SAFETY DATA SHEET

1. Identification

Product identifier **Cationic slow set asphalt emulsion**

Other means of identification

SDS number 950194

Synonyms APPLICABLE TO ALL CSS-1 D (DILUTE) PRODUCTS * APPLICABLE TO ALL CSS-1H D (DILUTE) PRODUCTS*CQS-1 * CQS-1H * CSS-1 * CSS-1 SPECIAL * CSS-1H * CSS-1H Slurry * CSS-1HP * CSS-1P * CIR-EE(S) * CIR-EE(H) * SB-EE(S) * SB-EE(H)

Recommended use Road maintenance applications.

Recommended restrictions Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier

Flint Hills Resources Pine Bend, LLC
P.O. Box 64596
Pine Bend, MN
55164-0596
United States

Telephone Numbers - 24 hour Emergency Assistance

Chemtrec (US) 800-424-9300 (CCN: 8586)

Telephone numbers

General Assistance

8-5 (M-F, CST) 316-828-7988

SDS Assistance E-mail msdsrequest@fhr.com

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, skin	Category 1
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (liver, thymus, bone marrow)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word	Danger
Hazard statement	May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Hydrogen Sulfide (H2S) may be present in trace quantities (by weight), but may accumulate to toxic concentrations such as in tank headspace. The presence of H2S is highly variable, unpredictable and does not correlate with sulfur content. Studies with similar products have shown that 1 ppm H2S by weight in liquid may produce 100 ppm or more H2S in the vapor headspace of the storage tank.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Water	7732-18-5	25 - 93
Asphalt Binder	Mixture	7 - 75
Cationic Emulsifier Salt	Proprietary	≤ 5
Oil Distillates	Proprietary	≤ 5

Components

Chemical name	CAS number	%
Petroleum Asphalt	8052-42-4	≤ 75
Polymer Modifier	Proprietary	≤ 7
Polycyclic aromatic hydrocarbons	130498-29-2	≤ .1
Hydrogen sulfide	7783-06-4	≤ .1

Composition comments The manufacturer has claimed one or more hazardous ingredients as trade secret under the OSHA Hazard Communication Standard. The hazards of this (these) ingredient(s) are given on this SDS.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

For contact with hot material, immediately immerse affected area of skin in large amounts of cold water to dissipate heat and reduce the extent of thermal burns.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Hydrogen sulfide can react with the iron in an asphalt storage tank to form iron sulfide. Iron sulfide is pyrophoric. When exposed to air, iron sulfide is capable of igniting spontaneously.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Stay away from ends of tanks. As with any fire, toxic gases, vapors, and fumes can be generated. Use pressure-demand self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. Using water can cause frothing with increased fire intensity.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted. Material will burn in a fire. Hydrogen sulfide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	The product is immiscible with water and will spread on the water surface. Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Avoid contact with eyes, skin, and clothing. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Petroleum Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m3	Inhalable fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	15 mg/m3	
		10 ppm	
Petroleum Asphalt (CAS 8052-42-4)	Ceiling	5 mg/m3	Fume.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Skin protection

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Wear approved respiratory protection when working with this material unless ventilation or other engineering controls are adequate to keep airborne concentrations below recommended exposure standards. Follow respirator protection program requirements (OSHA 1910.134 or CSA-Z94.4-02(R2008), and ANSI / AIHA Z88.6) for all respirator use. Note: If any of the applicable hydrogen sulfide standards are likely to be exceeded, positive pressure supplied-air respiratory protection must be used.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary. Thermally protective apron and long sleeves are recommended when volume of hot material is significant.

General hygiene considerations

Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Viscous liquid.
Color	Dark brown.
Odor	Musty.
Odor threshold	Not available.
pH	2.1 - 11.4
Melting point/freezing point	< 32 °F (< 0 °C)
Initial boiling point and boiling range	> 212 °F (> 100 °C)
Flash point	> 212.0 °F (> 100.0 °C) Pensky-Martens Closed Cup (ASTM D93)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor density	Not available.
Relative density	0.9 - 1.1
Relative density temperature	60 °F (15.56 °C)
Solubility(ies)	
Solubility (water)	Dispersible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	10 - 700 SFS
Viscosity temperature	77 °F (25 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.

Ingestion Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Toxicological data

Components	Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)		
Acute		
Inhalation		
Gas		
LC50	Rat	444 ppm, 4 Hours
Petroleum Asphalt (CAS 8052-42-4)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 hours
Inhalation		
LC50	Rat	> 94.4 mg/m3

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Petroleum Asphalt (CAS 8052-42-4) 2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Polycyclic aromatic hydrocarbons (CAS 130498-29-2) Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)			
Aquatic			
Acute			
Crustacea	EC50	Crustacea	0.042 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0243 mg/l, 96 hours

Persistence and degradability Not readily biodegradable.

Bioaccumulative potential Has the potential to bioaccumulate.

Mobility in soil May partition into air, soil and water.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Hydrogen sulfide (CAS 7783-06-4) U135

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not classified for MARPOL. Please contact the Transportation Compliance CSO if transportation mode is a ship or vessel to determine the need for a MARPOL classification.

General information This description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).

In accordance with US DOT, bulk and non-bulk shipments of this product, which are offered for transportation below 212°F (100°C), are not regulated.

BILL OF LADING - NON-BULK (U. S. DOT): Non-regulated by DOT

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hydrogen sulfide (CAS 7783-06-4) Listed.
Petroleum Asphalt (CAS 8052-42-4) Listed.

SARA 304 Emergency release notification

HYDROGEN SULFIDE (CAS 7783-06-4) 100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components on the TSCA 8(b) inventory are designated "active" or are exempt from reporting under the Inventory Update Rule.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Hydrogen sulfide	7783-06-4	100	500		

SARA 311/312 Hazardous chemical Yes

Classified hazard categories	Skin corrosion or irritation Serious eye damage or eye irritation Respiratory or skin sensitization Carcinogenicity Reproductive toxicity Specific target organ toxicity (single or repeated exposure) Aspiration hazard

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Polycyclic aromatic hydrocarbons	130498-29-2	≤ .1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act (SDWA) Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Hydrogen sulfide (CAS 7783-06-4) High priority

US state regulations

US. Massachusetts RTK - Substance List

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)

US. New Jersey Worker and Community Right-to-Know Act

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

US. Rhode Island RTK

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)

California Proposition 65

WARNING: This product can expose you to Asphalt, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Petroleum Asphalt (CAS 8052-42-4) Listed: January 1, 1990

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

16. Other information, including date of preparation or last revision

Issue date	19-February-2020
Revision date	-
Version #	01
HMIS® ratings	Health: 3* Flammability: 0 Physical hazard: 0
NFPA ratings	

Disclaimer

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