

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Trade name	: Urea
Chemical name	: Urea
IUPAC name	: Urea
EC-No.	: 200-315-5
CAS-No.	: 57-13-6
REACH registration No	: UK-01-2747601809-1-0005
Formula	: CH ₄ N ₂ O
Synonyms	: Carbamide / Carbonyl diamide

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture	: Antifreeze agent Fertilisers intermediate (precursor) resins coatings, inks and polymers, pharmaceuticals, melamine, as raw material in the cement, steel and glass industry Cleaning agent Reducing agents Food/feedstuff additives Processing aid Impregnation of packaging paper pharmaceutical substance Packaging (excluding food packaging)
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1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Maclin Sourcing Solutions Ltd
Unit A3 Risby Business Park
Newmarket Road
Risby
Suffolk
IP28 6RD
Tel: 01284 810 887
Email: info@maclingroup.co.uk

1.4. Emergency telephone number

Emergency number	: 01284 810 887 (office hours only)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

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2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%
Urea	CAS-No.: 57-13-6 EC-No.: 200-315-5 REACH-no: 01-2119463277-33-0228	100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove victim to fresh air. Give oxygen or artificial respiration if necessary. Get medical attention.
First-aid measures after skin contact	: Wash off with soap and plenty of water. Cover wounds with sterile bandage. Get medical advice if skin irritation persists.
First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Rinse immediately with plenty of water, also under the eyelids. Obtain medical attention if irritation persists.
First-aid measures after ingestion	: Rinse mouth out with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

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	: Carbon dioxide (CO ₂), dry chemical powder, foam. Use extinguishing media appropriate for surrounding fire.
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5.2. Special hazards arising from the substance or mixture

Fire hazard	: Not flammable.
Explosion hazard	: None known.
Hazardous decomposition products in case of fire	: Nitrogen oxides. Carbon monoxide. Carbon dioxide. Ammonia. Cyanuric acid. Biuret.

5.3. Advice for firefighters

Firefighting instructions	: Wear proper protective equipment. Positive pressure self-contained breathing apparatus (SCBA) and structural fire-fighters protective clothing. Evacuate the personnel away from the fumes.
Protective equipment for firefighters	: Wear a self contained breathing apparatus. Positive pressure self-contained breathing apparatus (SCBA). Complete protective clothing.
Other information	: Evacuate unnecessary personnel. Keep away from ignition sources. Cool tanks/drums with water spray/remove them into safety.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid dust formation. Avoid contact with spilled material. Avoid breathing dust, mist or spray.

6.1.1. For non-emergency personnel

Protective equipment : Do not attempt to take action without suitable protective equipment.
Emergency procedures : No action shall be taken involving any personal risk or without suitable training.

6.1.2. For emergency responders

Protective equipment : Wear recommended personal protective equipment.

6.2. Environmental precautions

Avoid discharge to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Avoid creating or spreading dust.

6.4. Reference to other sections

See Section 1 for emergency contact information. For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13: "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Ensure adequate ventilation. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Remove all contaminated clothing and footwear. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in dry, cool, well-ventilated area. Keep in original containers closed. Store at room temperature.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

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8.1.4. DNEL and PNEC

Urea (57-13-6)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	580 mg/kg bodyweight/day
Acute - systemic effects, inhalation	292 mg/m ³
Long-term - systemic effects, dermal	580 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	292 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	580 mg/kg bodyweight
Acute - systemic effects, inhalation	125 mg/kg bodyweight/day
Acute - systemic effects, oral	42 mg/kg bodyweight
Long-term - systemic effects, oral	42 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	125 mg/m ³
Long-term - systemic effects, dermal	580 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.47 mg/l
PNEC aqua (marine water)	0.047 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2. Personal protection equipment

Personal protective equipment:

Safety glasses. Gloves.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Chemical resistant apron. Lab coat.

Hand protection:

Chemical resistant gloves. Impermeable protective nitrile gloves

Other skin protection

Materials for protective clothing:

Personal protective equipment should be selected based upon the conditions under which this product is handled or used

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8.2.2.3. Respiratory protection

Respiratory protection:

None generally required. Where excessive dust may result, wear approved mask.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: White.
Appearance	: Powders. Particulate.
Molecular mass	: 60.055 g/mol
Odour	: Not available
Odour threshold	: Not available
Melting point	: 133.3 – 134 °C
Freezing point	: Not available
Boiling point	: The substance is reported to decompose before the boiling point is reached (CRC Handbook, 2006).
Flammability	: Non flammable, according to EU Method A.10 (Flammability (Solids))
Explosive properties	: Not explosive.
Oxidising properties	: Not oxidising.
Explosive limits	: Not applicable
Lower explosive limit (LEL)	: Not applicable
Upper explosive limit (UEL)	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: No evidence of autoflammability: the substance melted at 134 °C. Below this temperature there was no self-ignition of the sample (Gwerder et al, 2009).
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Water solubility. Water: 624 g/l @ 20°C (Gwerder et al, 2009)
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: -1.73 @ 20°C
Vapour pressure	: 0.002 Pa @25°C (Jones, 1960)
Vapour pressure at 50 °C	: Not available
Density	: Not available
Relative density	: 1.33 g/cm ³ (Gwerder et al, 2009)
Relative vapour density at 20 °C	: Not applicable
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

Hazardous polymerisation does not occur.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Extremely high temperatures. Keep away from (strong) acids. keep away from oxidizing agents . hypochlorous acid or hypochlorite.

10.5. Incompatible materials

Strong acids, strong bases and strong oxidants.

10.6. Hazardous decomposition products

Ammonia. If strongly heated, ammonia might be produced by decomposing. Biuret.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Urea (57-13-6)

LD50 oral rat	14300 mg/kg bodyweight (Sato et a., 1977)
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Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

Urea (57-13-6)

LC50 - Fish [1]	> 20000 mg/l
LC50 - Fish [2]	> 10000 mg/l @48 h (Juhnke, I. & Ludemann, D. 1978)

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Urea (57-13-6)

EC50 - Crustacea [1]	> 10000 mg/l
EC50 72h - Algae [1]	29 mg/l (Entosiphon sulcatum)
LOEC (chronic)	> 200 mg/l (Oster, et al. 2011)
NOEC (chronic)	200 mg/l (Oster, et al. 2011)

12.2. Persistence and degradability

Urea (57-13-6)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

Urea (57-13-6)

Partition coefficient n-octanol/water (Log Pow)	-1.73 @ 20°C
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Urea (57-13-6)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

No additional information available

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

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ADR	IMDG	IATA	ADN	RID
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

Inland waterway transport

Not applicable

Rail transport

Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Urea is not on the REACH Candidate List

Urea is not on the REACH Annex XIV List

Urea is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Urea is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

15.1.2. National regulations

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

Listed on the Canadian DSL (Domestic Substances List)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Japanese ISHL (Industrial Safety and Health Law)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Listed on Thailand Existing Chemicals Inventory (TECI - FDA)

Listed on the Vietnam National Chemical Database (as amended through 31 July 2018)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

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15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this substance

SECTION 16: Other information

Abbreviations and acronyms:

SDS	Safety Data Sheet
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
LC50	Median lethal concentration
EC50	Median effective concentration
PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative
CAS	CAS (Chemical Abstracts Service) number

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.