MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name: Micro-surfacing Emulsion (MSE)
Synonyms: Cationic Asphalt Emulsion
CAS Number: Blend

Company Identification

Reed & Graham, Inc.
690 Sunol Street
San Jose, CA 95126 USA
408-287-1400.1 (For product information)
1-800-424-9300 CHEMTREC (for emergencies)

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT LISTING:

Chemical Name	Amount	CAS Number
ASPHALT (PETROLEUM)	55.0 - 70.0 %	8052-42-4
WATER	< 40.0 %	7732-18-5
Confidential Ingredient A	< 5 %	Trade Secret
HYDROCHLORIC ACID	< 2 %	7647-01-0
Confidential Ingredient B	< 2 %	Trade Secret
Confidential Ingredient C	< 2 %	Trade Secret
HYDROGEN SULFIDE	< 1 %	7783-06-4

COMPOSITION COMMENT:

Concentration values are typical and may vary. Although specific identities of some product components are being withheld as trade secrets, known pertinent hazards are addressed in this MSDS.

Hydrogen sulfide may be present as a by-product of asphalt processing.

HAZARDS DISCLOSURE

This product contains hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains materials that are acute hazards.

MISCELLANEOUS:

This material does not have established exposure limits.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW / CAUTION

May cause skin irritation. Dilute with water. For hot product, immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Do not allow material to completely dry. Fumes from hated material may be irritating. Aspiration hazard if swallowed – can cause lung damage.

HMIS RATING -	Health:	2
	Flammability:	0
	Reactivity:	0
	Personal Protective Index:	1
NFPA RATING -	Health:	2
	Flammability:	0
	Reactivity:	0
	Special Hazard:	corrosive

POTENTIAL HEALTH EFFECTS -

EYE:

Corrosive. Direct contact may cause eye irritation. Exposure to vapors, fumes, or mists may cause irritation. Contact with heated material may cause eye burns and permanent tissue damage.

SKIN:

Avoid prolonged or repeated contact with skin. Prolonged or repeated contact may irritate the skin and cause a skin rash (dermatitis).

INHALATION:

Avoid breathing vapors or mists. Prolonged or excessive inhalation may cause respiratory tract irritation.

Hydrogen sulfide can cause respiratory paralysis and death depending on the concentration and duration of exposure.

INGESTION:

Substance may be harmful if swallowed. Irritating to mouth, throat, and stomach.

SIGNS AND SYMPTOMS OF EXPOSURE:

Exposure to hot material may cause thermal burns. Vapors may have an offensive odor which may cause headaches, nausea, and vomiting. Symptoms of overexposure include: fatigue, tearing of eyes, burning sensation in the throat, cough, chest discomfort and skin irritation.

CHRONIC EFFECTS:

No known hazards in normal industrial use.

CARCINOGENICITY INFORMATION:

IARC has determined that there is inadequate evidence that asphalts are carcinogenic to humans. While brief or intermittent skin contact with this product is not expected to cause harm, those workers who do not practice good personal hygiene and who are exposed repeatedly via skin contact may be at risk.

MEDICAL CONDITIONS AGRAVATED BY EXPOSURE:

Disorders of the kidney, liver, skin and respiratory system.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists. Burns due to contact with heated material require immediate medical attention.

SKIN CONTACT FIRST AID:

Wash skin with soap and water. Wear protective gloves to minimize skin contamination. For hot material exposure, DO NOT try to remove solidified material from the skin. DO NOT try to dissolve with solvents or thinners.

INHALATION FIRST AID:

At elevated temperatures may cause irritation of the eyes and respiratory tract. Although this product is not known to cause respiratory problems, if breathing is difficult, safely remove victim to fresh air and provide oxygen. Get immediate medical attention.

INGESTION FIRST AID:

Get immediate medical attention. Do not induce vomiting due to danger of aspirating liquid into lungs. Gastric lavage may be required.

STATEMENT OF PRACTICAL TREATMENT:

Get prompt medical attention. Dilute with water. If solidified, treat as neat asphalt.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

COC Flash Point: None
TCC Flash Point: None
Autoignition Temperature: N/A

FLAMMABLE LIMITS IN AIR

LEL: N/A
UEL: N/A

FLAMMABLE PROPERTIES:

Product is an aqueous solution. Heated product may produce hazardous fumes, decomposition products or residues. Small quantities of hydrogen sulfide may be released upon heating.

EXTINGUISHING MEDIA:

Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material. Exercise care when using water as contact with hot asphalt products may produce steam and violent foaming.

FIRE FIGHTING INSTRUCTIONS:

As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear. Decomposition may produce fumes, smoke, oxides of carbon and hydrocarbons, and possible small quantities of hydrogen sulfide.

COMBUSTION PRODUCTS:

Avoid breathing vapors from heated material. Combustion may produce CO, NOx, SOx and reactive hydrocarbons.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):

Observe precautions in Protective Equipment section.

INITIAL CONTAINMENT:

Clean up spills immediately, observing precautions in Protective Equipment section. Contain spilled liquid with sand or earth.

LARGE SPILLS PROCEDURE:

Stop the source of the leak or release. Clean up releases as soon as possible, observing precautions in Exposure Controls/Personal Protection. Contain liquid to prevent further contamination of soil, surface water or groundwater. Large spillage should be dammed-off and pumped into containers.

SMALL SPILLS PROCEDURE:

Absorb spills with inert material.

7. HANDLING AND STORAGE

HANDLING (PHYSICAL ASPECTS):

When handling hot material, use protective clothing impervious to this material.

STORAGE PRECAUTIONS:

Do not store at temperatures above 82°C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

EYE / FACE PROTECTION REQUIREMENTS:

Where contact with this material is likely, eye protection is recommended.

SKIN PROTECTION REQUIREMENTS:

Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation.

RESPIRATORY PROTECTION REQUIREMENTS:

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

EXPOSURE GUIDELINES:

ASPHALT
OSHA TWA: 5 mg/m^3

HYDROCHLORIC ACID
Recommended Exposure Limit: 5 ppm
OSHA PEL: 5 ppm, 7 mg/m^3
OSHA TWA: 5 ppm, 7.5 mg/m^3
OSHA Ceiling Limit: 5 ppm, 7 mg/m^3
Skin Designation: Yes

HYDROGEN SULFIDE
OSHA TWA: 10 ppm, 14 mg/m^3
OSHA STEL: 15 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM .....: Liquid
COLOR .....: Brown to Black
ODOR .....: Asphalt Odor
BOILING POINT .....: 100 C @ 760 mm Hg
VAPOR PRESSURE .....: Same as water mm Hg @ 21 C
VAPOR DENSITY .....: Same as water (Air = 1)
SOLUBILITY IN WATER .....: Dispersible
SPECIFIC GRAVITY .....: 1.0 - 1.1 (Water = 1)
MELTING/FREEZING POINT .....: 0 C
PH .....: 2-6
% VOLATILES .....: <35 % @ 21 C @ 760 mm Hg
VOLATILE ORGANIC COMPOUNDS (VOC) …..: <2%

10. STABILITY AND REACTIVITY

STABILITY:

This compound is stable at ambient conditions.

POLYMERIZATION:

Hazardous polymerization will not occur.

INCOMPATIBILITY WITH OTHER MATERIALS:

Avoid contact with strong bases.

DECOMPOSITION:

Decomposition will not occur if handled and stored properly.

CONDITIONS TO AVOID:

Avoid extreme temperatures.

11. TOXICOLOGICAL INFORMATION

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:

This material should be prevented from uncontrolled applications to soil or earth. This material is a water pollutant and should be prevented from entering storm water and sewage drainage systems and bodies of water.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements. Avoid disposal into waste water treatment facilities.

CONTAMINATED MATERIALS:

Treat as product waste.

CONTAINER DISPOSAL:

Uncleaned empty containers should be disposed of in the same manner as the contents.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL .....…..: MSE
D.O.T. SHIPPING NAME ...: Non Regulated, Water Based Asphalt Emulsion
D.O.T. HAZARD CLASS ....: Non-Hazardous

15. REGULATORY INFORMATION

EEC Symbols and Indications of Danger:
Irritant (Xi), Corrosive (C)

R-Phrases:
R34 - Causes burns.
R36/37/38 - Irritating to eyes, respiratory system, and skin.

WHMIS Hazard Symbols:
Class E - Corrosive Material

Canadian Disclosure List
HYDROCHLORIC ACID (7647-01-0)

SARA Title III - Section 313
HYDROCHLORIC ACID (7647-01-0)

CERCLA Hazardous Substances
HYDROCHLORIC ACID (7647-01-0) -- RQ 5000 lb

HYDROGEN SULFIDE (7783-06-4) -- RQ 100 lb

RCRA Hazardous Substances
HYDROGEN SULFIDE (7783-06-4) -- RCRA Code: U135

Clean Air Act - Section 112
HYDROCHLORIC ACID (7647-01-0)

Title V
HYDROCHLORIC ACID (7647-01-0)
HYDROGEN SULFIDE (7783-06-4)

SC Toxic Air Pollutants List
HYDROCHLORIC ACID (7647-01-0)
HYDROGEN SULFIDE (7783-06-4)

16. OTHER INFORMATION

ISSUE ……..…..…..…....: Update
PREPARED BY..……..…....: Eric Richard
APPROVED BY……...…...: Mozammel Haq
TITLE .....……..: Environmental Compliance & Risk Manager
APPROVAL DATE…… August 14, 2007
SUPERCEDES DATE ….....: August 4, 2001
R&G MSDS…… 011

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