

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Trade name	: ETOX
Chemical name	: 2-ethyl-2-oxazoline
CAS-No.	: 10431-98-8
Formula	: C ₅ H ₉ NO

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Organic intermediate or monomer for use in manufacturing water soluble polymers, specialty coatings, pharmaceuticals and medical devices, binders, electronic components, paints and pigments, bactericides, herbicides, materials used in water technologies, cosmetics and personal care products, membranes and films, polishing preparations, quenches, additives, paper and packaging products, sizing materials, and adhesives.
Restrictions on use	: None known

1.3. Supplier

Polymer Chemistry Innovations
4231 S. Fremont Ave
Tucson, AZ, USA
85714
john@polychemistry.com

1.4. Emergency telephone number

Emergency number	: 24 hour emergency number PERS +1 801-629-0667 Customer Number 12216
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 3	Flammable liquid and vapor
Skin corrosion/irritation Category 1B	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	Causes serious eye damage

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)	:  
Signal word (GHS US)	: Danger
Hazard statements (GHS US)	: Flammable liquid and vapor Causes severe skin burns and eye damage Causes serious eye damage
Precautionary statements (GHS US)	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting, ventilating equipment.

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Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe vapors, mist, spray.
Wash hands, forearms and face thoroughly after handling.
Wear eye protection, Respiratory protection, face protection, protective clothing.
If swallowed: rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER, a doctor.
Wash contaminated clothing before reuse.
In case of fire: Use extinguishing powder, carbon dioxide (CO₂), foam.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container to comply with applicable local, national and international regulation..

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	GHS US classification
2-ethyl-2-oxazoline (Main constituent)	CAS-No.: 10431-98-8	100	Flam. Liq. 3, H226 Skin Corr. 1B, H314 Eye Dam. 1, H318

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if breathing difficulty persists.
First-aid measures after skin contact	: Wash off immediately and plentifully with water for at least 20 minutes. Take off immediately all contaminated clothing and wash it before reuse. Get immediate medical advice/attention.
First-aid measures after eye contact	: In case of eye contact, immediately rinse with clean water for 20-30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact	: Causes severe burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

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4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor. On combustion, forms: carbon oxides (CO and CO₂). Nitrogen oxides.
Explosion hazard : Vapor heavier than air may travel considerable distance to a source of ignition and flash back.
Reactivity in case of fire : May explode or ignite :
Hazardous decomposition products in case of fire : Toxic fumes may be released. Thermal decomposition can lead to the release of irritating gases and vapors.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with spilled material.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Do not breathe vapors, mist, spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Stop leak if safe to do so. Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Do not breathe vapors, mist, spray.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spillage to prevent material-damage.
Methods for cleaning up : Collect spillage. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13 : "Disposal considerations".

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling	: Ensure good ventilation of the work station. Wear personal protective equipment. No open flames. No smoking. Avoid contact with skin and eyes. Do not breathe vapors, mist, spray.. Take precautionary measures against static discharge.
Hygiene measures	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Keep away from open flames, hot surfaces and sources of ignition. Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep container tightly closed in a cool, well-ventilated place. Keep container closed when not in use. Store locked up.
Incompatible materials	: Oxidizing agents. Reducing agents. Acids. Bases. Copper and its alloys.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Monitoring methods

Monitoring methods	No additional information available.
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8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear suitable gloves resistant to chemical penetration. Wear suitable gloves tested to ISO 374-1. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer

Eye protection:

Chemical goggles or safety glasses. Use eye protection according to ISO 16321-1

Skin and body protection:

Long sleeved protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection.

Other information:

Do not eat, drink or smoke during use.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: -62 °C
Freezing point	: No data available
Boiling point	: 131 °C
Flash point	: 29.4 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Flammable liquid and vapor.
Vapor pressure	: 1310 Pa @ 37.8 °C
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 0.9787 @ 15.6 °C
Solubility	: Water: > 97.87 g/l
Partition coefficient n-octanol/water (Log Pow)	: 0.198 @ 24 °C
Auto-ignition temperature	: 407 °C
Decomposition temperature	: No data available
Viscosity, kinematic	: 0.7 mm²/s @ 40 °C
Viscosity, dynamic	: No data available
Explosion limits	: Lower explosion limit: 1.3 vol % @ ≈ 95 °C Upper explosion limit: 9.7 vol % @ ≈ 95 °C
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

oxidizing agents. Reducing agents. Acids. Bases. Copper and its alloys.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition can lead to the release of irritating gases and vapors.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

2-ethyl-2-oxazoline (10431-98-8)

LD50 oral rat	2700 mg/kg body weight
LD50 dermal rat	> 500 mg/kg body weight
LD50 dermal rabbit	> 500 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 635 ppm 7-hours
ATE US (oral)	2700 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

2-ethyl-2-oxazoline (10431-98-8)

NOAEL (animal/male, F0/P)	391 mg/kg body weight
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STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

2-ethyl-2-oxazoline (10431-98-8)

NOAEL (oral,rat,90 days)	320 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
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Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)
Viscosity, kinematic : 0.7 mm²/s @ 40 °C
Symptoms/effects after skin contact : Causes severe burns.
Symptoms/effects after eye contact : Causes serious eye damage.
Symptoms/effects after ingestion : May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Presents no specific risk for the environment

2-ethyl-2-oxazoline (10431-98-8)

LC50 - Fish [1]	2070 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	67 ml/l (78h)
LC50 - Fish [2]	51.8 mg/l Test organisms (species): Pimephales promelas

12.2. Persistence and degradability

2-ethyl-2-oxazoline (10431-98-8)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

2-ethyl-2-oxazoline (10431-98-8)

Partition coefficient n-octanol/water (Log Pow)	0.198 @ 24 °C
Bioaccumulative potential	No bioaccumulation.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecological waste information	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
UN2920	UN2920	2920	2920
14.2. Proper Shipping Name			
Corrosive liquids, flammable, n.o.s. (2-ethyl-2-oxazoline)	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (2-ethyl-2-oxazoline)	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (2-ethyl-2-oxazoline)	Corrosive liquid, flammable, n.o.s. (2-ethyl-2-oxazoline)
14.3. Transport hazard class(es)			
8 (3)	8 (3)	8 (3)	8 (3)
			
14.4. Packing group			
II	II	II	II
14.5. Environmental hazards			
Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No

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DOT	TDG	IMDG	IATA
Consult the associated transport regulations for other available and applicable exceptions or exemptions,			
The suitable shipping classification must be evaluated at the time of shipment due to the possibility for variations in regard to the transportation of this material considering the requirements, modes of transport, packaging, packaging configuration, quantity etc. Please consult the appropriate regulation for specific shipping information and requirements.			
This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation information can be obtained through the authorized transporting corporation. It is the responsibility of the transporting corporation to follow all applicable laws, regulations and rules relating to the transportation of this product.			

14.6. Special precautions for user

DOT

UN-No.(DOT)	: UN2920
DOT Special Provisions (49 CFR 172.102)	: B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 243
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 30 L
DOT Vessel Stowage Location	: C - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	: 25 - Protected from sources of heat, 40 - Stow "clear of living quarters"

TDG

Not applicable

IMDG

Special provision (IMDG)	: 274
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T11
Tank special provisions (IMDG)	: TP2, TP27
EmS-No. (Fire)	: F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage)	: S-C - SPILLAGE SCHEDULE Charlie - FLAMMABLE CORROSIVE LIQUIDS
Stowage category (IMDG)	: C
Stowage and handling (IMDG)	: SW1, SW2

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Properties and observations (IMDG) : Causes burns to skin, eyes and mucous membranes.

IATA

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y840
PCA limited quantity max net quantity (IATA) : 0.5L
PCA packing instructions (IATA) : 851
PCA max net quantity (IATA) : 1L
CAO packing instructions (IATA) : 855
CAO max net quantity (IATA) : 30L
ERG code (IATA) : 8F

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to US HazCom 2012

Revision date : 13 August 2024

Other information : None.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.