SAFETY DATA SHEET
46%
UREA

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. PRODUCT IDENTIFIER

Product name:	Urea
Product No.:	UREA
CAS-No.:	57-13-6
EC No.:	200-315-5
REACH No.:	01-2119463277-33
Synonym:	Carbamide, carbonyl diamide, carbonyldiamine, diaminomethanal, diaminomethanone
Chemical Formula:	CH_4N_2O

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Recommended use:
- As a fertiliser in agriculture;
- As a foliar spray for plants (normally 0.5%-2% active);
- In the manufacture of plastics like urea-formaldehyde resins;
- In the manufacture of adhesives;
- Urea solutions are used to remove pollutants from diesel engines;
- As a de-icer (ice melt) for use on paths and road;
- In ready-to-use cold compresses in first aid;
- A flame proofing agent used in dry chemical fire extinguishers;
- As a solubility-enhancing and moisture-retaining additive to dye baths for textile dyeing or printing.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

HD Chemicals LTD
UNIT 9 Scott Business Park
PL2 2PB Plymouth UK

Contact Person responsible for SDS: Mr Peter Konefal, e-mail: contact@hdchemicals.co.uk

SECTION 2: HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Classification 67/548/EEC: Not Classified

Classification – EC 1272/2008: Not Classified

2.2. LABEL ELEMENTS

No labelling requirements

SIGNAL WORDS

Not Classified

RISK PHRASES

Not Classified

HAZARD PHRASES

Not Classified

PROTECTION PHRASES

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

SAFETY PHRASES

Not Classified

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

67/548/EEC/1999/45/EC

Composition information – main constituents						
Substance name	**Mol. Formula**	**REACH**	**Typical conc. (%w/w)**	**EINECS No.**	**CAS-No.**	**Classification**
Urea	CH_4N_2O	01-2119463277-33	46%	200-315-5	57-13-6	Not Classified

EC 1272/2008

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Urea	CH_4N_2O	01-2119463277-33	46%	200-315-5	57-13-6	Not Classified

SECTION 4: FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

First-aid measures general: Consult a physician when you fell unwell. Show this safety data sheet to the doctor in attendance.

Inhalation: If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe.

Skin contact: Wash with soap and water. Get medical attention if irritation develops.

Eye contact: Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention if irritation occurs.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Inhalation: May cause coughing, irritation of nose, throat and airway.

Ingestion: May cause mild stomach upset and vomiting.

Skin contact: There may be irritation at the site of contact.

Eye contact: May cause burning, redness, and tearing of eyes.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treat symptomatically

SECTION 5: FIREFIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

Suitable extinguishing media:	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media:	Do not use chemical extinguishers or foams or attempt to smother the fire with steam or sand.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Not combustible, but decomposes above 133°C. Thermal decomposition can lead to release of irritating and toxic gases and vapours. Hazardous combustion products: carbon dioxide (CO_2), carbon monoxide (CO), nitrogen oxides (NOx), ammonia, nitrous gases.

5.3. ADVICE FOR FIRE-FIGHTERS

No action shall be taken involving any personal risk or without suitable training. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear suitable protective equipment (splash goggles, protective suit, boots, gloves and self-contained breathing apparatus) to prevent any contamination of skin, eyes and personal clothing. Ensure adequate ventilation of the working area. Avoid contact with skin and eyes. Avoid breathing vapours, mist or gas. Avoid formation of dust. Keep unprotected persons away. Do not touch or walk through spilled material.

For personal protection see section 8.1.

6.2. ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment. Do not allow to enter sewers/ surface or ground water. Do not allow to enter into soil/subsoil. Prevent further leakage or spillage if safe to do so. Use appropriate container to avoid environmental contamination. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

SECTION 7: HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Handle in accordance with good industrial hygiene and safety practice. Avoid formation of dust. Do not inhale dust/smoke/mist. Ensure adequate ventilation of the working area. Wear personal protective equipment. Avoid contact with eyes and skin. Do not eat or drink during the process, washing hands afterwards with suitable cleaning products. Avoid the formation or spread of mists in the air. Avoid contamination by combustible (e.g. diesel oil, grease, etc.) and/or other incompatible materials. Avoid unnecessary exposure to the atmosphere to prevent moisture pick-up. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep in a cool, dry, well ventilated area. Keep in original tightly closed containers. Protect from direct sunlight and moisture. Keep away from incompatible materials, food and drink.

7.3. SPECIFIC END USE(S)

See section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS/EXPOSURE GUIDELINES

Occupational Exposure Limit Values (Urea):

CAS NO	Exposure limit	Value	Name of Agent
57-13-6	TWA – 8 Hrs	125 mg/m^3	inhalation
57-13-6	STEL – 15 Min	292 mg/m^3	inhalation

Engineering controls: Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before breaks and at the end of the working day. Protect from direct sunlight and moisture. Keep away from incompatible materials, food and drink.


EYE PROTECTION


FACE SHIELD


RESPIRATOR


PROTECTION WEAR


HAND PROTECTION

Protective equipment: Use protective tightly fitting safety goggle (European standard - EN 166), gloves (European standard - EN 374) and long sleeved clothing to prevent skin, body and eyes exposure.

Respiratory equipment: Respiratory protection not required but self-contained breathing apparatus must be available in case of emergency (inadequate ventilation).

Skin and body protection: Wear appropriate protective gloves and clothing to prevent skin exposure. The glove material has to be impermeable and resistant to the product. Protective gloves should be replaced at first signs of wear. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Eye/Face protection: Wear appropriate tightly fitting protective eye glasses or chemical safety goggles as described by EN166 (EU Standard). Ensure eye bath is to hand.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid. Prills
Colour:	White
Odour:	Odourless
Initial boiling point (°C):	No data available
Melting point (°C):	133°C
Freezing point:	No data available

Relative density:	1.32 g/cm^3
Specific gravity / density:	Not available
Vapour density:	Not available
Vapour pressure:	Not available
Flash point (°C):	Not available
Molecular mass:	60.056 g/mol
Auto-ignition temperature:	Not applicable
Oxidizing properties:	Not available
Decomposition temperature:	Not available
Molecular formula:	CH_4N_2O

SECTION 10: STABILITY AND REACTIVITY

10.1. REACTIVITY

Urea is non-reactive under normal conditions of use, storage and transport.

10.2. CHEMICAL STABILITY

This product is stable under room temperature, normal conditions and under recommended usage and storage.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

When heated can decompose. May liberate toxic gases. See section 10.5.

10.4. CONDITIONS TO AVOID

Protect from direct sunlight and moisture. Keep away from incompatible materials, food and drink.

10.5. INCOMPATIBLE MATERIALS

May liberate toxic gases. Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.

Remark: acids, alkalis, nitrites and nitrates.

10.6. HAZARDOUS DECOMPOSITION

Not combustible, but decomposes above 133°C. Thermal decomposition can lead to release of irritating and toxic gases and vapours. Hazardous combustion products: carbon dioxide (CO_2), carbon monoxide (CO), nitrogen oxides (NOx), ammonia, nitrous gases.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

TOXIC DOSE	**LD50 Oral – Rat – 14300 mg/kg**
	LD50 Oral – Mouse – 11500 mg/kg
Inhalation:	May cause coughing, irritation of nose, throat and airway.
Ingestion:	May cause mild stomach upset and vomiting.
Skin contact:	There may be irritation at the site of contact.
Eye contact:	May cause burning, redness, and tearing of eyes.

SECTION 12: ECOLOGICAL INFORMATION

12.1. TOXICITY

Aquatic Toxicity:

Toxicity to freshwater fish:	LC50: 6,810 mg/l, 96h
Toxicity to water flea:	EC50: 10,000 mg/l, 24h
Toxicity to algae:	EC50: 47 mg/l, 192h

12.2. PERSISTENCE AND DEGRADABILITY

Readily biodegradable.

12.3. BIOACCUMULATIVE POTENTIAL

Low bioaccumulative potential.

12.4. MOBILITY

This product may move with surface or groundwater flows because its water solubility is high.

12.5. RESULTS OF PBT AND vPvB ASSESSMENT

This product is not identified as a PBT/vPvB substance.

12.6. OTHER ADVERSE EFFECTS

No known significant effects or critical hazards.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste disposal recommendations: Disposal of urea should be in accordance with local and national legislation. Processing, use or contamination of this product may change the waste management options. Should not be released into the environment. Dispose of container and unused contents in accordance with applicable member state and local requirements.

Uncleaned packaging: Disposal must be made according to official regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG

UN number	N/A
UN proper shipping name	N/A
Transport hazard class(es)	N/A
Packing group	N/A

ADR/RID

UN number	N/A
UN proper shipping name	N/A
Transport hazard class(es)	N/A
Packing group	N/A

IATA

UN number	N/A
UN proper shipping name	N/A
Transport hazard class(es)	N/A
Packing group	N/A

SECTION 15: REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2 CHEMICAL SAFETY ASSESSMENT

This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: OTHER INFORMATION

General information

The information contained in this safety data sheet is provided in accordance with the requirements of the regulations. The product should not be used for purposes other than those shown in section 1 without first referring to the supplier and obtaining written handling instruction. As the specific conditions of use of the product are outside the suppliers control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

Revision Comments

This information is provided in a revised format to that previously produced.

Revision Date: 01/10/2018

Revision: 01

Safety Data Sheet Status Approved.

Date printed 01/10/2018

Signature Initials P.K.

DISCLAIMER:

If this product is re-distributed and re-formulated for sale, details of its hazards and recommended methods for safe handling must be passed to customers. Customers are urged to ensure that the product is entirely suitable for their own purpose. It is the customer's responsibility to ensure that a suitable and sufficient assessment of the risks created by a work activity using this product is undertaken before this product is used.

NOTE:

The information contained in this Safety Data Sheet does not constitute the users own assessment of workplace risk as required by other Health & Safety Legislation (e.g. the Health and Safety at Work Act,1974;the control of Substances Hazardous to Health Regulations,1988). The data given here is based on current knowledge and experience. The purpose of this data sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the product's properties.