## SECTION 1 – IDENTIFICATION

**Name, Address, and Telephone of the Responsible Party**

Dyno Nobel Inc.
2795 East Cottonwood Parkway, Suite 500
Salt Lake City, Utah 84121
Phone: 801-364-4800   Fax 801-321-6703
E-Mail: dnna.hse@am.dynonobel.com  www.dynonobel.com

**SDS #:** 1132  
**Date:** 11/01/2018  
**Supersedes:** 05/07/2015

**Product Identifier**

**Product Form:** Solid  
**Product Name:** Urea Feed

**Other Means of Identification**

**Trade Name(s):** Urea - RBU™, Urea Fertilizer  
**Synonyms:**  
- Urea Feed  
- Urea, Prilled, 46-0-0

**Product Class:** Urea

**Intended Use of the Product**

Ingredient for animal feed and fertilizer

**Uses advised against:** Not to be used as an ingredient for human food. Not approved for human use.

**Emergency Telephone Number**

FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300  
CANUTEC (CANADA) 613-996-6666

## SECTION 2 – HAZARD(S) IDENTIFICATION

**Classification of the Substance or Mixture**

Classification (GHS-US)

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of the product.

**Label Elements**

**GHS-US Labeling**

**Hazard Pictograms (GHS-US):** Not Applicable

**Signal Word (GHS-US):** Not Applicable

**Hazard Statements (GHS-US):** No known significant effects or critical hazards

**Precautionary Statements (GHS-US):** Read label before use. Keep out of reach of children. If medical advice needed, have product container or label at hand.

**Other Hazards**

**Hazards Not Otherwise Classified (HNOC):** None known

**Unknown Acute Toxicity:** None known
**SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Name</th>
<th>Product identifier</th>
<th>% (w/w)</th>
<th>Ingredient Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urea</td>
<td>(CAS No) 57-13-6</td>
<td>98 - 99</td>
<td>Not Classified</td>
</tr>
<tr>
<td></td>
<td>Methyleneurea</td>
<td>(CAS No) 68611-64-3</td>
<td>0.3 – 0.5</td>
<td>Aquatic Chronic 3, H412</td>
</tr>
<tr>
<td></td>
<td>Biuret</td>
<td>(CAS No) 108-19-0</td>
<td>0.4 – 0.5</td>
<td>Not Classified</td>
</tr>
</tbody>
</table>

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

**SECTION 4 - FIRST AID MEASURES**

**Description of First Aid Measures**

**Eye Contact:** Immediately flush with large amounts of water, including under the eyelids. If pain or irritation persists seek medical attention.

**Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

**Skin Contact:** Remove contaminated clothing. Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

**Ingestion:** Do not induce vomiting. Get medical attention immediately.

**Most Important Symptoms and Effects Both Acute and Delayed**

**General:** May cause skin irritation and eye irritation.

**Inhalation:** May cause respiratory irritation.

**Skin Contact:** May cause skin irritation.

**Eye Contact:** May cause eye irritation.

**Ingestion:** Do not induce vomiting. Get medical attention immediately.

**Chronic Symptoms:** None expected under normal conditions of use.

**Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed and feeling unwell, seek medical advice (show the label where possible).

**SECTION 5 - FIRE-FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

**Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Not considered combustible but may decompose at high temperatures.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

**Advice for Firefighters**

**Precautionary Measures Fire:** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Collect contaminated fire-fighting water separately. It must not enter the sewage system. Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Urea will not burn or support combustion but will decompose into noxious, poisonous gas when exposed to the high temperatures of a fire. Firefighters should wear self-contained breathing apparatus and full protective clothing.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Ammonia and Nitrogen Oxides (Nitric Oxide and Nitrogen Dioxide).
**Reference to Other Sections:** Refer to section 9 for flammability properties.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Avoid all contact with skin, eyes, or clothing. Avoid breathing dust.

**For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

**For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area.

**Environmental Precautions**

Prevent entry to sewers and public waters.

**Methods and Material for Containment and Cleaning Up**

**For Containment:** Contain any spills to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities as appropriate after a spill.

**Reference to Other Sections**

See heading 8, Exposure Controls and Personal Protection

### SECTION 7 - HANDLING AND STORAGE

**Precautions for Safe Handling**

Store in compliance with all Federal, State, and local regulations. Store in a well-ventilated area, away from incompatible materials or sources of heat and ignition. Empty containers may contain residue and can be dangerous if exposed to hot work conditions. Do not pressurize, cut, weld, braze, solder, drill, grind or expose contaminated containers to heat, flames, sparks or other sources of ignition; as they may evolve noxious fumes.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

**Conditions for Safe Storage, Including Any Incompatibilities**

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.


### SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control Parameters**

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

**Exposure Controls**

**Appropriate Engineering Controls:** Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available but are not required.

**Personal Protective Equipment:** Safety glasses, gloves and general work clothing are recommended. Where ventilation is insufficient, wear respiratory protection. Wearing of appropriate protective clothing and gloves is suggested if epidermal sensitivity develops.
### SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Information on Basic Physical and Chemical Properties</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State:</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance:</td>
<td>White crystalline</td>
</tr>
<tr>
<td>Odor:</td>
<td>Slight ammonia odor</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>Not available</td>
</tr>
<tr>
<td>pH:</td>
<td>7.2 @ 10% solution</td>
</tr>
<tr>
<td>Relative Evaporation Rate (butylacetate=1):</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>133 °C (271 °F)</td>
</tr>
<tr>
<td>Freezing Point:</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition Temperature:</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature:</td>
<td>135 °C (275 °F)</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Flammable Limit:</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Flammable Limit:</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>.08 kPa (.06 mm Hg) [room temperature]</td>
</tr>
<tr>
<td>Relative Vapor Density at 20 °C:</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative Density:</td>
<td>1.33</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>0.74 - 0.83 g/cc (46 - 52 lb/ft³)</td>
</tr>
<tr>
<td>Solubility:</td>
<td>In water: 112.4 g/100ml @ 20 °C (68 °F)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water:</td>
<td>-1.59</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Mechanical Impact:</td>
<td>Not expected to present an explosion hazard due to mechanical impact.</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Static Discharge:</td>
<td>Not expected to present an explosion hazard due to static discharge.</td>
</tr>
</tbody>
</table>

### Materials for Protective Clothing:
Not specified

### Hand Protection:
Wear appropriate protective gloves.

### Eye Protection:
Chemical goggles or safety glasses.

### Skin and Body Protection:
Wear suitable protective clothing to avoid skin contact.

### Respiratory Protection:
Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

### Environmental Exposure Controls:
Shovel spilled material into containers for disposal. Do not flush to surface water. Spilled chemical can be used as fertilizer (46-0-0). Follow applicable Federal, State and local reporting requirements.

### Consumer Exposure Controls:
Do not eat, drink or smoke during use.
SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Stable. Decomposes at about 135°C, just above its melting point. Can be made explosive when dissolved in Nitric Acid, even without completely drying. Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Avoid exposing containers to heat or flame. Keep separated from incompatible materials. Avoid moisture while in storage as urea will readily absorb moisture. Incompatible materials.

Incompatible Materials: Nitric Acid, gallium, perchlorate, strong oxidizing agents, caustics and alkalis.

Hazardous Decomposition Products: Ammonia and Nitrogen Oxides (Nitric Oxide and Nitrogen Dioxide).

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: May cause skin irritation.

Serious Eye Damage/Irritation: Causes eye irritation.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Excessive inhalation of the dust may cause sore throat, coughing and irritation of mucous membranes and the respiratory tract.

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: Dust and micro particles are likely to cause eye irritation.

Symptoms/Injuries After Ingestion: Abdominal pain, nausea, vomiting and gastrointestinal irritation may result. (Urea is a protein to ruminants, animals with the enzyme Urease in their digestive systems, but is moderately toxic to humans when ingested).

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD50 Oral Rat</th>
<th>LC50 Fish</th>
<th>EC50 Daphnia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea (57-13-6)</td>
<td>8471 mg/kg</td>
<td>16200 - 18300 mg/l</td>
<td>3910 mg/l</td>
</tr>
<tr>
<td>Methylenediurea (68611-64-3)</td>
<td>&gt; 2000 mg/kg</td>
<td>&gt; 150 mg/l</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: Not classified

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LC50 Fish 1</th>
<th>EC50 Daphnia 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea (57-13-6)</td>
<td>16200 - 18300 mg/l (Exposure time: 96 h - Species: Poecilia reticulata)</td>
<td>3910 mg/l (Exposure time: 48 h - Species: Daphnia magna [static])</td>
</tr>
<tr>
<td>Methylenediurea (68611-64-3)</td>
<td>&gt; 150 mg/l (Exposure time: 48 h - Species: Daphnia magna [static])</td>
<td></td>
</tr>
</tbody>
</table>
Persistence and Degradability  Not available
Bioaccumulative Potential
  Urea (57-13-6)
    BCF fish 1  < 10
    Log Pow  -1.59 (at 25 °C)

Mobility in Soil  Not available
Other Adverse Effects
Other Information: None

SECTION 13 - DISPOSAL CONSIDERATIONS
Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations. Transport in closed containers.
Additional Information: Spilled chemical can be used as fertilizer.

SECTION 14 - TRANSPORT INFORMATION
14.1 In Accordance with DOT  Not regulated for transport.
14.2 In Accordance with IMDG  Not regulated for transport.
14.3 In Accordance with IATA  Not regulated for transport.
14.4 In Accordance with TDG  Not regulated for transport.

SECTION 15 - REGULATORY INFORMATION
US Federal Regulations
  Urea
    SARA Section 311/312 Hazard Classes  Immediate (acute) health hazard
      Urea (57-13-6)
      Listed on the United States TSCA (Toxic Substances Control Act) inventory
    Biuret (108-19-0)
      Listed on the United States TSCA (Toxic Substances Control Act) inventory
      EPA TSCA Regulatory Flag  T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
      Methylene-diurea (68611-64-3)
        Listed on the United States TSCA (Toxic Substances Control Act) inventory
        EPA TSCA Regulatory Flag  T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
  US State Regulations
    Urea (57-13-6)
      U.S. - Minnesota - Hazardous Substance List
      U.S. - Texas - Effects Screening Levels - Long Term
      U.S. - Texas - Effects Screening Levels - Short Term

Canadian Regulations
  Urea (57-13-6)
    WHMIS Classification  Class D Division 2 Subdivision B - Toxic material causing other toxic effects
      Urea (57-13-6)
      Listed on the Canadian DSL (Domestic Substances List) inventory.
      WHMIS Classification  Class D Division 2 Subdivision B - Toxic material causing other toxic effects
## Biuret (108-19-0)

Listed on the Canadian DSL (Domestic Substances List) inventory.

| WHMIS Classification | Class D Division 2 Subdivision B - Toxic material causing other toxic effects |

## Methyleneurea (68611-64-3)

Listed on Non-Domestic Substances List (NDSL)

| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

<table>
<thead>
<tr>
<th>Revision date</th>
<th>11/01/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Information</td>
<td>This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.</td>
</tr>
</tbody>
</table>

**Party Responsible for the Preparation of This Document**

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Dyno Nobel SDS