

## 1. Identification

**Product identifier** TUFCHEM<sup>TM</sup> EPOXY RESIN (ALL COLORS)

**Other means of identification** None.

**Recommended use** Not available.

**Recommended restrictions** None known.

### Manufacturer/Importer/Supplier/Distributor information

**Company Name** Armor Limited, Inc.  
**Address** 2410 US-15 South, Sumter, SC 29150

**After hours telephone number** 1-877-982-7667

**Normal work hours telephone number** 1-877-982-7667

**Website** www.armor-inc.com

**E-mail** customerservice@armor-inc.com

**Emergency 24-hour telephone number** CHEMTREC North America: 800-424-9300, International: +1-703-527-3887

**Information on operation hours** 8:00 a.m. to 5:00 p.m.

## 2. Hazard(s) identification

**Physical hazards** Not classified.

<b>Health hazards</b>	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, skin	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 2

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

### Label elements



**Signal word** Warning

**Hazard statement** Suspected of causing genetic defects. Suspected of causing cancer. Causes serious eye irritation. May cause an allergic skin reaction. Causes skin irritation.

### Precautionary statement

**Prevention** Avoid breathing dust/fume/gas/mist/vapors/spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

**Response** Specific treatment see Section 4 of this SDS. IF exposed or concerned: Get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water. 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. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

**Storage** Store locked up.

<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
BISPHENOL A-(EPICHLOROHYDRIN) EPOXY RESIN		25068-38-6	70 - 99.5
OXIRANE, MONO[(C12-14-ALKYLOXY)METHYL] DERIVS.		68609-97-2	>= 0.1
BUTYL GLYCIDYL ETHER		2426-08-6	1 - 20

### 4. First-aid measures

<b>Inhalation</b>	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention, if needed.
<b>Skin contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. For minor skin contact, avoid spreading material on unaffected skin. Take off contaminated clothing and wash before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Continue rinsing. Get medical attention immediately.
<b>Ingestion</b>	Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested 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.
<b>Most important symptoms/effects, acute and delayed</b>	Skin irritation. May cause an allergic skin reaction. Dermatitis. Rash. Irritant effects. May cause redness and pain. Prolonged exposure may cause chronic effects.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Take off contaminated clothing and shoes immediately. In case of shortness of breath, give oxygen. IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Alcohol foam. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	Water. Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Fire may produce irritating, corrosive and/or toxic gases.
<b>Special protective equipment and precautions for firefighters</b>	Wear suitable protective equipment. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out. Water runoff can cause environmental damage.
<b>Specific methods</b>	In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid skin contact and inhalation of vapors during disposal of spills. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

### Methods and materials for containment and cleaning up

Extinguish all flames in the vicinity.

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. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. 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.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not taste or swallow. Avoid contact with skin. Avoid prolonged exposure. Avoid contact with clothing. Do not use in areas without adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash thoroughly after handling. Avoid release to the environment. Do not empty into drains.

### Conditions for safe storage, including any incompatibilities

CAUTION Store locked up. Keep away from heat, sparks and open flame. Store in a closed container away from incompatible materials. Store in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Store in accordance with local/regional/national/international regulation. Keep container tightly closed. Use care in handling/storage.

## 8. Exposure controls/personal protection

### Occupational exposure limits

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

Components	Type	Value
BUTYL GLYCIDYL ETHER (CAS 2426-08-6)	PEL	270 mg/m3
		50 ppm

#### US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
BUTYL GLYCIDYL ETHER (CAS 2426-08-6)	TWA	3 ppm

#### NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
BUTYL GLYCIDYL ETHER (CAS 2426-08-6)	IDLH	250 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Components	Type	Value
BUTYL GLYCIDYL ETHER (CAS 2426-08-6)	Ceiling	30 mg/m3
		5.6 ppm

### Biological limit values

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

## Exposure guidelines

### US ACGIH Threshold Limit Values: Skin designation

BUTYL GLYCIDYL ETHER (CAS 2426-08-6)

Danger of cutaneous absorption

### 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

Safety glasses. If risk of splashing, wear safety goggles or face shield.

#### Skin protection

##### Hand protection

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

##### Other

Wear appropriate clothing to prevent any possibility of skin contact.

#### 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

Clear liquid with tint

#### Physical state

Liquid.

#### Form

Liquid.

#### Color

Not available.

### Odor

Odorless to Mild.

### Odor threshold

Not available.

### pH

Not available.

### Melting point/freezing point

Not available.

### Initial boiling point and boiling range

Not available.

### Flash point

>200.0 °F (>93.3 °C)

### 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

Not available.

### Decomposition temperature

Not available.

### Viscosity

Not available.

### Other information

#### Density

9.40 lb/gal

#### Specific gravity

1.12 @ 25°C

## 10. Stability and reactivity

### Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

### Chemical stability

Stable.

<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Heat, flames and sparks. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Peroxides. Chlorine. Strong acids, alkalis and oxidizing agents.
<b>Hazardous decomposition products</b>	If product is burned hazardous gases such as oxides of carbon and nitrogen and various hydrocarbons may be produced.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	May be harmful if inhaled.
<b>Skin contact</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Ingestion</b>	May be harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Dermatitis. May cause an allergic skin reaction. May cause redness and pain. Rash. Skin irritation.

### Information on toxicological effects

#### Acute toxicity

Product	Species	Test Results
TUFCEM™ EPOXY RESIN (ALL COLORS)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	5.4 g/kg
<b>Inhalation</b>		
LC50	Rat	4580 mg/l, 8 Hours
<b>Oral</b>		
LD50	Rat	14 g/kg

Components	Species	Test Results
BUTYL GLYCIDYL ETHER (CAS 2426-08-6)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	0.788 g/kg

**Skin corrosion/irritation** Causes skin irritation.  
**Serious eye damage/eye irritation** Causes serious eye irritation.

#### Respiratory or skin sensitization

##### ACGIH sensitization

n-Butyl glycidyl ether (BGE) (CAS 2426-08-6) Dermal sensitization

**Respiratory sensitization** Not available.

**Skin sensitization** May cause allergic skin disorders in sensitive individuals.

**Germ cell mutagenicity** Suspected of causing genetic defects.

**Carcinogenicity** Suspected of causing cancer.

#### IARC Monographs. Overall Evaluation of Carcinogenicity

BUTYL GLYCIDYL ETHER (CAS 2426-08-6) 2B Possibly carcinogenic to humans.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

#### US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

**Reproductive toxicity** Not available.

**Specific target organ toxicity - single exposure** Not available.

**Specific target organ toxicity - repeated exposure** Not available.

**Aspiration hazard** Not available.

## 12. Ecological information

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

Product	Species	Test Results
TUFCHEM™ EPOXY RESIN (ALL COLORS)		
<b>Aquatic</b>		
Crustacea	EC50	Daphnia 3.4264 mg/l, 48 hours
Fish	LC50	Fish 1.9036 mg/l, 96 hours

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** Not available.

**Partition coefficient n-octanol / water (log Kow)**  
BUTYL GLYCIDYL ETHER 0.63

**Mobility in soil** Not 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** Dispose in accordance with all applicable regulations. 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.

**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. Offer rinsed packaging material to local recycling facilities.

## 14. Transport information

**DOT**  
Not regulated as dangerous goods.

### IATA

**UN number** UN3082  
**UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A-(EPICHLOROHYDRIN) EPOXY RESIN)  
**Transport hazard class(es)**  
**Class** 9  
**Subsidiary hazard** -  
**Packing group** III  
**Environmental hazards** YES  
**ERG Code** 9L  
**Special precautions for user** Not assigned.  
**Other information**  
**Passenger and cargo aircraft** Allowed with restrictions.  
**Cargo aircraft only** Allowed with restrictions.

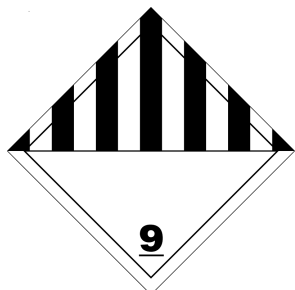
### IMDG

**UN number** UN3082  
**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A-(EPICHLOROHYDRIN) EPOXY RESIN), MARINE POLLUTANT (OXIRANE, MONO[(C12-14-ALKYLOXY)METHYL] DERIVS.)  
**Transport hazard class(es)**  
**Class** 9  
**Subsidiary hazard** -

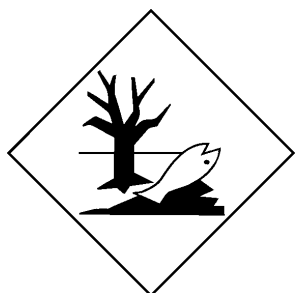
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes
<b>EmS</b>	F-A, S-F
<b>Special precautions for user</b>	Not assigned.

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

**IATA; IMDG**



**Marine pollutant**



## 15. Regulatory information

### US federal regulations

#### Toxic Substances Control Act (TSCA)

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

Not regulated.

##### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

##### SARA 304 Emergency release notification

Not regulated.

##### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

#### SARA 311/312

Yes

#### Hazardous chemical

##### Classified hazard categories

Skin corrosion or irritation  
 Serious eye damage or eye irritation  
 Respiratory or skin sensitization  
 Germ cell mutagenicity  
 Carcinogenicity

#### SARA 313 (TRI reporting)

Not regulated.

## Other federal regulations

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

Not regulated.

### 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 Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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

BUTYL GLYCIDYL ETHER (CAS 2426-08-6)

Listed: January 27, 2023

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	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
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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** 04-13-2023

**Revision date** 03-05-2025

**Version #** 02

**NFPA ratings**  
Health: 2  
Flammability: 1  
Instability: 0

**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: Alternate Trade Names  
Composition / Information on Ingredients: Ingredients  
Physical & Chemical Properties: Multiple Properties  
Stability and reactivity: Incompatible materials  
Toxicological information: Symptoms related to the physical, chemical and toxicological characteristics  
Transport Information: Material Transportation Information  
Regulatory information: California Proposition 65  
HazReg Data: International Inventories  
GHS: Classification