

MATERIAL SAFETY DATA SHEET

DAUBERT CHEMICAL COMPANY

4700 SOUTH CENTRAL AVENUE
CHICAGO, ILLINOIS 60638
TELEPHONE: (708) 496-7350
FAX: (708) 496-7367

EMERGENCY CONTACT:
CHEMTREC (800) 424-9300

HMIS HAZARD RATING

| | |
|---------------------|---|
| HEALTH | 2 |
| FIRE | 2 |
| REACTIVITY | 0 |
| PERSONAL PROTECTION | D |

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By: R. Lauterbach

SECTION 1: PRODUCT IDENTIFICATION

Product Name: **NOX-RUST®501 LS** (MIL-PRF-16173E, Class 1, Grade 1)
Chemical Family: Petroleum Solvent/Asphalt Blend
Material Usage: Corrosion Preventive Compound (MIL-PRF-16173E, Class 1, Grade 1)

EMERGENCY OVERVIEW: Petroleum solvent-based product with solvent odor. Combustible liquid; when product burns it releases typical hydrocarbon products of combustion. Refer to Section 3 for health effects and to Section 5 for fire hazard data.

SECTION 2: HAZARDOUS INGREDIENTS

| Component | Wt% | Recommended Exposure Limits (TWA) |
|--|-------|--|
| ^[1] Petroleum Asphalt CAS #8052-42-4 | 40-45 | ACGIH TLV: 5 mg/m ³ (for fumes) NIOSH: 5 mg/m ³ (ceiling limit) |
| Aliphatic Petroleum Solvent CAS #64742-88-7 and/or #64742-47-8 and/or #8052-41-3 | 48-53 | OSHA PEL: 100 ppm ACGIH TLV: 100 ppm ACGIH STEL: 200 ppm |
| Hydrogen Sulfide 7783-06-4 | <0.08 | OSHA PEL: 20 ppm ACGIH TLV: 10 ppm ACGIH STEL: 15 ppm |

^[1]See Section 3.

SECTION 3: HEALTH HAZARD INFORMATION

Primary Routes of Entry: Inhalation, skin absorption.

Acute Effects: Inhalation of vapors may cause nose, throat, and mucous membrane irritation, and nausea, headaches or dizziness, and central nervous system depression, including drowsiness, loss of coordination, and unconsciousness. Prolonged or repeated skin contact with cold product may result in dryness and irritation of the skin. Prolonged contact with clothing saturated in petroleum distillates can cause second degree burns. Long term skin exposure to asphalt can increase sensitivity to the sun and cause discoloration. Eye contact may cause severe irritation, redness, tearing and blurred vision. If ingested, may cause mouth, throat and gastrointestinal tract irritation and upset with possible nausea, vomiting and diarrhea. Aspiration of petroleum distillates into the lungs can cause severe chemical pneumonitis which can be fatal.

Chronic Effects: Prolonged or repeated skin contact with these products may result in irritation and dermatitis. Studies of workers exposed to asphalt have not established an association between asphalt and cancer or other lung disease in man. However this petroleum based product contains a variable amount of polycyclic aromatic hydrocarbons which have been shown to cause cancer and respiratory damage in laboratory animals.

Carcinogenicity: *Petroleum Asphalt:* In March 1987, the International Agency for Research on Cancer (IARC) classified extracts of steam and air refined bitumen's (such as mineral spirits cutback asphalt) as possibly carcinogenic to humans (Group 2B). This classification was based on combined evaluation of published human and animal studies. IARC concluded that the human studies did not provide adequate evidence that extracts of steam and air refined bitumen's caused cancer in humans. No epidemiological study of workers exposed only to bitumen's is available. The 2B classification was substantially based on experimental animal studies. Some bitumen's (asphalt) diluted, dissolved or liquified in solvents (e.g. cutback asphalt) have produced skin cancer in laboratory animals at the site of application. NIOSH recently conducted mouse skin painting studies using selected fractions of asphalt fume condensate. Skin application of the condensate fractions resulted in skin tumors in laboratory mice. Based on skin painting data, IARC has concluded that there is sufficient evidence of carcinogenicity of those extracts. IARC regards it prudent to treat a material for which there is sufficient evidence of carcinogenicity in animals as if it is possibly carcinogenic in humans. Intermittent or occasional skin contact with petroleum asphalt's is not expected to have serious health effects as long as good personal hygiene measures, such as those outlined in the Material Safety Data Sheet, are followed.

Pre-Existing Medical Conditions Aggravated by Exposure: Chronic respiratory or skin conditions may worsen from exposure to these products.

SECTION 4: FIRST AID PROCEDURES

Inhalation: Move victim to fresh air and call emergency medical care. If not breathing, give artificial respiration; if breathing is difficult, give oxygen.

Eyes: In case of contact with material, immediately flush eyes with running water for at least 15 minutes. Seek immediate medical attention.

Skin: Wash skin with soap and water. Remove and isolate contaminated clothing and shoes at the site.

Ingestion: DO NOT INDUCE VOMITING. Consult a physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point: 105°F min.

Explosive Limits: LEL = 0.6 UEL = 7.0

Extinguishing Media: Small Fires: Dry chemical, CO₂, water spray, or regular foam. Large Fires: Water spray, fog, or regular foam. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks. For massive fire in cargo area, use unmanned hose holder or monitor nozzles. If this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire.

Special Firefighting Protection/Emergency Action: Fire may produce irritating or poisonous gases. Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide limited protection. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 1/2 mile in all directions if tank, rail car or tank truck is involved in fire. If runoff from fire control occurs, notify the appropriate authorities.

Unusual Fire/Explosion Hazards: Flammable/combustible material; may be ignited by heat, sparks or flames. Vapors may travel to a source of ignition and flash back. Container may explode in heat of fire. Vapor explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard.

Products of Combustion: Carbon monoxide, carbon dioxide, miscellaneous hydrocarbons.

SECTION 6: SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Steps to be taken in case Material is Released or Spilled: Shut off ignition sources; no flares, smoking or flames in hazard area. Stop leak if you can do it without risk.

Small Spills: Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Large Spills: Dike far ahead of liquid spill for later disposal.

SECTION 7: SAFE HANDLING INFORMATION

Precautions To Be Taken In Handling/Storage: Store in cool, well-ventilated area. Keep away from flames, sparks or hot surfaces. Never use a torch to cut or weld on or near container. Empty containers can contain explosive vapors.

Heated asphalt may emit hydrogen sulfide, an extremely flammable, colorless, highly toxic gas, which may accumulate in storage tanks and bulk transport compartments. Prolonged breathing (greater than 1 hour) of concentrations of hydrogen sulfide around 50 ppm can produce eye and respiratory tract (mouth, nose and throat) irritation, and at high concentrations (around 300 ppm) is considered immediately dangerous to life and health.

Other Precautions: Never wear contaminated clothing. Launder or dry clean before wearing. Discard oil-soaked shoes. Wash thoroughly with soap and water (waterless hand cleaner may be helpful in removing residues) after use and before smoking or eating. Avoid excessive skin contact.

SECTION 8: EXPOSURE CONTROLS

Respiratory Protection: NIOSH-approved respirator for organic vapor and mist to control exposure where ventilation is inadequate. In situations where Hydrogen Sulfide may exceed; the PEL or TLV, supplied air respirators or self-contained breathing apparatus' are required.

Ventilation: General and local exhaust.

Personal Protective Equipment: Protective Gloves: Impervious gloves (Viton, PVOH, etc.) Eye Protection: Safety glasses with shields or chemical goggles. Other Protective Clothing or Equipment: If splashing is anticipated, wear rubber apron and boots or other protective equipment to minimize contact.

Work/Hygienic Practices: Handle in accordance with good industrial hygiene and safety practices. These include avoiding any unnecessary exposure and removal of the material from the skin, eyes and clothing. Wash hands and arms frequently. Shower after exposure. Wash work clothes when soiled. Safety showers and eye wash stations should be available. Product is combustible. Avoid smoking; keep away from open flames and sources of static or electrical sparking. Use explosion proof motors and equipment. Tank trucks and other containers should be grounded and/or bonded when material is transferred.

SECTION 9: REACTIVITY HAZARD DATA

Stability: Stable

Incompatibility: Strong acids, oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, miscellaneous hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 10: PHYSICAL AND CHEMICAL PROPERTIES

Color: Black

Appearance: Viscous Liquid

Odor: Petroleum Solvent

Boiling Point (initial): Not Determined

Evaporation Rate (n-Butyl Acetate=1): <1

Vapor Pressure (mmHg @ 20°C): Not Determined

Vapor Density (air=1): >1

Solubility in Water: Negligible

Specific Gravity: 0.89

pH: Not Applicable

Percent Volatile by Volume: 57

SECTION 11: DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Dispose of in accordance with state, local and federal regulations. Materials may become a hazardous waste through use. If permitted, incineration may be practiced. Consider recycling solvent.

SECTION 12: REGULATORY INFORMATION

Volatile Organic Content: (Calculated Values)

VOC per gallon: 3.7 lbs/gal

EPA Hazardous Waste Number(s) (40CFR Part 261):

D001

EPA Hazard Category (40CFR Part 370):

IMMEDIATE (ACUTE)
 DELAYED (CHRONIC)
 FIRE HAZARD (COMBUSTIBLE)

TSCA

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

SARA TITLE III

This product contains the following TOXIC CHEMICALS subject to the *Reporting Requirements of Sec. 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and of 40CFR Part 372:*

| CHEMICAL | CAS NO. | WT % |
|----------|---------|------|
| NONE | | |

This product contains the following EXTREMELY HAZARDOUS SUBSTANCE(S) subject to the *Emergency Planning Requirements under Sec. 301-303 (40CFR Parts 300 and 355) and Emergency Release Notification Requirements under Sec. 304:*

| CHEMICAL | CAS NO. | WT % | RQ/TPQ Lbs |
|------------------|-----------|-------|------------|
| Hydrogen Sulfide | 7783-06-4 | <0.08 | 100 |

(CERCLA LIST) This product contains the following HAZARDOUS SUBSTANCE(S) subject to *Emergency Release Notification Requirements under Sec. 304 (40 CFR Part 302):*

| CHEMICAL | CAS NO. | WT % | Final RQ Lbs |
|-----------------------------|---|-------|--------------|
| Aliphatic Petroleum Solvent | 64742-88-7 and/or 8052-41-3 and/or 64742-47-8 | 48-53 | 100 |

CALIFORNIA PROPOSITION 65

This product may contain trace quantities of the following chemicals that are identified by the State of California under the *Safe Drinking Water and Toxic Reinforcement Act of 1986 ("Proposition 65")* as either a carcinogenic or reproductive hazard:

| CHEMICAL | CAS NO. | Estimated Concentration % |
|-------------------|-----------|---------------------------|
| Petroleum Asphalt | 8052-42-4 | 40-45 |

Although the information contained herein is believed to be reliable, it is furnished without warranty of any kind. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, and storage.