

Material Safety Data Sheet

Section 1. Chemical product and company identification

Trade Name : Urea (Granular)
 Manufacturer : SORFERT ALGERIE
 Chemical formula : $\text{CH}_4\text{N}_2\text{O}$, H_2O
 Responsible Name : Moufid Benmrabet
 In case of emergency : Tel: 0770 52 47 21

Section 2. Composition, Information on Ingredients

State	Particle Size	Fraction <1mm-% WT	Hardness- Kg	Natural Angel of Repose	Bulk Density- Kg/m ³	Temperature C	Nitrogen-% WT	Biuret at design load %wt	Water-% WT	Free ammonia -ppm WT	Formaldehyde-%WT
Granule	Average diameter 2.8-3.2	< 1.0	3.15 mm granule min 3.0	27-29	750-790	< 50	≥46.2	Max 1.0	Max 0.30	50	Max 0.55

Cas number 57-13-6

Section 3. Hazards Identification

Physical State : Solid (Granular)
Emergency overview : MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRATATION.
Potential acute health effects
Eyes : Slightly irritating to the eyes.
Skin : Slightly irritating to the skin.
Inhalation : Slightly irritating to the respiratory system.
Ingestion : Harmful if swallowed.
Carcinogenic effects : No known significant effects or critical hazards.
Mutagenic effects : No known significant effects or critical hazards.
Reproduction toxicity : No known significant effects or critical hazards.
 See Toxicological Information (section 11)

Section 4. First Aid Measures

- Eye contact** : Immediately flush eyes with water for at least 15 minutes, occasionally lifting and lowering the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Skin Contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Get Medical attention if irritation occurs. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if Breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if symptoms occur. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 5. Firefighting measures

- Flash Point** : Non flammable
- Auto Ignition Temperature** : Not combustible
- Flammability Limits in Air (%)**: UEL: Not applicable, LEL: Not applicable
- Extinguishing Media** : Use appropriate media for surrounding fire
- Special Fire Fighting Procedures** : A self-contained breathing apparatus should be worn in a fire involving the material. Toxic gas and vapor (carbon monoxide, ammonia, nitrogen oxide) may be released by decomposition.
- Other Fire/Explosion Hazards**: Not combustible, but urea decomposes at > 133°C generating toxic NO_x fumes and ammonia gas.

Section 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Method of Cleaning up** : Collect all spilled material and store in containers suitable for recycle or disposal.

Section 7. Handling and storage

- Handling** : Avoid contact with eyes, skin and clothing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Storage** : Urea is extremely hygroscopic at relative humidity above approximately 70%. Store in a cool and well-ventilated area. Keep away from heat, sparks, and flame. Keep containers closed. Do not expose sealed containers to temperatures above 49°C. Keep dry.

Section 8. Exposure Controls, Personal Protection

Engineering Controls	: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.
Personal Protection	
Eyes	: Use chemical safety goggles when there is potential for eye contact.
Skin	: Cotton gloves and protective clothing should be used.
Respiratory	: A dust mask should be suitable for most applications. Wear respiratory protection for dust/mist where ventilation is inadequate.
Other Precautions	: Locate safety shower and eyewash station close to chemical handling area.
Exposure limits	: OSHA PEL 15 mg/m ³ total dust 5 mg/m ³ respirable dust

Section 9. Physical and chemical properties

Physical State	: Solid @ 20°C and 101 Kpa, crystal or white powder
Appearance and Odor	: White granules, odorless or slight ammonia odor
Odor Threshold	: Not applicable
Boiling Point	: 135°C at 101 kPa (Decomposes)
Freezing Point	: 133°C
Specific Gravity	: Solid at 20°C = 1.335 t/m ³
Vapor Pressure	: 80 Pa at 20°C
Bulk Density	: Granules: 750 kg/m ³ (48 lb/cu ft)
Solubility (Water)	: 78 g/100 ml (5°C); 119.3 g/100 ml (25°C)
pH	: ≈7.5 at 100g/L
Coefficient of Water/Oil	: -1.59 at 20-25°C
Distribution:	
Floatability (Water)	: Sinks and mixes
Molecular Weight	: 60.07
Hygroscopicity	: @ > 70% Rel. Humidity

Section 10. Stability and reactivity

Stability	: Stable under normal conditions. Decomposes under fire conditions.
Incompatibility (Materials to Avoid)	: Avoid contact with caustics and alkalines. Mixing with phosphate or other nitrate fertilizers will increase the hygroscopic nature of urea.
Hazardous Products of Decomposition	: Decomposes in flame or on hot surface, giving off toxic nitrous vapors. Decomposes when heated, giving off ammonia vapor. Hydrolyzes slowly on contact with air. Soluble in water.

Section 11. Physical and chemical properties

- Recommended Exposure Limit** : None established for this product
- Toxicological Data (Acute)** : LD₅₀ (oral, rat): 14300-15000 mg/kg
LD₅₀ (oral, mouse): 11500-13000 mg/kg
- Toxicological Data (Chronic)**: NOAEL (oral, mouse): 6750 mg/kg
NOAEL (oral, rat): 2250 mg/kg
(NOAEL: No Observable Adverse Effect Level)
- Carcinogenicity Data** : The ingredient(s) of this product is (are) not classified as carcinogenic by ACGIH (American Conference of Government Industrial Hygienists) or IARC (Internal Agency for Research on Cancer), not regulated as carcinogens by OSHA (Occupational Safety & Health Association), and not listed as carcinogens by NTP (National Toxicology Program).
- Reproductive Effects** : No reproductive effects noted.
- Mutagenicity Data** : Not mutagenic.
- Teratogenicity Data** : Not teratogenicity.

EFFECTS OF EXPOSURE WHEN:

- Inhaled** : Dust is irritating to the nose, throat, and respiratory tract, and may cause coughing and sneezing.
- In Contact with the Skin** : Prolonged and repeated contact may cause mild irritation. May be irritating at >10% Concentrations.
- In Contact with the Eyes** : May cause irritation, redness, and pain.
- Ingested** : Ingestion of large amounts of dust may cause gastrointestinal upset and abdominal pain.
- Other Health Effects** : Forms corrosive solutions when dissolved in water (or tears). High blood concentrations of urea increase the risk of glaucoma

Section 12. Ecological information

- Toxicological Data (Acute)** : LC₅₀ (fish, 96 hr.) : >9,100 mg/L
EC₅₀ (daphnia, 24 hr) : >10,000 mg/L

Do not contaminate bodies of water with urea.

Section 13. Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Consult your local or regional authorities

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
TDG Classification	Not regulated.	-	-	-		-
DOT Classification	Not regulated.	-	-	-		-

Section 15. Regulateur Information

- Non-regulation** : This product is listed on the Algerian Environmental Protection Act domestic substances list. This product is not regulated by Transportation of Dangerous Good or MSDS.

Section 16. Other Information