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HMIS HAZARD RATING	
1	HEALTH
0	FIRE
0	REACTIVITY

MATERIAL SAFETY DATA SHEET

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Emergency Phone Number (CHEMTREC): 800-424-9300

I. PRODUCT INFORMATION

TRADE NAME CSS-1HM ASPHALT EMULSION, MICROAD EMULSION	C.A.S. NUMBER Mixture
SYNONYMS Slurry Oil, Micro Surfacing Oil	PRODUCT CODE NUMBER 424,425

II. PHYSICAL DATA

BOILING POINT @ 760 MM Hg 212°F	% VOLATILES BY VOLUME 25-30%	SOLUBILITY IN H2O BY WEIGHT % Highly Miscible
SPECIFIC GRAVITY 1.0 ± 0.2 @ 60°F	MELTING POINT Not Applicable	EVAPORATION RATE (BUTYL ACETATE = 1) Slower
VAPOR DENSITY (AIR = 1) > 1.0	VAPOR PRESSURE Not Determined	APPEARANCE AND ODOR Brown to Black Material

III. HAZARDOUS COMPONENTS

C.A.S. NUMBER	MATERIAL OR COMPONENT	%	HAZARD DATA
8052-42-4	[1] Asphalt	57-65	TLV/TWA - 5mg/m ³ for asphalt fumes TLV/STEL - 10 mg/m ³ for asphalt fumes
7732-18-5	[2] Water	25-30	Not applicable
9003-55-8	[3] Proprietary Polymer	2-2.5	Not applicable
	[4] Proprietary Emulsifier	1-1.5	TLV/TWA - 980 mg/m ³ for Isopropyl Alcohol TLV/TWA - 1225 mg/m ³ for Isopropyl Alcohol

IV. HEALTH HAZARD INFORMATION

EXPOSURE LIMITS	TLV/TWA 5 mg/m³ for oil mist	TLV/STEL 5 mg/m³ for oil mist	TLV/PEL Not Established	ODOR THRESHOLD LIMIT Not Applicable
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ROUTES OF EXPOSURE AND EFFECTS AS REQUIRED BY 29CFR1910.1200

INHALATION	<p>Vapors that are released during the curing process are not known to contain hazardous materials. However, effects from raw materials include irritation to the eye, nose, and respiratory tracts of test animals. Health effects are not be expected if proper personal safety and hygiene is observed.</p>
INGESTION	<p>High viscosity oils, i.e. asphalt, have been shown to be less toxic when ingested than lower viscosity, higher volatility oils. Product contains acidic material (0.2%) and could cause burns in the mouth, esophagus, and stomach.</p>
SKIN ABSORPTION	<p>Skin absorption could occur through normal skin contact and/or through wounds exposed to asphalt products. Product contains less than 0.2% acidic material. Effects could include irritation and possible tissue damage or dermatitis. Health effects are not be expected if proper personal safety and hygiene is observed.</p>
SKIN CONTACT	<p>Product contains less than 0.2% acidic material. Direct contact may cause irritation and/or itching. Pre-existing skin disorders may be aggravated by exposure to this product. Severe effects could include tissue burns, irritation and dermatitis.</p>
EYE CONTACT	<p>Documentation indicates that contact lenses should not be worn when exposed to this product. This product contains less than 0.2% acidic material and can cause inflammation, irritation, and possible corneal burns.</p>
ACUTE OVEREXPOSURE	<p>Skin effects may include irritation and itching. Product contains less that 0.2% acidic material and may cause tissue burns or dermatitis. Any pre-existing skin conditions may be aggravated by exposure to this product.</p>
CHRONIC OVEREXPOSURE	<p>Chronic health effects are not expected if proper personal safety and hygiene is observed. Pre-existing skin disorders may be aggravated by repeated or prolonged exposure to this product.</p>

V. EMERGENCY AND FIRST AID PROCEDURES

INHALATION	<p>Vapors that are released during the curing process are not known to contain hazardous materials. However, if breathing is difficult, move person to fresh air and seek prompt medical attention.</p>
INGESTION	<p>DO NOT induce vomiting. In general, emesis induction is unnecessary for high viscosity, low volatility oils such as asphalt and grease. Avoid all digestible oils, fats, and alcohol, which may increase intestinal absorption. Seek medical attention.</p>
SKIN CONTACT	<p>Flush area with water to cool. Wash affected area with waterless hand cleaner, followed by water and a mild detergent. DO NOT use solvents! For relief from irritation, apply hand lotion. If irritation persists, seek medical attention.</p>
EYE CONTACT	<p>Flush eyes with water for 15 minutes while holding eyelids open. If subject is wearing contact lenses, immediately seek an ophthalmologist for treatment.</p>

VI. SPECIAL PROTECTION INFORMATION

VENTILATION	Care must be taken to assure that the TLV/TWA of 5mg/m ³ for oil mist is not exceeded. Normal exterior application should not require the need for mechanical ventilation. Application must be made downwind from operator.	PERSONAL PROTECTIVE EQUIPMENT
RESPIRATORY PROTECTION	If needed, use an approved OSHA/NIOSH particulate and organic vapor canister respirator, or a positive atmosphere supplied air respirator as described in 29 CFR 1910.134.	DUST/ORGANIC VAPOR RESPIRATOR
EYE PROTECTION	Goggles and full-face shield are recommended when handling this material.	GOGGLES FULL-FACE SHIELD
SKIN PROTECTION	Flannel-lined Neoprene or Nitrile gloves are recommended.	CHEMICAL RESISTANT GLOVES
OTHER PPE	Rubber or leather footwear is recommended. All clothing saturated with this product should be discarded.	BOOTS

VII. FIRE AND EXPLOSION DATA

FLASH POINT Not Applicable	AUTOIGNITION TEMPERATURE Not Applicable	LOWER FLAMMABLE LIMIT Unknown
EXTINGUISHING MEDIA This product contains water and will not burn until all moisture has been removed. If fire should occur, extinguish with foam, carbon dioxide or dry chemical extinguishers.		
SPECIAL FIRE FIGHTING PROCEDURES Fire fighters should wear full protective equipment and self-contained breathing apparatus.		
UNUSUAL FIRE AND EXPLOSION HAZARDS Water sprayed on burning product may cause frothing, steam, and eruptions.		

VIII. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY	Since this is a water-based emulsion, settling will occur. The settling rate is dependent on the dilution and storage temperature. NOTE: Care should be taken to prevent this material from freezing.
INCOMPATIBILITY	This material is incompatible with bases. DO NOT heat above 212°F. All additives should be evaluated before use in the field.
HAZARDOUS DECOMPOSITION PRODUCTS	Irritating or toxic vapors may be released when this material is burned.
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION	None known.

IX. SPILL AND LEAK PROCEDURES

SPILL CONTROL PROCEDURE

If possible, stop source of leak. Dike and contain to eliminate environmental contamination. For small spills, squeegee into thin layer and cover with dirt or aggregate. If material enters a waterway, notify police, local EPA and the National Response Center (1-800-424-8802).

NEUTRALIZING CHEMICALS

DO NOT use water. This material is highly miscible and water will increase the volume of the spill. If appropriate, pump material into holding vessel and bind with sand or lime dust.

WASTE DISPOSAL

If disposal is necessary, contact your state environmental agency for guidance with disposal methods and waste receiving locations in your area.

X. SPECIAL PRECAUTIONS

ENVIRONMENTAL

1. This product is considered an oil under EPA-CWA Section 311. Spills into water sources must be reported to 1-800-424-8802.
2. If this product becomes a waste material, refer to 40 CFR 261.21 (RCRA) for latest waste disposal regulations and waste stream number.
3. This product is listed in the EPA/TSCA inventory (40 CFR 700 to end).

LABELING

1. "KEEP FROM FREEZING" labels are recommended.
2. This material is not regulated by the Department of Transportation.

XI. REFERENCES

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| <ol style="list-style-type: none"> 1. BITUMEN SAFETY CODE (ISBN-085501-319-2) 2. CAUSTIC SODA HANDBOOK, VULCAN CHEMICAL 3. CLINICAL TOXICOLOGY OF COMMERCIAL PRODUCTS, 5TH EDITION 4. DOCUMENTATION OF THRESHOLD LIMIT VALUES, 4TH EDITION 5. ENCYCLOPEDIA OF SURFACTANTS, VOLUME III 6. EPA/CWA SECTION 311 | <ol style="list-style-type: none"> 7. HYGIENE AND SANITATION, VOLUME 33 8. NFPA 325M, 704 9. POISONING, TOXICOLOGY, SYMPTOMS, TREATMENTS 10. 29 CFR, 40 CFR AS NOTED WITHIN 11. REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES |
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NOTE: This material safety data sheet is intended as a source of information for persons involved in any and all phases of handling this material, from production to final application, as required by 29 CFR 1910.1200. The health data provided is based on the nature of the raw constituents. This material is a mixture and the health effects as such have not been evaluated.

XII. ENVIRONMENTAL INFORMATION

1. THIS PRODUCT CONTAINS THE FOLLOWING EXTREMELY HAZARDOUS SUBSTANCE(S)

4. THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS

<table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">(SECTION 302 AND 304):</td> <td style="width: 20%;"><u>COMPONENT</u></td> <td style="width: 15%;"><u>TPQ(LBS)</u></td> <td style="width: 15%;"><u>RQ(BLS)</u></td> </tr> <tr> <td></td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">(SECTION 302 AND 304):</td> <td style="width: 20%;"><u>COMPONENT</u></td> <td style="width: 15%;"><u>RQ(LBS)</u></td> <td style="width: 15%;"><u>WEIGHT %</u></td> </tr> <tr> <td></td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </table>	(SECTION 302 AND 304):	<u>COMPONENT</u>	<u>TPQ(LBS)</u>	<u>RQ(BLS)</u>		N/A	N/A	N/A	(SECTION 302 AND 304):	<u>COMPONENT</u>	<u>RQ(LBS)</u>	<u>WEIGHT %</u>		N/A	N/A	N/A	<table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">(SECTION 313):</td> <td style="width: 20%;"><u>COMPONENT</u></td> <td style="width: 15%;"><u>CAS#</u></td> <td style="width: 15%;"><u>WEIGHT %</u></td> </tr> <tr> <td></td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">CARCINOGENICITY:</td> <td style="width: 10%;"><u>NTP</u></td> <td style="width: 30%;"><u>IARC MONOGRAPHS</u></td> <td style="width: 10%;"><u>OSHA</u></td> </tr> <tr> <td></td> <td>NO</td> <td>NO</td> <td>NO</td> </tr> </table>	(SECTION 313):	<u>COMPONENT</u>	<u>CAS#</u>	<u>WEIGHT %</u>		N/A	N/A	N/A	CARCINOGENICITY:	<u>NTP</u>	<u>IARC MONOGRAPHS</u>	<u>OSHA</u>		NO	NO	NO
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<h3>3. THIS PRODUCT HAS THE FOLLOWING HAZARDS (SECTION 311 AND 312):</h3> <table border="0" style="width: 100%;"> <tr> <td></td> <td style="text-align: center;"><u>YES</u></td> <td style="text-align: center;"><u>NO</u></td> </tr> <tr> <td>IMMEDIATE</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>DELAYED</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>FIRE</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>PRESSURE</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>REACTIVITY</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table>		<u>YES</u>	<u>NO</u>	IMMEDIATE	X	X	DELAYED	X	X	FIRE	X	X	PRESSURE	X	X	REACTIVITY	X	X	
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The information provided in this material safety data sheet has been obtained and compiled from sources believed to be reliable. This information relates to the specific material designated and may not be valid for such material used in combination with any other material or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Vance Brothers, Inc. does not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent.

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DATE

January 15, 2013

PREPARED BY

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