MATERIAL SAFETY DATA SHEET

KOCH NITROGEN INTERNATIONAL SARL

1. Product and Company Identification

Material name **Urea**

Revision date 04-17-2012

Version # 01

CAS # 57-13-6

MSDS Number KNI_Urea_NA_EN

Product use Fertilizer

Synonym(s) Carbamide, Carbamidic Acid

Manufacturer/Supplier

Koch Nitrogen International SARL
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316-828-7672

Emergency

Emergency For Chemical Emergency
Call CHEMTREC day or night
USA/Canada - 1-800-424-9300
Outside USA/Canada
1.703.527.3887
(collect calls accepted)

2. Hazards Identification

Physical state Solid.

Appearance White granules with faint ammonia odor.

Emergency overview Dusts may irritate the respiratory tract, skin and eyes.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Routes of exposure Eye contact. Skin contact. Inhalation.

Eyes Contact may cause eye irritation. Dust or powder may irritate eye tissue.

Skin Dust or powder may irritate the skin. Skin irritation occurs on contact with moist or wet skin.

Inhalation Dust may irritate throat and respiratory system and cause coughing. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Ingestion No harmful effects expected in amounts likely to be ingested by accident. However, accidental ingestion of the content may cause discomfort.

Signs and symptoms Symptoms can include irritation, redness, scratching of the cornea, and tearing.

Potential environmental effects 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.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Urea*	57-13-6	95 - 100

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

4. First Aid Measures

First aid procedures

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.

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

Inhalation	Move to fresh air. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly. Get medical attention if any discomfort continues.
Notes to physician	Treat symptomatically.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	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.
Extinguishing media	
Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Protection of firefighters	
Specific hazards arising from the chemical	Fire will produce irritating, corrosive and/or toxic gases.
Protective equipment and precautions 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.
Fire fighting equipment/instructions	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.
Hazardous combustion products	Carbon oxides. Nitrogen Oxides Cyanide compounds. Ammonia. Biuret.

6. Accidental Release Measures

Personal precautions	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 MSDS.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers or watercourses.
Methods for containment	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product.
Methods for cleaning up	Avoid dust formation. After removal flush contaminated area thoroughly with water. Never return spills to original containers for re-use.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Avoid inhalation of dust and contact with skin and eyes. Use only with adequate ventilation. Use work methods which minimize dust production. Keep the workplace clean.
Storage	Store in a well-ventilated place. Store in a cool, dry place. Keep container tightly closed. Store away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Exposure guidelines	ACGIH has limits for “nuisance dusts” which is TLV–TWA = 10 mg/m3.
Engineering controls	Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust.
Personal protective equipment	
Eye / face protection	Use tight fitting goggles if dust is generated.
Skin protection	Risk of contact: Wear appropriate clothing to prevent any possibility of skin contact.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998.

General hygiene considerations	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 practice.

9. Physical & Chemical Properties

Appearance	White granules with faint ammonia odor.
Color	White.
Odor	Ammonia-like. Faint, characteristic.
Odor threshold	Not available.
Physical state	Solid.
Form	Granular. Pellets. Prilled.
pH	8 - 8.5 10% solution
Melting point	270.9 °F (132.7 °C)
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.335 (water=1)
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Bulk density	48 - 52 lb/ft³ (Packed)
Molecular weight	60.06 g/mol

10. Chemical Stability & Reactivity Information

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.
Conditions to avoid	Moisture. High temperatures. Contact with incompatible materials.
Incompatible materials	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Ammonia. Biuret.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Test Results
Urea* (57-13-6)	Acute Oral LD50 Rat: 8471 mg/kg

Acute effects	Dust in the eyes will cause irritation. Dust may irritate skin. High concentrations of dust may irritate throat and respiratory system and cause coughing.
Sensitization	Not a skin sensitizer.
Chronic effects	Frequent inhalation of dust over a long period of time increases the risk of developing asthma, chronic lung diseases, and skin irritation.

Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Mutagenicity	No data available.
Reproductive effects	No data available.
Symptoms and target organs	Symptoms can include irritation, redness, scratching of the cornea, and tearing.
Further information	No other specific acute or chronic health impact noted.

12. Ecological Information

Ecotoxicological data

Product	Test Results
Urea* (57-13-6)	EC50 Water flea (Daphnia magna): 3910 mg/l 48 hours

Ecotoxicity	The product components are 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.
Environmental effects	The product may cause risk of hazardous effects to the environment.
Persistence and degradability	Not available.
Bioaccumulation / Accumulation	No data available.
Partition coefficient (n-octanol/water)	Not available.
Mobility in environmental media	The product is water soluble and may spread in water systems.

13. Disposal Considerations

Disposal instructions	Dispose of this material and its container to hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
CERCLA/SARA Hazardous Substances - Not applicable.

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CRF 355, Appendix A)	No
Section 311/312 (40 CFR 370)	No
Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)	Not controlled
Food and Drug Administration (FDA)	Total food additive Direct food additive GRAS food additive
Canadian regulations	This is not a WHMIS controlled product.
WHMIS status	Non-controlled

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0
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.
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