



SAFETY DATA SHEET

CI250- Corrosion Inhibitor

Section 1. Identification

GHS product identifier : CI250- Corrosion Inhibitor

Other means of identification : Not available.

Product use : Corrosion inhibitor.

Product type : Liquid.

Manufacturer
UTE Energy
6940E 1400S Fort
Duchesne, UT 84026

Validation date : 3/9/2018

**For Chemical Emergency
Spill, Leak Fire, Exposure or
Accident:** Call CHEMTREC Day or Night Within USA and
Canada
800-424-9300
Account Number 1021931

Supplier's details :
jd.horrocks@ute-energy.com
435-823-0726

Section 2. Hazards identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (kidneys, optic nerve) - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic

Section 2. Hazards identification

effects) - Category 3
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (thyroid) -
 Category 1

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: H226 - Flammable liquid and vapor.
 H302 - Harmful if swallowed.
 H319 - Causes serious eye irritation.
 H315 - Causes skin irritation.
 H360 - May damage the unborn child.
 H370 - Causes damage to organs. (kidneys, optic nerve)
 H336 - May cause drowsiness or dizziness.
 H372 - Causes damage to organs through prolonged or repeated exposure.
 (thyroid)

Precautionary statements

General

: P103 - Read label before use.
 P102 - Keep out of reach of children.
 P101 - If medical advice is needed, have product container or label at hand.

Prevention

: P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
 P242 - Use only non-sparking tools.
 P243 - Take precautionary measures against static discharge.
 P233 - Keep container tightly closed.
 P271 - Use only outdoors or in a well-ventilated area.
 P260 - Do not breathe vapor.
 P270 - Do not eat, drink or smoke when using this product.
 P264 - Wash hands thoroughly after handling.

Response

: P314 - Obtain medical attention if you feel unwell.
 P307 + P311 - IF exposed: Call a POISON CENTER or physician.
 P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
 P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
 P332 + P313 - If skin irritation occurs: Obtain medical attention.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Obtain medical attention.

Section 2. Hazards identification

| | |
|---|--|
| Storage | : P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool. |
| Disposal | : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| Hazards not otherwise classified | : None known. |
| Routes of entry | : Dermal contact. Eye contact. Inhalation. Ingestion. INGESTION: Although not a normal route of entry, ingestion is expected to be harmful. DO NOT TAKE INTERNALLY. FOR INDUSTRIAL USE ONLY. |
| Target organs | : Contains material which may cause damage to the following organs: kidneys, the reproductive system, heart, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, pituitary gland, thyroid. |

Section 3. Composition/information on ingredients

| | |
|--------------------------------------|------------------|
| Substance/mixture | : Mixture |
| Other means of identification | : Not available. |

CAS number/other identifiers

| | |
|-------------------|-------------------|
| CAS number | : Not applicable. |
|-------------------|-------------------|

| Ingredient name | % | CAS number |
|-----------------|---------|-------------|
| Ethylene Glycol | 10 - 30 | 107-21-1 |
| Methanol | 10 - 30 | 67-56-1 |
| Proprietary | 5 - 10 | Proprietary |
| Proprietary | 1 - 5 | Proprietary |
| Proprietary | 1 - 5 | Proprietary |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

| | |
|--------------------|---|
| Eye contact | : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. If irritation persists, obtain medical attention. If necessary, call a poison center or physician. |
|--------------------|---|

Section 4. First aid measures

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If irritation persists, obtain medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 minutes. If irritation persists, obtain medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If irritation persists, obtain medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

Ingestion : Adverse symptoms may include the following:
 stomach pains
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations
 blindness

| <u>Specific target organ toxicity (single exposure)</u> | | | |
|---|------------|-------------------|------------------|
| Name | Category | Route of exposure | Target organs |
| Ethylene Glycol | Category 2 | Oral | kidneys |
| Methanol | Category 1 | Oral | optic nerve |
| | Category 3 | Not applicable. | Narcotic effects |

| <u>Specific target organ toxicity (repeated exposure)</u> | | | |
|---|------------|-------------------|---------------|
| Name | Category | Route of exposure | Target organs |
| Proprietary | Category 1 | Not determined | thyroid |

| <u>Aspiration hazard</u> | |
|--------------------------|--------|
| Name | Result |
| Not available. | |

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical

: Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Additional Vapor Statement : Not available.
 Not available.

Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 nitrogen oxides
 sulfur oxides
 phosphorus oxides
 halogenated compounds
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

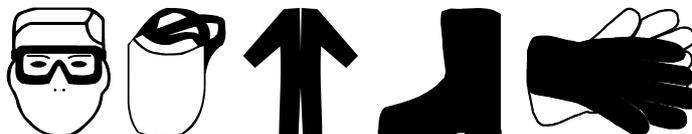
Occupational exposure limits

| Ingredient name | Exposure limits |
|-----------------|---|
| Ethylene Glycol | ACGIH TLV (United States, 4/2014). C: 100 mg/m ³ Form: Aerosol OSHA PEL 1989 (United States, 3/1989). CEIL: 50 ppm CEIL: 125 mg/m ³ |
| Methanol | ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 200 ppm 8 hours. TWA: 262 mg/m ³ 8 hours. STEL: 250 ppm 15 minutes. STEL: 328 mg/m ³ 15 minutes. OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. TWA: 200 ppm 8 hours. TWA: 260 mg/m ³ 8 hours. STEL: 250 ppm 15 minutes. STEL: 325 mg/m ³ 15 minutes. NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 200 ppm 10 hours. TWA: 260 mg/m ³ 10 hours. |

Section 8. Exposure controls/personal protection

STEL: 250 ppm 15 minutes.
 STEL: 325 mg/m³ 15 minutes.
OSHA PEL (United States, 2/2013).
 TWA: 200 ppm 8 hours.
 TWA: 260 mg/m³ 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- Personal protective equipment (Pictograms)** :



Section 9. Physical and chemical properties

Appearance

| | |
|--|--|
| Physical state | : Liquid. [Clear.] |
| Color | : Pale straw colored |
| Odor | : Pungent. |
| Odor threshold | : Not available. |
| pH | : 4 to 7 |
| Melting point | : Not available. |
| Boiling point | : Not available. |
| Flash point | : Closed cup: 23.333°C (74°F) [Pensky-Martens.] |
| Evaporation rate | : Not available. |
| Flammability (solid, gas) | : Not available. |
| Lower and upper explosive (flammable) limits | : Not available. |
| Vapor pressure | : Not available. |
| Vapor density | : >1 [Air = 1] |
| Relative density | : 0.98 to 1.03 |
| Density | : 8.17 to 8.46 (lbs/gal) |
| Solubility | : Easily soluble in the following materials: cold water. |
| Partition coefficient: n-octanol/water | : Not available. |
| Auto-ignition temperature | : Not available. |
| Decomposition temperature | : Not available. |
| Viscosity | : Not available. |

Section 10. Stability and reactivity

| | |
|------------------------------------|--|
| Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : The product is stable. |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. |
| Incompatible materials | : Reactive or incompatible with the following materials: oxidizing materials |
| Hazardous decomposition products | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-----------------------|---------|------------|----------|
| Ethylene Glycol | LD50 Oral | Rat | 4700 mg/kg | - |
| Methanol | LC50 Inhalation Gas. | Rat | 145000 ppm | 1 hours |
| | LC50 Inhalation Gas. | Rat | 64000 ppm | 4 hours |
| | LC50 Inhalation Vapor | Rat | 10 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | 1000 mg/kg | - |
| Proprietary | LD50 Oral | Rat | 300 mg/kg | - |
| | LD50 Oral | Rat | 1832 mg/kg | - |
| | LD50 Dermal | Rat | 2001 mg/kg | - |
| Proprietary | LD50 Oral | Rat | 1310 mg/kg | - |
| | LD50 Dermal | Rabbit | 2000 mg/kg | - |
| | LD50 Dermal | Rat | 300 mg/kg | - |
| | LD50 Oral | Rat | 84 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|------------------------------------|---------|-------|-------------------------|-------------|
| Ethylene Glycol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Eyes - Mild irritant | Rabbit | - | 1 hours 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 6 hours 1440 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 555 milligrams | - |
| Methanol | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 40 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| Proprietary | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| Proprietary | Eyes - Cornea opacity | Rabbit | 3 | 3 minutes | 14 days |
| | Skin - Visible necrosis | Rabbit | - | 3 minutes | 14 days |
| Proprietary | Skin - Severe irritant | Rabbit | - | 500 milligrams | - |
| | Skin - Visible necrosis | Rabbit | - | 3 minutes | 4 hours |
| | Eyes - Redness of the conjunctivae | Rabbit | 2 | - | 4 hours |

Sensitization

| Product/ingredient name | Route of exposure | Species | Result |
|-------------------------|-------------------|------------|-----------------|
| Proprietary | skin | Guinea pig | Not sensitizing |

Mutagenicity

| Product/ingredient name | Test | Experiment | Result |
|-------------------------|----------|--|----------|
| Proprietary | OECD 471 | Experiment: In vitro Subject: Bacteria | Negative |
| | OECD 475 | Experiment: In vivo Subject: Mammalian-Animal | Negative |

Section 11. Toxicological information

Carcinogenicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|--------|---------|------|----------|
| Not available. | | | | |

Product/ingredient name

Not available.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose | Exposure |
|-------------------------|-------------------|-----------|-------------------|---------|------|----------|
| Proprietary | - | - | Positive | Rat | Oral | - |

Teratogenicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|--------|---------|------|----------|
| Not available. | | | | |

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|-----------------|------------|-------------------|------------------|
| Ethylene Glycol | Category 2 | Oral | kidneys |
| Methanol | Category 1 | Oral | optic nerve |
| | Category 3 | Not applicable. | Narcotic effects |

Specific target organ toxicity (repeated exposure)

| Name | Category | Route of exposure | Target organs |
|-------------|------------|-------------------|---------------|
| Proprietary | Category 1 | Not determined | thyroid |

Aspiration hazard

| Name | Result |
|----------------|--------|
| Not available. | |

Information on the likely ToxKinetics - routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

Section 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

- Skin contact** : Adverse symptoms may include the following:
 pain or irritation
 redness
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

- Ingestion** : Adverse symptoms may include the following:
 stomach pains
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations
 blindness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

- General** : Causes damage to organs through prolonged or repeated exposure.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : May damage the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|---------------------|--------------|
| Oral | 720.8 mg/kg |
| Dermal | 3722.4 mg/kg |
| Inhalation (vapors) | 47.35 mg/l |

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--------------------------------------|--|----------|
| Ethylene Glycol | Acute LC50 100000 µg/l Marine water | Crustaceans - Crangon crangon - Adult | 48 hours |
| | Acute LC50 10000000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 8050000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| Methanol | Acute EC50 16.912 mg/l Marine water | Algae - Ulva pertusa | 96 hours |
| | Acute LC50 2500000 µg/l Marine water | Crustaceans - Crangon crangon - Adult | 48 hours |
| | Acute LC50 3289 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 100 mg/l Fresh water | Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| | Chronic NOEC 9.96 mg/l Marine water | Algae - Ulva pertusa | 96 hours |
| Proprietary | Acute EC50 6600000 µg/l Fresh water | Algae - Chlorella pyrenoidosa | 96 hours |
| | Acute EC50 23 ppm Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute LC50 26400 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 502 ppm Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| Proprietary | Acute EC50 110 µg/l Fresh water | Algae - Chlorella pyrenoidosa - Exponential growth phase | 72 hours |
| | Acute EC50 14.22 ppb Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 18 ppb Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 39 µg/l Marine water | Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling) | 48 hours |
| | Acute LC50 0.01 µg/l Fresh water | Fish - Acipenser transmontanus - Larvae | 96 hours |
| | Chronic NOEC 25 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata - Exponential growth phase | 72 hours |
| | Chronic NOEC 125 µg/l Fresh water | Daphnia - Daphnia magna | 21 days |

Conclusion/Summary : Not available.

Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|-------------------------|-------------------|--------------------------|------------------|----------|
| Proprietary | OECD 303a | 91 % - 70 days | - | - |
| | OECD 301B | 72 % - Readily - 28 days | 10 mg/l | - |
| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability | |
| Proprietary | - | - | Readily | |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---------------------------------------|--------------------|----------|-----------------------|
| | | | |
| <i>Date of issue/Date of revision</i> | | 3/9/2018 | <i>Version</i> : 1.03 |

| Section 12. Ecological information | | | |
|---|-------|------|-----|
| Ethylene Glycol | -1.36 | - | low |
| Methanol | -0.77 | <10 | low |
| Proprietary | -0.67 | 1.82 | low |

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

| Section 13. Disposal considerations |
|--|
|--|

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

| Ingredient | CAS # | Status | Reference number |
|----------------------------------|---------|--------|------------------|
| Proprietary | 96-45-7 | Listed | U116 |
| Methanol (l); Methyl alcohol (l) | 67-56-1 | Listed | U154 |

| Section 14. Transport information |
|--|
|--|

| Regulatory information | UN/NA Number | Proper shipping name | Hazard Class(es) | PG* |
|------------------------|--------------|---|------------------|-----|
| DOT Classification | | PG* : Packing group | | |
| | UN1993 | FLAMMABLE LIQUID, N.O.S. (methanol) RQ (Quaternary Ammonium Compound, methanol) | 3 | III |

Additional information

Emergency Response Guide (ERG): 128

Reportable quantity

144.09 lbs / 65.418 kg [17.282 gal / 65.418 L]

Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

Section 14. Transport information

Label



TDG Classification

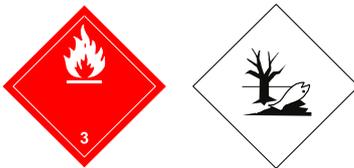
| | | | |
|--------|---|---|-----|
| UN1993 | FLAMMABLE LIQUID, N.O.S. (methanol). Marine pollutant (Quaternary Ammonium Compound) | 3 | III |
|--------|---|---|-----|

Additional information

Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark).

The marine pollutant mark is not required when transported by road or rail.

Label



IMDG Class

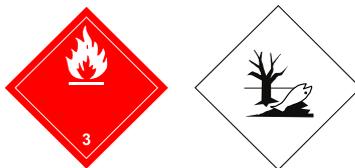
| | | | |
|--------|--|---|-----|
| UN1993 | FLAMMABLE LIQUID, N.O.S. (methanol). Marine pollutant Quaternary Ammonium Compound) | 3 | III |
|--------|--|---|-----|

Marine pollutant notes: : Not available.

Additional information

The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Label



IATA-DGR Class

| | | | |
|--------|-------------------------------------|---|-----|
| UN1993 | FLAMMABLE LIQUID, N.O.S. (methanol) | 3 | III |
|--------|-------------------------------------|---|-----|

Additional information

The environmentally hazardous substance mark may appear if required by other transportation regulations.

Label



Section 14. Transport information

Section 15. Regulatory information

U.S. Federal regulations : TSCA 4(a) proposed test rules: Proprietary
 TSCA 8(a) CDR Exempt/Partial exemption: Not determined
 All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
 Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

| Name | % | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|-----------------|---------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| Methanol | 10 - 30 | Yes. | No. | No. | Yes. | Yes. |
| Ethylene Glycol | 10 - 30 | No. | No. | No. | Yes. | Yes. |
| Proprietary | 5 - 10 | No. | No. | No. | Yes. | No. |
| Proprietary | 1 - 5 | No. | No. | No. | Yes. | No. |

SARA 313

| | Product name | CAS number | % |
|--|-----------------|------------|-------------|
| Form R - Reporting requirements | Ethylene Glycol | 107-21-1 | 10 - 30 |
| | methanol | 67-56-1 | 10 - 30 |
| | Proprietary | - | Proprietary |
| Supplier notification | Ethylene Glycol | 107-21-1 | 10 - 30 |
| | methanol | 67-56-1 | 10 - 30 |
| | Proprietary | - | Proprietary |

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Section 15. Regulatory information

- Massachusetts** : The following components are listed: ETHYLENE GLYCOL; Proprietary; METHANOL
- New York** : The following components are listed: Ethylene glycol; Proprietary; Methanol
- New Jersey** : The following components are listed: ETHYLENE GLYCOL; 1,2-ETHANEDIOL; Proprietary; METHYL ALCOHOL; METHANOL
- Pennsylvania** : The following components are listed: 1,2-ETHANEDIOL; Proprietary; METHANOL
- California Prop. 65**

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

| Ingredient name | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|-----------------|--------|--------------|---------------------------|---|
| methanol | No. | Yes. | No. | 23000 µg/day (ingestion) 47000 µg/day (inhalation) |
| Proprietary | Yes. | Yes. | Yes. | No. |

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Canadian lists

Canadian NPRI (Pollution Release) : The following components are listed: Ethylene glycol; Ethylene thiourea; Methanol

CEPA Toxic substances : None of the components are listed.

Canada inventory-DSL / NDSL : All components are listed or exempted.

International lists

National inventory

Australia : Not determined.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : **Japan inventory (ENCS):** Not determined.

Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Section 16. Other information

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Normal Package Size(s): Ball: 2" Ball 50/Cooler; 4" Ball 12/Cooler
 Dry Product: 50 Lbs/Box
 Liquid: 5 Gallon/55 Gallon/Bulk
 Pellets: 30 Lbs/Cooler; 24 Lbs/Pail
 Stix: 1 1/4": 50 Each/Cooler

History

Date of issue/Date of revision : 3/9/2018

Version : 1.03

Date of previous issue : 6/23/2017

Previous Validation Date : 6/23/2017

SDS Requests: : jd.horrocks@ute-energy.com

Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References : Not available.

📌 Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

This Safety Data Sheet (“SDS”) is a mandatory disclosure pursuant to 29 CFR § 1910.1200 and related rules and regulations. Therefore, it is not intended, nor shall it serve to create, any rights, obligations, liabilities, and remedies, of any kind whatsoever, between UTE Energy and related entities (UTE Energy) and any users of this SDS (“Users”).

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*** END OF SDS ***