SAFETY DATA SHEET

1. Identification

Product identifier **PENNTROWEL VINYL ESTER PRIMER RESIN (All Colors)**

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 3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	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 swallowed. Toxic to aquatic life with long lasting effects. May cause respiratory irritation. Suspected of causing cancer. Toxic to aquatic life. Flammable liquid and vapor. May cause damage to organs through prolonged or repeated exposure. Causes skin irritation. Harmful if inhaled. Causes serious eye irritation.

Prevention Observe good industrial hygiene practices. Use only outdoors or in a well-ventilated area. Do not handle until all safety precautions have been read and understood. Ground/bond container and receiving equipment. Do not eat, drink or smoke when using this product. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Obtain special instructions before use. Wash thoroughly after handling. Use explosion-proof electrical/ventilating/lighting equipment. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid release to the environment. Wear protective gloves/eye protection/face protection. Do not breathe mist or vapor.

Response	IF exposed or concerned: Get medical advice/attention. Wash hands after handling. If eye irritation persists: Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Specific treatment (see this label). IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use appropriate media for extinction. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Collect spillage.
Storage	Store away from incompatible materials. Store in a well-ventilated place. Keep cool. Store locked up. Store in a well-ventilated place. Keep container tightly closed.
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	%
VINYL ESTER RESIN		N/A	40 - 60
STYRENE		100-42-5	45 - 60
Other components below reportable levels			0.2817563557

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

4. First-aid measures

Inhalation	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 if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin.
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. Get medical attention immediately.
Ingestion	If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. If ingestion of a large amount does occur, call a poison control center immediately. If swallowed, do NOT induce vomiting. Give a glass of water. Never give liquid to an unconscious person.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Oxygen, if needed. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Keep victim under observation. Keep victim warm.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Dry chemical. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Fire may produce irritating, corrosive and/or toxic gases.
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. Structural firefighters protective clothing will only provide limited protection.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. In the event of fire, cool tanks with water spray. Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In the event of fire and/or explosion do not breathe fumes.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep out of low areas. 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. For personal protection, see section 8 of the SDS.

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 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

Contain spillages with sand, earth or any suitable adsorbent material.

7. Handling and storage

Precautions for safe handling

Keep away from sources of ignition - No smoking. All equipment used when handling the product must be grounded. Use only with adequate ventilation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid prolonged exposure. Wear personal protective equipment. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities

The pressure in sealed containers can increase under the influence of heat. Keep away from heat and sources of ignition. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a well-ventilated place. Store in cool place. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS). Use care in handling/storage.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
STYRENE (CAS 100-42-5)	Ceiling	200 ppm
	TWA	100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
STYRENE (CAS 100-42-5)	STEL	40 ppm
	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
STYRENE (CAS 100-42-5)	STEL	425 mg/m3 100 ppm
	TWA	215 mg/m3 50 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
STYRENE (CAS 100-42-5)	400 mg/g	Mandelic acid plus phenylglyoxylic acid	Creatinine in urine	*
	0.2 mg/l	Styrene	Venous blood	*

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

Exposure guidelines

US - California OELs: Skin designation

STYRENE (CAS 100-42-5) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

STYRENE (CAS 100-42-5) Skin designation applies.

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). Goggles/face shield are recommended.
Hand protection	Wear protective gloves.
Skin protection	
Other	Wear appropriate chemical resistant clothing. Wear appropriate clothing to prevent any possibility of skin contact with solutions containing 10% or more of this chemical.
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	Viscous liquid
Physical state	Liquid.
Form	Viscous Liquid.
Color	Purple
Odor	Styrene
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-23.8 °F (-31 °C) estimated
Initial boiling point and boiling range	294 °F (145.56 °C) 212 °F (100 °C) estimated
Flash point	93.9 °F (34.4 °C) estimated 89.6 - 95.0 °F (32.0 - 35.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.1 % estimated 1.1
Flammability limit - upper (%)	6.1 % estimated 6.1
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	8.53 hPa estimated 7 mm Hg
Vapor density	3.6
Relative density	1.04 - 1.06
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Flammability class	Flammable IC estimated
Percent volatile	49.36 % estimated
Specific gravity	0.45 estimated
VOC (Weight %)	99.73 % estimated 35.45 %

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. However, this material can undergo hazardous polymerization.

Possibility of hazardous reactions Hazardous polymerization can occur. Heat will speed polymerization. Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks. Avoid temperatures exceeding the flash point. Contact with incompatible materials. Contact with acids. Avoid contact with oxidizing agents.

Incompatible materials Strong acids. Acids. Strong oxidizing agents. Aluminum. Peroxides. Aluminum chlorides. Halogens. Metal salts. Strong bases.

Hazardous decomposition products Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion May be harmful if swallowed.

Inhalation Harmful by inhalation.

Skin contact No adverse effects due to skin contact are expected.

Eye contact Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Harmful if swallowed - may enter lungs if swallowed or vomited.

Product	Species	Test Results
PENNTROWEL VINYL ESTER PRIMER RESIN (All Colors) (CAS Mixture)		
Acute		
Inhalation		
LC50	Mouse	10010.1924 ppm, 2 Hours estimated
	Rat	5613.0029 ppm, 4 Hours estimated
		48.6325 mg/l, 4 Hours estimated

Components	Species	Test Results
STYRENE (CAS 100-42-5)		
Acute		
Inhalation		
LC50	Mouse	4940 ppm, 2 Hours
	Rat	2770 ppm, 4 Hours
		24 mg/l, 4 Hours
Oral		
LD50	Mouse	316 mg/kg
	Rat	1 g/kg
Other		
LD50	Mouse	90 g/kg
	Rat	898 mg/kg

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

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity Suspected of causing genetic defects.

Carcinogenicity Hazardous by OSHA criteria. Suspected of causing cancer. Contains a substance which may be potentially carcinogenic.

IARC Monographs. Overall Evaluation of Carcinogenicity

STYRENE (CAS 100-42-5) 2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

STYRENE (CAS 100-42-5) Reasonably Anticipated to be a Human Carcinogen.

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

Not listed.

Reproductive toxicity Possible reproductive hazard.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Central nervous system. Causes damage to the following organs through prolonged or repeated exposure:

Aspiration hazard May be harmful if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

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.

Components		Species	Test Results
STYRENE (CAS 100-42-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia)	42 g/ml, 24 hours
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus)	5.1 - 16 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)

STYRENE 2.95

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. Dispose in accordance with all applicable regulations.

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.

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 UN1866

UN proper shipping name Resin solution

Transport hazard class(es)

Class 3

Subsidiary risk -

Label(s) 3

Packing group III

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions B1, B52, IB3, T2, TP1

Packaging exceptions 150

Packaging non bulk 173

Packaging bulk 242

IATA

UN number	UN1866
UN proper shipping name	Resin solution
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	3L
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	UN1866
UN proper shipping name	RESIN SOLUTION
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No
EmS	F-E, S-E*
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

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)

STYRENE (CAS 100-42-5) 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 - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
STYRENE	100-42-5	49.3497436441

Other federal regulations

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

STYRENE (CAS 100-42-5)

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.

US. Massachusetts RTK - Substance List

STYRENE (CAS 100-42-5)

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

STYRENE (CAS 100-42-5) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

STYRENE (CAS 100-42-5)

US. Rhode Island RTK

STYRENE (CAS 100-42-5)

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)	Yes
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 05-09-2016

Version # 01

Further information HMIS® is a registered trade and service mark of the NPCA.

References IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer The information given is based on data available for the material, the components of the material, and similar materials. 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
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
Ecological Information: Ecotoxicity
Transport Information: Proper Shipping Name/Packing Group
Regulatory Information: United States
GHS: Qualifiers