjunctivitis and corneal injury. There is no evidence that H₂S will accumulate in the body tissue after repeated overexposure.

Fumes, mists or vapors may cause respiratory irritation. Contains or may release hydrogen sulfide gas (H₂S), which may accumulate in confined spaces. H₂S fumes and vapors may be harmful or fatal if inhaled. Avoid inhalation of dust generated from mechanical handling of hardened/dried material. Breathing silica containing dust for prolonged periods in the workplace can cause lung damage and lung disease called silicosis. Several scientific organizations have classified crystalline silica as causing lung cancer in humans. Silicosis and lung cancer can result in permanent injury or death.

Eye Contact:

Dust particles can scratch the eye causing tearing, redness, a stinging or burning feeling, or swelling of the eyes with blurred vision.

Direct contact with hot material can cause severe thermal burns. Hardened material may scratch the eye causing tearing, redness and a stinging sensation. Fumes, vapors or mists may be irritating.

Skin Contact:

Dust particles can scratch and irritate the skin with redness, an itching or burning feeling, swelling of the skin, and/or rash. Repeated or prolonged exposure may result in absorption of component petroleum distillates.

Ingestion:

Asphalt has a low toxicity when ingested; however, chewing and swallowing asphalt may cause gastrointestinal effects. Gastric masses (Bezoars) and stomach (pyloric) obstructions have been reported in individuals who have chewed and swallowed asphalt. Aspiration of product into lungs may occur when vomiting, and may result in pulmonary edema and/or chemical pneumonia.

Medical Conditions Aggravated by Exposure:

Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and/or lung (including asthma and/or other breathing disorders).

Delayed and immediate effects and also chronic effects from short- and long-term exposure:

Prolonged and repeated exposure to asphalt may cause skin disorders such as dermatitis, folliculitis, and acne-like lesions, or more rarely, pigmentation of the skin. Chronic inhalation of high concentrations of asphalt emissions may cause chronic bronchitis and pneumonitis (inflammation of the lungs). In mice, there was damage to the lungs, including bronchitis, pneumonitis, and abscess formation. Guinea pigs and rats showed pneumonitis, peribronchial adenomatosis, and some squamous cell metaplasia.

This material contains heavy vacuum distillates/aromatic extract oils. Repeated dermal application of these oils to experimental animals has been reported to cause skin disorders, effects on the adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus ~~liver, thymus and blood forming organs~~, as well as fetal death and birth defects. Repeated exposure to low levels of H₂S may cause eye effects including conjunctivitis and corneal injury. There is no evidence that H₂S will accumulate in the body tissue.

Contains or may release hydrogen sulfide H₂S gas. Exposure to H₂S concentrations above the permissible exposure limit causes irritation of the mucous membranes, headache, dizziness, vomiting, coughing, nasal discharge and pulmonary edema. At levels between 500 and 700 ppm, respiratory paralysis, loss of consciousness and possible death can occur within 30 to 60 minutes. Exposure to higher concentrations can result in immediate death. Repeated exposure to low levels may also cause eye effects including conjunctivitis and corneal injury. There is no evidence that H₂S will accumulate in the body tissue after repeated overexposure.

The following information applies to the dried product if it is subjected to mechanical forces (such as demolition or asphalt recycling work), which may generate crystalline silica-containing dust particles:

Prolonged overexposure to respirable dusts in excess of appropriate exposure limits can cause inflammation of the lung leading to possible fibrotic changes, a medical condition known as pneumoconiosis.

Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of allowable exposure limits may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of exposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased. Symptoms of silicosis may include, but are not limited to, the following: shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Repeated overexposures to very high levels of respirable crystalline silica (quartz, cristobalite, tridymite) for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include, but are not limited to, shortness of breath, cough, fever, weight loss, and chest pain.

Respirable dust containing newly broken silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken particles of silica.

There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Carcinogenicity:

Skin application of asphalt fume condensate fractions caused skin tumors in laboratory mice. When asphalt was dissolved or mixed with a solvent prior to exposing laboratory animals, the carcinogenicity results were weakly positive. The causal agent is thought to be 4 to 6 ring polycyclic aromatic compounds (PAH). Trace amounts of these materials may be present in asphalts and can be generated upon excessive heating. Some PAHs have been identified as causing carcinogenic and reproductive effects. Currently, epidemiological evidence does not support a link between asphalt exposure and human skin cancer.

Repeated breathing of asphalt emissions has not resulted in a carcinogenic response in laboratory animal testing. Although epidemiological studies on asphalt workers have suggested a possible link between asphalt fumes and certain types of cancer, confounding factors such as smoking and concomitant exposure to other agents in the workplace may have influenced the results of these studies. Asphalt is not listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA).

IARC states that there is sufficient evidence that extracts (asphalts dissolved in hydrocarbon solvents) are carcinogenic to laboratory animals and recently the agency determined that occupational exposures to oxidized asphalt and their emissions during roofing applications are “probably carcinogenic to humans” (Group 2A). They also determined that occupational exposures to hard asphalts and their emissions during mastic asphalt work and occupational exposures to straight – run asphalts and their emissions during paving operations are “possibly carcinogenic to humans” (Group 2B).

This material contains heavy vacuum distillates/aromatic extract oils. IARC has determined that there is sufficient evidence in experimental animals for their carcinogenicity, and has classified these oils as Group 1, or human carcinogens.

The following information applies to the dried product if it is subjected to mechanical forces (such as demolition or asphalt recycling work), which may generate crystalline silica-containing dust particles:

Epidemiology studies on the association between crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source and type of crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.

In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a “known human carcinogen.” In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

Additional information on toxicological-effects:

Acute toxicity: Not classified.

No specific data on product. Based on components, not expected to be classified for acute toxicity.

Asphalt:

Asphalt Oral, rat: LD50>5-5000 mg/kg

Acute Dermal, rat: LD 50>2000 mg/kg

Skin corrosion/irritation: Not classified

Serious eye damage/eye irritation: Not classified

Respiratory sensitization: Not classified

Skin sensitization: May cause photosensitization (contact), but not classified as a skin sensitizer.

Germ cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Reproductive toxicity: Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure: Not classified

Specific target organ- toxicity – repeated exposure: Causes damage to organs (lungs, respiratory system, adrenals, bone marrow, liver, lymph nodes, kidney, stomach and thymus) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not classified (not applicable- solid material)

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

No specific data on this product. The asphalt component may cause damage to aquatic organisms. Large spills may cause damage to aquatic organisms through fouling of the shoreline.

Persistence and degradability:

Expected to be resistant to biodegradation.

Bioaccumulative potential.

Significant migration into the environment and bioaccumulation are unlikely.

Mobility in soil.

Not determined.

Other adverse effects.

Not determined.

13. Disposal considerations

Safe handling and disposal of waste:

Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information

UN Number:

Not regulated.

UN Proper shipping name:

Not regulated.

Transport Hazard class:

Not applicable.

Packing group, if applicable:

Not applicable.

Marine pollutant (Yes/No):

Not applicable.

15. Regulatory information

Toxic Substances Control Act (TSCA):

The components in this product are listed on the TSCA Inventory or are exempt.

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

Releases of this material to water may be reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act. (See Section 6)

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:

Section 302 extremely hazardous substances:

None

Section 311/312 hazard categories:

Delayed Health

Section 313 reportable ingredients at or above de minimus concentrations:

None

California Proposition 65:

This product contains a chemical (crystalline silica, bitumen, various aromatic hydrocarbons) known to the State of California to cause cancer and birth defects or other reproductive harm.

State Regulatory Lists:

Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other information

Disclaimer

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any 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, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.

Issue date:

06/01/2015

Revision date:

06/01/2015

**Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242**



Dear Customer/Contractor:

Please find attached a safety data sheet (SDS) for the product that you purchased from Vulcan Materials Company or one of its subsidiaries or affiliates ("Vulcan"). This is a revised SDS and replaces any previous versions of the material safety data sheet (MSDS) for this product. This SDS is provided to you as required by the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Mine Safety and Health Administration's (MSHA) Hazard Communication Standard (30 CFR Part 47), and/or any applicable state Right-to-Know laws.

It is the responsibility of your company to communicate this information to your employees, customers, and contractors who may use or come in contact with this product. Further, if you distribute this product, Vulcan requests, and applicable laws may require, that you forward this SDS to your customers.

Please direct this information to the person responsible for safety and health compliance at your company. If you have questions about the SDS, please contact Vulcan at 1200 Urban Center Drive, Birmingham, AL 35242 or 1-866-401-5424.

If you need additional copies of this or any other Vulcan SDS or a Spanish language version, you can obtain them at www.vulcanmaterials.com or by calling 1-866-401-5424.

La MSDS puede obtenerse en www.vulcanmaterials.com o llamando al 1-866-401-5424.

Sincerely,
Occupational Health Office
Vulcan Materials Company