

Section 1: IDENTIFICATION

Product Name:	Cationic Asphalt Emulsion with Polymer
Synonyms:	CRS-1P; CRS-2P; CQS-1HP.
Product Use:	Tack coat, chip seal, micro surfacing and miscellaneous industrial applications.
Restrictions on Use:	Not available.
Manufacturer/Supplier:	General Liquids Canada Ltd. 1233 Rocky Lake Drive Waverley, Nova Scotia, Canada B2R 1S1
Phone Number:	8-5 (M-F, AST): (902) 835-3311
Emergency Phone:	24 hr. contact #: (902) 240-3763 CANUTEC: 1-888-CAN-UTEC (226-8832), 613-996-6666 or *666 on a cellular phone
Date of Preparation of SDS:	May 26, 2017

Section 2: HAZARD(S) IDENTIFICATION
GHS INFORMATION

Classification: Skin Irritation, Category 2
 Eye Irritation, Category 2A
 Germ Cell Mutagenicity, Category 1B
 Carcinogenicity, Category 1B

LABEL ELEMENTS
Hazard
Pictogram(s):

Signal Word: Danger

Hazard Statements: Causes skin irritation.
 Causes serious eye irritation.
 May cause genetic defects.
 May cause cancer.

Precautionary Statements

Prevention: Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Wash thoroughly after handling.
 Wear protective gloves, protective clothing, eye protection and face protection.

Response: IF ON SKIN: Wash with plenty of water.
 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 occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: 75% of this product mixture consists of ingredient(s) of unknown acute toxicity.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Asphalt	Not available.	8052-42-4	55 - 75
Water	Not available.	7732-18-5	25 - 45
Benzene, ethenyl-, polymer with 1,3-butadiene	Not available.	9003-55-8	0 - 6
Naphtha (petroleum), hydrotreated light	Not available.	64742-49-0	0 - 5
Fuel oil, no. 2	Fuel oil No. 2	68476-30-2	0 - 5
Hydrochloric acid	Not available.	7647-01-0	< 1
Polycyclic Aromatic Hydrocarbons	Not available.	130498-29-2	Variable
Hydrogen sulfide (H ₂ S)	Hydrogen sulphide	7783-06-4	Trace

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. When heated, this product may generate small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide 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 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 sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate. Hydrogen chloride is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hot liquid product may cause serious thermal burns on direct contact. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H₂S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Get immediate medical advice/attention. Remove non-adhering contaminated clothing. Cool adherent materials and burned areas with ice and/or cold water. Do not remove adherent material or clothing. Do not use solvents to remove asphalt from the skin. Wash contaminated clothing before reuse.

Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Hot liquid product may cause serious thermal burns on direct contact. Asphalt fumes can increase susceptibility to sunburn.

Ingestion: If swallowed: Rinse mouth. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: Hot product may cause thermal burns. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen. If swallowed in large quantities, Asphalt can obstruct the intestine. Hydrochloric acid may cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Material will burn if involved in a fire. When heated, this material may evolve toxic and flammable Hydrogen sulphide.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is sensitive to static discharge at temperatures at or above the flash point.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, water spray or regular foam.
Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

- Unsuitable Extinguishing Media:** Do not spray water onto burning product as this may cause spattering and spreading of the flame.
- Products of Combustion:** Oxides of carbon. Oxides of sulphur. Oxides of nitrogen. Aromatic hydrocarbons. Hydrogen sulphide.
- Protection of Firefighters:** Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

- Emergency Procedures:** 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).
- Personal Precautions:** Do not touch or walk through spilled material. Use personal protection recommended in Section 8.
- Environmental Precautions:** Keep out of drains, sewers, ditches, and waterways.
- Methods for Containment:** Stop leak if without risk. Contain hot liquid by dyking and allow to cool and solidify. Do not flush to sewer or allow to enter waterways.
- Methods for Clean-Up:** Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Other Information:** See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Avoid breathing mist, vapours, or spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Grounding of containers/pouring equipment is necessary when transferring hot liquid product. See Section 8 for information on Personal Protective Equipment.

Storage:
Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children. Asphalt contains trace amounts of Hydrogen sulfide which can accumulate in vapour space of tanks and containers. Structural materials and lighting and ventilation systems should be corrosion resistant.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines
Component

Asphalt [CAS No. 8052-42-4]

ACGIH: 0.5 mg/m³ (TWA); A4; BEI; Inhalable fraction; For Asphalt (Bitumen) fume, as benzene-soluble aerosol

OSHA: No PEL established.

SAFETY DATA SHEET

Water [CAS No. 7732-18-5]

ACGIH: No TLV established.

OSHA: No PEL established.

Benzene, ethenyl-, polymer with 1,3-butadiene [CAS No. 9003-55-8]

ACGIH: No TLV established.

OSHA: No PEL established.

Naphtha (petroleum), hydrotreated light [CAS No. 64742-49-0]

ACGIH: 100 ppm (TWA); (1980); For Stoddard solvent

OSHA: 100 ppm (TWA), 400 mg/m³ (TWA); For Petroleum distillates (Naphtha).

Fuel oil No. 2 [CAS No. 68476-30-2]

ACGIH: 100 mg/m³ (TWA); Skin; A3; Inhalable fraction and vapor (2007)

OSHA: 5 mg/m³ (TWA); For Oil mist, mineral.

Hydrochloric acid [CAS No. 7647-01-0]

ACGIH: 2 ppm (C); A4 (2000)

OSHA: 5 ppm (C), 7 mg/m³ (C);

Polycyclic Aromatic Hydrocarbons [CAS No. 130498-29-2]

ACGIH: A2; BEI; Exposure by all routes should be carefully controlled to levels as low as possible (1990); For Benz[a]anthracene

OSHA: 0.2 mg/m³ (TWA); For benzene-soluble fraction.

Hydrogen sulphide [CAS No. 7783-06-4]

ACGIH: 1 ppm (TWA); 5 ppm (STEL); (2009);

OSHA: 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other meas. exp. occurs.)

10 ppm (TWA); 15 ppm (STEL) [Vacated];

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

C: Ceiling

Engineering Controls:

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear chemical safety goggles. If product is hot, wear full face-shield. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR

1910.133 for Personal Protective Equipment.

- Hand Protection:** Wear protective gloves. If product is hot, thermally protective gloves are recommended. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing. Clothing with full length sleeves and pants should be worn.
- Respiratory Protection:** If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES
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Appearance:	Black or dark brown liquid.
Colour:	Black or dark brown.
Odour:	Slight petroleum odor.
Odour Threshold:	Not available.
Physical State:	Liquid.
pH (in water):	0 to 5
Melting Point / Freezing Point:	0 °C (32 °F) (the water phase)
Initial Boiling Point:	Not available.
Boiling Range:	100 °C (212 °F) (the water phase)
Flash Point:	> 232 °C (449.6 °F) (COC)
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	< 1 mmHg at 20 °C (68 °F)
Vapor Density:	> 1 (Air = 1)
Relative Density:	0.95 to 1.13 (Water = 1)

SAFETY DATA SHEET

Solubilities: Partially miscible with water.

Partition Coefficient: n-Octanol/Water: Not available.

Auto-ignition Temperature: > 370 °C (698 °F)

Decomposition Temperature: Not available.

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Density: Not available.

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: Contact between heated Asphalt and water can cause a violent eruption.

Conditions to Avoid: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Incompatible Materials: Acids. Bases. Oxidizers.

Hazardous Decomposition Products: Hydrogen sulphide. Hazardous sulphur dioxide, and related oxides of sulphur may be generated upon combustion.

Section 11: TOXICOLOGICAL INFORMATION
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EFFECTS OF ACUTE EXPOSURE
Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Asphalt	8052-42-4	Not available.	Not available.	Not available.
Water	7732-18-5	> 90 mL/kg (rat)	Not available.	Not available.
Benzene, ethenyl-, polymer with 1,3-butadiene	9003-55-8	Not available.	Not available.	Not available.
Naphtha (petroleum), hydrotreated light	64742-49-0	Not available.	Not available.	Not available.

Cationic Asphalt Emulsion with Polymer

Date of Preparation: May 26, 2017

SAFETY DATA SHEET

Fuel oil No. 2	68476-30-2	12000 mg/kg (rat)	4720 µL/kg (rabbit)	Not available.
Hydrochloric acid	7647-01-0	900 mg/kg (rabbit)	Not available.	1108 ppm (mouse); 1H
Polycyclic Aromatic Hydrocarbons	130498-29-2	Not available.	Not available.	Not available.
Hydrogen sulphide	7783-06-4	Not available.	Not available.	444 ppm (rat); 4H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion. Skin absorption.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Central nervous system. Teeth.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. When heated, this product may generate small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide 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 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 sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate. Hydrogen chloride is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hot liquid product may cause serious thermal burns on direct contact. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H₂S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

Skin: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Hot liquid product may cause serious thermal burns on direct contact. Asphalt fumes can increase susceptibility to sunburn.

Ingestion: Hot product may cause thermal burns. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen. If swallowed in large quantities, Asphalt can obstruct the intestine. Hydrochloric acid may cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

SAFETY DATA SHEET
EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Spleen. Liver. Kidneys. Central nervous system. Teeth.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation. Exposure to Naphtha may damage the blood-forming organs resulting in fatigue and anaemia (RBC), decreased resistance to infection, and/or excessive bruising and bleeding (platelet effect). Peripheral nerve damage may be evidenced by impairment of motor function (incoordination, unsteady walk, or muscle weakness in the extremities, and/or loss of sensation in the arms and legs). Auditory system effects may include temporary hearing loss and/or ringing in the ears. Prolonged exposure to Hydrochloric acid may cause conjunctivitis, photosensitization, and possible blindness, and may have effects on the lungs, resulting in chronic bronchitis. This product contains Polycyclic Aromatic Hydrocarbons. Prolonged contact with these compounds has been associated with the induction of skin and lung tumours, anemia, disorders of the liver, bone marrow and lymphoid tissues. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation; and damage to cardiovascular system.

Carcinogenicity: May cause cancer. Long-term or repeated exposures to Asphalt fumes are possibly carcinogenic to humans. Lifetime skin painting studies in animals with petroleum distillates have produced tumours in animals following prolonged and repeated skin contact.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Asphalt	A4	Group 2B	Not listed.	OSHA Carcinogen.	Listed.
Benzene, ethenyl-, polymer with 1,3-butadiene	Not listed.	Group 3	Not listed.	Not listed.	Not listed.
Fuel oil No. 2	A2	Group 1	List 1	OSHA Carcinogen.	Listed.
Hydrochloric acid	A4	Group 3	Not listed.	Not listed.	Not listed.
Polycyclic Aromatic Hydrocarbons	A2	Not listed.	List 2	OSHA Carcinogen.	Listed.

Mutagenicity: May cause genetic defects.

Reproductive Effects: Studies exist which report a link between crude oil and reproductive effects including menstrual disorders.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:	Not available.
Persistence / Degradability:	Not available.
Bioaccumulation / Accumulation:	Not available.
Mobility in Environment:	Not available.
Other Adverse Effects:	Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION**U.S. Department of Transportation (DOT)**

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Section 15: REGULATORY INFORMATION**Chemical Inventories****US (TSCA)**

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations**United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SAFETY DATA SHEET
SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Hydrochloric acid	500	5000	5000	313	Not listed.	5000
Polycyclic Aromatic Hydrocarbons	Not listed.	Not listed.	Not listed.	313	Not listed.	Not listed.
Hydrogen sulphide	500	100	100	313	U135	10000

State Regulations
Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Asphalt	8052-42-4	Listed.
Benzene, ethenyl-, polymer with 1,3-butadiene	9003-55-8	Listed.
Naphtha (petroleum), hydrotreated light	64742-49-0	Listed.
Fuel oil No. 2	68476-30-2	Listed.
Hydrochloric acid	7647-01-0	E
Polycyclic Aromatic Hydrocarbons	130498-29-2	Listed.
Hydrogen sulphide	7783-06-4	E

Note: E = Extraordinarily Hazardous Substance

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Asphalt	8052-42-4	Listed.
Naphtha (petroleum), hydrotreated light	64742-49-0	Listed.
Fuel oil No. 2	68476-30-2	SHHS
Hydrochloric acid	7647-01-0	SHHS
Hydrogen sulphide	7783-06-4	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Asphalt	8052-42-4	Listed.
Benzene, ethenyl-, polymer with 1,3-butadiene	9003-55-8	Listed.
Naphtha (petroleum), hydrotreated light	64742-49-0	Listed.
Fuel oil No. 2	68476-30-2	S
Hydrochloric acid	7647-01-0	E
Polycyclic Aromatic Hydrocarbons	130498-29-2	Listed.
Hydrogen sulphide	7783-06-4	E

Note: E = Environmental Hazard; S = Special Hazardous Substance

**California
California Prop 65:**

WARNING This product can expose you to chemicals including Asphalt, Fuel Oil No. 2, and Polycyclic Aromatic Hydrocarbons which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 16: OTHER INFORMATION**Disclaimer:**

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: May 26, 2017
Version: 1.0
GHS SDS Prepared by: Deerfoot Consulting Inc.
Phone: (403) 720-3700