

1. Identification

| | |
|--------------------------------------|--------------------------------|
| Product identifier | Penntrowel 250 Hardener |
| Other means of identification | Not available. |
| Recommended use | Not available. |
| Recommended restrictions | None known. |

Manufacturer/Importer/Supplier/Distributor information
Manufacturer

| | |
|---|---|
| Company Name | ErgonArmor, a division of Ergon Asphalt & Emulsions, Inc. |
| Address | 2829 Lakeland Drive Jackson, MS 39232 USA |
| After hours telephone number | 1-800-222-7122 |
| Normal work hours telephone number | 1-877-982-7667 |
| Website | www.ergonarmor.com |
| E-mail | sds@ergon.com |
| Emergency 24-hour telephone number | CHEMTREC: North America 1-800-424-9300 International 1-800-527-3887 |
| Information on operation hours | 8:00 a.m. to 5:00 p.m. |

2. Hazard(s) identification

| | | |
|------------------------------|---|------------|
| Physical hazards | Not classified. | |
| Health hazards | Acute toxicity, oral | Category 4 |
| | Acute toxicity, dermal | Category 4 |
| | Acute toxicity, inhalation | Category 4 |
| | Skin corrosion/irritation | Category 1 |
| | Serious eye damage/eye irritation | Category 1 |
| | Sensitization, skin | Category 1 |
| | Specific target organ toxicity, repeated exposure | Category 1 |
| Environmental hazards | Not classified. | |
| OSHA defined hazards | Not classified. | |

Label elements


| | |
|-------------------------|--|
| Signal word | Danger |
| Hazard statement | Harmful if inhaled. Causes severe skin burns and eye damage. Harmful in contact with skin. Harmful if swallowed. May cause an allergic skin reaction. |
| Prevention | Observe good industrial hygiene practices. Obtain special instructions before use. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. |
| Response | Wash hands after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash contaminated clothing before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If skin irritation or rash occurs: Get medical advice/attention. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |

| | |
|--|---|
| Storage | Store away from incompatible materials. Store locked up. |
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | Not applicable. |

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|-----------|
| 3-AMINOMETHYL-3,5,5-TRIMETHYL CYCLOHEXYLAMINE | | 2855-13-2 | 60 - < 70 |
| BENZYL ALCOHOL | | 100-51-6 | 20 - < 30 |
| TRIMETHYLHEXAMETHYLENE DIAMINE | | 25620-58-0 | 5 - < 10 |
| BENZENE, HYDROXY- | | 108-95-2 | 1 - < 3 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

| | |
|---|---|
| Inhalation | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist. |
| Skin contact | Rinse skin with water/shower. Get medical attention if irritation develops and persists. |
| Eye contact | Rinse with water. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. |
| Most important symptoms/effects, acute and delayed | Direct contact with eyes may cause temporary irritation. |
| Indication of immediate medical attention and special treatment needed | Treat symptomatically. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures

| | |
|--|---|
| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | Water. Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire-fighting equipment/instructions | Move containers from fire area if you can do so without risk. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

| | |
|--|---|
| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. |

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Avoid prolonged exposure. Use care in handling/storage.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value |
|----------------------------------|------|----------------------|
| BENZENE, HYDROXY- (CAS 108-95-2) | PEL | 19 mg/m ³ |
| | | 5 ppm |

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|----------------------------------|------|-------|
| BENZENE, HYDROXY- (CAS 108-95-2) | TWA | 5 ppm |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value |
|----------------------------------|---------|----------------------|
| BENZENE, HYDROXY- (CAS 108-95-2) | Ceiling | 60 mg/m ³ |
| | TWA | 15.6 ppm |
| | | 19 mg/m ³ |
| | | 5 ppm |

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

| Components | Type | Value |
|-------------------------------|------|------------------------|
| BENZYL ALCOHOL (CAS 100-51-6) | TWA | 44.2 mg/m ³ |
| | | 10 ppm |

Biological limit values

ACGIH Biological Exposure Indices

| Components | Value | Determinant | Specimen | Sampling Time |
|----------------------------------|----------|------------------------|---------------------|---------------|
| BENZENE, HYDROXY- (CAS 108-95-2) | 250 mg/g | Phenol with hydrolysis | Creatinine in urine | * |

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

BENZENE, HYDROXY- (CAS 108-95-2) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

BENZENE, HYDROXY- (CAS 108-95-2) Skin designation applies.

US - Tennessee OELs: Skin designation

BENZENE, HYDROXY- (CAS 108-95-2) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

BENZENE, HYDROXY- (CAS 108-95-2) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

BENZENE, HYDROXY- (CAS 108-95-2) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

BENZENE, HYDROXY- (CAS 108-95-2) Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear protective gloves.

Skin protection

Other Wear appropriate chemical resistant clothing.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

| | |
|---|--|
| Appearance | Liquid. |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Light yellow |
| Odor | Amine-like. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | > 400 °F (> 204.44 °C) |
| Flash point | > 212.0 °F (> 100.0 °C) Tag Closed Cup |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | 816.8 °F (436 °C) estimated |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Specific gravity | 1.1 |

10. Stability and reactivity

| | |
|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Avoid temperatures exceeding the flash point. Contact with incompatible materials. |
| Incompatible materials | Peroxides. Phenols. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

| | |
|---------------------|--|
| Ingestion | Expected to be a low ingestion hazard. |
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | Causes skin irritation. |
| Eye contact | Causes severe eye burns. |

Symptoms related to the physical, chemical and toxicological characteristics

Direct contact with eyes may cause temporary irritation.

Information on toxicological effects**Acute toxicity**

| Product | Species | Test Results |
|---------------------------------------|----------------|-----------------------------------|
| Penntrowel 250 Hardener (CAS Mixture) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 7990.9712 mg/kg estimated |
| | Rat | 46384.2461 mg/kg estimated |
| <i>Inhalation</i> | | |
| LC50 | Rat | 4622.2256 mg/l, 8 Hours estimated |
| <i>Oral</i> | | |
| LD50 | Cat | 6.9334 g/kg estimated |
| | Dog | 34.6669 g/kg estimated |
| | Mouse | 5253.5806 mg/kg estimated |
| | Rabbit | 8967.1172 mg/kg estimated |
| | Rat | 4516.9263 mg/kg estimated |
| <i>Other</i> | | |
| LD50 | Mouse | 2804.9751 mg/kg estimated |
| | Rat | 1388.2057 mg/kg estimated |

| Components | Species | Test Results |
|----------------------------------|----------------|---------------------|
| BENZENE, HYDROXY- (CAS 108-95-2) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 850 mg/kg |
| | Rat | 669 mg/kg |
| <i>Oral</i> | | |
| LD50 | Cat | 0.1 g/kg |
| | Dog | 0.5 g/kg |
| | Mouse | 270 mg/kg |
| | Rat | 317 mg/kg |
| <i>Other</i> | | |
| LD50 | Mouse | 112 mg/kg |
| | Rat | 460 mg/kg |
| BENZYL ALCOHOL (CAS 100-51-6) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 2000 mg/kg |
| <i>Inhalation</i> | | |
| LC50 | Rat | 1000 mg/l, 8 Hours |
| <i>Oral</i> | | |
| LD50 | Mouse | 1580 mg/kg |
| | Rabbit | 1940 mg/kg |
| | Rat | 1230 - 3100 mg/kg |
| <i>Other</i> | | |
| LD50 | Mouse | 950 mg/kg |
| | Rat | 314 mg/kg |

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation

Prolonged skin contact may cause temporary irritation.

| | |
|---|--|
| Serious eye damage/eye irritation | Direct contact with eyes may cause temporary irritation. |
| Respiratory or skin sensitization | |
| Respiratory sensitization | Not available. |
| Skin sensitization | This product is not expected to cause skin sensitization. |
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |
| IARC Monographs. Overall Evaluation of Carcinogenicity | |
| BENZENE, HYDROXY- (CAS 108-95-2) | 3 Not classifiable as to carcinogenicity to humans. |
| US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | |
| Not listed. | |
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. |
| Specific target organ toxicity - single exposure | Not classified. |
| Specific target organ toxicity - repeated exposure | Skin. |
| Aspiration hazard | Not available. |
| Chronic effects | Prolonged inhalation may be harmful. |
| Further information | This product has no known adverse effect on human health. |

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Product | Species | Test Results | |
|--|---------|---|-----------------------------------|
| Penntrowel 250 Hardener (CAS Mixture) | | | |
| Crustacea | EC50 | Daphnia | 21.5282 mg/l, 48 hours estimated |
| Fish | LC50 | Fish | 547.9573 mg/l, 96 hours estimated |
| Components | Species | Test Results | |
| 3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE (CAS 2855-13-2) | | | |
| Aquatic | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | 14.6 - 21.5 mg/l, 48 hours |
| BENZENE, HYDROXY- (CAS 108-95-2) | | | |
| Aquatic | | | |
| Crustacea | EC50 | Water flea (Daphnia obtusa) | 4.7 - 6.4 mg/l, 48 hours |
| Fish | LC50 | Asiatic knifefish (Notopterus notopterus) | 8 - 8.25 mg/l, 96 hours |
| BENZYL ALCOHOL (CAS 100-51-6) | | | |
| Aquatic | | | |
| Fish | LC50 | Bluegill (Lepomis macrochirus) | 10 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

| | |
|--|---|
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| Partition coefficient n-octanol / water (log Kow) | |
| BENZENE, HYDROXY- | 1.46 |
| BENZYL ALCOHOL | 1.1 |
| Mobility in soil | No data available. |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

13. Disposal considerations

| | |
|-----------------------------------|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |

US RCRA Hazardous Waste U List: Reference

BENZENE, HYDROXY- (CAS 108-95-2)

U188

| | |
|--|--|
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

14. Transport information**DOT**

| | |
|-------------------------------------|---|
| UN number | UN2735 |
| UN proper shipping name | Amines, liquid, corrosive, n.o.s, or Polyamines, liquid, corrosive, n.o.s. (3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE), MARINE POLLUTANT |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | III |
| Environmental hazards | |
| Marine pollutant | Yes |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Special provisions | A3, A6, B10, N34, T14, TP2, TP27 |
| Packaging exceptions | None |
| Packaging non bulk | 201 |
| Packaging bulk | 243 |

IATA

| | |
|-------------------------------------|--|
| UN number | UN2735 |
| UN proper shipping name | Amines, liquid, corrosive, n.o.s. (3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Packing group | III |
| Environmental hazards | No. |
| ERG Code | 8L |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Other information | |
| Passenger and cargo aircraft | Allowed. |
| Cargo aircraft only | Allowed. |

IMDG

| | |
|-------------------------------------|---|
| UN number | UN2735 |
| UN proper shipping name | AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-AMINOMETHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Packing group | III |
| Environmental hazards | |
| Marine pollutant | Yes |
| EmS | F-A, S-B |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

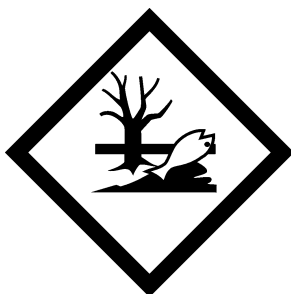
DOT



IATA; IMDG



Marine pollutant



15. Regulatory information

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

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

BENZENE, HYDROXY- (CAS 108-95-2) Listed.

US EPCRA Section 304 Extremely Haz. Subs. & CERCLA Haz. Subs.: Section 304 EHS reportable quantity

BENZENE, HYDROXY- (CAS 108-95-2) 1000 LBS

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

| Chemical name | CAS number | Reportable quantity | Threshold planning quantity | Threshold planning quantity, lower value | Threshold planning quantity, upper value |
|-------------------|------------|---------------------|-----------------------------|--|--|
| BENZENE, HYDROXY- | 108-95-2 | 1000 | | 500 lbs | 10000 lbs |

SARA 311/312 Hazardous chemical
No

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|-------------------|------------|----------|
| BENZENE, HYDROXY- | 108-95-2 | 1 - < 3 |

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

BENZENE, HYDROXY- (CAS 108-95-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.**US. Massachusetts RTK - Substance List**

BENZENE, HYDROXY- (CAS 108-95-2)

BENZYL ALCOHOL (CAS 100-51-6)

US. New Jersey Worker and Community Right-to-Know Act

BENZENE, HYDROXY- (CAS 108-95-2) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

BENZENE, HYDROXY- (CAS 108-95-2)

BENZYL ALCOHOL (CAS 100-51-6)

US. Rhode Island RTK

BENZENE, HYDROXY- (CAS 108-95-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision**Issue date** 04-17-2015**Revision date** 01-14-2016**Version #** 02**Disclaimer** The information in the sheet was written based on the best knowledge and experience currently available.**Revision Information** Product and Company Identification: Product and Company Identification