

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

1.1. Product identifier

Name of the substance	Urea
Identification number	200-315-5 (EC number)
Registration number	01-2119463277-33-XXXX
Synonyms	Carbamide, Carbamidic Acid
Product code	KF_Urea_EU_EN
Issue date	25-July-2018
Version number	01
Revision date	-
Supersedes date	-

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

Identified uses	Fertiliser
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Company name	Koch Fertilizer, LLC
	4111 E 37th Street North
	PO Box 2219
	Wichita, KS, 67201-2219
	kochmsds@kochind.com
	1-316-828-7672
Emergency	For Chemical Emergency
	Call CHEMTREC day or night
	1.800.424.9300
	Mexico - 1.800.681.9531
	Outside USA/Canada
	1.703.527.3887
	(collect calls accepted)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary	Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.
----------------	--

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains:	Urea*
Hazard pictograms	None.
Signal word	None.
Hazard statements	The substance does not meet the criteria for classification.

Precautionary statements

Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information

2.3. Other hazards	None.
	Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Urea*	95 - 100	57-13-6 200-315-5	01-2119463277-33-XXXX	-	

Classification: -

Composition comments

*Treated with a non-hazardous anti-caking agent, less than 1% by weight.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation

Move to fresh air. Get medical attention if any discomfort continues.

Skin contact

Wash contact areas with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Dust in the eyes: Do not rub eyes. Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Ingestion

Rinse mouth thoroughly. Get medical attention if any discomfort continues.

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

Eye contact: Symptoms can include irritation, redness, scratching of the cornea, and tearing.
Skin contact: Mild skin irritation.
Dust may irritate throat and respiratory system and cause coughing.

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

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

Urea is non-combustible under most conditions. However, during a fire, irritating/toxic gases may be generated. The dust can be ignited at very high temperatures, but not expected to explode (minimum ignition temperature (cloud) = 900 deg C).

5.1. Extinguishing media

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

None known.

5.2. Special hazards arising from the substance or mixture

Fire will produce irritating, corrosive and/or toxic gases.

5.3. Advice for firefighters

Special protective equipment for firefighters

Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Move containers from fire area if you can do it without risk. Use water spray to prevent dust formation, absorb heat, keep containers cool and protect fire-exposed material.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Avoid inhalation of dust and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing. Use personal protection recommended in Section 8 of the SDS.

For emergency responders

Use personal protection as recommended in section 8 of the SDS.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Stop the flow of material, if this is without risk. Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. After removal flush contaminated area thoroughly with water.

Never return spills to original containers for re-use.

6.4. Reference to other sections

For personal protection, see Section 8 of the SDS. For waste disposal, see section 13 of the SDS.

Urea

900102 Version #: 01 Revision date: - Issue date: 25-July-2018

SDS UK

2 / 7

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling** Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Use only with adequate ventilation. Observe good industrial hygiene practices. Use work methods which minimise dust production. Keep the workplace clean.
- 7.2. Conditions for safe storage, including any incompatibilities** Keep container tightly closed. Store away from incompatible materials.
- 7.3. Specific end use(s)** Fertiliser

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

- Occupational exposure limits** No exposure limits noted for ingredient(s).
- Biological limit values** No biological exposure limits noted for the ingredient(s).
- Recommended monitoring procedures** Follow standard monitoring procedures.

Derived no effect levels (DNELs)

General Population

Product	Value	Assessment factor	Notes
Urea* (CAS 57-13-6)			
Long-term, Systemic, Dermal	580 mg/kg bw/day	12	Developmental toxicity
Long-term, Systemic, Inhalation	125 mg/m3	12	Developmental toxicity
Long-term, Systemic, Oral	42 mg/kg bw/day	12	Developmental toxicity
Short-term, Systemic, Dermal	580 mg/kg bw/day	12	Developmental toxicity
Short-term, Systemic, Inhalation	125 mg/m3	12	Developmental toxicity
Short-term, Systemic, Oral	42 mg/kg bw/day	12	Developmental toxicity

Workers

Product	Value	Assessment factor	Notes
Urea* (CAS 57-13-6)			
Long-term, Systemic, Dermal	580 mg/kg bw/day	12	Developmental toxicity
Long-term, Systemic, Inhalation	292 mg/m3	12	Developmental toxicity
Short-term, Systemic, Inhalation	292 mg/m3	12	Developmental toxicity

Predicted no effect concentrations (PNECs)

Product	Value	Assessment factor	Notes
Urea* (CAS 57-13-6)			
Freshwater	0.05 mg/l	1000	

- Exposure guidelines** Follow standard monitoring procedures.

8.2. Exposure controls

- Appropriate engineering controls** Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust.

Individual protection measures, such as personal protective equipment

- General information** Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Use personal protective equipment as required.
- Eye/face protection** Use tight fitting goggles if dust is generated.
- Skin protection**
- Hand protection** Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
 - Other** Risk of contact: Wear appropriate clothing to prevent any possibility of skin contact.
- Respiratory protection** Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter.
- Thermal hazards** Wear appropriate thermal protective clothing, when necessary.
- Hygiene measures** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practices.

- Environmental exposure controls** Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Urea

900102 Version #: 01 Revision date: - Issue date: 25-July-2018

SDS UK

3 / 7

Appearance	White granules with faint ammonia odor.
Physical state	Solid.
Form	Granular. Pellets. Prilled.
Colour	White.
Odour	Ammonia-like. Faint, characteristic.
Odour threshold	Not available.
pH	8 - 8.5 10% solution
Melting point/freezing point	132.7 °C (270.86 °F)
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	1.335 (water=1)
Solubility(ies)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Viscosity	Not applicable.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	
Bulk density	48 - 52 lb/ft ³ (packed)
Molecular weight	60.06 g/mol

SECTION 10: Stability and reactivity

10.1. Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
10.2. Chemical stability	Normally stable. May gradually give off ammonia. The product is hygroscopic and will absorb water by contact with the moisture in the air.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Moisture. High temperatures. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents. Nitric acid. Nitrites.
10.6. Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Ammonia. Biuret.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	High concentrations of dust may irritate throat and respiratory system and cause coughing.
Skin contact	Dust may irritate skin.
Eye contact	Dust may irritate the eyes.
Ingestion	May cause discomfort if swallowed.
Symptoms	Eye contact: Symptoms can include irritation, redness, scratching of the cornea, and tearing. Skin contact: Mild skin irritation. Dust may irritate throat and respiratory system and cause coughing.
11.1. Information on toxicological effects	
Acute toxicity	May cause discomfort if swallowed.

Product	Species	Test Results
Urea* (CAS 57-13-6)		
Acute		
Oral		
LD50	Rat	14300 mg/kg 8471 mg/kg
Skin corrosion/irritation	May cause irritation through mechanical abrasion.	
Serious eye damage/eye irritation	May cause irritation through mechanical abrasion.	
Respiratory sensitisation	Based on available data, the classification criteria are not met.	
Skin sensitisation	Not a skin sensitiser.	
Germ cell mutagenicity	Based on available data, the classification criteria are not met.	
Carcinogenicity	Not classifiable as to carcinogenicity to humans.	
Reproductive toxicity	Based on available data, the classification criteria are not met.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.	
Aspiration hazard	Not an aspiration hazard.	
Mixture versus substance information	No data available.	
Other information	No other specific acute or chronic health impact noted.	

SECTION 12: Ecological information

- 12.1. Toxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
Urea* (CAS 57-13-6)		
Aquatic		
Algae	EC10	Algae 47 mg/l, 192 hours
Crustacea	LC50	Water flea (Daphnia magna) > 10000 mg/l, 24 hours
Fish	LC50	Leuciscus idus > 6810 mg/l, 96 hours
12.2. Persistence and degradability	No data available.	
12.3. Bioaccumulative potential	No data available.	
Partition coefficient n-octanol/water (log Kow)	Not available.	
Bioconcentration factor (BCF)	Not available.	
12.4. Mobility in soil	This product is water soluble and may disperse in soil.	
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.	
12.6. Other adverse effects	No data available.	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose in accordance with all applicable regulations. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.
EU waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk Not applicable. However, the product is covered under Appendix I of the IMSBC Code.
according to Annex II of
MARPOL 73/78 and the IBC
Code

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended. The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

List of abbreviations

PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.
EC10: Effective concentration, 10%.

LC50: Lethal Concentration, 50%.

LD50: Lethal Dose, 50%.

References

EPA: AQUIRE database

HSDB® - Hazardous Substances Data Bank

RTECS

ECHA CHEM

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

None.

Training information

Follow training instructions when handling this material.

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.