Material Safety Data Sheet
Urea C-Tech Treated Technical Grade

Edition: 13/01/2017

In compliance with Regulation (EC) No. 1907/2006, (REACH) and Annex II/ Regulation (EU) No. 2015/830. - United Kingdom (UK)

1) Identification of substance/preparation and of the company undertaking

Material	Urea C-Tech Treated Technical Grade
EC No	200-315-5
CAS No	57-13-6
REACH Registration No	01-2119463277-33
Product code	PA38A8
Product type	Solid (granules prills)
Chemical formula	CH4N2O
Company	Inoxia Ltd 45.7 Dunsfold Park Stovolds Hill Cranleigh Surrey GU6 8TB Tel: 02032 909990 safety@inoxia.co.uk www.inoxia.co.uk

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

1.2.1. Relevant identified uses

Notes:
The safety data sheet and any attached exposure scenario are compiled in accordance with the REACH regulation and in no way reflects the specification, purity or quality standards required for specific applications and use of the product identified in section 1.1.

Identified uses:

- Industrial distribution.
- Industrial USE to formulate chemical product mixtures.
- Industrial USE as chemical intermediate.
- Industrial Use for flue gas NOx and SOx reduction.
- Industrial USE as reactive agent/processing aid and for general chemical applications.
- Industrial USE as chemical/process nutrient.
- Industrial USE for surface/article treatment.
- Industrial USE to manufacture specialist chemical/other products.
- Industrial USE as part of specialist chemicals/other products.
- Professional formulation of mixtures.
- Professional USE as chemical/process nutrient.
- Professional USE as reactive agent/processing aid and for general chemical applications.
- Professional USE as a laboratory/research chemical.

- Professional USE for surface/article treatment.
- Professional USE as part of specialist chemicals/other products.
- Industrial USE to formulate fertilisers product mixtures.
- Industrial USE in manufacture of paper products.
- Industrial USE as a laboratory/research chemical.
- Professional distribution.

1.2.2. Uses advised against
None identified.

2) Hazards identification.

2.1. Classification of the substance or mixture
Product definition: Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Classification: Not classified.
The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

2.2. Label elements

Signal word: No signal word.
Hazard statements: Not applicable.

Precautionary statements
General: Not applicable.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Special packaging requirements
Containers to be fitted with: Not applicable
child-resistant fastenings
Tactile warning of danger: Not applicable.

2.3. Other hazards
Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII: Not applicable.
Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII: Not applicable.
Other hazards which do not result in classification: Product forms slippery surface when combined with water.

3) Composition/information on ingredient

3.1. Substances

Mono-constituent substance

Product/Ingredient name	Urea
Identifiers	RRN: 01-2119463277- 33 EC: 200-315-5 CAS : 57-13-6
%	100
Classification: Regulation (EC) No. 1272/2008 [CLP]	
Type	[A]

Type

[A] Constituent

[B] Impurity

[C] Stabilizing additive

See Section 16 for the full text of the H statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8

4) First Aid Measures

4.1. Description of first aid measures

First-aid measures after 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.

First-aid measures after skin contact: Wash with soap and water. Get medical attention if irritation develops.

First-aid measures after eye contact: Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention if irritation occurs.

First-aid measures after 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.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

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

Potential acute health effects

Eye contact: No known significant effects or critical hazards.
Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. 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.

Specific treatments: No specific treatment.

5) Fire Fighting

5.1. Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media: None identified.

5.2. Special hazards arising from the substance or mixture

Hazards from the substance or mixture: No specific fire or explosion hazard.
Hazardous thermal decomposition products: Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
nitrogen oxides
ammonia

Avoid breathing dusts, vapours or fumes from burning materials. In case of inhalation of decomposition products in a fire, symptoms may be delayed.

5.3. Advice for firefighters

Special precautions for firefighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters: 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.
Additional information: None.

6) Accidental Release

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2. Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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

Small spill: 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.
Large spill: Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.

7) Handling/Storage

7.1. Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2. Conditions for safe storage, including any incompatibilities

Recommendations: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3. Specific end use(s)

Recommendations: Not available.

Industrial sector specific solutions: Not available.

8) Exposure Controls/Personal Protection

8.1. Control parameters

Occupational exposure limits

Remark: No exposure limit value known.

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Reference should be made to monitoring standards, such as the following:

European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy)

European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents)

European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents)

Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Urea	DNEL	Short term Dermal	580 mg/kg bw/day	Workers	Systemic
Urea	DNEL	Short term Inhalation	292 mg/m³	Workers	Systemic
Urea	DNEL	Long term Dermal	580 mg/kg bw/day	Workers	Systemic
Urea	DNEL	Long term Inhalation	292 mg/m³	Workers	Systemic

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
Urea	PNEC	Fresh water	0.047 mg/l	Assessment Factors
Urea	PNEC	Salt water	0.047 mg/l	Not applicable.

8.2. Exposure controls

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. A washing facility or water for eye and skin cleaning purposes should be present.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin Protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9) Physical/Chemical Properties

Appearance

Physical state	Solid (granules)
Colour	White
Odour	Odourless
Odour threshold	Not determined
pH	9 [Conc. (% w/w): 100 g/l]
Melting point/freezing point	133 - 134 °C
Initial boiling point and boiling range	Not determined
Flash point	Not applicable
Evaporation rate	Not determined
Flammability (solid, gas)	Not flammable
Upper/lower flammability or explosive limits	Lower: not determined Upper: not determined
Vapour pressure	0.000016 hPa
Vapour density	2.07 [Air = 1]
Relative density	Not determined
Bulk density	760 - 800 kg/m3
Density	1.33 g/cm3
Solubility(ies)	Easily soluble in the following materials: cold water
Water solubility	624 g/l @ 20 °C
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature	Not determined
Viscosity	Dynamic: Not determined Kinematic: Not determined
Explosive properties	None.
Oxidizing properties	None.

9.2. Other information

No additional information

10) Stability/Reactivity

10.1. Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2. Chemical stability

The product is stable.

10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid

Avoid contamination by any source including metals, dust and organic materials.

10.5. Incompatible materials

Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.

Remark: acids

Alkalis

Nitrites and nitrates

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11) Toxicological Info

11.1. Information on toxicological effects

Acute Toxicity

Product/ingredient name	Result	Species	Dose	Exposure	References
urea					
	LD50 Oral	Rat	14,300 mg/kg OECD 401	Not applicable.	IUCLID 5

Conclusion/Summary: No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

Skin: No known significant effects or critical hazards.

Eyes: No known significant effects or critical hazards.

Respiratory: No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Skin: No known significant effects or critical hazards.

Respiratory: No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary: No known significant effects or critical hazards.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure	References
urea	Negative - Oral - NOAEL	Rat	2,250 mg/kg	7 days per week	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive Toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
urea	Not applicable.	Not applicable.	Negative	Rat	Oral: 500 mg/kg	7 days per week	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary: No known significant effects or critical hazards.
Information on the likely routes of exposure: No known significant effects or critical hazards.

Potential acute health effects

Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Eye contact: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No specific data.
Ingestion: No specific data.
Skin contact: No specific data.
Eye contact : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure	References
urea	Chronic NOAEL Oral	Rat	2,250 mg/kg	12 months 7 days per week	IUCLID 5

Conclusion/Summary: No known significant effects or critical hazards.
General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Toxicokinetics
Absorption: Rapidly absorbed.
Distribution: Not metabolized within liver tissues before entering the systemic circulation.
Metabolism: Metabolite is not known to be toxic.
Elimination: The chemical and its metabolites are fully excreted and do not accumulate within the body.

12) Ecological Information

12.1. Toxicity

Product/ingredient name	Result	Species	Exposure	References
Urea				
	Acute LC50 6,810 mg/l Fresh water	Fish	96 h	IUCLID 5
	Acute EC50 10,000 mg/l Fresh water	Water flea	24 h	IUCLID 5
	Chronic No-observable-effect-concentration 47 mg/l Fresh water	Algae	192 h	IUCLID 5

Conclusion/Summary: No known significant effects or critical hazards.

12.2. Persistence and degradability

Product/ingredient name: Urea
Test: 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test
Result: 96 % - Inherently biodegradable - 16 d
Dose: mg/l
Inoculum: Activated sludge
References: IUCLID
Conclusion/Summary: No known significant effects or critical hazards

12.3. Bioaccumulative potential

Product/ingredient name: Urea
LogPow: 1.73

BCF: Not applicable
Potential: low

12.4. Mobility in soil
S**oil/water partition coefficient:** Not available.
(KOC)
Mobility: This product may move with surface or groundwater flows because its water solubility is: high

12.5. Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

12.6. Other adverse effects
No known significant effects or critical hazards.

13) Disposal Considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1. Waste treatment methods
Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous Waste: Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

European waste catalogue (EWC)
Waste code: 06 10 99
Waste designation: wastes not otherwise specified

Packaging
Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
Special precautions: This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14) Transport Information

Regulation: ADR/RID

14.1 UN Number
Not regulated
14.2 UN Proper Shipping Name
Not applicable.
14.3 Transport Hazard Class(es)
Not applicable.
14.4. Packing group
Not applicable.
14.5. Environmental hazards
No

Regulation: ADN

14.1 UN Number
Not regulated
14.2 UN Proper Shipping Name
Not applicable.
14.3 Transport Hazard Class(es)
Not applicable.
14.4. Packing group
Not applicable.
14.5. Environmental hazards
No
Additional information
Danger code: Not applicable.

Regulation: IMDG

14.1 UN Number
Not regulated
14.2 UN Proper Shipping Name
Not applicable.
14.3 Transport Hazard Class(es)
Not applicable.
14.4. Packing group
Not applicable.
14.5. Environmental hazards
No
Additional information
Marine pollutant: no.

Regulation: IATA

14.1 UN Number
Not regulated
14.2 UN Proper Shipping Name
Not applicable.
14.3 Transport Hazard Class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

No

Additional information

Marine pollutant: no.

14.6. Special precautions for user

Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

14.8 IMSBC

Bulk cargo shipping name: UREA
Class: Not applicable.
GrouP: C
Marpol V: Non-HME

15) Regulatory Information

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

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorization

Annex XIV: None of the components are listed.

Substances of very high concern: None of the components are listed.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Other EU regulations

Europe inventory: All components are listed or exempted.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Notes : To our knowledge no other country or state specific regulations are applicable.

15.2 Chemical Safety Assessment: Complete.

16) Other Information

Abbreviations and acronyms:

ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
DMEL = Derived Minimal Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
PBT = Persistent, Bioaccumulative and Toxic
vPvB = Very Persistent and Very Bioaccumulative
bw = Body weight

Key literature references and sources for data

EU REACH IUCLID5 CSR.
National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances.
IHS, 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.
Regulation (EC) No 1272/2008 Annex VI.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification: not classified
Justification: calculation method

Full text of abbreviated H statements: Not applicable.
Full text of classifications: Not applicable
[CLP/GHS]

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