

Section 1 Chemical Product and Company Identification

Product Identifier ETU

General Use Additive for etching plates

Company UEI Systems®, a UEI Group Company

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Section 2 Hazards Identification

GHS Classification

Hazard Class	Hazard Category	Route of Exposure
Acute Toxicity	4	Oral
Carcinogenicity	2	–
Toxic to Reproduction	1B	–
Specific to Target Organ Toxicity Repeated (Repeated Exposure)	2	Thyroid

GHS Labeling Contains

Ethylene Thiourea (96-45-7)



Danger

Hazard Statements

Harmful if swallowed
Suspected of causing cancer of the thyroid
Suspected of damaging fertility or the unborn child
May cause damage to the thyroid through prolonged or repeated exposure

Precautionary Statements

Wash hands thoroughly after handling
Do not eat, drink or smoke when using this product
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Chemical manufacturer, importer or distributor to specify type of equipment, as required
Do not breathe dust/fume/gas/mist/vapors/spray
If exposed or concerned, get medical attention

Response

If swallowed: Call a Poison Center/doctor if you feel unwell.
If exposed or concerned: Get medical advice/attention. Rinse mouth.

Storage

Store locked up

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations

Section 3 Hazardous Ingredients / Identity Information

Hazardous Components	CAS No.	%	OSHA (PEL/TWA)	ACGIH TLV
Ethylene Thiourea	96-45-7	Proprietary 0–100%	–	–

Section 4 First Aid Measures

In all cases, call a physician immediately.

Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water.
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes
Skin Contact	Wash off with soap and plenty of water. Take victim immediately to hospital.

Section 5 Firefighting Measures

Flammable/Combustible Properties	Carbon Oxides, Nitrogen Oxides (NOx), Sulphur Oxides
Fire/Explosion	No data available
Extinguishing Media	Use dry chemical, carbon dioxide, water spray or foam extinguishers
Firefighting Equipment/Instructions	If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Notify local health and fire officials and pollution control agencies. From a secure, explosion-proof location, use water spray to cool exposed containers. If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors or shows any signs of deforming), withdraw immediately to a secure position.

Section 6 Accidental Release Measures

Personal Precautions	Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
Environmental Precautions	Prevent runoff to sewers or waterways
Methods for Cleaning Up	Use absorbent material and place in non-leaking containers and tightly seal

Section 7 Handling and Storage

Handling Precautions	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.
Storage Requirements	Keep container tightly closed in a dry and well-ventilated place.

Section 8 Component Exposure Limits

Components with Workplace Control Parameters	Contains no substances with occupational exposure limit values
Appropriate Engineering Controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal Respiratory Protection	Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator.
Personal Hand Protection	Handle with gloves
Eye Protection	Use face shield and safety glasses
Skin Protection	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9 Physical and Chemical Properties

Appearance/Odor	White powder/no data	Odor Threshold	No data available
pH	No data available	Boiling Point	347°C (657° F)
Melting Point	No data available	Solubility (H₂O)	No data available
Specific Gravity	Solid material	Density	No data available
Octanol/H₂O Coefficient	No data available	Evaporation Rate	No data available
Molecular Weight	No data available	Decomposition Temperature	No data available
Auto Ignition	No data available	Lower Flammability Limit	No data available
Flash Point	No data available	Upper Flammability Limit	No data available
Vapor Density	No data available	Vapor Pressure	No data available
VOC	No data available	Flammability Class	No data available
Viscosity	No data available		

Section 10 Chemical Stability and Reactivity

Stability	Stable
Conditions to Avoid	No data available
Incompatibility	Strong oxidizing agents
Hazardous Decomposition/By-Products	Thermal decomposition may produce Carbon Monoxide, Carbon Dioxide, Hydrogen Chloride, Nitrogen Oxides and Sulfur Oxides.
Hazardous Polymerization	Will not occur

Section 11 Toxicological Information

Acute Toxicity					
Acute Oral LD50	1,832 mg/kg (rat)				
Acute Dermal LD50	No data available				
Acute Inhalation LC50	No data available				
Carcinogenicity	Ingredient	NTP	IARC	OSHA	Other
	Ethylene Thiourea	Yes	Yes	Yes	Not listed
Carcinogenicity Comment	IARC lists Ethylene Thiourea as a Group 3 carcinogen (Unclassifiable as to carcinogenicity in humans). NTP lists Ethylene Thiourea as reasonably anticipated to be a human carcinogen (based on animal studies).				
Target Organ Effects	Targets organs in high doses: liver, kidney, thyroid gland				
Reproductive Toxicity	No data available				
Teratogenicity	Category 3. Toxic effect for fetal development.				

Section 12 Ecological Information

Ecotoxicity															
Acute Aquatic Toxicity	Category 3														
Chronic Aquatic Toxicity	Category 3														
	<table><tr><th>Component</th><th>Species</th><th>Exposure Time</th><th>LC50/EC50/IC50</th></tr><tr><td rowspan="3">Ethylene Thiourea (96-45-7)</td><td><i>Poelicia Reticulata</i> (guppy)</td><td>96 hrs</td><td>LC50 7,500 mg/l</td></tr><tr><td><i>Chlorella Pyrenoidosa</i> (green algae)</td><td>96 hrs</td><td>EC50 6,600 mg/l</td></tr><tr><td><i>Daphnia Magna</i> (water flea)</td><td>48 hrs</td><td>CE(l)50 26.4 mg/l</td></tr></table>	Component	Species	Exposure Time	LC50/EC50/IC50	Ethylene Thiourea (96-45-7)	<i>Poelicia Reticulata</i> (guppy)	96 hrs	LC50 7,500 mg/l	<i>Chlorella Pyrenoidosa</i> (green algae)	96 hrs	EC50 6,600 mg/l	<i>Daphnia Magna</i> (water flea)	48 hrs	CE(l)50 26.4 mg/l
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Persistence/Degradability	In water: Biodegradation: 0% after 14 days Degradation in the atmosphere: t ½ life = 3 hours In soils and sediments: Biodegradable in soils														
Bioaccumulative Potential	Bioconcentration factor (FABC): <0.2 to 1.8 (fish: cyprinus carpio)														
Mobility in Soil	Adsorption: log Koc (calculated) = 0.8														

Section 13 Disposal Considerations

Disposal Instructions	Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste.
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Section 14		Transportation Information	
DOT (US)		IATA	
UN number	3077	UN number	3077
Class	9	Class	9
Packing group	III	Packing group	III
Proper shipping name		Proper shipping name	
Environmentally Hazardous Substance, Solid, N.O.S. (2-Imidazolidinethione)		(2-Imidazolidinethione)	
Reportable Quantity (RQ)	10 lbs	Special Provision A197: These substances when transported in single or combination packaging containing a NET mass of 5KG of Solid material or less for solids, are not subject to any other provisions of these regulations provided the packaging meets the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8	
Marine pollutant	No		
Poison Inhalation Hazard	No		

Section 15		Regulatory Information	
Component Analysis – State			
SARA 302 Components			
SARA 302	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.		
SARA 313 Components			
SARA 313	The following components are subject to reporting levels established by SARA Title III, Section 313		
	Component	CAS-No	Revision Date
	2-Imidazolidinethione	96-45-7	1993-04-24
SARA 311/312 Hazards	Acute Health Hazard, Chronic Health Hazard		
TSCA ⁴ - Toxic Substances Control Act	Listed		
	Right To Know Components	CAS-No	Revision Date
Massachusetts	2-Imidazolidinethione	96-45-7	1993-04-24
Pennsylvania	2-Imidazolidinethione	96-45-7	1993-04-24
New Jersey	2-Imidazolidinethione	96-45-7	1993-04-24
California Prop 65	Warning! This product contains a chemical known to State of California to cause cancer. Warning! This product contains a chemical known to State of California to cause birth defects or other reproductive harm.		

Section 16

Other Information

UEI Systems® provides the information contained herein in good faith. It is believed to be correct. However it is not all-inclusive and should be used only as a guide. Individuals receiving this information must exercise their independent judgement in determining its appropriateness for a particular purpose. UEI Systems shall not be held liable for any damage resulting from handling or from contact with this product. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources.

Abbreviations PEL Permissible Exposure Limit
TLV Threshold Limit Value

End Notes

1. SARA - Signed into law in 1986, the Superfund Amendments and Reauthorization Act (SARA) is an extension of CERCLA, and is intended to encourage and support local and state emergency planning efforts. SARA provides citizens and local governments with information about potential chemical hazards, and calls for facilities that store hazardous materials to provide officials and citizens with data on the type and amount on hand at specific locations. This field states whether a material is listed or not listed in section 372.65 of SARA. EHS - This states if a material is listed or not listed in Appendix B to part 355, the SARA Extremely Hazardous Substances (EHS) section. RQ is the reportable quantity. TPQ is the Threshold Planning Quantity.
2. RCRA - The Resource Conservation and Recovery Act enacted in 1976 and subsequently amended, controls solid-waste disposal and encourages recycling. This states whether a material is listed or not listed under this regulation. If listed the Hazardous Waste Number and waste characterization assigned by RCRA is also provided.
3. CERCLA - Enacted in 1980 and amended thereafter, the Comprehensive Environmental Response, Compensation, and Liability Act provides for identification and cleanup of hazardous materials released on land, into the air, waterways, and groundwater. It covers areas affected by newly released materials and older leaking or abandoned dump sites. This states whether a material is listed or not listed in CERCLA Table 302.4. If listed the section(s) that it is listed under and the Reportable Quantity (RQ) are also provided.
4. TSCA - The Toxic Substances Control Act controls the exposure to and use of raw industrial chemicals not subject to other laws. This states whether the chemical is listed or not listed under this regulation.

Evidence <https://ntp.niehs.nih.gov/ntp/roc/content/profiles/ethylenethiourea.pdf>
<http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/f?./temp/~5zDWnc:1>

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