Safety
Data
Sheet

U·E·I Systems
A UEI® GROUP COMPANY

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Section 1 Chemical Product and Company Identification

Product Identifier GPC® Stabilizer

Product Number IR-CHE7320, IR-CHE7321, IR-CHE7322, IR-CHE7323, IR-CHE7324, IR-CHE7325, IR-CHE7326, IR-CHE7327

General Use Additive for etching copper plates

Company Address UEI Systems®, a UEI Group Company
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Phone +1 800 221 9059 or +1 913 541 0503

Emergency Contact Number CHEMTEL – Available 24 hours/day, 7 days/week
Domestic North America: +1 800 255 3924
International: +1 813 248 0585

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) Formamidine Disulfide Dihydrochloride (14807-75-1)

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

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Section 3 Hazardous Ingredients / Identity Information

Hazardous Components	CAS No.	%	OSHA (PEL/TWA)	ACGIH TLV
Ethylene Thiourea	96-45-7	Proprietary 0–100%	–	–
Formamidine Disulfide Dihydrochloride	14807-75-1	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 vicitm 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.

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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 (H_2O)**	No data available
Specific Gravity	Solid material	**Density**	No data available
Octanol/H_2O 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

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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
Formamidine Disulfide Dihydrochloride	No	No	No	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

Component	Species	Exposure Time	LC50/EC50/IC50
Ethylene Thiourea (96-45-7)	*Poelicia Reticulata* (guppy)	96 hrs	LC50 7,500 mg/l
	Chlorella Pyrenoidosa (green algae)	96 hrs	EC50 6,600 mg/l
	Daphnia Magna (water flea)	48 hrs	CE(I)50 26.4 mg/l

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 tro 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)

UN number	3077
Class	9
Packing group	III
Proper shipping name	Environmentally Hazardous Substance, Solid, N.O.S. (2-Imidazolidinethione)
Reportable Quantity (RQ)	10 lbs
Marine pollutant	No
Poison Inhalation Hazard	No

IMDG

UN number	3077
Class	9
Packing group	III
EMS-No	F-A, S-F
Proper shipping name	Environmentally Hazardous Substance, Solid, N.O.S. (2-Imidazolidinethione)
Marine pollutant	No

IATA

UN number	3077
Class	9
Packing group	III
Proper shipping name	(2-Imidazolidinethione)

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

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.

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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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