


ASPHALT EMULSION INDUSTRIES, LLC

SAFETY DATA SHEET **Emulsified Asphalt** **Cationic, All Grades**

1. Product Identification, Company Identification, Recommended Uses and Use Restrictions

Product Name	EMULSIFIED ASPHALT,CATIONIC, ALL GRADES		
Product Family	Asphalt Mixture		
CAS Number	Mixture		
Synonyms	Emulsified Asphalt, CRS-1, CRS-1h, CRS-2, CRS-2h, CRS-2L, CRS-2P, CMS-2, CMS-2N, CSS-1h, CQS-1hLM, CQS-1hLM Flex, Novabond™, Thimaco, Fiberbat™, Tack Coat, Tack Coat (diluted 30-50% with water), NTT, Non-Tracking Tack, Cold In-Place Recycling Emulsion, IPR Emulsion		
Manufacturer	ASPHALT EMULSION INDUSTRIES, LLC		
	1524 Valley Road Richmond, VA 23222 804-321-5912	7700 Fort Darling Road Richmond, VA 23237	8730 Vulcan Lane Manassas, VA 20109 703-369-1326
	18000 Cockpit Point Road Dumfries, VA 22026 703-221-1171	801 Terminal Avenue Newport News, VA 23607 757-244-6545	151 Emmett Road Dunn, NC 28334 910-230-3764
	107 Arendell Street Morehead City, NC 28587 252-222-3332		
Technical Contact	3617 Nine Mile Road Richmond, VA 23223 804-267-0707		
Emergency Contact	ChemTrec – 24 hour 1-800-424-9300		
Web MSDS	www.asphalt-emulsion.com		
Recommended Uses	Road Maintenance Operations including Slurry Seal, Microsurfacing, Surface Treatment, HMA Paving, Cold In-Place Recycling		
Use Restrictions	Temperatures must be above freezing		



2. Hazard Identification

Physical State	Liquid
Color	Brown to Black
Odor	Mild Petroleum Odor
	Liquid can cause eye and skin irritation Avoid prolonged contact with eyes, skin and clothing Hot product can cause burns Fumes from hot product can cause irritation to eyes, skin and respiratory system

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2. Hazard Identification, continued

	Harmful to aquatic organisms
	Respiratory Sensitizer
NFPA Rating	Health=1, Fire=1, Reactivity=0 RATING SCALE:
HMIS Rating	Health=1 (Chronic), Fire=1, Reactivity=0 RATING SCALE:

3. Composition/Information on Ingredients

Component Name	CAS Number	Concentration, %
Petroleum Asphalt	8052-42-4	38-72
Water	7732-18-5	62-28
Fuel Oil Flux	68334-30-5	0-6
Stoddard Solvent	8052-41-3	0-6
Hydrochloric Acid	7647-01-0	0.1-2.5
SBR Co-Polymer	9003-55-8	0-4.5
Dispersion Polymer Modifier	Mixture	0-5
Fatty Amine Emulsifier	Mixture	0.1-2.5
Hydrogen Sulfide	7783-06-4	0-0.1

CMS-2N: Contains Stoddard Solvent

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4. First Aid Measures

Skin Contact	HOT PRODUCT: Immediately flush the area with large amounts of cool water. Do not attempt to remove material from the skin or to remove contaminated clothing. Seek immediate medical attention COOL PRODUCT: Wash the skin with plenty of soap and water. Remove contaminated clothing and shoes and place into a container for laundering or disposal – clean contaminated clothing before reuse. If skin is reddened or blistered, seek medical attention.
Eye Contact	HOT PRODUCT: Hold the eyelids apart and flush with cool water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. Hot Product may cause thermal burns to eyes COOL PRODUCT: Flush with cold water or saline solution. Seek medical attention
Ingestion	DO NOT INDUCE VOMITING. SEEK IMMEDIATE MEDICAL ATTENTION HOT PRODUCT: May cause thermal burns in the mouth, throat and esophagus COOL PRODUCT: May cause irritation in the mouth, throat and esophagus
Inhalation	Move the person to fresh air and monitor for respiratory distress NOT BREATHING: Begin rescue breathing and SEEK IMMEDIATE MEDICAL ATTENTION. NOTE: Inhalation exposure of fumes of hot product can produce toxic effects. Treat intoxications as hydrogen sulfide exposures.

5. Fire Fighting Measures

Extinguishing Media	Dry chemical foam, carbon dioxide or water fog
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, oxides of sulfur and/or nitrogen, unburned hydrocarbons and smoke fumes. At elevated temperatures hydrogen sulfide and other sulfur containing gases may be produced.
Special Properties	Asphalt emulsions normally will not ignite. Asphalt residues will burn if heated. At elevated temperatures asphalt emulsions may separate to form a layer of asphalt and a layer of water. Fire in the vicinity of storage tanks may cause a boiling liquid-expanding vapor explosion (BLEVE).

6. Accidental Release Measures

Personal Precautions	Wash hands and other exposed skin areas with soap and water before eating, drinking, smoking, using toilet facilities or leaving the work area. Use only cleaning soaps/agents approved for human use – do not use gasoline, kerosene, solvents or harsh abrasives
Personal Protective Equipment (PPE)	GENERAL: Minimum PPE recommended is safety glasses, work gloves and work shoes. EYE: Safety glasses for small spills, Goggles or face shield for large spills. A suitable eyewash station should be located in the vicinity of the work area. HAND: Standard work gloves recommended. Nitrile, neoprene or butyl gloves recommended for repeated or prolonged use. RESPIRATORY: With adequate ventilation a respirator is usually not required. In those cases where exposure exceeds the occupational control limits a NIOSH/MSA approved air purifying particulate respirator suitable for dusts, fumes and mists is recommended. Respirators should be used in accordance with 29 CFR 1910.134.
Small Spills	Absorb or cover with earth, sand or other inert non-combustible absorbent material. Scrape up and place into containers for disposal.
Large Spills	Immediately contact emergency personnel. In all cases stop the source of leak only when it is safe to do so. LAND: Contain the spill with dikes of earth or sand. Do not allow to enter waterways or sewer. Recover as much liquid as possible for re-use/reclamation. Scrape up residual product and diking material and either reclaim or dispose of. WATER: The emulsion will slowly begin to disperse in water. Contain as much as possible with booms and begin recovery as soon as possible. Notify local and state authorities and the National Response Center if required.

7. Handling and Storage

Handling	HOT PRODUCT: Avoid breathing fumes or vapors – hydrogen sulfide can accumulate in bulk transport or storage tanks. Wear appropriate PPE to avoid skin, face and eye contact, especially when opening hatches or vents, since the bulk transporter or tank may be pressurized. COOL PRODUCT: Avoid breathing fumes or vapors. Wear appropriate PPE when opening hatches or vents in case pressure has built up in the bulk transporter or storage tank.
Storage	HEATING: Avoid overheating product -- temperature >200°F (93°C). Keep heating coils and flues in storage tanks and trucks covered with material when heating. COLD WEATHER: Protect product from freezing. GENERAL: Empty containers will contain product residues. Do not cut, grind, weld or expose containers to potential ignition sources unless precautions are taken against these hazards.

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8. Exposure Controls/Personal Protection

OCCUPATIONAL EXPOSURE LIMITS

SUBSTANCE	CAS NO.	TIME/TYPE
Asphalt	8052-42-4	ACGIH 8-hr TWA: 0.5 mg/m ³
Fuel Oil Flux	68334-30-5	ACGIH TWA: 100 mg/m ³
Stoddard Solvent	8052-41-3	ACGIH TWA: 100 ppm
		OSHA PEL TWA: 500 ppm
		NIOSH PEL TWA: 350 mg/m ³
		NIOSH Ceiling: 1800 mg/m ³ [15 minute]
Hydrogen Sulfide	7783-06-4	ACGIH TWA: 1 ppm, STEL: 5 ppm
		OSHA PEL 8-hr: 10 ppm / 14 mg/m ³ , 15-min STEL: 15 ppm / 21 mg/m ³
Engineering Controls		Provide exhaust ventilation or other engineering controls in enclosed areas to keep airborne vapor concentrations below respective exposure limits.
Personal Protection (PPE)		
General		PPE should be based on a risk assessment of the work area. In all cases use good personal hygiene.
Skin		Work clothes, work boots and work gloves should be worn.
Eye		OSHA- approved safety glasses. A suitable eyewash station should be available
Respiratory		With adequate ventilation a respirator is not required. If the risk assessment indicates a respirator is required a NIOSH/MSA approved air-purifying particulate respirator suitable for dusts, fumes and mists should be used. Respirator selection must be based on known or anticipated exposure limits for the hazards and the safe working limits of the respirator

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9. Physical and Chemical Properties

Physical State	Liquid
Color	Brown-Black
Odor	Mild Petroleum-like
pH	2-4
Melting Point, °F (°C)	Not Applicable
Freezing Point, °F (°C)	32 (0)
Boiling Point, °F (°C)	212 (100)
Flash Point, °F (°C)	Not Applicable
Evaporation Rate	INA
Flammability	NFPA Class III-B combustible material
Lower Flammable Limit, % by Vol.	Not Applicable
Upper Flammable Limit, % by Vol.	Not Applicable
Vapor Pressure	INA
Vapor Density	>1 (Air = 1)
Relative Density	>1 (Water = 1)
Solubilities	Water: Dispersable
Partition Coefficient (n-octanol/water)	INA
Auto-Ignition Temperature	Not applicable
Decomposition Temperature	Not applicable
Viscosity	See AASHTO M-208

10. Stability and Reactivity

Reactivity	Not reactive under normal conditions
Chemical Stability	Stable under normal conditions
Possibility of Hazardous Reaction	Minimal
Conditions to Avoid	Excessive heat, freezing, sources of ignition.
Incompatible Materials	Strong oxidizers such as nitrates, chlorates, peroxides
Hazardous Decomposition Products	Combustion produces carbon dioxide, carbon monoxide, oxides of sulfur and/or nitrogen, unburned hydrocarbons. At elevated temperatures hydrogen sulfide and other sulfur gases may be produced.

11. Toxicological Information	
Major Routes of Entry	Skin Contact
Symptoms related to	
Skin	Irritation with reddening, itching, burning feeling and/or swelling. Contains component(s) that may cause allergic skin reactions. Repeated skin contact may cause harmful effects to other parts of the body. Hot material may cause thermal burns
Eye	Irritation with tearing, redness, stinging or burning feeling. Hot material can cause thermal burns with eye tissue destruction and possible permanent injury.
Ingestion	Stomach and/or intestinal pain, nausea, vomiting and/or diarrhea
Inhalation	No significant adverse health effects expected during normal exposure to product at room temperature. Fumes from hot product may cause irritation to the respiratory tract.
Short Term Exposure	
Immediate	HOT PRODUCT: May cause skin and respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
Chronic	HOT PRODUCT: May cause skin and respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
Long Term Exposure	
Immediate	HOT PRODUCT: may cause dermatitis, acne and/or photosensitization of the skin. May cause respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
Chronic	HOT PRODUCT: May cause dermatitis, acne, and/or photosensitization of the skin. May cause respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
Toxicity Data	
Asphalt	Oral LD ₅₀ : Acute >5000 mg/kg [rat] Dermal LD ₅₀ : >2000 mg/kg [rabbit]
Fuel Oil Flux	Octane (111-65-9): Inhalation LC ₅₀ : 118mg/l 4 hrs [rat] n-Nonane (111-84-2): Inhalation LC ₅₀ : 3200 mg/l 4 hrs [rat] n-Heptane (14282-5) Inhalation LC ₅₀ : 103 mg/l 4 hrs [rat] Naphthalene (91-20-3): Dermal LD ₅₀ : >2 g/kg [rabbit] Oral LD ₅₀ : 450 mg/kg [rat]
Stoddard Solvent	Inhalation LC ₅₀ : >20 mg/l 1 hr [rat] Oral LD ₅₀ : >7000 mg/kg [rat] Dermal LD ₅₀ : >2000 mg/kg [rabbit]
Hydrogen Sulfide	Intraperitoneal LD ₅₀ : 2300 µg/kg [rat] Intravenous LD ₅₀ : 270 µg/kg [rat] Inhalation (Vapor) LC ₅₀ : 820 mg/kg 3 hrs [rat] Inhalation (Gas) LC ₅₀ : 712 ppm 1 hr [rat]

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11. Toxicological Information, continued

Carcinogenic Data

Asphalt	IARC: Determined that there is sufficient evidence that extracts of stream and air refined bitumens are carcinogenic in animals but there is inadequate evidence that bitumens alone are carcinogenic to humans. NTP: Reasonably expected to be a carcinogen. ACGIH: A4 – Not classifiable as a carcinogen. OSHA – Select Carcinogens: Listed
Fuel Oil Flux	ACGIH (Fuels, diesel 68334-30-5): A3 confirmed carcinogen with unknown relevance to humans
Stoddard Solvent	No data available to indicate product or any components present at greater than 0.1% are carcinogenic
Hydrogen Sulfide	No known significant effects
Target Organs	Skin, Eyes, Respiratory System

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12. Ecological Information

Ecotoxicity	Harmful to aquatic organisms
Persistence & Biodegradability	Expected to have a low rate of biodegradation
Bioaccumulative Potential	Expected to have a low rate of bioaccumulation
Mobility in Soil	Not mobile in soil – will not penetrate to a significant depth.

13. Disposal Considerations

RCRA Classification	The product as supplied is not considered a hazardous waste. The hazard characteristic and regulatory waste stream classification can change with product use. It is the responsibility of the user to determine at the time of disposal whether the material is a hazardous waste subject to RCRA or not.
Waste Disposal	Disposal of this product, solutions and any by-products must comply with Local, State and Federal Regulations

14. Transportation Information

Type	UN Number	Proper Shipping Name	Class	PG*	Label	Other
USDOT (Non-bulk)	Not Regulated					
USDOT (Bulk)	Not Regulated					
IATA-DGR	Not Regulated					
IMDG	Not Regulated					

*PG = Packing Group

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15. Regulatory Information	
TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) Inventory
OSHA Hazard Communication Standard	This product has been determined to be hazardous as defined in the OSHA Hazard Communication Standard
SARA 302 Emergency Planning and Notification	Extremely Hazardous Substances (40 CFR 302.4, 40 CFR 355) identified in this product: Hydrogen Sulfide (500 lb TPQ)
SARA 304 Emergency Planning and Notification	Extremely Hazardous Substances or CERCLA Hazardous Substances which in the case of spill may be subject to reporting requirements; Hydrogen Sulfide (100 lb. Final RQ)
SARA 311/312 Emergency Planning and Notification	EPA Hazard Category: Acute
SARA 313 Emergency Planning and Notification	This product contains the following components that may be subject to reporting on the Toxic Release Inventory Form R: NONE
CERCLA	CERCLA requires notification to the National Response Center of the release of "hazardous substances" equal to or greater than the RQ listed in 40 CFR 302.4: NONE
RCRA	The product as supplied is not considered a hazardous waste. The hazard characteristic and regulatory waste stream classification can change with product use. It is the responsibility of the user to determine at the time of disposal whether the material is a hazardous waste subject to RCRA or not.
Clean Water Act	This product is classified as an oil under Section 311 of the CWA. Discharges or spills which produce a visible oil sheen on waters of the United States or adjoining shorelines or conduits leading into surface waters must be reported to the National Response Center at 1-800-424-8802. Local and state regulations may be more restrictive and require additional reporting.
Oil Pollution Act	This product is classified as an oil under the OPA. Discharges or spills which produce a visible oil sheen on waters of the United States or adjoining shorelines or conduits leading into surface waters must be reported to the National Response Center at 1-800-424-8802. Local and state regulations may be more restrictive and require additional reporting.
Clean Air Act	This product contains the following components designated as hazardous, toxic or flammable air pollutants under Section 112 of the CAA: NONE
California Proposition 65	This material contains the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm: Polynuclear Aromatic Hydrocarbons (4-6 member condensed rings)
New Jersey Right-To-Know	For New Jersey RTK labeling requirements refer to components listed in Section 3
Additional Regulatory Remarks	None

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16. Other Information	
Date Prepared	November 2013
Revision Number	1
Prepared By	
Abbreviations	
=, eq	Equal to
>	Greater than
<	Less than
INA	Information not available
NE	Not Established
ACGIH	American Conference of Government Industrial Hygienists
AIHA	American Industrial Hygiene Association
AASHTO	American Association of State Highway Transportation Officials
CAA	Clean Air Act
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
CWA	Clean Water Act
DGR	Dangerous Goods Regulations
EPA	U. S. Environmental Protection Agency
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
MSA	Mine Safety Administration
NFPA	National Fire Protection Administration
NIOSH	National Institute of Occupational Health and Safety
NTP	National Toxicology Program
OPA	Oil Pollution Act of 1990
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limits
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short Term Exposure Limit
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

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DISCLAIMER

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