

Section 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

IDENTIFICATION of the PREPARATION:

Identification of Product Series: Cationic Asphalt Emulsion - 600 Series
Product Identifier/Trade Names (As Labeled): CIR-EE; CIR-EE_S; CIR-EE_WY; Cold Recycle Solventless Emulsion; CQS-1H; CQS-1H FS; CQS-1H NV; CQS-1NV; CQS-1NV_FS; CQSH AZ; CRS-1; CRS-1H; CRS-2; CRS-2A; CRS-2B; CRS-2F; CRS-2H; CRS-2NV; CRS-2WA; CRSEA; CSS Adobe; CSS-1; CSS-1EP; **CSS-1H**; CSS-1H_RWA; CSS-EE; CSS-FDR; HIR-EE; HPTC; NTCRS-1HM; PFE-103; QS 40; QSE; QSRE; Quick Set; Quickseal; Quickseal 100; Rapid Curing Fog Oil; SC-H118; SC-H118 + (2-40%) CSS-1; SC-H118-10; SC-H118-5; SC-H118E; SSG-16; STE-1; WE Prime
Other Means Of Identification: Cationic Asphalt Emulsions
Recommended Product Use: Road Paving and Resurfacing
Restrictions On Use: Other Than Recommended Use

COMPANY/UNDERTAKING IDENTIFICATION:

U.S. Manufacturer/Supplier's Name: IDAHO ASPHALT SUPPLY, Inc.
Address: PO Box 50538, Idaho Falls, ID 84305
Business Phone: 1-(208)-524-5871 or 1-(800)-524-1679 (8 a.m. to 5 p.m. MST)
Emergency Phone: Chemtrec: 1-(800)-424-9300 [24-hours]
Company Website: https://idahoasphalt.com

DATE OF PREPARATION: 06-23-2021 **REVISION DATE:** New

Section 2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with the UN Global Harmonization Standard under the U.S. OSHA Hazard Communication Standard.

Classification: Carcinogenicity Category 2, Skin Irritation Category 2, Skin Sensitization Category 1, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Category 3, Specific Target Organ Toxicity (Multiple Organs) Repeated Exposure Category 2, Aquatic Chronic Toxicity Category 4

Physical Hazards Not Otherwise Classified: Contact with heated product can cause burns. Contents may create or be under pressure during transportation, storage and/or heating conditions.

Chemical Hazards Not Otherwise Classified: Heated asphalts can release hydrogen sulfide, which causes adverse effects at 300 ppm and can be fatal at 500 ppm if exposure is prolonged. Chronic inhalation of fumes from heated product may cause cancer. Contains compounds that are suspected endocrine disruptors.

Signal Word: Warning

Hazard Statements: May cause cancer. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. Causes damages to organs through prolonged or repeated exposure. May cause long-lasting harmful effects to aquatic life.

Precautionary Statements:

Prevention: Obtain, read and follow all safety instructions before use. Do not breathe vapors, spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves, protective clothing, eye protection or face protection.

Response: If exposed or concerned, get medical advice. IF ON SKIN (or hair): Remove or take off immediately all contaminated clothing. Rinse skin with water or instant-acting shower. If skin irritation or rash occurs, get medical attention. IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists: get medical help. IF SWALLOWED: Get emergency medical help immediately. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical help if you feel unwell.

Storage: Store in a well-ventilated place. Keep container tightly closed.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard Symbols/Pictograms:



PERCENT OF UNKNOWN TOXICITY BY ROUTE OF EXPOSURE: 17-81% of oral toxicity is unknown; 24-81% of oral toxicity is unknown; 20-81% of toxicity by inhalation is unknown.

HAZARD OVERVIEW

Product Description: These products thick viscous brown to black liquids with a mild hydrocarbon odor.

Health Hazards: Contact with heated product will cause burns. Acute inhalation of fumes will cause irritation of the nose, throat and respiratory system. Contact of fumes with the eyes can cause irritation. Direct eye contact with the product may cause serious chemical irritation; direct eye contact with heated product may cause burns and may cause blindness. Chronic skin contact may cause skin eruptions, redness or rash. Although unlikely, accidental ingestion may cause severe burns to the throat and digestive system. Contains multiple compounds that may cause skin sensitization and allergic reactions in susceptible individuals. Chronic inhalation of asphalt fumes may cause cancer; risk of cancer depends on duration and concentration of exposure. Due to possible presence of hydrogen sulfide fumes and the toxicity of hydrogen sulfide, inhalation of fumes should be avoided. Refer to Section 11 for additional information.

Flammability Hazards: Due to the high water content, these products will not burn. If involved in a fire where the water has evaporated, ignition of the residue may occur. If involved in a fire, these products may produce carbon and nitrogen oxides, hydrogen sulfide, hydrocarbons and thick, dense smoke and stream.

Section 2. HAZARD IDENTIFICATION (Continued)

HAZARD OVERVIEW (continued)

Reactivity Hazards: These products are not normally reactive.

Environmental Hazards: Cationic asphalt emulsions contain a complex mixture of hydrocarbons that may be harmful to aquatic and terrestrial organisms. Although these products present minimal environmental hazard when used in road paving and resurfacing, all intentional and accidental release or disposal to the soil or waterways should be avoided.

Emergency Considerations: Emergency responders should wear appropriate protection for situation to which they respond as well as to be aware of potential hydrogen sulfide toxicity and potential for thermal burns of hot asphalts. If hydrogen sulfide poisoning is suspected immediate medical attention is needed.

Section 3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	WT%	GHS Classification under U.S. OSHA Hazard Communication and Global Harmonization Standards Hazard Statements
Asphalt	8052-42-4	19-68%	Classification: Not hazardous under GHS criteria. Hazard Statements: Not Applicable
Asphalt fumes from heated product		Not possible to determine	Self-Classification (based on IARC-2B classification & GHS criteria): Carcinogenic Cat. 2 Hazard Statements: H351: Suspected of causing cancer.
Proprietary Cationic Styrene-Butadiene Polymer containing:		0-8%	MFG Classification: Skin Irritation Cat. 2, Eye Irritation/Corrosion Cat. 2A, Aquatic Acute Toxicity Cat. 2, Aquatic Chronic Toxicity Cat. 2 Hazard Statements: H315: Causes skin irritation. H319: Causes serious eye irritation. H411: Toxic to aquatic life with long-lasting effects.
Proprietary Styrene-Butadiene Polymer		(0- >5%)	Self-Classification (based on EU ECHA classifications for class of Styrene-Butadiene Polymers): Skin Sensitization Cat. 1 Hazard Statements: H317: May cause an allergic skin reaction.
Ethanol	64-17-5	(0- >0.2%)	Harmonized Classification: Flammable Liquid Cat. 2 Notified Classification: Carcinogenic Cat. 2, Acute Oral Toxicity Cat. 3, Acute Dermal Toxicity Cat. 3, Acute Inhalation Toxicity Cat. 3, Eye Corrosion/Damage Cat. 1, Skin Irritation Cat. 2, Specific Target Organ Toxicity (Ingestion-Optic Nerve) Single Exposure Cat. 2 Hazard Statements: H351: Suspected of causing cancer. H225: Highly flammable liquid and vapor. H301 + H311 + H331: Toxic if swallowed, in contact with skin or if inhaled. H318: Causes serious eye damage. H315: Causes skin irritation. H372: Causes damages to the optic nerve through prolonged or repeated exposure by ingestion.
Proprietary Quaternary Ammonium Compound		(0- >0.2%)	Notified Classification (based on EU ECHA classification for Quaternary Ammonium Compounds as a group): Eye Irritation/Damage Cat. 1, Skin Irritation Cat. 2, Aquatic Acute Toxicity Cat. 1, Aquatic Chronic Toxicity Cat. 1 Hazard Statements: H318: Causes serious eye damage. H315: Causes skin irritation. H400: Very toxic to aquatic life. H410: Very toxic to aquatic life with long-lasting effects.
Water and Other Unknown Compounds		(Balance)	Classification: Not Determined
Proprietary Asphalt Emulsifier Mixture containing:		0-4%	Mfg Classification: Acute Oral Toxicity Cat. 4, Skin Corrosion/Damage Cat. 1B, Skin Sensitization Cat. 1, Specific Target Organ Toxicity (Multiple Organs) Repeated Exposure Cat. 2 Hazard Statements: H301: Toxic if swallowed. H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction. H372: Causes damages to organs through prolonged or repeated exposure.
Proprietary Asphalt Emulsifier		0-4%	Mfg Classification: Skin Sensitization Cat. 1B, Eye Corrosion-Irritation Cat. 2, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Cat. 3, Aquatic Acute Toxicity Cat. 2, Aquatic Chronic Toxicity Cat. 2 Hazard Statements: H317: May cause an allergic skin reaction. H320: Causes eye irritation. H402: Harmful to aquatic life. H412: Harmful to aquatic life with long-lasting effects.
Proprietary Fatty Acid Amine Asphalt Emulsifier		0-2%	Mfg Classification: Acute Oral Toxicity Cat. 3, Skin Corrosion/Damage Cat. 1B, Skin Sensitization Cat. 1, Eye Corrosion/Damage Cat. 1 Hazard Statements: H301: Toxic if swallowed. H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction. H318: Causes serious eye damage.
Proprietary Ethanol Based Surfactant		0-2%	Classification Per Mfg: Flammable Liquid Cat. 3, Acute Oral Toxicity Cat. 4, Skin Corrosion/Damage Cat. 1b, Eye Corrosion/Damage Cat. 1, Aquatic Acute Toxicity Cat. 1, Aquatic Chronic Toxicity Cat. 1 Hazard Statements: H226: Flammable liquid and vapor. H302: May be harmful if swallowed. H314: Causes severe skin burns and eye damage. H410: Very toxic to aquatic life with long-lasting effects.

NOTE: Hydrogen chloride is added to this product as a pH adjustor but it reacts out; no residual hydrogen chloride remains and so does not add additional hazards to the product and is not referenced throughout this SDS. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

Section 3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

CHEMICAL NAME	CAS #	WT%	GHS Classification under U.S. OSHA Hazard Communication and Global Harmonization Standards Hazard Statements
Proprietary Fatty Acid Amine Asphalt Emulsifier Mixture containing:		0-0.8%	Mfg Classification: Aspiration Hazard Cat. 1, Acute Oral Toxicity Cat. 4, Skin Corrosion/Damage Cat. 1B, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Cat. 3, Specific Target Organ Toxicity (Multiple Organs) Repeated Exposure Cat. 1, Aquatic Chronic Toxicity Cat. 1 Hazard Statements: H304: May be fatal if swallowed and enters airways. H302: May be harmful if swallowed. H314: Causes severe skin burns and eye damage. H335: May cause respiratory irritation. H372: Causes damages to organs through prolonged or repeated exposure. H410: Very toxic to aquatic life with long-lasting effects.
Proprietary Fatty Acid Amine Asphalt Emulsifier		0-0.4%	Mfg Classification: Skin Corrosion/Damage Cat. 1B, Skin Sensitization Cat. 1 Hazard Statements: H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction.
Proprietary Fatty Acid Amine Derivative		0-0.3%	Mfg Classification: Skin Corrosion/Damage Cat. 1B, Skin Sensitization Cat. 1B Hazard Statements: H314: Causes severe skin burns and eye damage. Skin Sensitization Cat. 1
Water	7732-18-5	Balance	Classification: Not Applicable

NOTE: Hydrogen chloride is added to this product as a pH adjustor but it reacts out; no residual hydrogen chloride remains and so does not add additional hazards to the product and is not referenced throughout this SDS. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

Section 4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: All first aid procedures should be periodically reviewed by a doctor familiar with the product and its conditions of use in the workplace. Provide general supportive measures (comfort, warmth, rest). Consult a doctor and/or the nearest Poison Control Centre for all exposure except minor instances of inhalation or skin contact. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Inhalation: If excessive inhalation of fumes occurs, remove to fresh air. Get prompt medical attention if breathing remains difficult or if irritation persists. If breathing is difficult, give oxygen. Seek medical attention if adverse effect occurs after removal to fresh air. If hydrogen sulfide toxicity is suspected to have occurred, immediate medical attention is needed.

GHS Precautionary Statements for Inhalation: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical help if you feel unwell.

Skin Exposure: For skin contact that is not hot, rinse skin with a mild soap and water after manually handling and wash contaminated clothing if there is potential for direct skin contact. Contaminated shoes, and leather goods (e.g., watchbands, belts) should also be removed. If skin contact causes irritation, flush with running water. Seek medical attention if adverse effects occur after flushing.

If heated product contacts the skin, quickly remove contaminated clothing and cool immediately by immersing the contacted skin in cool water for at least 15 minutes to limit tissue damage and prevent spread of liquid product. Iced water and cold packs may be applied to any burned area only if burned area is less than 10% of the body surface (about equal to surface of one arm or one half of a leg). If burns are over more than 10% of body, apply lukewarm water to alleviate pain, but heat in the asphalt must be removed as quickly as possible. Seek immediate emergency medical treatment.

GHS Precautionary Statements for Skin Exposure: IF ON SKIN (or hair): Remove or take off immediately all contaminated clothing. Rinse skin with water or instant-acting shower. Rinse skin with water or instant-acting shower. If skin irritation or rash occurs, get medical attention.

Eye Exposure: If vapors or aerosols enter the eyes, immediately flush eye(s) with plenty of with clean, potable and lukewarm, gently flowing water for at least 20 minutes, by the clock, while holding the eyelid(s) open. Have contaminated individual(s) "roll" eyes. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. Take care not to rinse contaminated water into the non-affected eye or onto the face. If irritation persists, repeat flushing and seek immediate medical attention. Get medical attention if irritation, pain, swelling, lacrimation or photophobia persist or develop later.

If molten asphalt is splashed into the eye(s), immediate medical attention must be sought.

GHS Precautionary Statements for Eye Exposure: IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists: get medical help.

Ingestion Exposure: If product has been swallowed and adverse effect occurs, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. NEVER give anything by mouth if the person who has swallowed the product is rapidly losing consciousness, is unconscious or is convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 240 to 300 mL (8 to 10 oz.) of water to dilute product in stomach. If milk is available, it may be administered AFTER the water has been given. If vomiting occurs naturally, rinse mouth and repeat administration of water. Quickly transport victim to an emergency care facility if adverse effects are evident.

GHS Precautionary Statements for Ingestion: IF SWALLOWED: Get emergency medical help immediately.

PROTECTION OF FIRST AID RESPONDERS: See Sections 6 (Accidental Release Measures) and 8 (Exposure Controls-Personal Protection).

Section 4. FIRST-AID MEASURES (Continued)

IMPORTANT SYMPTOMS AND EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Identification) and 11 (Toxicological Information) for more detailed information.

Acute:

- Symptoms/Effects After Inhalation:** EXPOSURE TO FUMES: Coughing, dry or sore throat, irritation to respiratory system.
- Symptoms/Effects After Skin Contact:** Burns may occur from heated product; irritation from direct skin exposure or fume exposure.
- Symptoms/Effects After Eye Contact:** Moderate to severe irritation of eye tissue. Burns from heated product.
- Symptoms/Effects After Ingestion:** Irritation of the digestive system.
- Symptoms/Effects After Accidental Injection:** None known.

Chronic:

- Symptoms/Effects After Skin Contact:** Dermatitis (dry, red skin, itching, cracking of the skin, skin rash/inflammation), allergic reactions, scarring (from burns).
- Symptoms/Effects After Inhalation:** Chronic inhalation exposure may cause reduced lung function or cancer.
- Symptoms/Effects After Ingestion:** None known.
- Symptoms/Effects After Accidental Injection:** None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin and respiratory disorders (including COPD) may be aggravated by exposure to asphalts.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure. In event of possible hydrogen sulfide toxicity, according to the CDC, some anecdotal evidence suggests nitrite therapy (found in a cyanide antidote kit) as a therapy for hydrogen sulfide exposure. Amyl nitrite is given by inhalation (for 30 seconds every minute until an intravenous line is established) followed by intravenous sodium nitrite (300 mg over absolutely no less than 5 minutes). This may aid recovery by forming sulfmethemoglobin, thus removing sulfide from combination in tissue. It is not necessary to use the sodium thiosulfate component of the cyanide antidote kit. Nitrite therapy should not be allowed to interfere with the establishment of adequate ventilation and oxygenation.

Section 5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined; these are emulsions that can have up to 81% water which makes determining a flash point difficult.

AUTOIGNITION TEMPERATURE: Not determined.

FLAMMABLE LIMITS (in air by volume, %): Not determined.

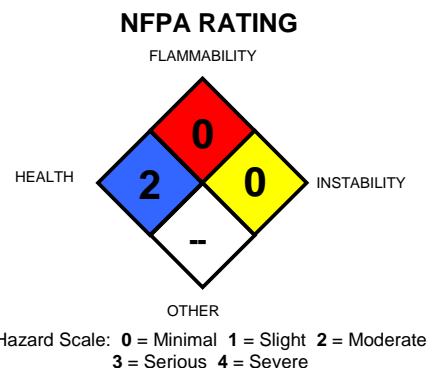
FIRE EXTINGUISHING MEDIA: Dry Chemical, CO₂, Class "B" extinguisher.

UNSUITABLE FIRE EXTINGUISHING MEDIA: Use of foam or water may cause frothing. Avoid using straight water streams. Use of a solid water stream for fighting fire may also scatter burning product and spread the fire.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: If heated above the boiling point of water [100°C (212°F)] large amounts of steam is generated. Hydrogen sulfide that is released during a fire can accumulate in confined spaces or low-lying areas causing an increased fire hazard, as well as a toxic environment.

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. Withdraw immediately from the area if there is a rising sound from venting safety device or discoloration of vessels, tanks, or pipelines.



Section 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Do not touch or walk through spilled asphalt. Proper protective equipment should be used. In the event of a spill, clear the area and protect people. Eliminate all sources of ignition. Non-sparking tools should be used. The atmosphere must have levels of components lower than those listed in Section 8, (Exposure Controls and Personal Protective Equipment) if applicable and have at least 19.5 percent oxygen before personnel can be allowed into the area without Self-Contained Breathing Apparatus (SCBA). Call CHEMTREC (1-800-424-9300) for emergency assistance.

PROTECTIVE EQUIPMENT:

Small Spills: Wear chemical resistant gloves, splash goggles with a shield, respirator protecting against asphalt fumes and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

Section 6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Hydrogen sulfide fumes are heavier than air and can collect in low-lying areas creating a fire and toxicity hazard.

Methods for Containment: Stop source of spill if possible to do so without endangering responders. A vapor-suppressing foam may be used to control hazardous vapors.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other noncombustible material and transfer to containers for disposal or recovery.

ENVIRONMENTAL PRECAUTIONS: Prevent spilled product from entering sewer or confined spaces, waterways, subsoil or public waters. Do not flush to sewer. For spills on water, contain, minimize dispersion and collect.

OTHER INFORMATION-NOTIFICATIONS: Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.

REFERENCE TO OTHER SECTIONS: See Section 13, Disposal Considerations for more information.

Section 7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors generated by this product. Use only in well-ventilated areas. The product should only be used in areas where electrical classification meets the product rating for this product, e.g., intrinsically safe. Use only in area provided with appropriate exhaust ventilation. Vapors may form explosive mixtures with air. Remove contaminated clothing immediately. Skin contact should be minimized. If any skin contact occurs, clean asphalt from skin with waterless hand cleaner and follow with a soap and water wash. Do not use solvents to clean product from skin. Solvents may contain ingredients that are carcinogenic and/or cause skin irritation. Launder or discard contaminated clothing. Discard contaminated leather material.

GHS Statements for Safe Handling: Obtain, read and follow all safety instructions before use. Do not breathe vapors, spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves, protective clothing, eye protection or face protection.

HANDLING OF BULK SHIPMENTS: Bulk shipments of this product should be loaded and unloaded in strict accordance with truck manufacturer recommendation and all established onsite safety procedures. Appropriate personal protective equipment must be used (see Section 8). All loading and unloading equipment must be inspected prior to each use. Loading and unloading operations must be attended at all times. Truck and material-handling equipment must be verified to be correct for receiving this product and be properly prepared prior to starting the transfer operations. Hoses must be verified to be free of incompatible chemicals prior to connection to the truck. Valves and hoses must be verified to be in the correct positions before starting transfer operations. Product may be under pressure after transporting or storage - open with caution. Follow local standard operating procedures for loading and unloading.

CONDITIONS FOR SAFE STORAGE: Store away from incompatible materials (see Section 10, Stability and Reactivity) and moisture. Use in a well-ventilated location, segregated from other materials and operations. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Storage facilities should be made of fire resistant materials. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a well-ventilated place. Do not allow material to freeze. Consult API Recommended Practice 2023 for additional guidance. Store distant from fire and ignition sources. No smoking near areas where material is stored or used. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

SPECIFIC END USE(S): These products are cationic emulsified asphalts used in road paving and resurfacing. Follow all industry standards for use of these products.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: CAUTION: When solvents (e.g., diesel fuel, fuel oil, naphtha, etc.) are used to clean out the container, tank, transport, pump, or piping system and are therefore introduced into the container with asphalts, the solvent may float to the surface. The vapor space above the liquid surface may have the same fire hazards as a container of the solvent. The container or tank should be labeled and treated in accordance with the hazards of the solvent in addition to the hazards of the asphalt. During maintenance and cleaning operations, appropriate personal protective equipment must be used as described in Section 8. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures standards.

Section 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

CONTROL PARAMETERS, INCLUDING OCCUPATIONAL EXPOSURE GUIDELINES OR BIOLOGICAL EXPOSURE LIMITS AND THE SOURCE OF THOSE VALUES:

Ventilation and Engineering Controls: Asphalts are normally used and applied outdoors; mechanical or other type of ventilation should not be needed.

If this product is used in an area which does pose an inhalation hazard, use adequate ventilation to ensure exposure levels are maintained below the limits provided in this Section, as applicable. Ensure eyewash/safety shower stations are available near areas where these products are used.

Occupational/Workplace Exposure Limits/Guidelines: Note: Heated asphalts can release hydrogen sulfide, which causes adverse effects or be fatal at 50 to 500 ppm levels if exposure is prolonged.

Chemical Name	CAS #	Guideline	Value
Asphalt Fumes (bitumen)	8052-42-4	ACGIH TLV TWA NIOSH REL TWA NIOSH REL STEL NIOSH IDLH	0.05 mg/m ³ (inhalable fraction) as benzene soluble aerosol See Pocket Guide Appendices A and C 5 mg/m ³ (ceiling) 15 minutes; See Pocket Guide Appendices A and C Ca (NIOSH Carcinogen)
Hydrogen Sulfide	7783-06-4	ACGIH TLV TWA ACGIH TLV STEL OSHA PEL TWA OSHA PEL STEL NIOSH REL STEL NIOSH IDLH	1 ppm 5 ppm 100 ppm (vacated 1989 PEL) 20 ppm (ceiling); 50 ppm 10-min. Peak, once per 8-hr shift; 15 ppm (vacated 1989 PEL) 10 ppm (ceiling) 100 ppm

ACGIH Biological Exposure Indices (BEIs): Currently, ACGIH Biological Exposure Indices (BEIs) have been determined for components.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Asphalt (bitumen) Fumes (as a Polycyclic Aromatic Hydrocarbons-PAHs) • 1-Hydroxypyrene in Urine • 3-Hydroxybenzo(a)pyrene in Urine	• End of Shift at End of Workweek • End of Shift at End of Workweek	• 2.5 µg/L* * Adjusted for the Pyrene to Benzo(a)pyrene ratio of the PAH mixture to which workers are exposed

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), 29 CFR 1910.133 for eye protection, 29 CFR 1910.138 for hand protection, 29 CFR 1910.136 for foot protection. Please reference applicable regulations and standards for relevant details. Local jobsite or facility requirements for PPE shall be followed and in many cases may be more stringent than NIOSH or OSHA recommendations. Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below limits listed above, if applicable. In instances where inhalable aerosols may be generated and respiratory protection is necessary, use only respiratory protection authorized under appropriate regulations. In the U.S., oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). Do not use air-purifying respiratory protection when considering elevated hydrogen sulfide gas concentrations. Supplied air respiratory protection may be necessary especially if hydrogen sulfide is present when entering a confined space or enclosed space. The following are NIOSH respiratory guidelines for Asphalt Fumes in air:

ASPHALT FUME

CONCENTRATION	RESPIRATORY EQUIPMENT
At Concentrations Above the NIOSH REL, or Where There is no REL, at Any Detectable Concentration:	Any Self-Contained Breathing Apparatus (SCBA) that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any Supplied-Air Respirator (SAR) that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape	Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having a high-efficiency particulate filter, or any appropriate escape-type, SCBA.

Where there is potential for airborne exposure to hydrogen sulfide (H₂S) above exposure limits, the following respiratory equipment is recommended by NIOSH.

HYDROGEN SULFIDE

CONCENTRATION	RESPIRATORY EQUIPMENT
Up to 100 ppm	Any Powered, Air-Purifying Respirator (PAPR) with cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted canister, or any Supplied-Air Respirator (SAR), Self-Contained Breathing Apparatus with a full facepiece.

Section 8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT (continued):

Respiratory Protection (continued):
HYDROGEN SULFIDE (continued):

CONCENTRATION	RESPIRATORY EQUIPMENT
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted canister, or any appropriate escape-type, SCBA.

When H2S vapors exceed permissible limits, e.g., in confined spaces or bulk transport loading/unloading, a positive-pressure atmosphere supplying respirator is recommended. Self-contained breathing apparatus should be used for fire-fighting.

Eye Protection: With product at ambient temperatures, safety glasses with side shields should be worn as minimum protection. Use a full-face shield with chemical safety goggles underneath if handling heated material. Dust goggles should be worn when excessively (visible) dusty conditions are present or anticipated. There is a potential for severe eye irritation if exposed to excessive concentrations of dust for those using contact lenses. An eye wash station should be immediately available at the work area. If necessary, refer to appropriate regulations and standards for further information.

Body Protection: Use body protection appropriate for task. Pants and long-sleeved shirt or coveralls that fully cover the arms and legs should be used during normal paving and resurfacing operations to protect personnel from heated product and exposure to irritating fumes. Boots with tops at least 6 inches high and laced without opening are recommended. Pants without cuffs which extend over the tops of the boots are also recommended. Full-body chemical protective clothing is recommended for emergency response procedures. Refer to appropriate regulations and standards for further information.

Hand Protection: When handling heated material, avoid direct contact with skin by using long leather or heat resistant gloves that extend up the arm and worn loosely so that they can easily be flipped if covered with hot asphalt. When product is at ambient temperatures, use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected. If necessary, refer to applicable regulations.

HYGIENE MEASURES: Wash dust-exposed hands, face or other contaminated areas with soap and water before eating, drinking, smoking, applying cosmetics or using toilet facilities. Do not use solvents or thinners (e.g., gasoline, kerosene) or harsh abrasive skin cleaners to remove material from skin. Avoid breathing dust or fumes. Promptly removed all contaminated clothing and wash prior to reuse.

OTHER CONTROL MEASURES: A fresh potable water supply for emergency first aid should be readily available. An oil-dissolving skin cleaner should be available. Workers should station themselves upwind of asphalt emissions when possible.

Section 9. PHYSICAL and CHEMICAL PROPERTIES

<p>FORM: Viscous liquid. MOLECULAR WEIGHT: Mixture. SPECIFIC GRAVITY @ 15.6°C (60°F): 0.95-1.03 ODOR: Mild hydrocarbon characteristic of asphalt. VAPOR DENSITY (air= 1): >1 SATURATION VAPOR CONCENTRATION: Not applicable. BOILING POINT: > 100°C (> 212°F) OXIDIZING PROPERTIES: Not an oxidizer. FLASH POINT: Not determined. FLAMMABILITY LIMITS IN AIR: Not determined. AUTOIGNITION TEMPERATURE: Will not auto-ignite. EXPLOSION POTENTIAL: Not applicable. VISCOSITY (dynamic or kinematic): Not applicable. PARTITION COEFFICIENT (n-octanol/water): Not determined. COEFFICIENT WATER/OIL DISTRIBUTION: Not determined. HOW TO DETECT THIS SUBSTANCE (identification properties): The appearance and odor of these products may be an identifying property in event of accidental release.</p>	<p>COLOR: Brown to black. MOLECULAR FORMULA: Mixture. pH: Solutions will be slightly basic. ODOR THRESHOLD: Not available. EVAPORATION RATE (n-BuAc = 1) : <1 VAPOR PRESSURE (air = 1): Not available. MELTING POINT: Not determined. VISCOSITY @ 60°C (140°F): < 2000 mPas AUTOIGNITION TEMPERATURE: Not determined. DECOMPOSITION TEMPERATURE: Not PERCENT SOLIDS: Not determined. SOLVENT CONTENT: Not determined. SOLUBILITY IN WATER: Insoluble. OTHER SOLUBILITIES: Not known.</p>
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Section 10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Heating above 100°C (212°F) may cause a violent eruption of the product as water in the product rapidly converts to vaporous steam.
POSSIBILITY OF HAZARDOUS REACTIONS OR POLYMERIZATION: None known.

Section 10. STABILITY and REACTIVITY (Continued)

DECOMPOSITION PRODUCTS: Combustion: Thermal decomposition of the material may release carbon monoxide, carbon dioxide, hydrogen sulfide, nitrogen dioxide, sulfur dioxide, and other organic and inorganic compounds (e.g., aldehydes, aromatics, etc.). Some thermal decomposition may occur during paving operating using Cationic asphalt emulsions. Hazardous vapors may collect in enclosed vessels or areas if not properly ventilated. **Hydrolysis:** Heating above 100°C (212°F) will produce steam and can cause spattering of the product.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Incompatible with strong acids and strong oxidizers. Avoid freezing. Hydrogen sulfide from the product can react with iron in asphalt storage tank to form iron sulfide, a pyrophoric (a material which ignites spontaneously in air below 130°F) material.

CONDITIONS TO AVOID: Avoid extreme temperatures, ignition sources, and incompatible chemicals.

Section 11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using these products in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Cationic asphalt emulsions may produce emissions that irritate the nose, throat, mucous membranes, and upper respiratory tract by mechanical abrasion. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, nasal discharge, headache, hoarseness, and nose and throat pain and flu-like fever may occur following exposures in excess of applicable exposure limits. Chronic exposure to elevated levels of asphalt emissions may result in chronic respiratory irritation and/or other lung diseases. Chronic exposure to fumes may cause symptoms such as coughing and wheezing, which may take a prolonged time to disappear after the overexposures has ended. Asphalt fumes are considered to be carcinogenic.

Asphalts contain trace amounts of Hydrogen Sulfide which may accumulate in confined spaces. In humans, inhalation of hydrogen sulfide at as low as 50-250 ppm for only a few minutes can result in incoordination, memory and motor dysfunction, and anosmia (so-called olfactory paralysis). Symptoms become more with longer exposure and sometimes lead to pulmonary edema. Inhalation of Hydrogen Sulfide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 100-500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen Sulfide may cause immediate loss of consciousness; death is rapid, and possibly immediate.

Contact with Eyes: Vapors generated by Cationic asphalt emulsions can redden and irritate the eyes. Direct eye contact may cause serious irritation.

Contact with Skin: Skin contact with this product, if hot, can cause pain, irritation, and tissue damage. Vapors generated during use can irritate, redden, and dry the skin. Repeated or prolonged exposure to the vapors caused by heating, can cause dermatitis (dry, red skin). Some components of this product are suspect skin sensitizers; subsequent exposure to very small amounts may cause allergic reaction in susceptible individuals.

Skin Absorption: Multiple components are known to be absorbed via intact skin and can contribute to adverse effects from skin exposure.

Ingestion: Ingestion is not anticipated to be a likely route of occupational exposure for Cationic asphalt emulsions. Accidental ingestion may cause severe irritation or damage to the digestive system or produce toxic effects.

Injection: Injection is a not likely route of exposure for asphalts.

Other Effects: May cause cancer; risk of cancer depends on concentration and duration of exposure.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT AND LONG-TERM EXPOSURE:

Acute (Short-Term): Inhalation, eye contact and skin contact may cause irritation. Direct contact with heated Cationic asphalt emulsions can cause burns and scarring.

Chronic (Long-Term): Chronic skin exposure may result in dermatitis or skin sensitization and allergic reaction. Chronic inhalation of asphalt fumes may cause reduced lung function. Asphalt fumes are suspected carcinogens.

IRRITANCY OF PRODUCT: Asphalt fumes may cause chemical irritation to the skin, eyes and respiratory system. Studies concerning the acute toxic effects of exposure to asphalt fumes have repeatedly found symptoms of irritation of the serious membranes of the conjunctivae (eye irritation) and the mucous membranes of the upper respiratory tract (nasal and throat irritation) among workers.



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

Section 11. TOXICOLOGICAL INFORMATION (Continued)

IRRITANCY OF PRODUCT (continued):

Skin Irritation: Skin irritation, pruritus, and occasionally rashes have been reported from workers of asphalt paving operations. Given the presence of confounding co-exposures (e.g., diesel fuel, coal tar) and environmental conditions (wind, heat and humidity, UV radiation), the extent to which asphalt fumes may be associated with these skin problems is unclear. Hydrogen Sulfide fumes are regarded as irritating to skin. In accordance with Regulation (EC) No 1272/2008 H₂S shall be classified as Category 2, skin irritant (H315: Causes skin irritation).

Eye Irritation: Hydrogen Sulfide are regarded as irritating to the eyes. In accordance with Regulation (EC) No 1272/2008 H₂S shall be classified as Category 2 (irritating to eyes) (H319: Causes serious eye irritation).

Respiratory Irritation: Hydrogen Sulfide is regarded as irritating to the mucous membranes of the respiratory tract. In accordance with Regulation (EC) No 1272/2008 H₂S shall be classified as STOT Single Exp. 3 (H335: May cause respiratory irritation). Unrefined/acid treated petroleum base oils are assigned the supplemental hazard phrase (EUH066), but do not meet the EU CLP Regulation (EC No. 1272/2008) criteria for classification as a skin irritant.

SENSITIZATION TO THE PRODUCT:

Respiratory Sensitization: No component is known to cause human or animal respiratory sensitization effects. No data have been found for components for human or animal data on respiratory sensitization.

Skin Sensitization: Anecdotal information has shown that chronic exposure to asphalts and asphalt fumes has caused sensitization and allergic reaction effects, such as rash, itching, and skin eruptions. If asphalt-related dermal photosensitization is occurring, such as seen with coal tar, it has not been described in the literature and so needs to be further investigated, as do the other reported skin problems. This product also contains a compound that the manufacturer classifies as a skin sensitizer. If sensitized, exposure to very small amount can trigger an allergic reaction.

SYNERGISTIC MATERIALS: None known.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral ATE: > 5998 (17-81% unknown)

Dermal ATE: > 2632 mg/kg (24-81% unknown)

Inhalation Vapor ATE: 75 mg/L (20-81% unknown)

ACUTE TOXICITY FOR COMPONENTS: These products have not been tested for toxicity by any route. No human data are available. The following are acute toxicity data from animal studies (e.g., LD₅₀ or LC₅₀ data) for components over 1% concentration, if data.

Acute Oral Toxicity:

Asphalt: LD₅₀ (Oral-Rat) > 5000 mg/kg; Method: OECD Test Guideline 401

Proprietary Asphalt Emulsifier: LD₅₀ (Oral-Rat) 6382 mg/kg; Calculated ATE

Proprietary Cationic Styrene-Butadiene Polymer: LD₅₀ (Oral-Rat) > 2000-10,000 mg/kg; Method (no test method available)

Proprietary Ethanol Based Surfactant: LD₅₀ (Oral-Rat) > 1337 mg/kg; Calculated ATE

Multiple Components: No data.

Acute Dermal Toxicity:

Asphalt: LD₅₀ (Skin-Rabbit) > 2000 mg/kg; Method: OECD Test Guideline 402

Multiple Components: No data.

Acute Inhalation Toxicity:

Asphalt: LD₅₀ (Inhalation-Rat) 4 hrs: > 94.4 mg/L; Method: OECD Test Guideline 403

Proprietary Ethanol Based Surfactant: LC₅₀ (Inhalation-Rat) 4 hours: > 233 mg/L; Calculated ATE

Multiple Components: No data.

CHRONIC TOXICITY: No specific chronic toxicity data from human studies (e.g., LDLo or TDLo data) are available for these products.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE: This product may cause respiratory irritation by inhalation and can cause eye and skin irritation from acute exposure.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE: This product may cause adverse effects to the adrenal glands, thymus and endocrine system with repeated exposure. Chronic inhalation of asphalt fumes has been shown to cause cancers of multiple organs. Chronic skin contact with asphalts may cause skin sensitization and allergic reactions, including photosensitization (sensitization to UV).

ASPIRATION DATA: Does not pose a hazard of aspiration due to high viscosity.

ENDOCRINE TOXICITY: No component has been shown to be a known or suspected endocrine disruptor.

CARCINOGENIC DATA: The following components are listed by agencies tracking the carcinogenic potential of chemical compounds (U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH).

Asphalt: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-2B (Possibly Carcinogenic to Humans); Applies to hard bitumens and emissions during mastic asphalt work; straight run bitumens emissions during road paving);; MAK-3B (Substances Which Cause Concern the They Could Be Carcinogenic for Man-Substances for which in vitro tests or animal studies have yielded evidence of carcinogenic effects that is not sufficient for classification of the substance in one of the other categories); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization)

Note: Asphalt may contain trace amounts of benzene, which is listed as follows: ACGIH TLV-A1 (Confirmed Human Carcinogen); EPA-A (Human Carcinogen); EPA-K (Known Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen); OSHA-Ca (Carcinogen Defined with No Further Categorization)

Section 11. TOXICOLOGICAL INFORMATION (Continued)

CARCINOGENIC DATA (continued):

Ethanol: ACGIH TLV-A3 (Confirmed Animal Carcinogen); MAK-5 (Substances with Carcinogenic and Genotoxic Effects, the potency of which is considered to be so low that, provided the MAK and BAT values are observed, no significant contribution to human cancer risk is to be expected.)

Hydrogen Sulfide: EPA-I (Measured as Inhalable Fraction)

REPRODUCTIVE TOXICITY DATA: Components have no known human mutagenic, embryotoxic, teratogenic or reproductive toxicity effects.

Section 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY IN SOIL: Asphalt materials are complex hydrocarbon mixtures with molecular weights ranging from approximately 500 to 2,000 and carbon numbers predominantly higher than C25. These complex mixtures are viscous semi-solid to solid materials possessing low to negligible water solubility and moderate to negligible vapor pressure. They are expected to possess low mobility in soil. Although hardened product does not itself present a hazard of mobility in the soil, leaching of PAHs and other hydrocarbons found in asphalt has been demonstrated. Fluorometry studies, HPLC, and TPH data, have indicated that Polycyclic Aromatic Hydrocarbons (PAHs) have the capacity to leach from asphalt and into groundwater. Research indicates that PAHs may be bound to particulate matter within the asphalt and leach out over time due to surface wear and water exposure.

As so little is known about asphaltenes, and the extreme difficulty of isolating asphaltenes, the extent of this leaching process is still not clearly known or understood. Significant concentrations of PAHs and hydrocarbons have been recorded in soil, directly beneath an asphalt cover. PAH concentration in the soil samples has been positively correlated with the moisture content at the site. A direct logarithmic relationship can be demonstrated between soil content of a particular PAH and molecular properties such as water solubility. Through studies of ratios between individual PAH concentrations at sites which had undergone different degrees of leaching a linear logarithmic relationship to molecular descriptors such as connectivity index has been demonstrated. This suggests that a significant amount of PAH can enter the environment through leaching from asphalt surfaces, but is dependent upon local environmental conditions, such soil moisture content.

PERSISTENCE AND BIODEGRADABILITY: Volatilization is considered low-to-high for Asphalt materials based on estimated Henry's Law constants for representative components of these mixtures; however, the strong tendency to adsorb to soil or sediment is likely to attenuate volatilization for most constituents of these complex mixtures. The rate of hydrolysis is considered negligible for the components of these complex mixtures. The rate of atmospheric photooxidation is considered rapid to moderate; however, most of the components of these mixtures are not expected to exist in the vapor phase in the ambient atmosphere.

Some amount of microbial biodegradation can occur with some elements of asphalt based on studies of the Canadian Athabaskan Tar Sands. Carboxylated cycloalkanes were biodegraded within oil sand tailings, although compounds with methyl substitutions on the cycloalkane ring were more resistant to microbial degradation. Microbial activity against hexadecane and certain carboxylated cycloalkanes was found to be nitrogen and phosphorus limited.

The components of the asphalt category are expected to possess high (P3) persistence potential.

BIO-ACCUMULATION POTENTIAL: The components of the asphalt category are expected to possess low (B1) bioaccumulation potential.

ECOTOXICITY: These products have not been tested for toxicity to aquatic or terrestrial toxicity.

ENDOCRINE DISRUPTING PROPERTIES: No component has been shown to be a suspected endocrine disruptor.

OTHER ADVERSE EFFECTS: Components are not known or expected to have having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Section 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT/DISPOSAL METHODS: Recover as much spilled material as possible for reuse or recycling. Disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271).

METHODS OF CONTAMINATED PACKAGING DISPOSAL: Empty containers should be completely drained and then discarded or recycled, if possible. Dispose of in accordance with federal, state and local regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials. Dispose of in accordance with applicable Federal, State, and local procedures and standards.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate containers for disposal. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

Section 13. DISPOSAL CONSIDERATIONS (Continued)

EPA WASTE NUMBER: Not applicable for wastes consisting only of this product. **NOTE:** If solvents are used to clean piping and/or pumps and are therefore introduced into the tank of asphalt, the resulting mixture may be regulated as a flammable material. See Section 7, Handling and Storage, for further information.

Section 14 . TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: Not regulated by the U.S. DOT. Cationic Emulsified Asphalts are not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): Cationic Emulsified Asphalts are not classified as dangerous goods per rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): Cationic Emulsified Asphalts are not classified as dangerous goods, per the International Maritime Organization.

ENVIRONMENTAL HAZARDS: These products do not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not specifically listed in Annex III under MARPOL 73/78.

Section 15. REGULATORY INFORMATION

UNITED STATES FEDERAL REGULATIONS:

U.S. SARA Reporting Requirements: The following components of this product may have reporting requirements under SARA (see information below on possible exceptions to SARA requirements.

U.S. SARA Section 302 Threshold Planning Quantity (TPQ): Hydrogen Sulfide: 500 lb (227 kg)

U.S. SARA Section 304 Reportable Quantity (TPQ): Hydrogen Sulfide: 100 lb (45.4 kg)

U.S. SARA Section 311/312: The following EPA hazard categories apply to this product: Acute Health Hazard; Chronic Health Hazard

U.S. SARA Section 313: The Hydrogen Sulfide trace compound is listed as a Section 313 compound.

U.S. CERCLA Reportable Quantity (RQ): Hydrogen Sulfide: 100 lb (45.4 kg)

Section 103 and SARA Section 304 (Release to the Environment). THE CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA section 103 reporting requirements. However, other federal reporting requirements, including SARA 304, as well as the Clean Water Act may still apply.

U.S. TSCA Inventory Status: Components with CAS#s given in Section 2 (Composition and Information on Ingredients) are listed on the TSCA Inventory.

U.S. Clean Air Act (112(r) Threshold Quantity (TPQ): Hydrogen Sulfide: 10,000 Kg (4536 kg)

Other U.S. Federal Regulations: 40 CFR Subpart UU - Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture is a standard that implements Section III of the Clean Air Act and are based on the Administrator's determination that asphalt processing causes or contributes significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The intended effect is to require all new, modified, and reconstructed asphalt processing facilities to use the best demonstrated system of continuous emission reduction considering costs non-air quality health and environmental impacts, and energy requirements. Effective August 6, 1982. This regulation includes: § 60.470 Applicability and Designation of Affected Facilities; § 60.471 Definitions; § 60.472 Standards for Particulate Matter; § 60.473 Monitoring of Operations; § 60.474 Test Methods.

STATE REGULATIONS:

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): Two Polycyclic Aromatic Hydrocarbons that may be in asphalt in trace quantities are listed California Proposition 65 lists as carcinogens. **WARNING:** This product can expose you to chemicals including PAHs which are known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov. In addition, to the warning text provided above, the following symbol must be displayed. Where the sign, label or shelf tag for the product is not printed using the color yellow, the symbol may be printed in black and white. The symbol shall be placed to the left of the text of the warning, in a size no smaller than the height of the word "WARNING".



Section 16. OTHER INFORMATION

PREPARATION DATE: June 23, 2021

REVISIONS DETAILS: New

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS Standard were used to classify the product.

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Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this SDS was obtained from sources which we believe reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness.

The conditions or methods of handling, storage, use and disposal of the products are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.