1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION
PRODUCT NAME: Urea
PRODUCT NUMBER: EC-605

CHEMICAL NAMES/DESCRIPTION: Carbamide resin; Isourea; Carbonyl diamide;
Carbonyldiamine

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>% Comp</th>
<th>CAS #</th>
<th>EINECS #</th>
<th>TLV (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>100</td>
<td>57-13-6</td>
<td>200-315-5</td>
<td>10mg/m3, 8 hr TWA</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION
APPEARANCE AND ODOR: White crystals or white powder.

EMERGENCY OVERVIEW - IMMEDIATE HAZARD
CAUSES IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. UREA IS HARMFUL IF SWALLOWED OR INHALED.

EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING
LONG-TERM EXPOSURE TO HIGH AIRBORNE CONCENTRATIONS CAN LEAD TO PROTEIN METABOLISM, DISTURBANCES, MODERATE EMPHYSEMA, AND CHRONIC WEIGHT LOSS.

POTENTIAL HEALTH EFFECTS
INHALATION:
Causes irritation to the respiratory tract.

INGESTION:
Causes irritation to the gastro intestinal tract.

SKIN:
Causes irritation to the skin.

EYES:
Causes irritation to the eyes.

SIGNS AND SYMPTOMS OF OVEREXPOSURE
INHALATION:
Symptoms may include coughing, shortness of breath. May be absorbed into the bloodstream with symptoms similar to ingestion.

INGESTION:
Symptoms may include nausea, vomiting, and diarrhea. May also cause headache, confusion and electrolyte depletion.

SKIN:
Symptoms include redness, itching, and pain.

EYES:
Redness, itching and pain.

CARCINOGENICITY:
Not listed as a carcinogen by NTP or IARC.

MUTAGENICITY:
No information found.

REPRODUCTIVE TOXICITY:
4. FIRST AID MEASURES

INHALATION:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

INGESTION:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

SKIN:
Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

EYES:
Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

FLASH POINT: N.A
FLAMMABLE LIMITS: N.A

EXTINGUISHING MEDIA:
Use media appropriate to the primary cause of fire.

PROTECTIVE EQUIPMENT:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

HAZARDOUS COMBUSTION PRODUCTS:
Urea decomposes upon heating and can form products including ammonia, oxides or nitrogen, cyanuric acid, cyanic acid, biuret, carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Not considered an explosion hazard.

NFPA CODES: Health: 1 Flammability: 0 Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Ventilat e area. Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

WASTE DISPOSAL METHOD:
Disposal must be made in accordance with applicable federal, state, and local regulations

PERSONAL PRECAUTIONS:
Wear appropriate protective equipment as specified in section 8.

7. HANDLING AND STORAGE
HANDLING:
Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

STORAGE:
Keep in a tightly closed container, stored in a cooled, dry, ventilated area. Protect from physical damage. Isolate from incompatible materials (section 10).

STORAGE TEMPERATURE: Room Temperature

DISPOSAL:
Observe all national, state, and local regulations regarding disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS:
Component: Urea
ACGIH Threshold Limit Value (TLV): 10 mg/m3, 8-hour TWA
OSHA Permissible Exposure Limit (PEL): not available

ENGINEERING CONTROLS:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

RESPIRATORY PROTECTION:
For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

EYE PROTECTION:
Safety glasses

SKIN PROTECTION:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

OTHER CONTROL MEASURES:
N.A.

9. PHYSICAL PROPERTIES

Boiling Point Decomposes Evaporation Rate No data found.
Melting Point 132-135°C (270-275°F) Solubility in Water Very soluble.
Vapor Pressure No data found. PH 7.2 (10% in water)
Vapor Density mm Hg No data found. Specific Gravity Air = 1 1.32 @ 20°C
% Volatile by Volume 0 (H2O = 1)

10. STABILITY AND REACTIVITY

STABILITY:
This product is stable.

CONDITIONS TO AVOID:
Incompatibles.

HAZARDOUS DECOMPOSITION PRODUCTS:
Urea decomposes upon heating and can form products including ammonia, oxides or nitrogen, cyanuric acid, cyanic acid, biuret, carbon dioxide.
HAZARDOUS POLYMERIZATION:
Will not occur.

INCOMPATIBLES:
Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride. It is incompatible with sodium nitrite, gallium perchlorate, strong oxidizing agents (permanganate, dichromate, nitrate, chlorine), phosphorus penta.

11. TOXICOLOGICAL INFORMATION
PRODUCT LD50 VALUES:
<table>
<thead>
<tr>
<th>Component</th>
<th>Oral Rat LD50 (mg/kg)</th>
<th>Dermal Rabbit LD50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>8471</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

COMPONENT CANCER LIST STATUS:

<table>
<thead>
<tr>
<th>Component</th>
<th>Known</th>
<th>Anticipated</th>
<th>IARC Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>No</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION
When urea is released to soil, this material will hydrolyze into ammonium in a matter of days to several weeks. When released into the soil, this material may leach into groundwater. When released into water, this material may biodegrade to a moderate extent. When released into water, this material is not expected to evaporate significantly. This material has an experimentally determined bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day.

13. DISPOSAL CONSIDERATIONS
Observe all national, state, and local regulations regarding disposal.

14. TRANSPORT INFORMATION

D.O.T.
Proper Shipping Name: Not regulated.
Hazard Class: N.A.
UN Number: N.A.
Packing Group: N.A.

I.A.T.A.: Item is not prohibited or restricted as per IATA.
Proper Shipping Name: Not regulated.
Hazard Class: N.A.
UN Number: N.A.
Packing Group: N.A.

I.M.O.
Proper Shipping Name: Not regulated.
Hazard Class: N.A.
UN Number: N.A.
Packing Group: N.A.

15. REGULATORY INFORMATION
UNITED STATES
Hazardous Label(s): N.A.
Safety phases: S 24/25
Avoid contact with skin and eyes
Risk phases: R 36/37/38/60

16. OTHER INFORMATION
NFPA CODES: Health: 1  Flammability: 0  Reactivity: 0