SAFETY DATA SHEET

Granular Urea

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

1.1 Product identifier

Product name	:	Granular Urea
EC number	:	200-315-5
REACH Registration number	:	01-2119463277-33
CAS number	:	57-13-6
Product code	:	PA385G
Product type	:	Solid (granulates)
Other means of identification	:	urea
Chemical formula	:	CH4N2O

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

Identified uses
Industrial distribution. Industrial USE to formulate fertilisers product mixtures. Professional formulation of fertiliser products. Professional USE as fertiliser at Farm - loading and spreading (includes soil conditioning). Professional USE as fertiliser in Greenhouse (e.g. Fertigation, includes pH control of fertiliser solution with acid). Professional USE as liquid fertiliser in open field (e.g. Fertigation). Professional USE as fertiliser - maintenance of equipment.

Uses advised against	:	None identified.

1.3 Details of the supplier of the safety data sheet

Yara UK Limited

Address

Street	:	Harvest House, Europarc
Postal code	:	DN37 9TZ
City	:	Grimsby, North East Lincolnshire
Country	:	United Kingdom
Telephone number	:	+44 (0) 1472 889250
Fax no.	:	+44 (0) 1472 889251
e-mail address of person responsible for this SDS	:	yarauk.hesq@yara.com

1.4 Emergency telephone number

National advisory body/Poison	:	Not available.

Center

Supplier

Telephone number : National Chemical Emergency Centre
+44 (0) 1865 407333

Hours of operation : 24h

SECTION 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.

Classification according to Directive 67/548/EEC [DSD]

Classification : Not classified.

See Section 16 for the full text of the R phrases or H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : No signal word.

Precautionary statements

Supplemental label elements : 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 child-resistant fastenings : Not applicable.

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.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mono-constituent substance

Product / ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
urea	RRN: 01-2119463277-33 EC: 200-315-5 CAS : 57-13-6	>=90 - <100	Not classified.	Not classified.	[A]

Type
[A] Constituent
[B] Impurity
[C] Stabilizing additive

See Section 16 for the full text of the R phrases or H statements declared above.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

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

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.

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

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.

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.

SECTION 5: Firefighting measures

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, vapors 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 fire-fighters : 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 : Not available.

SECTION 6: Accidental release measures

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 specialised 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 materials 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. Material free from contamination can be used for its original purpose.

Large spill : Immediately contact emergency personnel. 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. Material free from contamination can be used for its original purpose.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

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).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Product forms slippery surface when combined with water.

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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

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).

8.1 Control parameters

Occupational exposure limits

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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

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

PNECs

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	

8.2 Exposure controls

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

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.

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.

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 : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Solid (granulates)
Color : White.
Odor : Odorless.slight, ammoniacal
Odor threshold : Not determined.
pH : 9.5 [Conc. (% w/w): 100 g/l]

Melting point/freezing point	:	134 °C
Initial boiling point and boiling range	:	Not determined.
Flash point	:	Not applicable
Evaporation rate	:	Not determined
Flammability (solid, gas)	:	Non-flammable.
Burning time	:	Not determined
Burning rate	:	Not determined
Upper/lower flammability or explosive limits	:	**Lower:** Not determined **Upper:** Not determined
Vapor pressure	:	0.000016 hPa @ 20 °C
Vapor density	:	Not determined
Relative density	:	Not determined
Bulk density	:	Not determined
Density	:	1.33 g/cm3
Solubility(ies)	:	Easily soluble in the following materials: cold water
Water solubility	:	> 100 g/l
Partition coefficient: n-octanol/water	:	Not determined
Auto-ignition temperature	:	Not determined
Viscosity	:	**Dynamic:** Not determined **Kinematic:** Not determined
Explosive properties	:	Non-explosive.
Oxidizing properties	:	None.

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	Stable under recommended storage and handling conditions (see section 7).
10.3 Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	No specific data.
10.5 Incompatible materials	:	Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.
Remark	:	Reactive or incompatible with the following materials: Oxidizing agents acids alkalis Nitrites and nitrates
10.6 Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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	-	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	2250 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	-	-	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	2250 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.

SECTION 12: Ecological information

12.1 Toxicity

Product / ingredient name	Result	Species	Exposure	References
urea				
	Acute LC50 6,810 mg/l Fresh water	Fish - Fish	96 h	IUCLID 5
	Acute EC50 10,000 mg/l Fresh water	Aquatic invertebrates. Water flea	24 h	IUCLID 5
	Acute NOEC 47 mg/l Fresh water	Aquatic plants - Algae	192 h	IUCLID 5

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

12.2 Persistence and degradability

Product / ingredient name	Test	Result	Dose	Inoculum	References
urea		96 % - 16 d		Activated sludge	

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

12.3 Bioaccumulative potential

Product / ingredient name	LogPow	BCF	Potential	References
urea	1.73-2.11-1.73	-	low	

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

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

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.

SECTION 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

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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.

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	Waste designation
06 10 99	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.

SECTION 14: Transport information

Regulation: ADR/RID	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	**: ADR/RID**

Regulation: ADN	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	**: ADN**
Marine pollutant	: No.

Regulation: IMDG	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	

14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	**: IMDG**
Marine pollutant	**:** No.

Regulation: IATA	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	**: IATA**
Marine pollutant	**:** No.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

14.8 IMSBC

Proper shipping name : UREA
Class : Not applicable.
Group : C

SECTION 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
Substances of very high concern

Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso II Directive
This product is not controlled under the Seveso II Directive.

National regulations

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

15.2 Chemical Safety Assessment : Complete.

SECTION 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	Justification
Not classified.	Calculation method

Full text of abbreviated H statements : Not applicable.
Full text of classifications [CLP/GHS] : Not applicable.
Full text of abbreviated R phrases : Not applicable.
Date of printing : 26.03.2014
Date of issue/ Date of revision : 13.12.2013
Date of previous issue : 00.00.0000
Version : 1.0
Prepared by : Yara Product Classifications & Regulations.
|| Indicates information that has changed from previously issued version.

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