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

1.1. Product identifier
Name of the substance: Urea
Identification number: 57-13-6
Registration number: -
Synonyms: Carbamide, Carbamidic Acid
SDS Number: JHB_Urea_EU_EN
Issue date: 01-February-2013
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
Supplier
Company name: Bunn Fertiliser Limited
Address: Lakeside 500, 1st Floor
Old Chapel Way, Broadland Business Park
Norwich, NR7 0WG
UK
Telephone: (0845) 1662222
E-mail: info@bunnfertiliser.com
Contact person: Not available.

1.4. Emergency telephone number
For Chemical Emergency
Call CHEMTREC day or night
USA/Canada - 1-800-424-9300
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 Directive 67/548/EEC or 1999/45/EC as amended
This substance does not meet the criteria for classification according to Directive 67/548/EEC as amended.

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
Physical hazards: Not classified for physical hazards.
Health hazards: Occupational exposure to the substance or mixture may cause adverse health effects. Accidental ingestion of urea fertilizer caused nausea, persistent violent vomiting, excitement and convulsions. Complete recovery was observed within a few days. However, ingestion is not likely to be a primary route of occupational exposure.
Specific hazards: Dust may irritate skin. High concentrations of dust may irritate throat and respiratory system and cause coughing. Accidental ingestion of urea fertilizer caused nausea, persistent violent vomiting, excitement and convulsions. Complete recovery was observed within a few days. However, ingestion is not likely to be a primary route of occupational exposure.

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

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended
Identification number: 57-13-6
Hazard pictograms: None.
Signal word: None.
2.3. Other hazards
Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea*</td>
<td>95 - 100</td>
<td>57-13-6</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200-315-5</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Classification:
- DSD: -
- CLP: -

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.

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

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. 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. Avoid dust formation.

6.4. Reference to other sections
See Section 8 for personal protective equipment.
For waste disposal, see Section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid inhalation of dust and contact with skin and eyes. Use only with adequate ventilation. Use work methods which minimise dust production. Keep the workplace clean.

7.2. Conditions for safe storage, including any incompatibilities
Store in a well-ventilated place. Store in a cool, dry place. 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 level (DNEL)
Not available.

Predicted no-effect concentrations (PNECs)
Not available.

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.

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
No specific recommendation made, but protection against nuisance dust must be used when the general level exceeds 10 mg/m3. Seek advice from local supervisor.

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

Appearance
White granules with faint ammonia odor.

Physical state
Solid.

Form

Colour
White.

Odour
Ammonia-like. Faint, characteristic.
Odour threshold Not available.
P pH 8 - 8.5 10% solution
Melting point/freezing point Not available.
Initial boiling point and boiling range Not available.
Flash point Not applicable.
Evaporation rate Not applicable.
Flammability (solid, gas) Not applicable.
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.
Viscosity Not applicable.
Explosive properties Not available.
Oxidizing properties Not available.
9.2. Other information
  Bulk density 48 - 52 lb/ft³ (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.
10.5. Incompatible materials Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.

SECTION 11: Toxicological information
General information Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure
  Ingestion May cause discomfort if swallowed.
  Inhalation Inhalation of dusts may cause respiratory irritation.
  Skin contact Dust may irritate skin.
  Eye contact Dust may irritate the eyes.
Symptoms Symptoms can include irritation, redness, scratching of the cornea, and tearing.
11.1. Information on toxicological effects
Acute toxicity Dust in the eyes will cause irritation. Dust may irritate skin. High concentrations of dust may irritate throat and respiratory system and cause coughing.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea* (CAS 57-13-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>8471 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation May cause skin irritation.
Serious eye damage/irritation Direct contact with eyes may cause temporary irritation.
Respiratory sensitisation No data available.
Skin sensitisation Not a skin sensitiser.
Germ cell mutagenicity No data available.
Carcinogenicity Not classifiable as to carcinogenicity to humans.
Reproductive toxicity No data available.
Specific target organ toxicity - single exposure No data available.
Specific target organ toxicity - repeated exposure No data available.
Aspiration hazard No data available.
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

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea* (CAS 57-13-6)</td>
<td>Aquatic Crustacea</td>
<td>EC50 Water flea (Daphnia magna) 3910 mg/l, 48 hours</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No data available.
12.3. Bioaccumulative potential
No data available.
12.4. Mobility in soil
No data available.
12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.
12.6. Other adverse 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.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
- Residual waste: Dispose in accordance with all applicable regulations.
- 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: Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR
The product is not covered by international regulation on the transport of dangerous goods.
RID
The product is not covered by international regulation on the transport of dangerous goods.
ADN
The product is not covered by international regulation on the transport of dangerous goods.
IATA
The product is not covered by international regulation on the transport of dangerous goods.
IMDG
The product is not covered by international regulation on the transport of dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
This substance/mixture is not intended to be transported in bulk.
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
  Not listed.
- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
  Not listed.
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
  Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
  Not listed.
- Regulation (EC) No. 689/2008 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
  Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA
  Not listed.

Authorisations
- Regulation (EC) No. 143/2011 Annex XIV Substances Subject to Authorisation
  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
  Not regulated.
- Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding
  Not regulated.

Other EU regulations
- Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances
  Not regulated.
- Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
  Not listed.
- Directive 94/33/EC on the protection of young people at work
  Not listed.

Other regulations
- The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended.

National regulations
- The product has not been classified as dangerous according to the legislation in force.

SECTION 16: Other information

List of abbreviations
- DNEL: Derived No-Effect Level.
- PNEC: Predicted No-Effect Concentration.
- PBT: Persistent, bioaccumulative and toxic.
- vPvB: Very Persistent and very Bioaccumulative.

References
- RTECS
- HSDB

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 statements or R-phrases and H-statements under Sections 2 to 15
- None.

Training information
- Not available.
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 of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.