

1. Identification

Product identifier **PENNCOAT 210 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	Flammable liquids	Category 4
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1A
	Germ cell mutagenicity	Category 2
	Reproductive toxicity (fertility, the unborn child)	Category 2
Environmental hazards	Specific target organ toxicity, repeated exposure	Category 2
	Hazardous to the aquatic environment, acute hazard	Category 2
OSHA defined hazards	Hazardous to the aquatic environment, long-term hazard	Category 2
	OSHA defined hazards	Not classified.

Label elements


Signal word Danger

Hazard statement Causes serious eye damage. Harmful if inhaled. Suspected of causing genetic defects. Suspected of damaging fertility or the unborn child by ingestion. May cause damage to organs through prolonged or repeated exposure by inhalation. Toxic to aquatic life. Toxic to aquatic life with long lasting effects. Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Prevention Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Wear protective gloves and eye/face protection. Do not eat, drink or smoke when using this product. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Avoid release to the environment. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Response	IF ON SKIN: Wash with plenty of soap and water. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If eye irritation persists: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take off contaminated clothing and wash before reuse. Remove/Take off immediately all contaminated clothing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Specific treatment (see this label). Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
1,3-PROPANEDIAMINE, N-[3-(TRIDECYLOXY)PROPYL]-, BRANCHED		68479-04-9	20 - 30
Polyoxypropylene diamine		9046-10-0	15 - 20
2-PIPERAZIN-1-YLETHYLAMINE		140-31-8	10 - 20
PHENOL, 4-NONYL-, BRANCHED		84852-15-3	10 - 20
2,2'-IMINODI(ETHYLAMINE)		111-40-0	5 - 15
4,4'-ISOPROPYLIDENEDIPHENOL		80-05-7	5 - 15
Other components below reportable levels			7.5

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately. Call a POISON CENTER or doctor/physician if you feel unwell. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. Get medical attention if irritation develops and persists. Wash clothing separately before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Do not induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Mild skin irritation. Irritation of eyes and mucous membranes. Prolonged exposure may cause chronic effects. Irritant effects.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. Carbon dioxide (CO2). Powder.
Unsuitable extinguishing media	Not available.
Specific hazards arising from the chemical	No unusual fire or explosion hazards noted.

Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.
Specific methods	In the event of fire, cool tanks with water spray. Move container from fire area if it can be done without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Avoid inhalation of vapors or mists. Avoid skin contact and inhalation of vapors during disposal of spills.
Methods and materials for containment and cleaning up	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 or absorbent material then place into containers. Prevent product from entering drains. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid breathing vapor. Do not get this material on clothing. Use personal protective equipment as required. Do not use in areas without adequate ventilation. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks and open flame. Store in a well-ventilated place. Store in original tightly closed container. Store in a closed container away from incompatible materials. Keep away from food, drink and animal feedingstuffs.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0)	TWA	1 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0)	TWA	4 mg/m ³
		1 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0) Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0) Can be absorbed through the skin.

Appropriate engineering controls Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear approved safety goggles.

Hand protection Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Other Avoid contact with the skin. Wear appropriate chemical resistant clothing. Chemical resistant gloves.

Skin protection

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

Thermal hazards Not available.

General hygiene considerations Do not get in eyes. Avoid contact with eyes. Avoid contact with skin. Avoid contact with clothing. Wash hands before breaks and immediately after handling the product. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Liquid.
Physical state	Liquid.
Form	Liquid.
Color	light yellow to amber
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	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.03 (77 °F (25 °C))
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	644 °F (340 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.

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	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong acids. Alkaline metals. Peroxides. Phenols.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information**Information on likely routes of exposure**

Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Inhalation	Prolonged inhalation may be harmful.

Skin contact Causes skin irritation.
Eye contact Causes serious eye irritation.

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
PENNCOAT 210 Hardener (CAS Mixture)		
Acute		
<i>Oral</i>		
LD50	Mouse	25000 mg/kg estimated
	Rat	8136.9863 mg/kg estimated
<i>Other</i>		
LD50	Guinea pig	1620 mg/kg estimated
	Mouse	710 mg/kg estimated
	Rabbit	1318.5483 mg/kg estimated
	Rat	740 mg/kg estimated

Components	Species	Test Results
2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0)		
Acute		
<i>Oral</i>		
LD50	Rat	1080 mg/kg
<i>Other</i>		
LD50	Guinea pig	162 mg/kg
	Mouse	71 mg/kg
	Rabbit	1090 mg/kg
	Rat	74 mg/kg

4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7)		
Acute		
<i>Oral</i>		
LD50	Mouse	2500 mg/kg
	Rat	3300 mg/kg
<i>Other</i>		
LD50	Rabbit	150 mg/kg

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

Skin corrosion/irritation Causes skin irritation. Hazardous by OSHA criteria.

Serious eye damage/eye irritation Causes eye 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.

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 Not classified.

Aspiration hazard Not available.

Chronic effects May cause eczema-like skin disorders (dermatitis).

12. Ecological information

Ecotoxicity The product contains a substance which is harmful to aquatic organisms.

Product	Species	Test Results	
PENNCOAT 210 Hardener (CAS Mixture)			
Crustacea	EC50	Daphnia	0.252 mg/l, 48 hours estimated
Fish	LC50	Fish	0.8121 mg/l, 96 hours estimated
Components	Species	Test Results	
2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0)			
Aquatic			
Fish	LC50	Guppy (Poecilia reticulata)	1014 mg/l, 96 hours
2-PIPERAZIN-1-YLETHYLAMINE (CAS 140-31-8)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	1950 - 2460 mg/l, 96 hours
4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	9.2 - 11.4 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	3.6 - 5.4 mg/l, 96 hours
PHENOL, 4-NONYL-, BRANCHED (CAS 84852-15-3)			
Aquatic			
Crustacea	EC50	Clam (Mulinia lateralis)	0.0379 mg/l, 48 hours
Fish	LC50	Winter flounder (Pleuronectes americanus)	0.017 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 Not available.

Partition coefficient n-octanol / water (log Kow)

4,4'-ISOPROPYLIDENEDIPHENOL 3.32

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Dispose of contents/container in accordance with local/regional/national/international regulations. Do not discharge into drains, water courses or onto the ground. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Hazardous waste code Not applicable.

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). Avoid discharge into water courses or onto the ground.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN2735
UN proper shipping name	Polyamines, liquid, corrosive, n.o.s. (2-PIPERAZIN-1-YLETHYLAMINE), 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	IB3, T7, TP1, TP28

Packaging exceptions 154
Packaging non bulk 203
Packaging bulk 241

IATA

UN number UN2735
UN proper shipping name Polyamines, liquid, corrosive, n.o.s. (2-PIPERAZIN-1-YLETHYLAMINE)
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 Polyamines, liquid, corrosive, n.o.s. (2-PIPERAZIN-1-YLETHYLAMINE)
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 This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
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)

4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7) Listed.

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 - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 No

Hazardous chemical

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
4,4'-ISOPROPYLIDENEDIPHENOL	80-05-7	5 - 15

Other federal regulations

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

4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7)

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 WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0)
2-PIPERAZIN-1-YLETHYLAMINE (CAS 140-31-8)
4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7)

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

4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

2,2'-IMINODI(ETHYLAMINE) (CAS 111-40-0)
2-PIPERAZIN-1-YLETHYLAMINE (CAS 140-31-8)
4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7)

US. Rhode Island RTK

4,4'-ISOPROPYLIDENEDIPHENOL (CAS 80-05-7)

US. California Proposition 65

Not Listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
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	10-22-2014
Revision date	01-18-2016
Version #	03
Further information	HMIS® is a registered trade and service mark of the NPCA.
References	ACGIH EPA: AQUIRE database NLM: Hazardous Substances Data Base US. IARC Monographs on Occupational Exposures to Chemical Agents IARC Monographs. Overall Evaluation of Carcinogenicity National Toxicology Program (NTP) Report on Carcinogens ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision Information	Product and Company Identification: Product and Company Identification