

## UREA

### Material Safety Data Sheet (MSDS)

#### 1. PRODUCT IDENTIFICATION

Product Name: urea  
 INCI Name: urea  
 Synonyms: carbamide, carbamimidic acid  
 CAS Number: 57-13-6  
 EINECS Number: 200-315-5  
 Origin: synthetic

Eye Contact: May cause mild irritation.  
 Skin Contact: May cause mild irritation.  
 Ingestion: May cause gastrointestinal disturbances.

#### 2. PHYSICAL & CHEMICAL PROPERTIES

Melting Point: 104°C (220°F)  
 Boiling Point: not determined  
 Vapor Pressure: not determined  
 Vapor Density: not determined  
 Evaporation Rate: not determined  
 Density: 1.335 g/cm<sup>3</sup> at 20°C  
 Solubility in water: soluble  
 pH Value: 7.2 (5% solution)  
 Appearance & Odor: white crystalline, no to faint-odor

#### 8. FIRST AID MEASURES

Eyes: Irrigate eyes with a heavy stream of water for at least 15 to 20 minutes. If irritation persists get medical attention.  
 Skin: Wash exposed areas of the body with soap and water.  
 Inhalation: Remove from area of exposure. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist.  
 Ingestion: Seek medical advice

#### 3. STABILITY & REACTIVITY

Chemical Stability: stable  
 Incompatibility: oxidizing agents  
 Hazardous Decomposition Products: burning can produce carbon monoxide, carbon dioxide, nitrogen oxides, and ammonia  
 Hazardous Polymerisation: will not occur

#### 9. FIRE FIGHTING MEASURES

Flash Point: Not applicable  
 Flammability, Danger of Explosion: not flammable or explosive  
 Fire Fighting Procedures: Firefighters should wear full fire-fighting turn-out gear (full Bunker gear) including NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

#### 4. HANDLING & STORAGE

Avoid contact with eyes. Wash thoroughly after handling. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Avoid freezing or excessive heat. Do not handle or store near an open flame, heat or other sources of ignition. Keep the container tightly closed and in a cool, well-ventilated place.

#### 10. TOXICOLOGICAL INFORMATION

Acute Toxicity: LD50 >8471 mg/kg (oral, rats)  
 Irritation Tests: irritant to skin, mucous membranes and eyes  
 Sensitization: No sensitizing effects known  
 Chronic Toxicity: Urea causes teratogenic and carcinogenic effects in laboratory animals, and mutagenic effects in humans (via intraplacental route). To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. RTECS contains carcinogenic data for components in this product. No classification on carcinogenicity is available from EPA, IARC, NTP, OSHA, ACGIH.

#### 5. ACCIDENTAL RELEASE MEASURES

Isolate spill area immediately. Keep unauthorized personnel away. Ventilate closed spaces before entering. Do not touch or walk through spilled material. Prevent entry into waterways, sewers, basements or confined areas. Surface may become slippery after spillage. Use vacuum or broom sweeping and remove to disposal container. If damp, flush with water.

#### 11. DISPOSAL CONSIDERATIONS

Storage and disposal must be in accordance with applicable local, state & federal disposal regulations. Characterization and compliance with applicable laws are the responsibility solely of the generator.

#### 6. EXPOSURE CONTROLS & PERSONAL PROTECTION

Respiratory Protection: Where exposure likely exceeds acceptable criteria, use NIOSH/OSHA-approved respiratory equipment.  
 Protective Clothing: Gloves recommended to prevent skin contact. Safety glasses, goggles, or face shield recommended for eye protection.  
 Other Protective Measures: Employees must practice good personal hygiene, washing exposed areas of skin several times daily and laundering contaminated clothing before re-use.

#### 12. TRANSPORT INFORMATION

General: not regarded as hazardous material  
 DOT Regulations, Hazard Class: none  
 ADR/ RIC Code, Hazard Class: none  
 Sea Transport IMDG Code, Hazard Class: none  
 Air Transport IATA, Hazard Class: none

#### 7. HAZARDS IDENTIFICATION

Inhalation: Avoid breathing dust. May cause irritation to the respiratory tract.

#### 13. DISCLAIMER

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to be the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability & completeness of such information for his own particular use.

ALL DATA HEREIN ARE ALL AS PER OUR SUPPLIER.