



# Safety Data Sheet

SDS No. MZ-CMA-110916

Conforms to HazCom 2012/U.S.

## Section 1: IDENTIFICATION

**Product Name(s):** Cold Mix Asphalt

**Product Synonyms:** Cold Mix Asphalt, Cold Mix Asphaltic Concrete, Cold Patch Asphalt, Cold Asphalt Paving Material

**Manufacturer:** Mar-Zane, Inc.  
Corporate Offices  
3570 S. River Rd.  
P.O. Box 1585  
Zanesville, Ohio 43702-1585

**Information Telephone Number:**  
1-740-453-0127 (8am to 4:30pm EST)

**For Chemical Emergency ONLY:**  
(spill, leak, fire, exposure or accident)

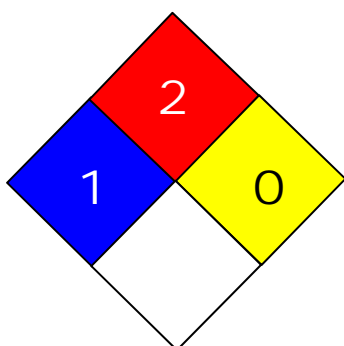
**CHEMTREC**  
**1-800-424-9300 24 HOURS / 7 Days**

**Recommended Use:** Cold mix is used for repairing paving roads, driveways, parking lots, school yards, and other surface, base, or sub-base applications..

**Note:** This SDS covers many types of HMA. Individual composition of hazardous constituents will vary between HMA mix designs.

## Section 2: HAZARD(S) IDENTIFICATION

**Hazard Classifications:** Category 2, Health Hazard. Skin Irritation  
Category 2, Health Hazard. Eye Irritation  
Category 2, Health Hazard. Carcinogenicity / Inhalation  
Category 2, Physical Hazard. Combustible Solid



NFPA



WARNING



WARNING

**Hazard Statements:** May cause skin Irritation.  
May cause eye Irritation.  
Possibly carcinogenic to humans.  
Readily Combustible Solid with Source

## Precautionary Statements:

**Eye Contact:** Cutting, crushing, or grinding hardened asphalt will release dust. Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with cold mix can cause moderate eye irritation, redness, and itching. Eye exposures require immediate first aid to prevent damage to the eye.

**Skin Contact:** Repeated or prolonged contact to cold mix may cause dry skin, discomfort, irritation, and dermatitis. If heated, direct contact with cold mix will cause severe thermal burns

**Inhalation (acute):** Cutting, crushing, or grinding hardened asphalt will release dust. Breathing dust may cause nose, throat, or lung irritation, including choking, depending on the degree of exposure. If heated, cold mix produces irritating fumes or vapors such as smoke, carbon dioxide, carbon monoxide, unburned hydrocarbons. Hydrogen sulfide and other sulfur-containing gases can evolve from this product at elevated temperatures. Exposure to fumes or vapors may cause irritation of the nose and throat, and symptoms such as headache, dizziness, loss of coordination, and drowsiness.

**Inhalation (chronic):** Risk of injury depends on duration and level of exposure.

**Silicosis:** This product contains trace amounts of crystalline silica. Under normal use and application, cold mix does not release crystalline silica. However; cutting, crushing, or grinding hardened asphalt or other crystalline silica-bearing materials will release respirable crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a serious disabling and fatal lung disease.

**Carcinogenicity:** Cold mix is not listed as a carcinogen by IARC or NTP; however, cold mix contains trace amounts of crystalline silica that is classified by IARC and NTP as a known human carcinogen.

**Ingestion:** Do not chew or ingest cold mix. Ingestion may result in nausea, vomiting, diarrhea, and restlessness. Chewing asphalt has caused gastrointestinal effects. Stomach obstructions have been reported in individuals who have chewed and swallowed asphalt.

**Readily Combustible Solid:** Can be easily ignited by brief contact with an ignition source. **NO SMOKING or OPEN FLAME.**

## Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

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Component	Percent (% wt)	CAS Number	ACGIH Exposure	OSHA PEL
Aggregates (gravel and/or limestone)	95-96	various	NA	NA
CML Liquid Blend Cement	5-6	mixture	100 mg/m <sup>3</sup>	NA
Crystalline Silica (as Quartz)	varies	14808-60-7	0.1 mg/m <sup>3</sup>	30 mg/m <sup>3</sup>

### Note:

Cold Mix is a mixture of gravel and/or limestone aggregates, and a liquid asphalt cement emulsion. It may also contain small amounts of asphalt modifiers (e.g. anti-stripping agents, hydrated lime), RAP, fly ash, slag aggregates, fibers (synthetic or organic), color pigment and other recycled materials (e.g. ceramics, plastics, glass, etc.).

## Section 4: FIRST AID MEASURES

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- Eye Contact:** For contact with cold mix material, flush eyes with large amounts of water for at least 15 minutes. Seek medical attention. For contact with airborne dust, rinse eyes thoroughly with water for at least 15 minutes, including under the lids, to remove all particles. Check for and remove any contact lenses. Seek medical attention for abrasions.
- Skin Contact:** Wash with cool water and a pH neutral soap or a mild skin detergent. Do not use solvents or thinners to remove material from skin. Seek medical attention for burns, rash, irritation, and dermatitis. For contact with hot material, immerse or flush skin with cold water for at least 15 minutes. Call a physician. Do not attempt to remove solidified material, since removal may cause further tissue injury. Remove contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse.
- Inhalation:** Move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. Seek medical attention for discomfort or if coughing or other symptoms do not subside..
- Ingestion:** Do not induce vomiting. Seek medical attention and/or contact poison control center immediately.

## Section 5: FIREFIGHTING MEASURES

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- Specific Hazards:** This product is a combustible solid per the OSHA Hazard Communication Standard,
- Extinguishing Agent:** For small fires, Class B fire extinguishing media such as CO<sub>2</sub>, dry chemical, foam (AFFF/ATC) can be used. For larger fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment
- Firefighting Equipment:** A SCBA is recommended to limit exposure to combustion products when fighting any fire.
- Combustion Products:** Toxic gases produced in a fire include by not limited to CO, CO<sub>2</sub>, and H<sub>2</sub>S.

## Section 6: ACCIDENTAL RELEASE MEASURES

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- General:** Use a shovel to scrape up material and place material into suitable containers for recovery or disposal. Do not wash cold mix down sewage and drainage systems or into bodies of water (e.g. streams). Wear appropriate protective equipment as described in Section 8.
- Waste Disposal Method:** Dispose of HMA according to Federal, State, Provincial, and Local regulations.

## Section 7: HANDLING AND STORAGE

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- General:** Cold mix asphalt is heavy and poses risks such as sprains and strains to the back, arms, shoulders, and legs during lifting and mixing. Handle with care and use appropriate control measures. Avoid contact with skin, eyes, and clothing. Maintain employee exposure levels below established regulatory limits. If heated, do not allow hot material to contact skin. Use all appropriate Personal Protective Equipment (PPE) described in Section
- Usage:** 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.

## Section 7: HANDLING AND STORAGE (continued)

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- Storage:** Store in appropriately labeled, closed containers, at cool, well ventilated areas. Do not expose open flames, strong oxidizers or other source of ignition.
- Clothing:** Remove and launder clothing that is soiled with asphalt. Thoroughly wash hands and exposed skin after exposure to cold mix.

## Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

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Component	OSHA PEL	ACGIH-TLV-TWA	NIOSH REL
Limestone Aggregates (Calcium Carbonate)	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	n/a	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Gravel Aggregates	n/a	n/a	n/a
CML Liquid Blend Cement	n/a	100 mg/m <sup>3</sup>	n/a
Crystalline Silica	mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup> (R)	0.05 mg/m <sup>3</sup> (R)

(T) Total Dust  
(R) Respirable Fraction  
(I) Inhalable Fraction

- Engineering Controls:** Under normal conditions, engineering controls are not required. Use local exhaust or general dilution ventilation when using at elevated temperatures or during activities that generate dust or fumes, to maintain levels below exposure limits.

### Personal Protective Equipment (PPE):

- Respiratory Protection:** Under ordinary conditions no respiratory protection is required. Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust or fumes above exposure limits.
- Eye Protection:** Wear ANSI approved glasses, safety goggles, or face shield when handling HMA to prevent contact with eyes.
- Skin Protection:** Wear leather or cloth work gloves to prevent skin contact and insulated gloves when handling hot material. Thoroughly wash hands and exposed skin after exposure to HMA.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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- Physical State:** Granular Solid.
- Appearance:** Black-Dark Brown Solid Color
- Odor:** Slight Petroleum / Tar Odor
- Vapor Pressure:** No Data Available
- Vapor Density:** No Data Available
- Specific Gravity:** 2.0 – 2.5
- Evaporation Rate:** No Data Available
- pH (In Water):** No Data Available
- Melting Point:** No Data Available
- Freezing Point:** No Data Available
- Boiling Point:** No Data Available

**Flash Point:** 236.7° F (113.7° C)  
**Auto-Ignition Temp.** No Data Available  
**Flammability (solid, gas)** No Data Available  
**Flammable Lower Limit:** No Data Available  
**Flammable Upper Limit:** No Data Available  
**Viscosity:** No Data Available  
**Solubility in Water:** Insoluble  
**Relative Density:** No Data Available  
**Decomposition Temperature:** No Data Available  
**Partition Coefficient: N-Octanol/water:** No Data Available

## Section 10: STABILITY AND REACTIVITY

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**Stability:** Stable  
**Chemical Stability:** Avoid contact with incompatible materials, excessive heat, sources of ignition and open flames. Incompatible with strong acids or bases, and oxidizing agents such as nitrates, chlorates, and peroxides.  
**Other:** **Hazardous Decomposition:** When heated, may produce hydrogen sulfide and various hydrocarbons.

## Sections 11: TOXICOLOGICAL INFORMATION

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Primary Routes of Exposure:	Inhalation:	Dermal:	Oral:
	Yes	No	Yes

### Summary of health effect data on Asphalt Cement Component:

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

Some epidemiologic studies conducted on workers exposed to asphalt fume have shown no increased incidence of cancer while other older studies have reported a slightly increased incidence of lung, other respiratory tract or gastrointestinal cancers. In those studies in which elevated cancer incidences were reported, concurrent or previous exposure to coal-tar products have been documented. therefore, it cannot be concluded that cancer incidence is related to exposure to petroleum asphalt fume.

Although early studies have some technical shortcomings, long term inhalation exposures to asphalt aerosols or fumes did not produce evidence of carcinogenicity even though chronic inflammatory changes similar to those produced by nonspecific respiratory irritants were observed. Inhalation of 150 mg/m<sup>3</sup> asphalt fume (particulate + vapor) 6 hours/day, 5 days/week for 13 weeks, did not produce toxicity except for reduced body weight and irritation in nasal passages in exposed rats.

Solvent dilutions of different types of asphalts have been tested in chronic skin painting studies. Some of the studies have reported a low incidence of skin tumors. The use of diluents may enhance bioavailability or metabolic activation of chemicals in the mixture in a fashion not representative of occupational exposure. Skin painting studies in

mice have been conducted using condensates from fumes generated at temperatures >450 F diluted in solvent. Asphalt fume condensate preparations have produced skin tumors. Experimental conditions (temperature and dose) were grossly exaggerated over that likely to occur in humans.

Extracts of whole asphalts tested in a modified Ames assay gave negative or slightly positive findings (mutagenicity index <1.5). Asphalt fume samples collected under actual field conditions did not show any significant mutagenic activity.

This product can produce a toxicologically significant concentration of hydrogen sulfide (H<sub>2</sub>S) when enclosed in a confined space. Hydrogen sulfide gas (H<sub>2</sub>S) is toxic by inhalation. Prolonged breathing of 50-100 ppm H<sub>2</sub>S vapors can produce eye and respiratory tract irritation.

Higher concentrations (250-600 ppm) for 15-30 minutes can produce headache, dizziness, nervousness, nausea and pulmonary edema or bronchial pneumonia. Concentrations of >1000 ppm will cause immediate unconsciousness and death through respiratory paralysis. Rats and mice exposed to 80 ppm H<sub>2</sub>S, 6 hrs/day, 5 days/week for 10 weeks, did not produce any toxicity except for irritation of nasal passages. H<sub>2</sub>S did not affect reproduction and development (birth defects or neurotoxicity) in rats exposed to concentrations of 75-80 ppm or 150 ppm H<sub>2</sub>S, respectively. Over the years a number of acute cases of H<sub>2</sub>S poisonings have been reported. Complete and rapid recovery is the general rule.

However, if the exposure was sufficiently intense and sustained causing cerebral hypoxia (lack of oxygen to the brain), neurologic effects such as amnesia, intention tremors or brain damage are possible.

### **Summary of health effect data on distillate fuel components:**

This product may contain >0.1% naphthalene. Exposure to naphthalene at 30 ppm for two years caused lung tumors in female mice. Male mice with the same exposure did not develop tumors. Exposure to 10-60 ppm naphthalene for 2 years caused tumors in the tissue lining of the nose and respiratory tract in male and female rats. Oral administration of 133-267 mg/kg/day of naphthalene in mice for up to 90 days did not produce mortality, systemic toxicity, adversely affect organ or body weight or produce changes in blood. Repeated oral administration of naphthalene produced an anemia in dogs. Repeated intraperitoneal doses of naphthalene produced lung damage in mice. Repeated high doses of naphthalene has caused the formation of cataracts and retinotoxicity in the eyes of rats and rabbits due to accumulation of 1,2-naphthoquinone, a toxic metabolite. Effects in human eyes is uncertain and not well documented. Pregnant rats administered intraperitoneal doses of naphthalene during gestation gave birth to offspring that had delayed heart and bone development. Pregnant mice given near lethal doses of naphthalene showed no significant maternal toxicity and a reduction in the number of pups per litter, but no gross abnormalities in offspring. Suppressed spermatogenesis and progeny development have been reported in mice, rats and guinea pigs after exposure to high concentrations of naphthalene in their drinking water. Certain groups or individuals, i.e., infants, Semites, Arabs, Asians and Blacks, with a certain blood enzyme deficiency (glucose-6-phosphate dehydrogenase) are particularly susceptible to hemolytic agents and can rapidly develop hemolytic anemia and systemic poisoning from ingestion or inhalation of naphthalene.

## **Section 12: ECOLOGICAL INFORMATION**

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### **Ecotoxicity Effects:**

If spilled, cold mix may release the oil components of the mixture and could harm plant and aquatic life in low concentrations. This product does not concentrate or accumulate in the food chain. If released to soil and water, this product is expected to biodegrade under both aerobic and anaerobic conditions.

## **Section 13: DISPOSAL CONSIDERATIONS**

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Dispose of waste and containers according to Federal, State, Provincial, and Local regulations.

## **Section 14: TRANSPORT INFORMATION**

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This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

## **Section 15: REGULATORY INFORMATION**

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### **Federal Regulatory Information:**

**US TSCA Chemical Inventory Section 8(b):** This product and/or its components are listed on the TSCA Chemical Inventory.

### **OSHA / MSHA Hazard Communication Standard:**

This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.



## EPA Superfund Amendment & Reauthorization Act (SARA):

**SARA Section 302:** This product contains and/or produces the following component(s) that have been listed on the EPA's Extremely Hazardous Substance (EHS) List: - Hydrogen Sulfide (H<sub>2</sub>S) -

**SARA Section 304:** This product is not listed as a CERCLA hazardous substance.

**SARA Section 311/312:** The following EPA hazard categories apply to this product:  
- Acute - Health – Hazard -

**SARA Section 313:** This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

**RCRA:** If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

**California Proposition 65:** Crystalline silica (airborne particulates of respirable size) is known by the State of California to cause cancer.

## Section 16: OTHER INFORMATION

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### Abbreviations:

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
(B)	Inhalable fraction, as benzene – soluble aerosol	OSHA	Occupational Safety and Health Administration
CAS No	Chemical Abstract Service number	PEL	Permissible Exposure Limit
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	pH	Negative log of hydrogen ion
CFR	Code of Federal Regulations	PPE	Personal Protective Equipment
DOT	U. S. Department of Transportation	(RP)	Respirable Particulate
EST	Eastern Standard Time	RCRA	Resource Conservation and Recovery Act
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
MG/M <sup>3</sup>	Milligrams per cubic meter	SCBA	Self-Contained Breathing Apparatus
MSHA	Mine Safety and Health Administration	(TP)	Total Particulate
NA	Not Available	TDG	Transportation of Dangerous Goods
NFPA	National Fire Protection Association	TLV	Threshold Limit Value
NIOSH	National Institute for Occupational Safety and Health	TWA	Time Weighted Average (8 hour)

This SDS (Sections 1-16) was revised on November 9, 2016.

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