



Safety Data Sheet

SDS No. SSE-CRS-111016

Conforms to HazCom 2012/U.S.



Section 1: IDENTIFICATION

Product Name(s): CRS-2, E-3
Product Identifiers: Cationic Asphalt Emulsion

Manufacturer and/or Marketer: S&S Emulsions, Inc.
1731 Old State Route #7
P.O. Box 66
Rayland, Ohio 43943

Information Telephone Number:
1-740-859-2131 (8am to 5pm EST)

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

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

Product Use: Cationic Asphalt Emulsion is used as a bonding application in building or repairing roadways, driveways, parking lots, school yards, and other surface, base, or sub-base applications.

Note: This MSDS covers different blends of Cationic Asphalt Emulsions. Individual composition of hazardous constituents will vary between Cationic Asphalt Emulsion mix designs.

Section 2: HAZARD(S) IDENTIFICATION

Hazard Classifications: Category 2, Health Hazard. Skin Irritation
Category 1, Health Hazard. Skin Sensitization
Category 2, Health Hazard. Eye Irritation
Category 2, Health Hazard. Carcinogenicity / Inhalation
Category 4, Fire Hazard. Combustible Liquid
Special Hazard: Elevated Temperature Applications



NFPA



WARNING



WARNING



WARNING

Hazard Statements: Hot Product will cause THERMAL BURNS!
Combustible Liquid – Keep from Flame or Sources of Ignition
May produce Hydrogen Sulfide Gas at Elevated Temperatures
May cause skin Irritation
May cause allergic skin reactions.
May cause eye Irritation.
Possibly carcinogenic to humans.

Precautionary Statements:

Eye Contact: Eye contact with Cationic Asphalt Emulsion may 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 Cationic Asphalt Emulsion may cause dry skin, discomfort, irritation, and dermatitis. If heated, direct contact with Cationic Asphalt Emulsion will cause severe thermal burns

Inhalation (acute): If heated, Cationic Asphalt Emulsion may release 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.

Carcinogenicity: Cationic Asphalt Emulsion is not listed as a carcinogen by ACGIH. Presently, the IARC has determined that there is inadequate evidence that bitumens alone are carcinogenic to humans.

Ingestion: Ingestion may result in nausea, vomiting, diarrhea, and restlessness.

Medical Conditions

Aggravated by Exposure: Individuals with preexisting skin conditions can be aggravated by exposure.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	Percent (% wt)	CAS Number
Liquid Asphalt Cement	60-95	8052-42-4
Diesel Fuel	0-5	68476-30-2
Water	25-35	7732-15-5
Emulsifier	0-4	Proprietary

Section 4: FIRST AID MEASURES

Eye Contact: For contact with Cationic Asphalt Emulsion, 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.

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

- Specific Hazards:** This product is not a combustible liquid per the OSHA Hazard Communication Standard, but will ignite and burn with contact with direct flame or ignition source.
- Extinguishing Agent:** For small fires, Class B fire extinguishing media such as CO₂, dry chemical, foam (AFFF/ATC) can be used. For larger fires, 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, CO₂, and H₂S.
- NFPA Rating:** Health: 0 Flammability: 1 Reactivity: 0 Other: ---

Section 6: ACCIDENTAL RELEASE MEASURES

- General:** Dike or contain spill with soil, floor-dry, sand, etc. Pump liquid to containers or storage vessel. Soak up residue with absorbent material. Use a shovel to scrape up material and place material into suitable containers for recovery or disposal. Do not wash Cationic Asphalt Emulsion 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:** Recovered materials may be blended with aggregate and used for patching or other maintenance use. Dispose of Cationic Asphalt Emulsion according to Federal, State, Provincial, and Local regulations.

Section 7: HANDLING AND STORAGE

- General:** Handle with care and use appropriate control measures. Avoid contact with skin, eyes, and clothing. Microbial degradation and other change may occur on very extended storage. Maintain employee exposure levels below established regulatory limits. Use all appropriate Personal Protective Equipment (PPE) described in Section 8.
- Usage:** Personal Protective Equipment (PPE) described in Section 8.
Concentrations of hydrogen sulfide (H₂S) can be generated and accumulated in storage tanks and bulk transport compartments which may require additional precautions and procedures during loading and unloading.
- Storage:** Store in appropriately labeled, clean covered tanks at ambient temperature. Avoid freezing. Do not expose to open flames, strong oxidizers or other source of ignition.
- Clothing:** Remove and launder clothing that is soiled with Cationic Asphalt Emulsion. Thoroughly wash hands and exposed skin after exposure to Cationic Asphalt Emulsion.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Component	OSHA PEL	ACGIH-TLV-TWA	NIOSH REL
Liquid Asphalt Cement	N/A	0.5 mg/m ³	5.0 mg/m ³
Diesel Fuel	N/A	100 mg/m ³	N/A
Water	N/A	N/A	N/A
Emulsifier	N/A	N/A	N/A

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 Cationic Asphalt Emulsion to prevent contact with eyes.

Skin Protection: Wear leather or cloth work gloves to prevent skin contact and insulated gloves when handling Cationic Asphalt Emulsion material. Thoroughly wash hands and exposed skin after exposure to Cationic Asphalt Emulsion.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: Black-Dark Brown Liquid, Semi-Liquid

Odor: Slight Petroleum / Tar Odor

Vapor Pressure: 23.756 mmHg / 77° F

Vapor Density: No Data Available

Specific Gravity: 1.009

Evaporation Rate: No Data Available

pH (In Water): No Data Available

Melting Point: No Data Available

Freezing Point: No Data Available

Boiling Point: 212° F

Flash Point: 212° F

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: Dispersible

Relative Density: No Data Available

Decomposition Temperature: No Data Available

Partition Coefficient: N-Octanol/water: No Data Available

Section 10: STABILITY AND REACTIVITY

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

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

Summary of health effect data on asphalt components:

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).

This product can produce a toxicologically significant concentration of hydrogen sulfide (H₂S) when enclosed in a confined space. Hydrogen sulfide gas (H₂S) is toxic by inhalation. Prolonged breathing of 50-100 ppm H₂S 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 H₂S, 6 hrs/day, 5 days/week for 10 weeks, did not produce any toxicity except for irritation of nasal passages. H₂S did not affect reproduction and development (birth defects or neurotoxicity) in rats exposed to concentrations of 75-80 ppm or 150 ppm H₂S, respectively. Over the years a number of acute cases of H₂S 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.

Some epidemiologic studies conducted on workers exposed to asphalt fume have shown no increased incidence of cancer while other 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 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/m³ 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.

Laboratory animals administered subcutaneous or intramuscular injections of asphalt preparations or repeated skin applications of hot (212 F) undiluted asphalt have occasionally produced a low incidence of skin tumors at the site of application. These findings are of questionable validity since repeated tissue trauma (and/or burns) at the application site can induce tumors. 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). Fume condensates derived from heating asphalts to high temperatures (>450 F) were moderately active (MI 4-9).

Fumes generated from coal tar pitch were >1000 times more active. Asphalt fume samples collected under actual field conditions did not show any significant mutagenic activity.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity Effects: If spilled, Cationic Asphalt Emulsion 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

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

Section 14: TRANSPORT INFORMATION

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

Section 15: REGULATORY INFORMATION

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 produces the following component(s) that have been Listed on the EPA's Extremely Hazardous Substance (EHS) List:
- Hydrogen Sulfide (H₂S) -

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.

Section 16: OTHER INFORMATION

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 ³	Milligrams per cubic meter	SCBA	Self-Contained Breathing Apparatus
MSHA	Mine Safety and Health Administration	(TP)	Total Particulate
N/A	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 10, 2016.

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