


2-Ethyl-2-Oxazoline

Safety Data Sheet

Section 1: Identification of substance/mixture and of the company/undertaking	
1.1 Product identifier:	2-ethyl-2-oxazoline
Trade name:	ETOX
CAS No.	10431-98-8
EC No.	233-912-4
Registration No.	01-2120773935-39-0000
1.2 Relevant identified uses of substance or mixture and used advised against	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.
Uses advised against	None known
1.3 Details of the supplier of the safety data sheet	Polymer Chemistry Innovations, Inc. 4231 South Fremont Avenue Tucson, AZ 85714 USA Tel: (1) 520-746-8446 Fax: (1) 520-746-8876
Only representative	Intertek Deutschland GmbH Stangenstrasse 1 70771 Leinfelden – Echterdingen Germany Tel: +49 711 27311-170
1.4 Emergency telephone number	24 hour emergency number: PERS +1 801-629-0667 Customer number 12216 john@polychemistry.com

Section 2: Hazard Classification	
2.1 Classification of the substance or mixture	Classification according to Regulation (EC) No. 1272/2008 (CLP) Flammable Liquid 3 H226 Skin Corr. 1B H314
Adverse physicochemical human health and environmental effects	Causes severe skin burns and eye damage. Flammable liquid and vapour.

2.2 Label elements Pictograms	
Signal word	WARNING
Hazard statements	H314: Causes severe skin burns and eye damage H226: Flammable liquid and vapor
Precautionary statements	P210: Keep away from heat/sparks/open flames/hot surfaces.-No smoking P280: Use chemical resistant gloves and chemical safety goggles when handling. P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower). P305+P351+P338: IF IN EYES; Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor/physician. P370+P378: In case of fire; Use to extinguish. (carbon dioxide, foam, sand)
2.3 Other hazards	Not a PBT or vPvB as defined in Regulation (EC) 1907/2006 Annex XIII No additional hazards that contribute to classification.

Section 3: Composition/Information on Ingredients

3.1 Substances			
Substance name:	2-ethyl-2-oxazoline		
Common name/description:	ETOX Monomer		
Ingredient/substance Name:	%	CAS #	EC/List No.
2-ethyl-2-oxazoline	100	10431-98-8	233-912-4

Section 4: First Aid Measures

4.1 Description of first aid measures	
Eyes	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Will cause reversible irritation, Seek medical attention immediately. Will cause severe irritation if left in the eye.
Skin	Wash skin with soap and water for 15 minutes. Remove contaminated clothing. Seek medical attention. Will cause severe irritation if left on the skin. Wash clothing before reuse.
Inhalation	In case of adverse reaction; remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.
Ingestion	Wash mouth with water. Do not induce vomiting. Seek immediate medical attention, or call poison control.
4.2 Most important symptoms and effects, both acute and delayed	Acute symptoms: Severe irritation to skin and mucus membrane. Chronic symptoms: None known.

4.3 Indication of any immediate medical attention and special treatment needed	Washing with soap and water to neutralize as soon as possible will reduce the effects of irritation that will develop.
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Section 5: Fire-Fighting Measures

5.1 Extinguishing Media	All fire fighting methods are suitable, water spray, dry chemical, carbon dioxide, or chemical foam.
Unsuitable Extinguishing Media	None known.
5.2 Special hazards arising from the substance or mixture	Material decomposes above 380° C and toxic fumes may be generated.
Products of Combustion	Nitrogen oxides, carbon monoxide, carbon dioxide
5.3 Advice for Firefighters	No special advice for firefighters beyond normal equipment and procedures.

Section 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency procedures	
For Non-Emergency Personnel	All non-essential personnel are to leave the area.
For Emergency Responders	Acid gas/organic vapor respirators are indicated if engineering controls cannot keep vapors at non-irritating levels. Avoid contact with skin and clothing. Remove all sources of ignition. Ask all non-essential personnel to leave the area. If vapors are irritating, respirator use is indicated. SCBA use is not necessary. No other special advice for responders.
6.2 Environmental Precautions	Do not allow material to enter the environment.
6.3 Methods and Material for Containment and Clean Up	Cover drains if necessary to prevent material from entering environment. Absorb spill with inert material, (e.g., vermiculite, dry sand or earth), then place into a chemical waste container. Do not use combustible materials such as sawdust. Use spark-proof tools to scoop material. Decontamination of clothing can be accomplished with water. Seal filled chemical waste containers tightly.
6.4 Reference to Other Sections	For Fire Fighting advice see section 5 For PPE advice see section 8 For Stability and Reactivity advice see section 10 For information on disposal advice see section 13

Section 7: Storage and Handling

7.1 Precautions for safe handling

Safe Handling	Store in a cool dry place with adequate ventilation. Keep containers tightly closed when not in use. Store and use with secondary containment to prevent spills that might enter the environment.
Fire and Explosion Protection	Do not smoke. Ground or bond containers. Keep away from sources of ignition.
Occupational Hygiene	Don't eat, drink, or smoke in work areas. Wash hands thoroughly after working with material Remove contaminated clothing and PPE before entering non-work areas. Wash clothing before wearing again.
7.2 Conditions for safe storage, including any incompatibilities	Use ventilation to keep vapors low, explosive conditions are not expected. Use polyethylene or neoprene gloves, aprons, or boots. Store away from ignitions sources Do not store with strong acids, strong oxidizing agents, copper or copper alloys Keep containers closed when not in use to prevent evaporation. Use in explosion proof rooms, use with adequate ventilation. No open flames. Use only spark-proof tools. Weather is not expected to cause a problem Ambient pressure is not expected to cause a problem Ambient temperature is not expected to cause a problem Sunlight is not expected to cause a problem Keep drums closed when not in use to keep moisture out of ETOX Vibration is not expected to cause a problem. No stabilisers needed No antioxidants needed. No special advice for ventilation No special advice for storage design. No limits on storage quantity beyond local fire regulations for flammable materials with similar flash points. Avoid packaging with copper or copper alloys.
7.3 Specific End Use(s)	No recommendations and no industrial sector specific solutions.

Section 8: Exposure Controls/ Personal Protection

8.1 Control Parameters

Occupational Exposure Limits	No data available.	
Other Occupational Limits	No limits set by ACIGH, OSHA, or any other safety agency in the USA.	
Biological Limit Values	No data available.	
Other biological exposure limits	No data available for other biological exposure limits.	
DNEL Values (Workers)	Acute – systemic effects, dermal	No hazard identified
	Acute - systemic effects, inhalation	No hazard identified
	Acute – local effects, dermal	Medium hazard (no threshold derived)
	Acute – local effects, inhalation	Medium hazard (no threshold derived)
	Long-term – systemic effects, dermal	5.2 mg/kg bw/day
	Long-term – local effects, dermal	Medium hazard (no threshold derived)

	Long-term – systemic effects, inhalation	36.7 mg/m ³
	Long-term – local effects, inhalation	Medium hazard (no threshold derived)
PNEC (Water)	PNEC aqua (freshwater)	0.024 mg/L
	PNEC aqua (marine water)	0.0024 mg/L
	PNEC aqua (intermittent, freshwater)	0.24 mg/L
	PNEC aqua (intermittent, marine water)	0.024 mg/L
PNEC (Sediment)	PNEC sediment (freshwater)	0.136 mg/kg dwt
	PNEC sediment (marine water)	0.0136 mg/kg dwt
PNEC (Soil)	PNEC soil	0.0127 mg/kg dwt
PNEC (Oral)	PNEC oral (secondary poisoning)	58 mg/kg food
PNEC (STP)	PNEC sewage treatment plant	60 mg/L
Specific Control Banding Recommendations	Not applicable.	
8.2 Engineering Controls		
Engineering Controls	Use adequate ventilation to keep vapor concentrations low.	
Eyes	Use European Standard EN 166 or 29 CFR 1910.133 compliant eye and face protection. Use goggles or full-face respirators for eye protection. Full face respirators are recommended.	
Skin	Work experience has shown polyethylene or neoprene gloves offer the best protection. Breakthrough rates have not been determined. Polyethylene or neoprene boots will offer the best protection.	
Respirator	Use European Standard EN 136 or NIOSH compliant respirators with EN 141 compliant cartridges, acid gas/organic vapor combination cartridges.	
Thermal Hazard	Not a thermal hazard.	
Environmental Exposure Controls	None known.	

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless liquid
Odor/Odor Threshold	Not characterized/Not determined
Freezing/Melting Point C°	-62°
Boiling Point C°	128.4 @ 760.00 mm Hg
Solubility in Water	Miscible
Oxidising properties	None
Volatile Content	Not available
pH	~ 11
Auto-ignition Temp.	>400° C
Flammability	Flammable class IC
Flash Point C°	29°
Evaporation rate	Not determined
Explosive Properties	Not determined
Vapor pressure	0.450 (PSIA)
Vapor density	Not determined

Relative density	0.982 g/cm ³
Decomposition Temp	Not determined
Partition Coefficient n-octonal/water	Log Kow of ~0.198
Solubilities	Most polar and non-polar solvents. Will decompose in protic solvents, like water
Viscosity	Not determined
Molecular Weight	99.13
Molecular Formula	C ₅ H ₉ NO
9.2 Other Information	None

Section 10: Stability and Reactivity

10.1 Reactivity	Not determined.
10.2 Chemical Stability	Product is stable under normal conditions of storage and handling.
10.3 Possibility of hazardous reactions	Spontaneous polymerization will not occur.
10.4 Conditions to Avoid	Incompatible materials, sources of ignition.
10.5 Incompatible materials	Strong oxidizing agents, strong acids, copper alloys, copper.
10.6 Hazardous decomposition products	No known hazardous decomposition products.

Section 11: Toxicological Information

11.1 Information on Toxicological Effects	
Acute toxicity – LD50 oral	No category. 2,700 mg/kg bw female rats, 3,660 mg/kg bw male rats.
Acute toxicity – LD50 dermal	No category. Toxicity was not determined after 24 hours of constant exposure to 500 mg/kg bw.
Acute toxicity - LC/50 inhalation	No category. The 7-hour LC50 is >635 ppm
Skin Corrosion/Irritation	Skin Corrosion category 1B
Serious eye damage/irritation	Eye Damage category 1
Respiratory sensitization	Not considered to be a sensitizer.
Skin sensitization	Not considered to be a sensitizer.
Germ cell mutagenicity	Negative (based on surrogate data)
Carcinogenicity	Not listed as a carcinogen.
Reproductive toxicity	Not embryotoxic, fetotoxic, or teratogenic (based on surrogate data)
STOT-single exposure	No specific organ effects noted following single exposure
STOT-repeat exposure	No specific organ effects noted following repeated exposure (based on surrogate data)
Aspiration hazard	No.
Inhalation hazard	No conclusive inhalation data.
Likely Routes of Exposure	Skin and eye contact, ingestion and inhalation.
Symptoms	Severe irritation, reversible chemical burns to skin and eyes.
Effects Acute/Chronic	Acute – irritation and burns/Chronic – no expected effects.
Interactive Effects	None known

Section 12: Ecological Information	
12.1 Toxicity	48h LC50 (daphnid) = 67 mg/L (based on surrogate data) 72h EC (algae) = mg/L (based on surrogate date)
12.2 Persistence and Degradability	Readily biodegradable so not considered persistent.
12.3 Bio-accumulative Potential	Not considered to be bio-accumulative or very bio-accumulative based on a log Kow of 0.198.
12.4 Mobility in Soil	No data
12.5 PBT and vPvB	Not a PBT or vPvB as defined in Regulation (EC) 1907/2006 Annex XIII
12.6 Other Adverse Effects	None known or expected

Section 13: Disposal Considerations	
13.1 Waste treatment methods	Dispose of in a manner consistent with local regulations. Dispose of in a licensed waste facility. Incineration is the recommended method of disposal.

Section 14: Transportation Information			
	DOT/ADR/RID/ADN 2017	IMDG	ICAO/IATA
14.1 UN Number	UN 2920	UN 2920	UN 2920
14.2 UN Proper Shipping Name	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	8 (3)	8 (3)	8 (3)
14.4 Packing Group	II	II	II
14.5 Environmental Hazards	Not environmentally hazardous in tank-vessels according to ADN	Not a marine pollutant.	
14.6 Special Precautions for users	RQ is 100 lbs.	Flash point 29° C RQ is 100 lbs.	None
14.7 Transport in bulk according to Annex II of Marpol and IBC Code	Yes (2-ethyl-2-oxazoline)	Yes (2-ethyl-2-oxazoline)	

Section 15: Regulatory Information	
(EC) No 1005/2009	Not subject to regulation under 1005/2009
(EC) No 850/2004	Not subject to regulation under 850/2004
(EC) No 649/2012	Not subject to regulation under 649/2012
15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture	No REACH Annex XVII restrictions Is not on the REACH Candidate List Is not on the REACH Annex XIV List WGK Hazard 1 (per Rigoletto)
15.2 Chemical Safety Assessment	A chemical safety assessment was completed.

Section 16: Additional Information
Creation date: 04/27/17 Created by Polymer Chemistry Innovations, Inc.
Last revision date: 11/11/2021, revision #3
Sources for data may be available through the manufacturer.
Indication of change: New emergency response provider – PERS – updated ER phone and PCI contact email.
The classification of this material was based on testing.
No additional training required to use this material safely
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