

Michigan Paving & Materials Company

MSDS ID No: 5666

Revision Date: 04/08/2015

1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

TRADE NAME: SS-1H, SS-1HP, RS-2, RS-2A, HFRS-2, HFRS-2M, HFRS-2P, CSEA, CSS-1HM, CQS-1H, CRS-2, CRS-2M, AE-90, AMS SEAL SP, AMS SEAL WP, TRUDAMP, TRU-DRY, TRU-DRY XG, PEP, CSS-1H, CSS-1H DILUTE, QTF SEAL, QTFM SEAL, PPSS, UBWC, PMEB

CAS NUMBER: MIXTURE

PRODUCT CODE: ND

SYNONYMS: ASPHALT CEMENT, MODIFIED ASPHALT CEMENT

MANUFACTURER/ Michigan Paving & Materials Company

SUPPLIER P.O. Box 87248

Canton, MI 48188

TELEPHONE NUMBERS – 24 HOUR EMERGENCY ASSISTANCE:

Chemtrec: 800-424-9300

TELEPHONE NUMBERS – GENERAL ASSISTANCE:

8-5 (M-F EST) 734-397-2050 or 734-241-9189

For technical assistance regarding this product, contact your local Michigan Paving & Materials Company representative.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Product Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA – Vacated PELs – Time Weighted Ave	Other:
Petroleum Asphalt	8052-42-4	>60%	=0.5 mg/m ³ TWA		

Component Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA – Vacated PELs – Time Weighted Ave	Other:
Petroleum Bitumen (proprietary)	Mixture	>60%	=0.5 mg/m ³ TWA (inhalable fraction, as benzene-soluble aerosol)		
Vacuum Residue (proprietary)	Mixture	0-20%	ND		
Water	7732-18-15	0-40%	ND		
Polymer Modifier (proprietary)	Mixture	<12%	ND		
Extender Oil (proprietary)	Mixture	0-40%	ND		
Distillate Lube Stock (proprietary)	Mixture	0-10%	ND		
Anionic Emulsifier (proprietary)	Mixture	0-2%	ND		

Hydrochloric Acid (20 Baume)	64742-04-7	0-0.5%	ND		
Cationic Emulsifier	Mixture	0-2%	ND		
Vulcanizing Agent (proprietary)	Mixture	0-1%	ND		
Anti-Strip (proprietary)	Mixture	0-1%	ND		
Hydrogen Sulfide	7783-06-4	<1%	=10 ppm TWA =15 ppm STEL	=10 ppm TWA =14 mg/m ³ TWA =15 ppm STEL =21 mg/m ³ STEL	

ND= Not Determined

*Values do not reflect absolute minimums and maximums; these are typical values which may vary from time to time.

The specific identities of some of the components of this product are being withheld as trade secrets.

However, all pertinent hazards are addressed in this MSDS.

Asphalt Products can contain hydrogen sulfide, because it is naturally occurring in crude oil from which asphalt is derived. Hydrogen sulfide can also be present as a by-product of asphalt processing.

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HEALTH HAZARDS

Emulsified asphalt is a dark brown to black liquid emulsion. This asphalt is fluid at 150-200 degrees F. This product is not a flammable or combustible material per the OSHA hazard communication standard, but will burn when heated to extremely high temperatures.

When heated, this product may release toxic hydrogen sulfide vapors – do not rely on odor for warning

Fumes from heated material may be irritating and hazardous

May be irritating to the skin, eyes and respiratory tract

Heated material may cause thermal burns

May cause allergic skin reaction

Aspiration hazard if swallowed-can enter lungs and cause damage

Contains material which can cause cancer

** SEE SPECIAL TOXIC EFFECTS SECTION FOR MORE INFORMATION

FLAMMABILITY HAZARDS

Undefined (flash point > 400f)

Per OSHA guidelines, 29 CFR 1910.1200(c)

See section 5 (fire fighting measures) for more information

REACTIVITY HAZARDS

Stable

POTENTIAL HEALTH EFFECTS, SKIN

May cause skin irritation. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

May cause an allergic reaction in some individuals.

May cause photoirritation in some individuals.

Contact with heated material may cause thermal burns.

No significant effects are expected to occur following short term exposure. Repeated or prolonged contact with large amounts of this material may result in absorption through the skin to produce toxic effects.

POTENTIAL HEALTH EFFECTS, EYE

MODERATELY TO SEVERELY IRRITATING. Direct contact may cause pain, tears, burns, sensitivity to light, swelling and possible corneal damage. Exposure to vapors, fumes or mists may cause irritation. Prolonged or repeated exposure may cause irritation and conjunctivitis.

Contact with heated material may cause thermal burns. Exposure will cause severe burns, destruction of eye tissue and possible permanent injury or blindness.

POTENTIAL HEALTH EFFECTS, INHALATION

Fumes or vapors from the heated material may be irritating to the respiratory tract. Breathing of the mists, vapors or fumes may irritate the nose, throat, and lungs. Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure.

May release hydrogen sulfide gas, which is highly toxic. Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since odor fatigue rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions. See Storage & Handling (Section 7) for more information.

Overexposure to this material may cause systemic damage including target organ effects listed under —Special Toxic Effects.

POTENTIAL HEALTH EFFECTS, INGESTION

Ingestion of large amounts may cause gastrointestinal disturbances. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical phenomena and lung damage.

SPECIAL TOXIC EFFECTS

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: skin and lung.

Exposure may cause the following specific symptoms, depending on the concentration and duration of exposure: fatigue, reduced appetite and respiratory effects.

Irritation and toxic hydrogen sulfide gas may be found in confined vapor space. **WARNING** —rotten egg|| odor of hydrogen sulfide is not a reliable indicator for warning of exposure since odor fatigue readily occurs. Odor sensation lost immediately at concentrations greater than 20 ppm. Avoid exposures to hydrogen sulfide gases. Hydrogen sulfide causes rapid death due to metabolic asphyxiation. Case reports suggest that toxic amounts can enter the body through a punctured ear drum, even while wearing some types of respiratory protective equipment.

This material contains petroleum asphalt. IARC has determined asphalt cement to have a 2B Classification; possibly carcinogenic to humans.

In solution, asphalts can produce skin cancer in animals following prolonged and repeated contact. Therefore, IARC has concluded that there is sufficient evidence for the carcinogenicity of asphalt extracts or —cutbacks|| (asphalts that are diluted, dissolved or liquefied in hydrocarbon solvents) in experimental animals, implication these products as potentially 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. It is important that all precautionary measures outlined in this MSDS be followed.

Asphalt fumes from heated material may cause eye, respiratory tract and skin irritation. These fumes may cause dermatitis and acne-like lesions as well as mild keratoses on prolonged and repeated exposure. Condensed roofing fumes, which are chemically different from those found in typical asphalt operations, were reported to cause skin tumors in animals following repeated, lifetime skin contact without washing. However, inhalation studies on inhaled asphalt fumes in laboratory animals did not produce lung cancer. To date, human studies also have not established a link between lung cancer and asphalt fume exposure.

This material may contain polynuclear aromatic hydrocarbons (PNAs). Repeated or prolonged exposure to some PNAs has been associated with effects to the liver, kidneys, immune system and skin with warty growths, skin burns, pigmentation of the bare skin and cornification of the surface layers. They have also been associated with anemia, photosensitivity, leukoplakia (white patches on the tongue, cheek or gums), edema of the eyelids, conjunctival hyperemia, lacrimation, photophobia, headache, loss of appetite, vital powers and strength, cough, bronchitis and nausea.

This material may contain untreated or mildly treated mineral oils. This material may contain solvent extract oils. IARC has determined that there is sufficient evidence for the carcinogenicity of these oils in experimental animals.

Pre-existing medical conditions which may be aggravated by exposure include disorders of the kidney, liver skin and respiratory system.

4 FIRST AID MEASURES

SKIN

For hot material, immerse or flush skin with large amounts of the coldest water possible. Cover with clean cotton sheeting or gauze. Remove clothing if not sticking to skin. DO NOT try to remove solidified material for the skin as the damaged flesh can be easily torn. DO NOT try to dissolve with solvents or thinners. GET IMMEDIATE MEDICAL ATTENTION.

For cold material, immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation persists.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

EYE

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION.

Burns due to contact with heated material require immediate medical attention.

INHALATION

Safely remove the victim from exposure. DO NOT ATTEMPT TO RESCUE WITHOUT ADEQUATE PROTECTIVE GEAR AND PROPER TRAINING. Remove to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

INGESTION

If large quantities of this material are accidentally ingested, do not induce vomiting. If spontaneous vomiting occurs keep head below hips to prevent aspiration and monitor for breathing difficulty. GET IMMEDIATE MEDICAL ATTENTION.

Keep affected person warm and at rest.

NOTES TO PHYSICIAN

If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

Hydrogen sulfide is primarily a respiratory toxin inhibiting the cytochrome oxidase system; it is probably more potent than HCN. The lifetime of sulfide in oxygenated blood is short and sulfmethemoglobin is rapidly detoxified by red blood cells and the liver. If nitrites have been used for detoxification, check methemoglobin levels. Follow fluid and electrolyte balance carefully since metabolic acidosis may occur from increased anaerobic metabolism. Watch for pulmonary edema and aspiration pneumonia during convalescence.

Anemia may require the usual supportive measures. Medical evaluation of acute overexposure should include hematological determination until stable. In severe acute and chronic poisoning, both renal and hepatic damage may occur and should be anticipated in such cases. Respiratory and pulmonary problems may require special attention. After severe acute symptoms have been alleviated, it may be advisable to consider periodic monitoring of the patient until such time as the likelihood of other adverse effects can be discounted.

For skin contact with hot asphalt material, do not peel the solidified material from the skin, or use solvents such as gasoline, kerosene, or paint thinner to remove. Cooled asphalt may adhere so tenaciously to the skin that attempted removal may cause severe distress to the patient. Covering the affected area using commercially available preparations containing the emulsifying agent polysorbate (Tween 80), or an antibiotic cream in a polysorbate base is the most effective method to dissolve the solidified asphalt. Asphalt can also be slowly dissolved with vegetable oil, baby oil or mineral oil.

5 FIRE FIGHTING MEASURES

HAZARDOUS COMBUSTION PRODUCTS

Combustion may produce CO, Nox, Sox and reactive hydrocarbons. Combustion may produce hydrogen sulfide, toxic and irritating vapors.

BASIC FIRE FIGHTING PROCEDURES

Use water spray, dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire. Exercise extreme care when using water spray on asphalt tank fires. When water is mixed with hot asphalt, steam may rapidly develop resulting in violent asphalt foaming and possible tank eruptions from increased pressure. Evacuate area and fligh fire from a safe distance.

Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

Firefighters must wear MSHA/NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

UNUSUAL FIRE & EXPLOSION HAZARDS

Fire involving this product may release carbon monoxide, carbon dioxide, reactive hydrocarbons and hydrogen sulfide.

Flash Point:	> 400 F PENSKEY-MARTENS CLOSED CUP
Auto Ignition Temperature	ND
Flammability Limits in Air, Lower (LEL), % by Volume:	ND
Flammability Limits in Air, Upper (UEL), % by Volume:	ND

NFPA Rating

Health 0

Flammability: 1

Instability: 0

Other: -

6 ACCIDENTAL RELEASE MEASURES

EMERGENCY ACTION

Isolate spill area and keep unnecessary people away. See Exposure Control/Personal Protection (Section 8).

ENVIRONMENTAL PRECAUTIONS

If product is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding safety and exposure to the released product. Notify local authorities and the National Response Center, if required.

SPILL OR LEAK PROCEDURE

Stop leak when safe to do so. For spills on land, dike ahead of spill to contain. Let material solidify and scrape up for disposal. To reclaim, mix with gravel, dirt or rock prior to solidifying. For spills on water, contain spill with booms and shovel into containers for disposal. If material sinks, consult with local, state and regional authorities for approved clean up procedures.

See Exposure Controls/Personal Protection (Section 8).

7 HANDLING & STORAGE

HANDLING

Use appropriate ground lines and equipment during transfer to reduce the possibility of static spark-initiating fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

Do not eat, drink or smoke in areas of use or storage.

Do not add or allow water to mix with hot asphalt. When water is mixed with hot asphalt, steam will develop rapidly. This could result in violent asphalt foaming or rupture of the storage vessel.

STORAGE

Store in a dry, isolated, and well-ventilated area away from sources of ignition and incompatibles. Avoid contact with strong oxidizers. Empty containers may contain product residue.

Hydrogen sulfide can build up in the headspace of storage vessels containing hot asphalt products. Use appropriate respiratory protection to prevent exposure. See Exposure Controls/Personal Protection (Section 8).

When entering a storage vessel that has previously contained any type of asphalt produce, it is recommended that the atmosphere be monitored for the presence of hydrogen sulfide. See Composition Information (Section 2) for exposure limits.

Hydrogen Sulfide can react with the iron in an asphalt storage tank to form iron sulfide. Iron Sulfide is pyrophoric. When exposed to air, iron sulfide is capable of igniting spontaneously.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

Consult NIOSH (National Institute for Occupational Safety and Health) for more information on guidelines for engineering controls for asphalt pavers.

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Wear safety goggles. A face shield is recommended for transfer operations or where splashing can occur. Have eye-washing facilities readily available where eye contact can occur.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Use appropriate chemical protective gloves when handling at room temperature. Use gloves that protect against thermal burns when handling at high temperatures. At a minimum, wear long-sleeved cotton shirt buttoned at the collar and full-length cotton pants. Synthetic fibers tend to melt and adhere to the skin when heated. Do not fold back or roll up cuffs. Rubberized suits or coats may be needed for maintenance operations with hot material.

RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. The use of air purifying respirators is not recommended where hydrogen sulfide levels may exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

9 PHYSICAL & CHEMICAL PROPERTIES

ODOR AND APPEARANCE

Appearance: DARK BROWN TO BLACK VISCOUS ELASTIC LIQUID WITH ASPHALT ODOR
OR
DARK BROWN TO BLACK VISCOUS ELASTIC LIQUID WITH PUNGENT ODOR

Physical State: Liquid

Color: Black-Brown
Odor: Tar
Boiling Point: > 212 F (>100 C)
Specific Gravity: 0.95 – 1.04
Melting Point: NA
Percent Volatile: < 1 %
Vapor Pressure < 0.01 mmHg @ 300 F (149 C)
Vapor Density: ND
Bulk Density: ND
Solubility in Water: INSOLUBLE
Octanol/Water Partn: ND
Volatile Organic: ND
Pour Point: NA
PH Value: ND
Freezing Point: NA
Viscosity: 1-3500 SUS @ 120 F (50 C)
Evaporation Rate: ND

Molecular Formula: NA
Molecular Weight ND
Chemical Family ASPHALT EMULSION
Odor Threshold: ND

10 STABILITY & REACTIVITY

STABILITY/INCOMPATIBILITY

Incompatible with oxidizing agents. See precautions under Handling & Storage (Section 7) pressure.

POLYMERIZATION

Will not occur.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

Combustion may produce CO, NO_x, SO_x, and reactive hydrocarbons. Combustion may produce hydrogen sulfide, toxic and irritating vapors.

MATERIALS TO AVOID

Incompatible with oxidizing agents; See precautions under Handling & Storage (Section 7)

CONDITIONS TO AVOID

Excessive heat, sources of ignition, open flame.

11 TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

See special Toxic Effects (Section 3).

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

ND

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

This product, as shipped, when discarded or disposed of, will not be a hazardous waste according to Federal regulations. Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements, as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

14 TRANSPORT INFORMATION

BILL OF LADING – BULK (U.S. DOT)

This material when transported via US Commerce is NOT REGULATED BY DOT REGULATIONS.

BILL OF LADING – NON-BULK (U.S. DOT)

NA

COMMENTS

If bulk shipments of this product are not offered for transportation at or above 212 F (100 C), the shipments are not regulated.

15 REGULATION INFORMATION

FEDERAL REGULATIONS

All known major components of this product are listed on the TSCA Inventory and/or are otherwise in compliance with TSCA.

A release of this product, as supplied, is exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) by the petroleum exclusion. Releases may be reportable to the National Response Center (800-424-8802) under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5). Failure to report may result in substantial civil and criminal penalties. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations.

This product does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40CFR 372).

There may be specific regulations at the local, regional or state/provincial level that pertain to this product.

STATE REGULATIONS

WARNING: This product contains a chemical known to the State of California to cause cancer.

SARA TITLE III RATINGS

Immediate Hazard: X Delayed Hazard: X Fire Hazard: - Pressure Hazard: _
Reactivity Hazard: -

NFPA RATINGS

Health: 0 Flammability: 1 Reactivity: 0 Special Hazards:

HMIS RATINGS

Health: Flammability: Reactivity:

16 OTHER INFORMATION

DISCLAIMER

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS may not be used as a commercial specification sheet of manufacturer

or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patent invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

Completed On: 04/08/15

Replaces Sheet Dated: 05/28/13

