

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name C-TECH[®] U-TECH[®] and Urea Miniprills

Chemical Formula NH₂.CO.NH₂

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name Carbamide – commonly referred to as Urea

CAS Number 57-13-6

EINECS Number: 200-315-5

3. HAZARDS IDENTIFICATION

Urea is not classified as a hazardous product.

Normally, by paying usual attention to industrial hygiene and by avoiding inhalation of dusty powder, there are no risks in handling urea.

The dust may cause irritation to eyes, skin and by inhalation. See Section 8 for recommended precautions.

By decomposition at high temperature toxic fumes of nitrogen oxide, ammonia and isocyanic acid can be emitted. These can also be produced by reaction of Urea with the chemicals listed under Section 7 "Handling and Storage".

Eye Contact

Irritating but does not injure eye tissue.

Skin Contact

Frequent or prolonged contact may irritate. Low order of toxicity.

Inhalation

Negligible hazard at ambient temperature. Decomposition fumes may cause breathing disorders and/or lung damage.

Ingestion

Minimal toxicity.

4. FIRST AID MEASURES

Eye Contact

Flush eyes with large amount of water until irritation subsides. If irritation persists, seek medical attention.

Skin Contact

Wash affected areas with water.

Ingestion

Do not induce vomiting. Give water to drink. Obtain medical attention if more than small quantities have been swallowed.

Inhalation

Remove from source of exposure to dust. Keep warm and at rest. Obtain medical advice if symptoms persist.

5. FIRE FIGHTING MEASURES

- Material will not burn.
- Decomposes. Flammable/toxic gases will form on decomposition, see Section 10 "Stability & Reactivity".
- Use water spray to cool fire exposed surfaces and to protect personnel.
- Respiratory and eye protection required for fire fighting personnel.

6. ACCIDENTAL RELEASE MEASURES

Sweep up spilled material and place in suitable containers for recycle or disposal. If spilled urea enters a watercourse, then the appropriate water authority and local authorities should be informed.

7. HANDLING & STORAGE

Handling

Product should not be heated above 130°C to avoid possible release of toxic fumes of ammonia, isocyanic acid and oxides of nitrogen. Contact should be avoided with oxidising agents, hypochlorites, aldehydes, inorganic acids, olefins, monomers and polymerisable esters to avoid possible release of toxic fumes of ammonia, isocyanic acid, oxides of nitrogen and biuret.

Storage

Storage should be in absence of source of heat and moisture to prevent lumps and dust forming. Storage may be in bulk or polyethylene bags.

Static Discharge

Product can accumulate static charges which can cause an incendiary electrical discharge: proper grounding procedures should be used.

8. EXPOSURE CONTROL/ PERSONAL PROTECTION

The recommended time weighted average exposure limits are as follows:

	mg/m ³	ppm
Long term Exposure Limit (OEL) (TWA-8 hr)		
Ammonia	18	25

Nitrogen Dioxide*	5	3
Nitrogen Dioxide	30	25
Isocyanic acid	0.02	

Short Term Exposure Limit (STEL) (TWA-10 min)

	mg/m ³	ppm
Ammonia	24	35
Nitrogen Dioxide*	9	5
Nitrogen Dioxide	45	35
Isocyanic acid	0.07	

*Most toxic component of NOx

Personal Protection

For open systems where contact is likely, wear safety glasses with side shields, long sleeves and chemical resistant gloves. Where over-exposure by inhalation may occur, and engineering, work practice or other means of exposure reduction are not adequate, approved respirators may be necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White prills or crystals
Odour:	Odourless
Nitrogen:	46% minimum
pH of 10% wt sol ¹ :	9.0 – 10.0
Melting point:	Decomposes at 133°C
Bulk Density	700 – 780 kg/m ³
Solubility in water:	1080g/l @ 20°C

10. STABILITY AND REACTIVITY

Stability

Urea is chemically stable at ambient conditions. By decomposition at high temperatures (133°C) toxic fumes of nitrogen oxide, ammonia and isocyanic acid can be emitted.

Reactivity

Contact should be avoided with oxidising agents, hypochlorites, aldehydes, inorganic acids, olefins, monomers and polymerisable esters to avoid possible release of toxic fumes of ammonia, isocyanic acid, oxides of nitrogen and biuret.

11. TOXICOLOGICAL INFORMATION

General

See Section 3.

Toxicity

LD₅₀ (oral rat) > 2000 mg/kg

12. ECOLOGICAL INFORMATION

Urea is highly soluble in water. Therefore it is rapidly diluted in water courses and leached from soils.

When dissolved, urea will act as a plant nutrient

13. DISPOSAL CONSIDERATIONS

General

Relevant authorities must be consulted before disposal of urea to drains or water courses. Sweep up spilled material and place in suitable containers for recycle or disposal. If spilled urea enters a water course then the appropriate water authority and local authorities should be informed.

14. TRANSPORT INFORMATION

Urea is not classified as a hazardous product for carriage.

15. REGULATORY INFORMATION

Urea is not classified as a hazardous product for supply.

16. OTHER INFORMATION

This Safety Data Sheet provides Health & Safety information. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information.

The product information in this Data Sheet is, to the best of this Company's knowledge, correct as at the date of publication. The user must be satisfied that the product is entirely suitable for the purpose for which it is being used.

The Company accepts no liability for any loss or damage (other than that arising from death or personal injury caused by negligence if proved) resulting from reliance on this information.

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