

1. Identification

Product identifier **R19XX Series Part A**
Other means of identification Not available.
Synonym(s) R1920
Recommended use Not available.
Recommended restrictions None known.
Manufacturer/Importer/Supplier/Distributor information
Manufacturer
Company Name Ergon Armor
Address 1655 Harbor Avenue
 Memphis, TN 38113
 USA
Telephone 1-800-222-7122
Website www.ergonarmor.com
E-mail sds@ergon.com
Emergency 24-hour phone 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 Skin corrosion/irritation Category 2
 Serious eye damage/eye irritation Category 2B
Environmental hazards Not classified.
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes eye irritation. Causes skin irritation.
Prevention Wear protective gloves. Wear eye/face protection. Wash thoroughly after handling.
Response Specific treatment see Section 4 of this SDS. Wash contaminated clothing before reuse. IF exposed or concerned: Get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage Store in accordance with local/regional/national regulations.
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	%
BISPHENOL A-(EPICHLORHYDRIN) EPOXY RESIN		25068-38-6	20 - 40
QUARTZ		14808-60-7	5 - 15
TITANIUM DIOXIDE		13463-67-7	0 - 5

Chemical name	Common name and synonyms	CAS number	%
EPICHLOROHYDRIN		106-89-8	< 0.2
Other components below reportable levels			40 - < 50

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Rinse with water. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.
Ingestion	Rinse mouth. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Call a POISON CENTER or doctor/physician if you feel unwell.
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	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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. 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. Observe good industrial hygiene practices.
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	Form
EPICHLOROHYDRIN (CAS 106-89-8)	PEL	19 mg/m ³	
TITANIUM DIOXIDE (CAS 13463-67-7)	PEL	5 ppm 15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
QUARTZ (CAS 14808-60-7)	TWA	0.3 mg/m ³ 0.1 mg/m ³ 2.4 mppcf	Total dust. Respirable. Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
EPICHLOROHYDRIN (CAS 106-89-8)	TWA	0.5 ppm	
QUARTZ (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.
TITANIUM DIOXIDE (CAS 13463-67-7)	TWA	10 mg/m ³	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
QUARTZ (CAS 14808-60-7)	TWA	0.05 mg/m ³	Respirable dust.

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

Exposure guidelines

US - California OELs: Skin designation

EPICHLOROHYDRIN (CAS 106-89-8) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

EPICHLOROHYDRIN (CAS 106-89-8) Skin designation applies.

US - Tennessee OELs: Skin designation

EPICHLOROHYDRIN (CAS 106-89-8) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

EPICHLOROHYDRIN (CAS 106-89-8) Can be absorbed through the skin.

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

EPICHLOROHYDRIN (CAS 106-89-8) 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 safety glasses; chemical goggles (if splashing is possible).

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

Other Wear suitable protective clothing.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

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 Liquid.

Color Beige.

Odor Benign

Odor threshold Not available.

pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	302 °F (150 °C) estimated
Flash point	> 500.0 °F (> 260.0 °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	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	> 1112 °F (> 600 °C)
Viscosity	Not available.
Other information	
Percent volatile	0.14 % estimated
Specific gravity	1.6

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 oxidizing agents.
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 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
R19XX Series Part A (CAS Mixture)		
Acute		
<i>Oral</i>		
LD50	Rat	27797.082 mg/kg estimated

Product	Species	Test Results
<i>Other</i>		
LD50	Guinea pig	82001.3906 mg/kg estimated
	Rabbit	82001.3906 mg/kg estimated
	Rat	92425.2969 mg/kg estimated
Components	Species	Test Results
EPICHLOROHYDRIN (CAS 106-89-8)		
Acute		
<i>Dermal</i>		
LD50	Mouse	250 mg/kg
	Rabbit	300 mg/kg
<i>Inhalation</i>		
LC50	Rabbit	445 ppm, 4 Hours
	Rat	500 ppm, 4 Hours
		250 ppm, 8 Hours
<i>Oral</i>		
LD50	Guinea pig	178 mg/kg
	Mouse	195 mg/kg
	Rabbit	345 mg/kg
	Rat	40 mg/kg
<i>Other</i>		
LD50	Guinea pig	118 mg/kg
	Rabbit	118 mg/kg
	Rat	133 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. This product contains crystalline silica. Silica is a known carcinogen; however in this encapsulated form the normal routes of exposure are unavailable.

IARC Monographs. Overall Evaluation of Carcinogenicity

EPICHLOROHYDRIN (CAS 106-89-8) 2A Probably carcinogenic to humans.

QUARTZ (CAS 14808-60-7) 1 Carcinogenic to humans.

TITANIUM DIOXIDE (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

EPICHLOROHYDRIN (CAS 106-89-8) Reasonably Anticipated to be a Human Carcinogen.

QUARTZ (CAS 14808-60-7) Known To Be Human Carcinogen.

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 Prolonged inhalation may be harmful.

12. Ecological information

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

Product	Species	Test Results	
R19XX Series Part A (CAS Mixture)			
Crustacea	EC50	Daphnia	7.8285 mg/l, 48 hours estimated
Fish	LC50	Fish	4.4779 mg/l, 96 hours estimated
Components	Species	Test Results	
BISPHENOL A-(EPICHLORHYDRIN) EPOXY RESIN (CAS 25068-38-6)			
Crustacea	EC50	Daphnia magna	2.7 mg/l, 48 hours
Fish	LC50	Salmo gairdneri (new name) Oncorhynchus mykiss	1.5 mg/l, 96 hours
EPICHLOROHYDRIN (CAS 106-89-8)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	9.1 - 12.3 mg/l, 96 hours
TITANIUM DIOXIDE (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 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)

EPICHLOROHYDRIN 0.45

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 When this product as supplied is to be discarded as waste, it does not meet the definition of a RCRA waste under 40 CFR 261.

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

EPICHLOROHYDRIN (CAS 106-89-8) U041

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

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

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)

EPICHLOROHYDRIN (CAS 106-89-8) Listed.

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

EPICHLOROHYDRIN (CAS 106-89-8) 100 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 - No
 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
EPICHLOROHYDRIN	106-89-8	100	1000 lbs		

SARA 311/312
 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
EPICHLOROHYDRIN	106-89-8	< 0.2

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

EPICHLOROHYDRIN (CAS 106-89-8)

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

EPICHLOROHYDRIN (CAS 106-89-8)

Safe Drinking Water Act (SDWA)
 Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

EPICHLOROHYDRIN (CAS 106-89-8)
 QUARTZ (CAS 14808-60-7)
 TITANIUM DIOXIDE (CAS 13463-67-7)

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

EPICHLOROHYDRIN (CAS 106-89-8) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

EPICHLOROHYDRIN (CAS 106-89-8)
 QUARTZ (CAS 14808-60-7)
 TITANIUM DIOXIDE (CAS 13463-67-7)

US. Rhode Island RTK

EPICHLOROHYDRIN (CAS 106-89-8)

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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

EPICHLOROHYDRIN (CAS 106-89-8) Listed: October 1, 1987
 QUARTZ (CAS 14808-60-7) Listed: October 1, 1988
 TITANIUM DIOXIDE (CAS 13463-67-7) Listed: September 2, 2011

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

EPICHLOROHYDRIN (CAS 106-89-8) Listed: September 1, 1996

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

Country(s) or region	Inventory name	On inventory (yes/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)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
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 04-06-2015

Version # 01

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