

SAFETY DATA SHEET

12.5% Urea

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY

Product name:	12.5% Urea
Company:	SYNTHEX ORGANICS, LLC 4601 Cortland Avenue Altoona, PA 16601 United States
Telephone:	814-941-8375
Telefax:	814-941-1031
Emergency telephone number:	Call CHEMTREC Day or Night 1-800-424-9300 / +1 703-527-3887 CCN809665
Common name:	Urea Solution
Chemical family:	Aliphatic amide
Formula:	CO(NH ₂) ₂

2. HAZARDS IDENTIFICATION

Form: Liquid

Color: Colorless

Odor: Odorless to slightly ammoniacal

Potential Health Effects:

Eye: May irritate eyes upon contact.

Skin: May irritate skin upon contact.

Inhalation: May cause irritation of the mucous membranes and upper respiratory tract.

Ingestion: May cause irritation of the mucous membranes and upper respiratory tract.

Not considered toxic for humans. However, in keeping with good industrial hygiene practices, exposure to any chemical should be kept at a minimum.

Carcinogenic Effects: None found by ACGIH, EPA, IARC, OSHA.

Mutagenic Effects: None found by ACGIH, EPA, IARC, OSHA.

Teratogenic Effects: None found by ACGIH, EPA, IARC, OSHA.

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3. COMPOSITION / INFORMATION OF INGREDIENTS

Chemical Name	CAS Number	Weight %	PEL/TLV
Urea	57-13-6	12.5	N/A

4. FIRST AID MEASURES

Eyes: Immediately flush eyes with copious amounts of tepid water for at least 15 minutes. If irritation, pain, swelling, excessive tearing, or light sensitivity persists, the patient should be seen in a health care facility.

Skin: Immediately flush exposed area with copious amounts of tepid water for at least 15 minutes followed by washing area thoroughly with soap and water. The patient should be seen in a health care facility if irritation or pain persists.

Ingestion: If conscious, give the patient large quantities of milk or water to drink immediately. Do not induce vomiting. Seek medical attention.

Inhalation: Generally not considered an inhalation hazard. If irritation develops, move patient to fresh air and monitor. If cough or difficulty in breathing develops, evaluate for respiratory tract irritation. If needed, administer supplemental oxygen if trained to do so. If irritation, coughing, or difficulty breathing persists, the patient should be seen in a health care facility.

5. FIRE FIGHTING MEASURES

Flash point: Not applicable.

Flammable limits: Not applicable.

Products of combustions: Material will not burn, but thermal decomposition may result in flammable/toxic gases being formed after material evaporates to dryness. These products are ammonia, carbon dioxide, and oxides of nitrogen.

Explosion hazard in the presence of various substances: Reacts violently with chlorine bleach. Resultant product may explode.

Fire-fighting media: Non Flammable. Material will not burn. Undergoes thermal decomposition at elevated temperatures to release toxic and combustible gases (ammonia, carbon dioxide, and oxides from nitrogen). Fire fighters should wear a self-contained breathing apparatus. Use extinguishing media suitable for surrounding materials.

Special remarks on fire hazards: Flammable/Toxic gases will form at elevated temperatures by thermal decomposition. When exposed to heat, ammonia is released.

Special remarks on explosion hazards: May be explosive

6. ACCIDENTAL RELEASE MEASURES

Containment: Keep unnecessary people away, isolate hazard area and deny entry.

Clean Up:

Small Spill: (Generally, a small spill is one that involves a single, small package (i.e. up to a 55 gallon drum), small cylinder, or a small (non-continuing) leak from a large container.) A.) Stop leak if you can do so without risk. B.) Spilled area may become slippery. C.) Wash contaminated areas with large volumes of water if approved by local, state, and federal environmental agencies. D.) Runoff may cause pollution.

Large Spill: A.) Dike ahead of liquid spill for later recovery of usable product and proper disposal of any residue. B.) Stop leak if you can do so without risk. C.) Spilled area may become slippery. D.) Wash contaminated areas with large volumes of water if approved by local, state, and federal environmental agencies. E.) Runoff may cause pollution.

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Evacuation: Necessary.

7. HANDLING AND STORAGE

Precautions: If user operations generate mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Keep out of reach of children. UAN (see section 8).

Storage: Ensure compatibility with storage vessel material of construction. Keep in an appropriate storage temperature to prevent freezing.

Transfer Equipment:

Work/Hygienic Practices: Use proper personal protective equipment when working with or around.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Eyes: If there is a potential for 12.5% Urea Solution to contact eyes, it is recommended that safety glasses or goggles be used.

Skin: It is recommended that if a person may be exposed to 12.5% Urea Solution for an extended length of time or if a person demonstrates sensitivity to 12.5% Urea Solution, skin protection should be used. Most liquid tight gloves and liquid resistant clothing is acceptable.

Respiratory: Wear appropriate respiratory protection for dust/mist when ventilation is inadequate.

Other: Safety shower and eyewash fountain or at least 5 gallons of accessible clean water should be provided in a 12.5% Urea Solution handling area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid

Color: Colorless liquid

Odor: Odorless to slightly ammoniacal

pH: 7

Specific gravity @20C: Not available.

Boiling point: Not available.

Melting point: 17.8 °C 64 °F (Salt out temp, 50% soln)

Solubility in water: Easily soluble in hot or cold water.

Flash point: Not applicable.

Auto-ignition temperature: Not applicable.

Flammable limits: Not applicable.

Density: 9.63 lbs/gallon

Saturated vapor concentration: 17 PPM recognition threshold as ammonia.

Taste: Saline.

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10. STABILITY AND REACTIVITY

Stability: Stable.

Incompatibility with various substances: Reactive with halogens. Slightly reactive with oxidizing agents, reducing agents, acids, alkalis, and moisture. Non-reactive with combustible material organic materials, most metals.

Corrosivity: Slightly corrosive to mild steel, aluminum, zinc, copper.

11. TOXICOLOGICAL INFORMATION

Significant routes of exposure: Ingestion. Inhalation.

Toxicity to animals: Acute Oral Toxicity (LD50): 14300 mg/kg (Rat).

Under controlled feeding conditions, urea is used as a nutritional supplement in cattle and other animals. The toxic dose in cattle given urea for the first time is considered to be 0.45 g/kg or a total of 100-200 g. Mature bullocks can digest as much as 400g a day without ill effects. As little as 50g may cause adverse effects in cattle not accustomed to it.

Special remarks on other effects on humans: May cause irritation of the mucous membranes and upper respiratory tract.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Fish

LC50 Danio rerio/96 hours = data not available

Invertebrates

EC50/Daphnia Magna/48 hours = > 10,000 mg/L

Persistence and degradability

data not available

Bioaccumulative potential

data not available

Mobility in soil

data not available

Results of PBT and vPvB assessment

data not available

Other adverse effects

None Use according to criteria of good industrial practice, avoiding product dispersion in the environment.

13. DISPOSAL CONSIDERATIONS

Recover and place material in a suitable container for intended use or disposal. Ensure disposal complies with government requirements and local regulations.

14. TRANSPORTATION REGULATIONS

12.5% Urea Solution is not listed by any U.S. or Canadian transportation authority as a hazardous material and as such, no specific information is available.

15. REGULATORY INFORMATION

CERCLA: Not Listed.

PROPOSITION 65: None.

TSCA Inventory: Listed.

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16. OTHER INFORMATION

The information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of manufacturer. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the health of employees and customers.

Revised July 15, 2015, S. Bowser

Revision 2: April 29, 2024 ER- Updated section 12