

Material Safety Data Sheet

Material Name: PENNPLY® 101

ID:

*** Section 1 - Chemical Product and Company Identification ***

Product Trade Name PENNPLY 101

Manufacturer Information

Ergon Armor (601) 933-3540
Corrosion Engineering
P.O. Box 1639 (800) 424-9300
Jackson, MS 39215-1639

*** Section 2 - Composition / Information on Ingredients ***

| CAS # | Component | Percent |
|---------------------|-----------|---------|
| 64742-93-4 Oxidized | bitumen | 50-70 |
| 65997-17-3 Glass | fibers | 30-50 |

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Glycidol derivatives.

*** Section 3 - Hazards Identification ***

Emergency Overview:

WARNING!
HOT MATERIAL CAUSES BURNS
MAY CAUSE EYE AND SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
PROLONGED EXPOSURE TO HIGH VAPOR CONCENTRATIONS CAN CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION INCLUDING HEADACHE, DIZZINESS, WEAKNESS, CONFUSION, NAUSEA, AND LOSS OF CONSCIOUSNESS.
MAY CAUSE ALLERGIC SKIN REACTION.

Potential Health Effects:

Oxidized Bitumen

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Contact with hot material may cause thermal burns; brief contact with cool material is non-irritating, but prolonged contact may cause moderate skin irritation. Exposure to fumes of heated material may be slightly irritating to eyes, nose, and throat. Long-term inhalation studies in animals have found bronchitis, pneumonitis, and emphysematous changes. Life-time skin application of this material to mice resulted in an increase in skin tumors. Heating of this material may release highly toxic hydrogen sulfide gas which may be lethal in poorly ventilated or enclosed work spaces.

*** Section 4 - First Aid Measures ***

Eye Contact:

Immediately flush with plenty of water. Get medical attention if irritation persists.

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If On Skin

Immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Ingestion:

Induce vomiting as directed by medical personnel. Get medical attention. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: >450 deg F

Method Used: TOC

Flammability
Classification:

Upper Flammable NE
Limit (UFL):

Lower Flammable NE
Limit (LFL):

Fire & Explosion Hazards:

Closed containers of this material may explode when subjected to heat from surrounding fire. Cool exposed containers with water. Avoid breathing fumes from fire exposed material.

Extinguishing Media:

Use water spray, carbon dioxide, foam or dry chemical.

Fire-Fighting Instructions:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

* * * Section 6 - Accidental Release Measures * * *

Spill or Leak

Turn off all ignition sources. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Contain spilled liquid with sand or earth. Clean up spill immediately, observing precautions in the Personal Protection section of MSDS. Avoid runoff into storm sewers and ditches which lead to waterways.

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*** Section 7 - Handling and Storage ***

Handling Procedures:

Do not get in eyes, on skin or clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Empty container may contain hazardous residues.

Storage Procedures:

Avoid excessive heat. Store out of direct sunlight in a cool, well-ventilated place.

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

Asphalt

ACGIH (TLV-TWA): 0.5 mg/m³ (Fume, benzene-soluble, aerosol)

Engineering Controls:

Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to control exposure levels. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

PERSONAL PROTECTIVE EQUIPMENT

As prescribed in the OSHA Standard for Personal Protective Equipment (29 CFR 1910.132), employers must perform a Hazard Assessment of all workplaces to determine the need for, and selection of, proper protective equipment for each task performed.

Eyes/Face Protective Equipment:

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin Protection:

Neoprene or Polyvinyl chloride gloves should be worn when handling this material. Wear face shield and chemical resistant clothing such as a rubber apron when splashing may occur. Wash contaminated clothing and clean protective equipment before reuse. Rinse contaminated skin promptly. Wash skin thoroughly after handling.

Respiratory Protection:

Avoid breathing vapor or mist. Use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure may be significant, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

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*** Section 9 - Physical & Chemical Properties ***

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| Physical State: Solid | Appearance: Black Solid |
| Odor: Asphalt | Vapor Pressure: Nil |
| Vapor Density: Heavier than air | Boiling Point: >900 deg F |
| Melting Point: 300 deg F | Specific Gravity: 1.01 @ 25/25 Deg C |
| pH: N/A | Viscosity: NA |
| VOC: 0% | Solubility Water: Insoluble |

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability:

This material is chemically stable under normal and anticipated storage and handling conditions.

Incompatibility:

Avoid contact with strong acids, strong oxidizers and alkalis which may cause a violent reaction. Contact with amine compounds in uncontrolled conditions results in an exothermic reaction.

Decomposition Products:

Oxides of carbon

Hazardous Polymerization:

Hazardous polymerization is not known to occur.

*** Section 11 - Toxicological Information ***

Acute Toxicity:

A: General Product Information

No information available for the product.

B: Component Analysis - LD50/LC50

Oxidized Bitumen

Single exposure (acute) studies indicate that this material is practically non-toxic to rats if swallowed (LD50 14,900 mg/kg), no more than slightly toxic to rabbits if absorbed through skin (LD50 >3,160 mg/kg) or rats if inhaled (no deaths with 6-hr exposure at >1.5 mg/l), moderately irritating to rabbit skin (3.0/8.0), and slightly irritating to rabbit eyes (4/110). Asphalt Workers exposed to heated fumes of this material have experienced coughing, burning of the throat, and runny nose. Deaths in workers have occurred following entry into an enclosed tank where high concentrations hydrogen sulfide released from This material were captured. A health survey on workers with this material in refineries without coal tar exposure showed no adverse health effects after

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an average exposure of 15 years. Rats exposed acutely to aerosols of this material showed decreased lung weights. Long-term inhalation of fumes of this material in guinea pigs, rats, and mice resulted in lung effects including bronchitis, pneumonitis, and emphysematous changes.

Inhalation studies with fumes of this material produced no lung tumors in rats or guinea pigs following exposure to for two years. Repeated application of this material to the skin of mice caused skin tumors at the site of application. However, in some skin painting studies, no increase in tumors was found. Therefore, this material is considered to have a weak carcinogenic potential in comparison to coal tar which has much higher levels of polycyclic aromatic hydrocarbons (PAHs) and has shown activity by both dermal and inhalation routes. The International Agency for Research (IARC) has concluded that there is sufficient evidence of carcinogenicity from animal studies for certain types of asphalt. IARC further concluded that there was inadequate evidence for the carcinogenicity of this material to humans. Human studies showing cancer increases have been found in occupations such as roofers where workers had exposure to fumes of this material, but were more likely due to exposure to coal tar and pitch. In occupations where exposure was primarily to this material and coal tar exposure was limited such as asphalt refinery workers, trucking of this material, and road construction, no increase in skin or lung cancer was found. This material has shown the ability to cause genetic changes in standard bacterial cell assays. Subchronic feeding studies with this material in rats have not shown any adverse effects up to concentrations of 3% in the diet. Topical application of this material to the skin of mice has not produced an increase in skin tumors in several studies. Oral administration of this material to pregnant rats and rabbits for the majority of gestation resulted in some maternal toxicity, but no increase in birth defects or toxicity to the fetuses. A single generation reproduction study was conducted by oral administration of this material and did not show adverse effects on fertility, mating or reproductive success or any adverse effects on the offspring. This material has shown an ability to produce genetic changes in standard bacterial and mammalian cell assays. Increases in chromosomal aberrations have also been observed in mammalian cells in culture. Exposure of whole animals has not resulted in an increase in micronuclei in bone marrow cells or dominant lethal effects. Evaluation of cells from exposed workers has shown chromosomal aberrations in two studies, but a third study did not show this effect.

Glass fibers

Patch testing and dermal rubbing experiments indicate that mechanical irritation of the skin can occur, but allergic sensitization reactions are not likely. Numerous epidemiology studies of cancer and non-cancer mortality has been conducted on workers exposed to this material during production. Generally, radiographic changes in the lungs were not observed and measures of pulmonary function were not affected. No significant increases in cancer mortality or other chronic effects that are attributable to exposure have been found. Both the International Agency for Research on Cancer (IARC) and the World Health Organization (WHO) have reviewed the human and animal data for carcinogenicity and concluded that there is inadequate evidence for carcinogenicity in humans or animals. Fiberglass wool, which is primarily used for thermal and acoustic insulation, was classified by IARC as a possible human carcinogen based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals. Inhalation studies in rats, guinea pigs, rabbits, monkey and hamsters have shown no increases in lung tumors or evidence for pulmonary fibrosis. No genetic changes were observed in tests using bacteria.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Chronic Toxicity

No information available for the product.

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Epidemiology:

No information available for the product.

Neurotoxicity:

No information available for the product.

Mutagenicity:

No information available for the product.

Teratogenicity:

No information available for the product.

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| *** Section 12 - Ecological Information *** |
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Ecotoxicity:

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No data are available

Environmental Fate:

No data are available

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| *** Section 13 - Disposal Considerations *** |
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US EPA Waste Numbers & Descriptions:

A: General Product Information

Recover, reclaim or recycle when practical.

Disposal via incineration is recommended. Appropriate pretreatment and disposal in an authorized landfill is acceptable. In all cases, dispose of material in accordance with all applicable federal, state, and local laws and regulations. Consult appropriate regulatory officials or your attorney for information on such disposal.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

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B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

*** Section 14 - Transportation Information ***

US DOT Information

DOT Name: NOT REGULATED BY DOT
DOT Technical Name:
DOT Hazard Class:
UN Number:
DOT Packing Group:

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

B: Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

SARA 311/312: Acute: Y Chronic: N Fire: N Pressure: N Reactive: N

State Regulations

A: General Product Information

No additional information available.

B: Component Analysis – State

The following components appear on one or more of the following state hazardous substances lists:

| Component CA | S # | CA | FL | MA | MN | NJ | PA |
|------------------|------------|-----|-----|-----|-----|----|----|
| Oxidized bitumen | 64742-93-4 | Yes | Yes | Yes | Yes | | |

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

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B: Component Analysis – Inventory Component Analysis - Inventory

| Component CA | S # | TSCA | DSL | EINECS |
|------------------|------------|-------------|-----|--------|
| Oxidized bitumen | 64742-93-4 | Yes Yes Yes | | |
| Glass fibers | 65997-17-3 | Yes Yes Yes | | |

C: Component Analysis - WHMIS IDL

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR. WHMIS Classification: D2B - Toxic

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component CA | S # | Concentration |
|------------------|------------|---------------|
| Oxidized bitumen | 64742-93-4 | 1% |
| Glass fibers | 65997-17-3 | 1% |

* * * Section 16 - Other Information * * *

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Ergon Armor bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.