



Emulsified Asphalt, All Grades, Cationic

Material Safety Data Sheet

CITGO Asphalt Refining Company
204 Grove Avenue
Thorofare, NJ 08086-2557

MSDS No. ASCRS
Revision Date 3/16/2006

IMPORTANT: Prepared in accordance with 29 CFR 1910.1200. Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

Hazard Rankings		
	HMIS	NFPA
Health Hazard	* 1	1
Fire Hazard	1	1
Reactivity	0	0

* = Chronic Health Hazard

Emergency Overview	
Physical State	
Color	Dark brown to black
Odor	Mild petroleum odor
CAUTION:	
Can cause eye and skin irritation.	
Avoid prolonged contact with eyes, skin, and clothing.	
Hot product can cause burns.	
If burned by hot product, cool affected area immediately with cool water.	
Seek medical attention if redness or irritation persists.	
Fumes from hot product can cause irritation to the eyes, skin, and respiratory system.	

Protective Equipment
Minimum Recommended See Section 8 for Details

SECTION 1. PRODUCT IDENTIFICATION

Trade Name	Emulsified Asphalt, All Grades, Cationic	Technical Contact	(856) 224-7409
Product Number	Various	Medical Emergency	(832) 486-4700
CAS Number	Mixture.	CHEMTREC Emergency (United States Only)	(800) 424-9300
Product Family	Asphalt mixture		
Synonyms	Emulsion Asphalts CMS -2 (15802); CRS -1 (15815); CRS -2 (15816); CRS -2L (15819); CSS -1H (15803); and CAE -P (15804).		

SECTION 2. COMPOSITION

Component Name(s)	CAS Registry No.	Concentration (%)
Asphalt	8052-42-4	60 - 65
Water	7732-18-5	33 - 38
Latex compound	Mixture	0 - 3
Fatty polyamine hydrochloride	Mixture	0.2 - 0.5

SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact.

Signs and Symptoms of Acute Exposure

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Inhalation	No significant adverse health effects are expected to occur upon short-term exposure to this product at ambient temperatures. Breathing fumes from heating of the cured product can irritate the mucous membranes of the nose, throat, bronchi, and lungs.
Eye Contact	Hot material can cause burns to the eye. This material can cause eye irritation with tearing, redness, or a stinging or burning feeling. Effects may become more serious with repeated or prolonged contact.
Skin Contact	Hot material can cause burns to the skin. May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. Effects may become more serious with repeated or prolonged contact. Skin contact may cause harmful effects in other parts of the body.
Ingestion	Contact with hot material may cause thermal burns. Swallowing large amounts of this material may cause stomach or intestinal upset with pain, nausea, vomiting, and/or diarrhea.
Chronic Health Effects Summary	This material, or a component of this material, has been shown to cause cancer in laboratory animals. The relevance of this to humans is not clear. See toxicological Information (section 11).
Conditions Aggravated by Exposure	Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin, Eyes
Target Organs	Contains material which may cause damage to the following organs: upper respiratory tract, skin, eye, lens or cornea
Carcinogenic Potential	Certain preparations of this material are classified as carcinogenic by OSHA, NTP, or IARC. See Section 11 of this MSDS for additional information concerning the carcinogenic potential of this product.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification				OSHA Physical Hazard Classification			
Irritant	<input checked="" type="checkbox"/>	Sensitizer	<input type="checkbox"/>	Combustible	<input type="checkbox"/>	Explosive	<input type="checkbox"/>
Toxic	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>
						Pyrophoric	<input type="checkbox"/>
						Water-reactive	<input type="checkbox"/>
						Unstable	<input type="checkbox"/>

SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation	Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.
Eye Contact	If hot product enters the eyes, irrigate with large amounts of room-temperature water. Seek medical attention immediately. If product at ambient temperatures enters eyes, check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness or pain persists.
Skin Contact	If burned by hot material, cool skin by quenching with large amounts of cool water. Seek medical attention if tissue appears damaged or if pain or irritation persists. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with soap and water. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods.

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Ingestion	Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. If significant amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.
Notes to Physician	Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification	NFPA Class-IIIB combustible material.		
Flash Point	Not applicable.		
Lower Flammable Limit	Not applicable.	Upper Flammable Limit	Not applicable.
Autoignition Temperature	Not applicable.		
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur and/or nitrogen. Hydrogen sulfide and other sulfur-containing gases can evolve from this product particularly at elevated temperatures.		
Special Properties	At elevated temperatures, asphalt emulsions may separate, forming a layer of asphalt and a layer of water in the storage tank. Fire impinging upon storage tanks may cause a boiling liquid-expanding vapor explosion (BLEVE). Asphalt emulsions normally will not ignite. Asphalt residues will burn if heated. Always check for flammable vapors and ignitable residues before commencing hot work on storage tanks.		
Extinguishing Media	Use dry chemical, foam, Carbon Dioxide or water fog.		
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.		

SECTION 6. ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage.

SECTION 7. HANDLING AND STORAGE

Handling	Avoid contamination and extreme temperatures to minimize product degradation. Empty containers may contain product residues that can ignite with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.
Storage	For ease of handling and to avoid breaking the emulsion, store product between 70 and 130 ° F.

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SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.

Personal Protective Equipment Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



Eye Protection Use a full-face shield and chemical safety goggles if handling heated material. With product at ambient temperatures, safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Keep a suitable eye wash station immediately available to the work area.

Hand Protection When handling product at elevated temperatures, use long-cuffed leather or heat-resistant gloves. When product is at ambient temperatures, use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected.

Body Protection Prevent skin contact when handling heated material. Use insulated, heat-resistant clothing such as a chemical resistant apron or slicker suit. Use a full-body heat-resistant or internally cooled suit when work conditions dictate.

Respiratory Protection With adequate ventilation, no respirator is needed. If exposure exceeds the occupational control limits, wear a NIOSH-approved, air-purifying, particulate filter respirator suitable for dusts, fumes and mists. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).

General Comments Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners.

Occupational Exposure Guidelines

Substance	Applicable Workplace Exposure Levels
Asphalt	ACGIH TLV (United States). TWA: 0.5 mg/m ³ 8 hour(s).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State		Color	Dark brown to black	Odor	Mild petroleum odor
Specific Gravity	1.00 - 1.04 (Water = 1)	pH	2 - 7	Vapor Density	>1 (Air = 1)
Boiling Range	IBP: AP 100° C (AP 212° F)			Melting/Freezing Point	Not available.
Vapor Pressure	AP 2.3 kPa (17 mm Hg) (at 20°C)			Volatility	Negligible volatility.
Solubility in Water	Phases separate or disperses in water.			Viscosity (cSt @ 40°C)	not available
Flash Point	Not applicable.				

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Additional Properties

No additional information.

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	Keep away from extreme heat, strong acids and strong oxidizing conditions.		
Materials Incompatibility	Strong oxidizers.		
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		

SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Asphalt

ORAL (LD50): Acute: >5000 mg/kg [Rat].
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Asphalt fumes have been associated with eye, skin and respiratory tract irritation. Repeated or prolonged contact with asphalt at ambient temperatures can result in skin irritation. Long-term exposure can cause dermatitis, acne, photosensitization and, more rarely, pigmentation of the skin. The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence for the carcinogenicity of extracts of steam-refined bitumens, air refined bitumens and pooled mixtures of steam- and air-refined bitumens in experimental animals. Further, IARC has determined that there is limited evidence for the carcinogenicity of undiluted steam-refined bitumens in experimental animals. Also, IARC determined that there is inadequate evidence that bitumens alone are carcinogenic to humans.

Water:

ORAL LDLo: Acute: 42900 mg/kg [Human].

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

This product is soluble in water and is expected to readily disperse in marine environments. As it mixes with water, water insoluble hydrocarbons in this material will separate and float on the water layer. Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

Environmental Fate

This product is estimated to have a slow rate of biodegradation. This product is not expected to bioaccumulate through food chains in the environment.

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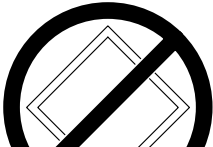
SECTION 13. DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Maximize material recovery for reuse or recycling. Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues.

SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

US DOT Status	Not regulated by the U.S. Department of Transportation as a hazardous material.		
Proper Shipping Name	Not regulated.		
Hazard Class	Not regulated.	Packing Group(s)	Not applicable.
		UN/NA Number	Not regulated.
Reportable Quantity	A Reportable Quantity (RQ) has not been established for this material.		
Placard(s)		Emergency Response Guide No.	Not applicable.
		MARPOL III Status	Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: Acute (Immediate) Health Hazard, Chronic (Delayed) Health Hazard
SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above <i>de minimis</i> levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.

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CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.

Clean Water Act (CWA)

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

California Proposition 65

This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): Polynuclear Aromatic Hydrocarbons (4- to 6- member condensed rings).

New Jersey Right-to-Know Label

For New Jersey R-T-K labeling requirements, refer to components listed in Section 2.

Additional Remarks

No additional regulatory remarks.

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number 1.0
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Print Date Printed on 3/16/2006.

ABBREVIATIONS

AP: Approximately	EQ: Equal	>: Greater Than	<: Less Than	NA: Not Applicable	ND: No Data	NE: Not Established
ACGIH: American Conference of Governmental Industrial Hygienists				AIHA: American Industrial Hygiene Association		
IARC: International Agency for Research on Cancer				NTP: National Toxicology Program		
NIOSH: National Institute of Occupational Safety and Health				OSHA: Occupational Safety and Health Administration		
NPCA: National Paint and Coating Manufacturers Association				HMIS: Hazardous Materials Information System		
NFPA: National Fire Protection Association				EPA: US Environmental Protection Agency		

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