

# Mixgran<sup>®</sup> ETU

| 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION   |   |
|--|---|
| <b>Manufacturer:</b><br>Shandong Yanggu Huatai Chemical Co., LTD<br>No.217, Qinghexi Road<br>Yanggu County, Shandong, China 252300 | <b>Emergency Contact:</b><br>Chemtrec:1-800-424-9300 (USA)<br>(1)330-542-8400 (outside USA) |
| <b>Trade Name(s):</b> Mixgran <sup>®</sup> ETU 75  | <b>Synonyms:</b> ETU, 2-mercaptoimidazoline, 2-imidazolidinethione                          |
| <b>Chemical Name:</b> Ethylene thiourea  | <b>CAS Number:</b> 96-45-7  |
| <b>Relevant identified uses of the substance or mixture and uses advised against:</b> No further relevant information available.   | <b>Application of the substance/the preparation:</b> Rubber Compounding.                    |
| <b>Issued By:</b> Sovereign Chemical Company<br><br>According to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS                 | <b>Date of Issue:</b> November 1, 2018  |

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The following classifications are applicable only to the general GHS regulations and not the specific CLP regulation: H360.

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H360D, H412.

Repr. 1 H360: M ay damage fertility or the unborn child.

Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).



GHS08 Health hazard  
 Repr. 1B H360D May damage the unborn child.



GHS07  
 Skin Irrit.2 H315 Causes skin irritation.  
 Eye Irrit.2 H319 Causes serious eye irritation.  
 Skin Sens.1 H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC



T; Toxic  
 R61: May cause harm to the unborn child.



Xn; Harmful  
 R22 Harmful if swallowed.



Xi; Irritant  
R36/38 Irritating to eyes and skin.



Xi; Sensitizing  
R43: May cause sensitization by skin contact.

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment: The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system

The classification is according to the latest editions of the EU-lists and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists and is supplemented by information from technical literature and by information provided by the company.

## 2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H360D, H412.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labeled according to the CLP regulation.

Hazard pictograms



GHS07



GHS08

Signal word: Danger

Hazard-determining components of labeling

ethylene thiourea

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq 700$ )

Hazard statements

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H360D.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360, H412.

|       |  |
|-------|--|
| H315  | Causes skin irritation.                            |
| H319  | Causes serious eye irritation.                     |
| H317  | May cause an allergic skin reaction.               |
| H360D | May damage the unborn child.                       |
| H412  | Harmful to aquatic life with long lasting effects. |

Precautionary statements

|      |   |
|------|---|
| P261 | Avoid breathing dust.   |
| P281 | Use personal protective equipment as required.                            |
| P264 | Wash thoroughly after handling.   |
| P202 | Do not handle until all safety precautions have been read and understood. |

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P302+P352 IF ON SKIN: Wash with plenty of water.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations

**Additional information**

Contains epoxy constituents. May produce an allergic reaction.  
 Restricted to professional users.

**Hazard description**  
**WHMIS-symbols**



D2A – Very toxic material causing other toxic effects

**NFPA ratings (scale 0-4)**



Health = 1  
 Fire = 0  
 Reactivity = 0

**HMIS ratings (scale 0-4)**



Health = \*1  
 Fire = 0  
 Reactivity = 0

\* - Indicates a long-term health hazard from repeated or prolonged exposures.  
 HMIS Long Term Health Hazard Substances: 96-45-7, ethylene thiourea





**2.3 Other hazards**

Results of PBT and vPvB assessment  
 PBT: Not applicable.  
 vPvB: Not applicable.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.2 Mixtures**

Description: Mixture of substances listed below with nonhazardous additions.  
 Dangerous components

|   |  |         |
|---|--|---------|
| CAS: 96-45-7<br>EINECS: 202-506-9<br>Index number: 613-039-00-9 | Ethylene thiourea<br> T Repr. Cat. 2 R61;  Xn R65<br> Repr. 1B, H360D<br> Acute Tox. 4, H302 | 50-100% |
|---|--|---------|

|   |  |      |
|---|--|------|
| CAS: 25068-38-6<br>NLP: 500-033-5<br>Index number: 603-074-00-8 | reaction product: bisphenol-A-(epichlorhydrin) epoxy resin<br>(number average molecular weight $\leq$ 700)<br>Xi R36/38; Xi R43; N R51/53<br>Aquatic Chronic 2, H411<br>Skin Irrit.2, H315; Eye Irrit.2, H319; Skin Sens.1, H317 | <25% |
|---|--|------|

SVHC: 96-45-7 ethylene thiourea

Additional information: For the wording of the listed risk phrases refer to Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General information

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore, medical observation for at least 48 hours after the accident.

After inhalation: Supply fresh air; consult doctor in case of complaints.

#### After skin contact

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

#### After eye contact

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

#### After swallowing

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

#### Allergic reactions

Irritant to skin and mucous membranes.

Irritant to eyes.

#### Hazards

May damage fertility or the unborn child.

No further relevant information available.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat skin and mucous membrane with antihistamine and corticoid preparations.

Contains reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq$  700).

May produce an allergic reaction.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing agents: CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons, unsuitable extinguishing agents: None.

### 5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

### 5.3 Advice for firefighters

#### Protective equipment

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information: No further relevant information available.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

### 6.2 Environmental precautions

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

### 6.3 Methods and material for containment and cleaning up

Pick up mechanically.

Dispose contaminated material as waste according to Section 13.

Send for recovery or disposal in suitable receptacles.

### 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Prevent formation of dust.

Open and handle receptacle with care.

Any unavoidable deposit of dust must be regularly removed.

Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.

Use only in well ventilated areas.

Information about fire and explosion protection: No special measures required.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage

Requirements to be met by storerooms and receptacles

Avoid storage near extreme heat, ignition sources or open flame.

Protect from humidity and water.

Information about storage in one common storage facility

Store away from foodstuffs.

Do not store together with oxidizing and acidic materials.

Further information about storage conditions: Store in cool, dry conditions in well-sealed receptacles.

### 7.3 Specific end use(s): No further relevant information available.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Additional information about design of technical facilities: No further data; see Section 7.

### 8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace

96-45-7 ethylene thiourea

REL (USA) Use in encapsulated form; See Pocket Guide App. A.

DNELs No further relevant information available.

PNECs No further relevant information available.

Additional information: The lists valid during the making were used as basis.

### 8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases/fumes/aerosols.

Avoid contact with the eyes and skin.

Respiratory protection

Not required under normal conditions of use.

Avoid inhalation of the chemical/the product/the preparation by organizational measures.

Suitable respiratory protective device recommended.

Use suitable respiratory protective device when high concentrations are present.

Protection of hands



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection



Safety glasses

Body protection: Protective work clothing

Limitation and supervision of exposure into the environment: No further relevant information available.

Risk management measures

See Section 7 for additional information.

No further relevant information available.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

9.1 Information on basic physical and chemical properties

General Information

|   |   |
|---|---|
| Appearance<br>Form: Granulate<br>Color: White                     | Change in Condition<br>Melting Point/Melting Range: Not determined<br>Boiling Point/Boiling Range: Undetermined |
| Odor: Characteristic.   | Octanol/Water Partition Coefficient: Not determined   |
| Odor threshold: Not determined                                    | Solvent Content: Organic solvents: Not determined   |
| pH: Not applicable  | Solids content: Not determined  |
| Vapor Pressure: Not applicable                                    | Flash point: Not applicable   |
| Density at 20 °C: 1.27 g/cm <sup>3</sup>                          | Flammability (solid, gaseous): Not determined.  |
| Relative density: Not determined                                  | Ignition temperature: Not determined  |
| Vapor Density: Not applicable                                     | Decomposition temperature: Not determined   |
| Evaporation rate Not applicable                                   | Self-igniting: Product is not self-igniting.  |
| Solubility in / Miscibility with water at 20 °C:<br>Soluble.      | Danger of explosion: Product does not present an explosion hazard   |
| Viscosity<br>Dynamic: Not applicable<br>Kinematic: Not applicable | Explosion limits<br>Lower: Not determined.<br>Upper: Not determined   |

9.2 Other information No further relevant information available.

**10. STABILITY AND REACTIVITY**

10.1 Reactivity

10.2 Chemical stability

Thermal decomposition / conditions to be avoided No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions: Reacts with oxidizing agents.

10.4 Conditions to avoid: Moisture.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products

- Carbon monoxide and carbon dioxide
- Nitrogen oxides.
- Sulphur oxides (SO<sub>x</sub>)

**11. TOXICOLOGICAL INFORMATION**

11.1 Information on toxicological effects

Acute toxicity

|   |      |                  |
|---|------|------------------|
| LD/LC50 values relevant for classification: |      |                  |
| 96-45-7 ethylene thiourea                   |      |                  |
| Oral  | LD50 | 1832 mg/kg (rat) |

|  |      |                           |
|--|------|---------------------------|
| 25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin<br>(number average molecular weight ≤ 700) |      |                           |
| Oral   | LD50 | >2000 mg/kg (rat, female) |
| Dermal   | LD50 | >2000 mg/kg (rat)         |

Primary irritant effect

- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.

Sensitization: Sensitizing possible through skin contact.

Additional toxicological information

The product shows the following dangers according to the calculation method of the General EU

Classification

Guidelines for Preparations as issued in the latest version

- Harmful.
- Irritant.

Danger through skin adsorption.

Toxic and/or corrosive effects may be delayed up to 24 hours.

May damage fertility or the unborn child.

Sensitization: May cause an allergic skin reaction.

Repeated dose toxicity

May cause damage to organs through prolonged or repeated exposure.

Repeated exposures may result in skin and/or respiratory sensitivity.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): Repr. 1B

**12. ECOLOGICAL INFORMATION**

12.1 Toxicity

Aquatic toxicity

|  |                                       |
|--|---------------------------------------|
| 25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin<br>(number average molecular weight ≤ 700) |                                       |
| EC50   | 2.7 mg/kg (daphnia) (48Hr)            |
| LC50   | 1.2 mg/l (Oncorhynchus mykiss) (96hr) |
|  | 2.4 mg/l (zebra fish) (96hr)          |

12.2 Persistence and degradability: Not easily biodegradable

12.3 Bioaccumulative potential: No further relevant information available.

12.4 Mobility in soil: No further relevant information available.

Ecotoxicological effects

Remark: Harmful to water fleas.

Additional ecological information

General notes

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Harmful to aquatic organisms.

Due to the available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment cannot be excluded.



12.5 Results of PBT and vPvB assessment

PBT: Not applicable.  
vPvB: Not applicable.

12.6 Other adverse effects: No further relevant information available.

**13. DISPOSAL CONSIDERATIONS**

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

Uncleaned packaging

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agents: Water, if necessary together with cleansing agents.

**14. TRANSPORTATION INFORMATION**

14.1 UN-Number

|                      |        |
|----------------------|--------|
| DOT, ADR, IMDG, IATA | UN3077 |
|----------------------|--------|

14.2 UN proper shipping name

|  |  |
|--|--|
| DOT<br><br>ADR<br><br>· IMDG<br><br>· IATA | Environmentally hazardous substances, solid, n.o.s., (ethylene thiourea, reaction product: bisphenol-A-(epichlorhydrin) epoxy resin)<br>3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (ethylene thiourea, reaction product: bisphenol-A-(epichlorhydrin) epoxy resin)<br>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (ethylene thiourea, reaction product: bisphenol-A-(epichlorhydrin) epoxy resin)<br>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (ethylene thiourea, reaction product: bisphenol-A-(epichlorhydrin) epoxy resin) |
|--|--|

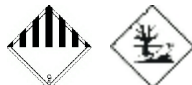
14.3 Transport hazard class(es)

DOT, IMDG, IATA



Class  
Label  
ADR

9 Miscellaneous dangerous substances and articles.  
9



|  |   |
|--|---|
| Class  | 9 (M7) Miscellaneous dangerous substances and articles.   |
| Label  | 9   |
| 14.4 Packing group   |   |
| DOT, ADR, IMDG, IATA   | III   |
| 14.5 Environmental hazards   |   |
| Marine pollutant   | Yes   |
|  | Symbol (fish and tree)  |
| Special marking (ADR)  | Symbol (fish and tree)  |
| Special marking (IATA)   | Symbol (fish and tree)  |
| 14.6 Special precautions for user  | Warning: Miscellaneous dangerous substances and articles.   |
| Danger code (Kemler)   | 90  |
| EMS Number   | F-A, S-F  |
| 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code                                 | Not applicable.   |
| Transport/Additional information: This product is non-hazardous for transport for packages less than 10 lbs. |   |
| ADR: Limited quantities (LQ)   | 5 kg  |
| UN "Model Regulation"  | UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (ethylene thiourea, reaction product: bisphenol-A-(epichlorhydrin) epoxy resin), 9, III |

**15. REGULATORY INFORMATION**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
United States (USA)

|  |                                     |
|--|-------------------------------------|
| SARA Section 355 (extremely hazardous substances)                | None of the ingredients are listed. |
| SARA Section 313 (Specific toxic chemical listings)              | 96-45-7 ethylene thiourea           |
| TSCA (Toxic Substances Control Act)                              | All ingredients are listed.         |
| Proposition 65 (California)                                      |                                     |
| Chemicals known to cause cancer                                  | 96-45-7 ethylene thiourea           |
| Chemicals known to cause reproductive toxicity for females       | None of the ingredients are listed. |
| Chemicals known to cause reproductive toxicity for males         | None of the ingredients are listed. |
| Chemicals known to cause developmental toxicity                  | 96-45-7 ethylene thiourea           |
| Carcinogenic Categories  |                                     |
| EPA (Environmental Protection Agency)                            | None of the ingredients are listed. |
| IARC (International Agency for Research on Cancer)               | 96-45-7 ethylene thiourea.<br>3     |
| TLV (Threshold Limit Value established by ACGIH)                 | None of the ingredients are listed. |
| NIOSH-Ca (National Institute for Occupational Safety and Health) | 96-45-7 ethylene thiourea           |
| Canada   |                                     |
| Canadian Domestic Substances List (DSL)                          | All ingredients are listed.         |

|  |                                     |
|--|-------------------------------------|
| Canadian Ingredient Disclosure list (limit 0.1%) | 96-45-7 ethylene thiourea           |
| Canadian Ingredient Disclosure list (limit 1%)   | None of the ingredients are listed. |

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

## 16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

### Relevant phrases

|        |   |
|--------|---|
| H302   | Harmful if swallowed.   |
| H315   | Causes skin irritation.   |
| H317   | May cause an allergic skin reaction.  |
| H319   | Causes serious eye irritation.  |
| H360D  | May damage the unborn child.  |
| H411   | Toxic to aquatic life with long lasting effects.  |
| R22    | Harmful if swallowed.   |
| R36/38 | Irritating to eyes and skin.  |
| R43    | May cause sensitization by skin contact.  |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic Environment. |
| R61    | May cause harm to unborn child.   |

### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox.4: Acute toxicity, Hazard Category 4

Skin Irrit.2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit.2: Serious eye damage/eye irritation, Hazard Category 2

Skin Sens.1: Sensitization – Skin Hazard Category 1

Repr.1B: Reproductive toxicity, Hazard Category 1B

Aquatic Chronic 2: Hazardous to the aquatic environment – Chronic Hazard, Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment – Chronic Hazard, Category 3