SAFETY DATA SHEET

UREA (GRANULAR) | REVISION 1, DATE AUGUST 2026

1. IDENTIFICATION

Product Name	Urea (Granular)
Other Names	Carbamide; Carbonyl Diamide; Carbonyldiamine; CH_4N_2O; NH_2CONH_2; Urea Fertiliser Grade
Uses	High-analysis, water-soluble nitrogen fertiliser (typically 46% N) used for soil application, broadcast, blending and fertigation to correct and prevent nitrogen deficiency in crops and pasture. Also used industrially as a raw material for urea-formaldehyde and melamine resins, as a non-protein nitrogen (NPN) source in animal feed supplements, in the production of diesel exhaust fluid (DEF/AdBlue), and as a road de-icing agent.
Product Type	Water-Soluble Nitrogen Fertiliser
Chemical Family	Organic amide (carbamide)
Chemical Formula	CH_4N_2O (NH_2CONH_2)
Chemical Name	Urea
Product Description	Urea Granular – high-analysis, water-soluble nitrogen fertiliser, minimum 46% total nitrogen

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Green Pick Australia	6 Fernhill Lane, Bayswater North VIC 3153, Australia	+61-426-571-061
Green Pick Iran	50 Khavaran Hwy, Industrial City Ivanaki, Taavoni 7, Tehran, Iran	+98-912-476-3248

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Australia – Westmead NSW	1800-251525 / 131126
Chemcall	Australia	1800-127406 / +64-4-9179888
Chemcall	New Zealand	0800-243622 / +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 / +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Not Scheduled (not listed in the SUSMP)

Globally Harmonised System

Hazard Classification	Not classified as a hazardous substance or mixture according to GHS criteria as adopted by Safe Work Australia, the UN GHS, and equivalent US (OSHA HCS 2012) and EU (Regulation (EC) No 1272/2008) frameworks.
Signal Word	None required
Hazard Statements	None allocated
Precautionary Statements	P264 – Wash hands thoroughly after handling P270 – Do not eat, drink or smoke when using this product P280 – Wear protective gloves/eye protection when handling dusty product P312 – Call a POISON CENTRE or doctor/physician if you feel unwell P391 – Collect spillage P501 – Dispose of contents/container in accordance with local/regional/national regulations

	(Precautionary statements are provided as good-practice guidance; the product does not meet GHS criteria requiring mandatory label elements.)
Hazard Pictograms	None required

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	Not classified as Dangerous Goods for transport by road, rail, sea or air – see SECTION 14 for full details.

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	Not classified as hazardous according to the criteria of Safe Work Australia under the Model WHS Regulations.

Urea is not classified as hazardous under the GHS and does not require hazard pictograms or a signal word. It is a naturally occurring compound (also produced endogenously by the human body). Nuisance dust generated during handling of granular product may cause mechanical/transient irritation to the eyes, skin and respiratory tract; standard good hygiene and handling practice is recommended. Refer to Sections 4, 8 and 12 for further detail.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Urea	CH_4N_2O	57-13-6	>= 99% (as urea); Total Nitrogen (N) ≥ 46%
Biuret (process impurity)	$C_2H_5N_3O_2$	108-19-0	≤ 1.5%
Moisture / anti-caking agent	—	—	Balance (typically ≤ 0.5% moisture)

Note: Urea is a single, well-defined organic compound (CAS 57-13-6). Biuret is an inherent process by-product formed during urea manufacture and is controlled to the limit shown, consistent with typical fertiliser-grade specifications, as elevated biuret levels can be phytotoxic to biuret-sensitive crops (e.g. citrus, when applied as a foliar spray).

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth thoroughly with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical advice if a large quantity has been swallowed or if symptoms occur.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if symptoms occur or persist.
Eye	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.
Skin	IF ON SKIN: Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Seek medical advice if irritation develops or persists.
Most Important Symptoms and Effects	None expected under normal conditions of use. Dust may cause mild, transient irritation to eyes, skin and the respiratory tract. Ingestion of large amounts may cause mild gastrointestinal discomfort.
Advice to Doctor	Treat symptomatically. Urea has low acute toxicity (oral rat LD50 > 5,000 mg/kg – practically non-toxic). Show this Safety Data Sheet to the treating doctor.
Medical Conditions Aggravated by Exposure	Dust exposure may aggravate pre-existing eye, skin or respiratory conditions.

5. FIRE FIGHTING MEASURES

General Measures	Product is non-combustible under normal conditions. If involved in a fire, cool nearby containers with water spray. Contain fire-control water for later disposal – avoid runoff into waterways.

Flammability Conditions	Non-combustible; will not readily ignite. Decomposes on strong heating rather than burning.
Extinguishing Media	Use extinguishing media appropriate to the surrounding fire: water spray/fog, foam, dry chemical or CO2. Avoid a heavy/concentrated water jet, which may spread molten or dissolved product.
Fire and Explosion Hazard	Not classified as explosive or oxidising under normal conditions. Contamination with strong oxidisers, nitrites or nitric acid can form unstable/explosive compounds (e.g. urea nitrate) – keep away from such materials (see Section 10).
Hazardous Products of Combustion	Strong heating or fire may produce irritating and toxic fumes including ammonia, oxides of nitrogen (NOx), carbon oxides (CO, CO_2), biuret and cyanuric acid.
Special Fire Fighting Instructions	Avoid inhalation of combustion/decomposition fumes. Contain fire-fighting runoff where possible – large releases of dissolved nitrogen to waterways may contribute to localised eutrophication.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA) and full structural firefighters' protective clothing for significant fires involving this product.
Flash Point	Not applicable (solid, non-combustible)
Lower Explosion Limit	Not applicable
Upper Explosion Limit	Not applicable
Auto Ignition Temperature	Not available
Hazchem Code	Not applicable (not classified as Dangerous Goods)

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation, especially in confined areas. Avoid generating dust; do not inhale dust. Avoid unnecessary contact with eyes, skin and clothing.
Personal Precautionary Measures	Use suitable protective equipment (see SECTION 8). Use clean, dry, non-sparking tools to collect material. Beware of slippery conditions if product becomes wet.
Environmental Precautionary Measures	Prevent release to drains, waterways or soil. As a concentrated, readily available nitrogen source, uncontrolled release to water bodies can promote excessive algal or plant growth. Notify authorities if a significant quantity enters waterways or sewers.
Containment	Stop the leak if it can be done without risk. Prevent dust cloud formation. Prevent entry into waterways, drains, sewers, basements or confined areas.
Clean Up Procedures	Sweep or vacuum up (avoiding dust generation) and place into a suitable, clearly labelled container. Uncontaminated product may be reclaimed for use; contaminated material should be treated as waste (see SECTION 13).
Decontamination	Flush the affected area with water only after bulk material has been recovered; avoid uncontrolled discharge to the environment.
Evacuation Criteria	Not normally required for small spills. Isolate the spill/leak area and keep unauthorised personnel away for larger releases.

7. HANDLING AND STORAGE

Handling	Ensure adequate ventilation. Avoid generating dust and unnecessary contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8). Wash hands after handling and before eating, drinking or smoking. Avoid contact with strong acids, strong oxidising agents, nitrites and chlorine/hypochlorite products.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Urea is hygroscopic – protect from moisture to prevent caking. Keep containers/bags tightly closed and resealed after opening. Store away from incompatible materials (see SECTION 10), open flames and heat sources, and away from foodstuffs.
Container	Keep in the original container or approved fertiliser storage packaging/bulk bins.
Incompatible Materials	Strong acids, strong bases, strong oxidising agents, chlorates, hypochlorites/chlorine, and nitrites. Reacts with nitric acid to form urea nitrate, which is explosive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific occupational exposure standard is established for urea in most jurisdictions. General nuisance/inert dust exposure standards (e.g. for particulates not otherwise classified) may be applied as a guide where relevant.
Engineering Measures	Local and/or general exhaust ventilation is recommended to keep employee exposure to dust as low as reasonably practicable.
Respiratory Protection	Not normally required. In dusty conditions or where ventilation is inadequate, wear a dust mask/particulate respirator (refer to AS/NZS 1715 & 1716).
Eye/Face Protection	Safety glasses or chemical goggles recommended when handling dusty product to avoid mechanical eye irritation.
Hand Protection	Wear general-purpose protective gloves (e.g. nitrile) for prolonged or repeated contact.
Skin/Body Protection	Wear appropriate protective clothing to avoid unnecessary skin contact. Recommended: overalls, safety shoes.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling and before eating, drinking or using the toilet. Remove and launder contaminated clothing before reuse.
Biological Limits	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Granules
Colour	White
Odour	Practically odourless; may develop a faint ammonia odour on prolonged exposure to moisture
pH (10% solution in water)	Approximately 7.2 – 8.0 (near neutral)
Water Solubility	Highly soluble in water: approximately 1,080 – 1,200 g/L at 20–25 °C. Slightly soluble in alcohol; poorly soluble in most non-polar organic solvents.
Total Nitrogen (N)	≥ 46%
Biuret	≤ 1.5%
Purity	≥ 99% (as urea)
Melting Point	Approximately 132.7 °C (decomposes on/shortly after melting)
Boiling Point	Not applicable (solid; decomposes before boiling)
Flash Point	Not applicable
Decomposition Temperature	Onset approximately 132.7 °C (releases ammonia); more extensive thermal decomposition above ~190 °C releases oxides of nitrogen, biuret and cyanuric acid
Vapour Pressure	Negligible at room temperature
Relative Vapour Density	Not applicable
Density (solid)	Approximately 1.32 g/cm³
Bulk Density	Approximately 750 – 800 kg/m³ (typical, granular fertiliser)
Molecular Weight	60.06 g/mol
Particle Size	Typically 2 – 4 mm granules (fertiliser grade)
Partition Coefficient (n-octanol/water)	Log P_{ow} approximately −1.6 to −2.1 (highly hydrophilic; not expected to bioaccumulate)
Evaporation Rate	Not applicable
Viscosity	Not applicable (solid); approximately 1.8 mPa·s for a 46% aqueous solution at 20 °C
Oxidising Properties	Not classified as oxidising
Explosive Properties	Product is not explosive. Note: can form explosive urea nitrate on contact with concentrated nitric acid (see SECTION 10).

10. STABILITY AND REACTIVITY

General Information	No dangerous reactions known under normal conditions of use.
Chemical Stability	Stable under normal conditions of storage and handling when kept dry. Hygroscopic – will absorb moisture from the air and may cake if not properly stored.
Conditions to Avoid	Avoid generating dust. Avoid exposure to moisture. Avoid strong heating (>130 °C) and contamination with incompatible materials.
Materials to Avoid	Strong acids, strong bases, strong oxidising agents, chlorates, hypochlorites/chlorine, and nitrites. Forms urea nitrate (explosive) on contact with concentrated nitric acid.
Hazardous Decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. At elevated temperature, decomposition may release ammonia, oxides of nitrogen (NOx), carbon oxides, biuret and cyanuric acid.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	Acute toxicity (oral): Not classified – practically non-toxic (LD50 > 5,000 mg/kg). Acute toxicity (dermal): Not classified. Acute toxicity (inhalation): Not classified. Skin corrosion/irritation: Not classified – may cause mild, transient irritation from dust. Eye damage/irritation: Not classified – may cause mild, transient irritation from dust. Respiratory/skin sensitisation: Not classified. Germ cell mutagenicity: Not classified. Carcinogenicity: Not classified – not listed by IARC, NTP or OSHA as a carcinogen. Reproductive toxicity: Not classified. STOT (single exposure): Not classified. STOT (repeated exposure): Not classified. Aspiration toxicity: Not applicable (solid).
Likely Routes of Exposure	Ingestion, inhalation of dust, and eye/skin contact.
Ingestion (Oral)	Acute toxicity: LD50, Rat: approximately 8,471 mg/kg bw – practically non-toxic. Urea is a normal human metabolic product (produced endogenously and excreted in urine). Ingestion of large amounts may cause mild gastrointestinal discomfort, nausea or vomiting.
Dermal	Not expected to be significantly absorbed through intact skin; not classified for acute dermal toxicity. Prolonged or repeated contact may cause mild irritation in sensitive individuals.
Inhalation	Inhalation of dust may cause transient irritation to the mucous membranes of the respiratory tract.
Chronic Effects	None expected under normal occupational handling of this product. No evidence of chronic systemic toxicity from typical exposure.
Carcinogen Category	None

Note: Urea (CAS 57-13-6) is a well-characterised, widely studied compound used extensively in agriculture, industry, cosmetics and pharmaceuticals, and is naturally produced by the human body. Toxicological figures shown are based on published literature and regulatory assessments for this substance.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Not classified as hazardous to the aquatic environment. Indicative published data: Acute LC50, Fish (96 h, *Poecilia reticulata*): approximately 16,200 – 18,300 mg/L; Acute EC50, Daphnia magna (48 h): approximately 3,910 mg/L; EC50, Algae (72 h): approximately 24,500 mg/L. As a concentrated, readily available source of nitrogen, uncontrolled release of large quantities to water bodies can promote excessive algal or aquatic plant growth (eutrophication), even though the substance itself is not acutely toxic to aquatic organisms.
Persistence/Degradability	Urea is readily biodegraded/hydrolysed (via microbial and enzymatic urease activity) to ammonium and carbon dioxide in soil and water; it is not considered persistent.
Bioaccumulation Potential	Low bioaccumulation potential (BCF < 10; log P_{ow} approximately −1.6). Not expected to bioaccumulate in aquatic organisms.
Mobility	Highly soluble and mobile in water; rapidly hydrolysed to ammonium in soil, which may subsequently nitrify or volatilise depending on conditions.
Environmental Fate	When used as directed as an agricultural nitrogen fertiliser at recommended application rates, the product is not expected to cause adverse ecological effects. Uncontrolled or excessive release, spillage or disposal to waterways should be avoided due to the potential for nutrient enrichment.
Environmental Impact	Not classified as hazardous to aquatic life; however, avoid uncontrolled release to the environment in bulk quantities (see SECTION 6).

13. DISPOSAL CONSIDERATIONS

General Information	Not classified as hazardous waste under normal circumstances. Where possible, collect and reclaim spilled/unused product for its intended fertiliser use. Otherwise dispose of contents/residues in accordance with local/regional/national waste regulations. Do NOT allow large quantities of product to enter drains, waterways or soil uncontrolled.

Contaminated Packaging	Empty containers/bags may retain traces of product residue. Dispose of, or recycle, contents/container in accordance with local/regional/national regulations at an approved waste handling site.

14. TRANSPORT INFORMATION

Proper Shipping Name	Not Regulated for Transport (Urea – not a Dangerous Good)
UN Number	Not applicable
Class	Not classified as Dangerous Goods under the ADG Code, ADR, IMDG Code or IATA DGR
Subsidiary Risk(s)	None
Pack Group	Not applicable
Hazchem Code	Not applicable
Marine Pollutant	No
Special Precautions	Although not regulated as Dangerous Goods, keep product dry during transport and storage to prevent caking, and follow standard bulk fertiliser handling and transport codes/ guidelines applicable in the country of transport.
Comments	Not classified as Dangerous Goods for transport. Users should confirm current transport requirements for bulk agricultural fertiliser shipments with a qualified dangerous goods/ logistics consultant where relevant.

15. REGULATORY INFORMATION

Poisons Schedule (Aust)	Not Scheduled (SUSMP)
General Information	Product is manufactured for use as an agricultural nitrogen fertiliser. Users should confirm local fertiliser registration and any applicable transport/handling requirements in the country of sale prior to distribution.

National/Regional Inventories

Inventory	Status
Australia (AICS)	Listed
New Zealand (NZIoC)	Listed
Europe (EINECS)	Listed – EC 200-315-5
USA (TSCA)	Listed
Canada (DSL)	Listed
China (IECSC)	Listed
Japan (ENCS)	Listed
Korea (KECI)	Listed
Iran (National Chemical Inventory)	Not Determined

16. OTHER INFORMATION

Abbrev.	Meaning	Abbrev.	Meaning
≥	Greater Than or Equal To	≤	Less Than or Equal To
AICS	Australian Inventory of Chemical Substances	GHS	Globally Harmonised System of Classification and Labelling of Chemicals
CAS	Chemical Abstracts Service (Registry Number)	LD50	Lethal Dose, 50% – the amount of a material, given all at once, which causes the death of 50% of a group of test animals

EC	European Community (Number)	LC50	Lethal Concentration, 50% – the concentration of a material in air/water which causes the death of 50% of a group of test animals
EC50	Effective Concentration, 50% – the concentration causing a defined effect in 50% of test organisms	N/A	Not Applicable
N	Nitrogen	NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development	ppm	Parts per Million
STOT	Specific Target Organ Toxicity	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
UN	United Nations	CH_4N_2O	Urea (Carbamide)

Revision	1
Revision Date	August 2026
Supersedes	Not applicable – first issue

This Safety Data Sheet has been prepared using published literature and regulatory reference data for urea (CAS 57-13-6), a well-characterised, widely used agricultural, industrial and pharmaceutical chemical, together with the specifications provided by Green Pick Australia for this product. To the best of our knowledge the information contained herein is accurate as of the date of issue; it is provided without warranty, expressed or implied. It is the responsibility of the user to determine the suitability of this information for their particular use and to comply with all applicable local, national and international regulations, including transport and poisons scheduling requirements.