

# ASPHALT EMULSION INDUSTRIES, LLC

## SAFETY DATA SHEET

### Emulsified Asphalt Cationic, All Grades

<b>1. Product Identification, Company Identification, Recommended Uses and Use Restrictions</b>			
<b>Product Name</b>	EMULSIFIED ASPHALT, CATIONIC, ALL GRADES		
<b>Product Family</b>	Asphalt Mixture		
<b>CAS Number</b>	Mixture		
<b>Synonyms</b>	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, Fibermat™, Tack Coat, Tack Coat (diluted 30-50% with water), NTT, Non-Tracking Tack, Cold In-Place Recycling Emulsion, IPR Emulsion		
<b>Manufacturer</b>	<b>ASPHALT EMULSION INDUSTRIES, LLC</b>		
	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		
<b>Technical Contact</b>	3617 Nine Mile Road Richmond, VA 23223 804-267-0707		
<b>Emergency Contact</b>	<b>ChemTrec – 24 hour 1-800-424-9300</b>		
<b>Web MSDS</b>	<a href="http://www.asphalt-emulsion.com">www.asphalt-emulsion.com</a>		
<b>Recommended Uses</b>	Road Maintenance Operations including Slurry Seal, Microsurfacing, Surface Treatment, HMA Paving, Cold In-Place Recycling		
<b>Use Restrictions</b>	Temperatures must be above freezing		

<b>2. Hazard Identification</b>	
<b>Physical State</b>	Liquid
<b>Color</b>	Brown to Black
<b>Odor</b>	Mild Petroleum Odor
	<p><b>SIGNAL WORD:</b> WARNING</p> <p>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</p>

<b>2. Hazard Identification, continued</b>	
	Respiratory Sensitizer
<b>NFPA Rating</b>	Health=1, Fire=1, Reactivity=0 RATING SCALE:
<b>HMIS Rating</b>	Health=1 (Chronic), Fire=1, Reactivity=0 RATING SCALE:
<b>Classification of the Substance or Mixture</b>	
Eye Irritant	Category 2A
Skin Corrosion/Irritation	Category 2
Respiratory/Skin Sensitizer	Category 1
<b>Hazard Statements</b>	May cause skin and eye irritation
	Harmful to aquatic organisms
	Fumes from heated material may be irritating
	Aspiration hazard if swallowed
	May be harmful if swallowed irritating mouth, throat and/or stomach
	Prolonged or excessive irritation may cause respiratory tract irritation
	Vapors may have a strong offensive odor which may cause headaches, nausea and vomiting
<b>Precautionary Statements</b>	Obtain and read instructions before use
	Do not handle until all safety precautions have been read and understood
	Exposure to hot material may cause thermal burns

<b>3. Composition/Information on Ingredients</b>		
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

**4. First Aid Measures**

<b>Skin Contact</b>	<p><b>HOT PRODUCT:</b> 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</p> <p><b>COOL PRODUCT:</b> 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.</p>
<b>Eye Contact</b>	<p><b>HOT PRODUCT:</b> Hold the eyelids apart and flush with cool water for at least 15 minutes. <b>SEEK IMMEDIATE MEDICAL ATTENTION.</b> Hot Product may cause thermal burns to eyes</p> <p><b>COOL PRODUCT:</b> Flush with cold water or saline solution. Seek medical attention</p>
<b>Ingestion</b>	<p><b>DO NOT INDUCE VOMITING. SEEK IMMEDIATE MEDICAL ATTENTION</b></p> <p><b>HOT PRODUCT:</b> May cause thermal burns in the mouth, throat and esophagus</p> <p><b>COOL PRODUCT:</b> May cause irritation in the mouth, throat and esophagus</p>
<b>Inhalation</b>	<p>Move the person to fresh air and monitor for respiratory distress</p> <p><b>NOT BREATHING:</b> Begin rescue breathing and <b>SEEK IMMEDIATE MEDICAL ATTENTION.</b></p> <p><b>NOTE:</b> Inhalation exposure of fumes of hot product can produce toxic effects. Treat intoxications as hydrogen sulfide exposures.</p>

**5. Fire Fighting Measures**

<b>Suitable Extinguishing Media</b>	Dry chemical foam, carbon dioxide or water fog
<b>Unsuitable Extinguishing Media</b>	Use caution when using water spray or stream. Contact with hot asphalt products may produce steam and violent foaming
<b>Hazardous Combustion Products</b>	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.
<b>Explosion Hazard</b>	None
<b>Special Properties</b>	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**

<b>Personal Precautions</b>	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
<b>Personal Protective Equipment (PPE)</b>	<p><b>GENERAL:</b> Minimum PPE recommended is safety glasses, work gloves and work shoes.</p> <p><b>EYE:</b> 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.</p> <p><b>HAND:</b> Standard work gloves recommended. Nitrile, neoprene or butyl gloves recommended for repeated or prolonged use.</p> <p><b>RESPIRATORY:</b> 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.</p>

<b>6. Accidental Release Measures, continued</b>	
<b>Small Spills</b>	Absorb or cover with earth, sand or other inert non-combustible absorbent material. Scrape up and place into containers for disposal.
<b>Large Spills</b>	<p>Immediately contact emergency personnel. In all cases stop the source of leak only when it is safe to do so.</p> <p>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.</p> <p>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.</p>

<b>7. Handling and Storage</b>	
<b>Handling</b>	<p><b>HOT PRODUCT:</b> 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.</p> <p><b>COOL PRODUCT:</b> 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.</p>
<b>Storage</b>	<p><b>HEATING:</b> Avoid overheating product -- temperature &gt;200°F (93°C). Keep heating coils and flues in storage tanks and trucks covered with material when heating.</p> <p><b>COLD WEATHER:</b> Protect product from freezing.</p> <p><b>GENERAL:</b> 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.</p>

<b>8. Exposure Controls/Personal Protection</b>		
<b>OCCUPATIONAL EXPOSURE LIMITS</b>		
SUBSTANCE	CAS NO.	TIME/TYPE
Asphalt	8052-42-4	ACGIH 8-hr TWA: 0.5 mg/m <sup>3</sup>
Fuel Oil Flux	68334-30-5	ACGIH TWA: 100 mg/m <sup>3</sup>
Stoddard Solvent	8052-41-3	ACGIH TWA: 100 ppm
		OSHA PEL TWA: 500 ppm
		NIOSH PEL TWA: 350 mg/m <sup>3</sup>
		NIOSH Ceiling: 1800 mg/m <sup>3</sup> [15 minute]
Hydrochloric Acid	7647-01-0	NIOSH PEL: 5 ppm OSHA PEL: 5 ppm, 7 mg/m <sup>3</sup>
Hydrogen Sulfide	7783-06-4	ACGIH TWA: 1 ppm, STEL: 5 ppm
		OSHA PEL 8-hr: 10 ppm / 14 mg/m <sup>3</sup> , 15-min STEL: 15 ppm / 21 mg/m <sup>3</sup>
<b>Engineering Controls</b>		Provide exhaust ventilation or other engineering controls in enclosed areas to keep airborne vapor concentrations below respective exposure limits.

**8. Exposure Controls/Personal Protection, continued**

**Personal Protection (PPE)**

<b>General</b>	PPE should be based on a risk assessment of the work area. In all cases use good personal hygiene.
<b>Skin</b>	Work clothes, work boots and work gloves should be worn.
<b>Eye</b>	Safety glasses meeting minimum ANSI Z87.1 requirements should be worn. A suitable eyewash station should be available
<b>Respiratory</b>	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

**9. Physical and Chemical Properties**

<b>Physical State</b>	Liquid
<b>Color</b>	Brown-Black
<b>Odor</b>	Mild Petroleum-like
<b>pH</b>	2-5
<b>Melting Point</b>	Not Applicable
<b>Freezing Point</b>	32°F (0°C)
<b>Boiling Point</b>	212°F (100°C)
<b>Flash Point</b>	Not Applicable
<b>Evaporation Rate</b>	INA
<b>Flammability</b>	NFPA Class III-B combustible material
<b>Lower Flammable Limit, % by Vol.</b>	Not Applicable
<b>Upper Flammable Limit, % by Vol.</b>	Not Applicable
<b>Vapor Pressure</b>	INA
<b>Vapor Density</b>	>1 (Air = 1)
<b>Relative Density</b>	>1 (Water = 1)
<b>Solubilities</b>	Water: Dispersable
<b>Partition Coefficient (n-octanol/water)</b>	INA
<b>Auto-Ignition Temperature</b>	Not applicable
<b>Decomposition Temperature</b>	Not applicable
<b>Viscosity</b>	See AASHTO M-208, M316

**10. Stability and Reactivity**

<b>Reactivity</b>	Not reactive under normal conditions
<b>Chemical Stability</b>	Stable under ambient conditions
<b>Possibility of Hazardous Reaction</b>	Minimal
<b>Conditions to Avoid</b>	Excessive heat, freezing, sources of ignition.
<b>Incompatible Materials</b>	Avoid contact with bases, strong oxidizing agents
<b>Hazardous Decomposition Products</b>	Decomposition normally will not occur if properly handled and stored. 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.

<b>11. Toxicological Information</b>	
<b>Major Routes of Entry</b>	Skin Contact, Eye Contact
<b>Symptoms related to</b>	
<b>Skin</b>	May cause irritation and a rash with prolonged or repeated contact. 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
<b>Eye</b>	Irritation with tearing, redness, stinging or burning feeling. May injure eye tissue if not removed promptly. Hot material can cause thermal burns with eye tissue destruction and possible permanent injury.
<b>Ingestion</b>	Not a likely route of entry. Accidental ingestion may cause mouth throat and stomach irritation, stomach and/or intestinal pain, nausea, vomiting and/or diarrhea
<b>Inhalation</b>	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 with coughing and chest discomfort.
<b>Short Term Exposure</b>	
<b>Immediate</b>	HOT PRODUCT: May cause skin and respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
<b>Chronic</b>	HOT PRODUCT: May cause skin and respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
<b>Long Term Exposure</b>	
<b>Immediate</b>	HOT PRODUCT: may cause dermatitis, acne and/or photosensitization of the skin. May cause respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
<b>Chronic</b>	HOT PRODUCT: May cause dermatitis, acne, and/or photosensitization of the skin. May cause respiratory tract irritation. COOL PRODUCT: No significant adverse effects expected.
<b>Toxicity Data</b>	
<b>Asphalt</b>	Oral LD <sub>50</sub> : Acute >5000 mg/kg [rat] Dermal LD <sub>50</sub> : >2000 mg/kg [rabbit]
<b>Fuel Oil Flux</b>	Octane (111-65-9): Inhalation LC <sub>50</sub> : 118mg/l 4 hrs [rat] n-Nonane (111-84-2): Inhalation LC <sub>50</sub> : 3200 mg/l 4 hrs [rat] n-Heptane (14282-5) Inhalation LC <sub>50</sub> : 103 mg/l 4 hrs [rat] Naphthalene (91-20-3): Dermal LD <sub>50</sub> : >2 g/kg [rabbit] Oral LD <sub>50</sub> : 450 mg/kg [rat]
<b>Stoddard Solvent</b>	Inhalation LC <sub>50</sub> : >20 mg/l 1 hr [rat] Oral LD <sub>50</sub> : >7000 mg/kg [rat] Dermal LD <sub>50</sub> : >2000 mg/kg [rabbit]
<b>Hydrogen Sulfide</b>	Intraperitoneal LD <sub>50</sub> : 2300 µg/kg [rat] Intravenous LD <sub>50</sub> : 270 µg/kg [rat] Inhalation (Vapor) LC <sub>50</sub> : 820 mg/kg 3 hrs [rat] Inhalation (Gas) LC <sub>50</sub> : 712 ppm 1 hr [rat]
<b>Hydrochloric Acid</b>	Inhalation LC <sub>50</sub> : 1108 ppm, 1 hour (mouse) 3124 ppm, 1 hour (rat) Oral LD <sub>50</sub> : 900 mg/kg (rabbit) Dermal LD <sub>50</sub> : 1449 mg/kg (mouse)

<b>11. Toxicological Information, continued</b>	
<b>Carcinogenic Data</b>	
<b>Asphalt</b>	IARC: 2B. 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
<b>Fuel Oil Flux</b>	ACGIH (Fuels, diesel 68334-30-5): A3 confirmed carcinogen with unknown relevance to humans
<b>Stoddard Solvent</b>	No data available to indicate product or any components present at greater than 0.1% are carcinogenic
<b>Hydrochloric Acid</b>	IARC: 3. Not classifiable as a carcinogen
<b>Hydrogen Sulfide</b>	No known significant effects
<b>Target Organs</b>	Skin, Eyes, Respiratory System

<b>12. Ecological Information</b>	
<b>Ecotoxicity</b>	Harmful to aquatic organisms
<b>Persistence &amp; Biodegradability</b>	Expected to have a low rate of biodegradation
<b>Bioaccumulative Potential</b>	Expected to have a low rate of bioaccumulation
<b>Mobility in Soil</b>	Not mobile in soil – will not penetrate to a significant depth.
<b>Other Adverse Effects</b>	No other adverse environmental effects (ozone depletion, photochemical ozone creation, endocrine disruption global warming potential) are expected from this product.

<b>13. Disposal Considerations</b>	
<b>Waste Disposal and RCRA Classification</b>	The product as supplied is not considered a hazardous waste (40 CFR 261). 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. Treat or dispose of waste material in accordance with all Local, State and Federal Regulations
<b>Contaminated Materials</b>	Treat as product waste
<b>Container Disposal</b>	Unclean empty containers should either be sent to a container recycling facility for cleaning or reuse or be disposed of in the same manner as the contents.

<b>14. Transportation Information</b>						
Type	UN Number	Proper Shipping Name	Class	PG*	Label	Other
USDOT (Non-bulk)						Not Regulated as Dangerous Goods
USDOT (Bulk)						Not Regulated as Dangerous Goods
IATA-DGR						Not Regulated as Dangerous Goods
IMDG						Not Regulated as Dangerous Goods

\*PG = Packing Group

**15. Regulatory Information**

<b>TSCA Inventory</b>	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) Inventory
<b>OSHA Hazard Communication Standard</b>	This product has been determined to be hazardous as defined in the OSHA Hazard Communication Standard
<b>SARA 302 Emergency Planning and Notification</b>	Extremely Hazardous Substances (40 CFR 302.4, 40 CFR 355) identified in this product: Hydrogen Sulfide (500 lb TPQ)
<b>SARA 304 Emergency Planning and Notification</b>	Extremely Hazardous Substances or CERCLA Hazardous Substances which in the case or spill may be subject to reporting requirements; Hydrogen Sulfide (100 lb. Final RQ)
<b>SARA 311/312 Emergency Planning and Notification</b>	EPA Hazard Category: Acute
<b>SARA 313 Emergency Planning and Notification</b>	This product contains the following components that may be subject to reporting on the Toxic Release Inventory Form R: NONE
<b>CERCLA</b>	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
<b>RCRA</b>	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.
<b>Clean Water Act</b>	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.
<b>Oil Pollution Act</b>	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.
<b>Clean Air Act</b>	This product contains the following components designated as hazardous, toxic or flammable air pollutants under Section 112 of the CAA: NONE
<b>California Proposition 65</b>	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)
<b>New Jersey Right-To-Know</b>	For New Jersey RTK labeling requirements refer to components listed in Section 3
<b>Additional Regulatory Remarks</b>	None

**16. Other Information**

<b>NFPA Rating</b>	Health Hazard=1; Fire Hazard=1; Reactivity=0; Special Hazard=None
<b>HMIS III Rating</b>	Health=1; Flammability=1; Reactivity=0; Personal Protection Index=B
<b>Abbreviations</b>	
<b>=, eq</b>	Equal to
<b>&gt;</b>	Greater than
<b>&lt;</b>	Less than
<b>INA</b>	Information not available
<b>NE</b>	Not Established
<b>ACGIH</b>	American Conference of Government Industrial Hygienists
<b>AIHA</b>	American Industrial Hygiene Association
<b>AASHTO</b>	American Association of State Highway Transportation Officials
<b>ANSI</b>	American National Standards Institute
<b>CAA</b>	Clean Air Act
<b>CAS</b>	Chemical Abstract Service
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation and Liability Act of 1980
<b>CFR</b>	Code of Federal Regulations
<b>CWA</b>	Clean Water Act
<b>DGR</b>	Dangerous Goods Regulations
<b>EPA</b>	U. S. Environmental Protection Agency
<b>HMIS</b>	Hazardous Materials Identification System
<b>IARC</b>	International Agency for Research on Cancer
<b>IATA</b>	International Air Transport Association
<b>IMDG</b>	International Maritime Dangerous Goods
<b>MSA</b>	Mine Safety Administration
<b>NFPA</b>	National Fire Protection Administration
<b>NIOSH</b>	National Institute of Occupational Health and Safety
<b>NTP</b>	National Toxicology Program
<b>OPA</b>	Oil Pollution Act of 1990
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Limits
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>SARA</b>	Superfund Amendments and Reauthorization Act of 1986
<b>STEL</b>	Short Term Exposure Limit
<b>TSCA</b>	Toxic Substances Control Act
<b>TWA</b>	Time Weighted Average

**DISCLAIMER**

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