

MATERIAL SAFETY DATA SHEET (MSDS) - UREA

1. PRODUCT AND COMPANY IDENTIFICATION

- **Product Name:** Urea
- **Chemical Formula:** $\text{CO}(\text{NH}_2)_2$
- **CAS Number:** 57-13-6
- **HS Code:** 31021000

2. COMPOSITION / INFORMATION ON INGREDIENTS

- **Chemical Name:** Urea
- **Molecular Weight:** 60.06 g/mol
- **Purity:** 99% (Technical Grade)
- **Impurities:** Negligible

3. HAZARDS IDENTIFICATION

- **GHS Classification:** Not classified as hazardous
- **Hazard Statements:**
 - May cause mild skin and eye irritation.
 - Inhalation of dust may cause respiratory discomfort.
- **Precautionary Statements:**
 - Avoid contact with skin and eyes.
 - Use in a well-ventilated area.
 - Wash hands thoroughly after handling.

4. FIRST AID MEASURES

- **Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.
 - **Skin Contact:** Wash with soap and water.
 - **Eye Contact:** Rinse eyes with plenty of water for at least 15 minutes.
 - **Ingestion:** Rinse mouth with water. Seek medical attention if discomfort occurs.
-
- |

5. FIRE-FIGHTING MEASURES

- **Suitable Extinguishing Media:** Water, foam, dry chemical, CO₂
- **Special Hazards:** Urea is non-flammable but may decompose at high temperatures to release ammonia and carbon dioxide.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- **Personal Precautions:** Use personal protective equipment (PPE).
- **Environmental Precautions:** Avoid discharge into water bodies.
- **Spill Cleanup:** Sweep up and place in a suitable container for disposal.

7. HANDLING AND STORAGE

- **Handling:** Avoid inhalation of dust. Use in a well-ventilated area.
- **Storage:** Store in a cool, dry place away from moisture and incompatible materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- **Exposure Limits:** No occupational exposure limits established.
- **Personal Protection:**
 - Respiratory Protection: Dust mask in case of high dust levels.
 - Eye Protection: Safety goggles.
 - Skin Protection: Protective gloves.
 - Ventilation: Local exhaust ventilation recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** White crystalline solid
 - **Odor:** Odorless
 - **Solubility:** Highly soluble in water
 - **Melting Point:** 132 - 135°C
 - **Boiling Point:** Decomposes before boiling
 - **Density:** 1.32 g/cm³
 - **pH (10% solution):** 7.2 - 7.5
-
- |

10. STABILITY AND REACTIVITY

- **Stability:** Stable under normal conditions.
- **Incompatible Materials:** Strong oxidizers, nitric acid, sodium hypochlorite.
- **Hazardous Decomposition Products:** Ammonia, carbon dioxide.

11. TOXICOLOGICAL INFORMATION

- **Acute Toxicity:** Low toxicity
- **Inhalation:** May cause mild irritation.
- **Skin Contact:** Non-irritating to slightly irritating.
- **Eye Contact:** Mild irritation possible.
- **Chronic Effects:** No known significant long-term effects.

12. ECOLOGICAL INFORMATION

- **Environmental Impact:** Not classified as hazardous.
- **Biodegradability:** Readily biodegradable.
- **Aquatic Toxicity:** Low toxicity to aquatic life.

13. DISPOSAL CONSIDERATIONS

- **Waste Disposal:** Dispose of according to local regulations.
- **Packaging Disposal:** Recycle or dispose of according to local waste management regulations.

14. TRANSPORT INFORMATION

- **UN Number:** Not classified as hazardous for transport.
- **Transport Hazard Class:** Not regulated.
- **Packing Group:** Not applicable.
- **Marine Pollutant:** No

15. REGULATORY INFORMATION

- **EU Regulations:** Not classified as hazardous under EU regulations.
 - **U.S. Regulations:** OSHA (Non-hazardous), TSCA (Listed)
 - **International Regulations:** Complies with relevant global regulations.
-

16. OTHER INFORMATION

- **Disclaimer:** The information provided in this MSDS is believed to be accurate and reliable but does not constitute a guarantee or warranty.
- **Date of Issue:** 2025.02.19
- **Revision Number:** 1.0

