

TRADEMARK NITROGEN

SAFETY DATA SHEET

40% UREA SOLUTION

Section 1 – Identification

Product 40% Urea Solution

Recommended Use:

Used in the production of fertilizers, animal feed, SCR for Nox control systems and adhesives.

Manufacturer TradeMark Nitrogen Corp.

Address 1216 Old Hopewell Road, Tampa, FL 33619

Phone (813) 626-1181

24 Hour Emergency Contact Chemtrec

Contact (800) 424-9300

Section 2 – Hazard Identification



GHS07

Signal Word: **WARNING**

Hazard Statements

H302 Harmful if swallowed

H315 Causes skin irritation

H320 Causes serious eye irritation

H335 May cause respiratory irritation

H402 Harmful to aquatic life

Precautionary
Statements:

P101: If medical advice is needed, have product container or label at hand.

P102: Keep out of reach of children.

P103 Read label before use

P264 Wash hands thoroughly after handling

P270 Do not eat, drink or smoke when using this product

P280 Wear eye protection, protective clothing, protective gloves

P301+P330 IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell

P302+P352 IF ON SKIN: Wash with plenty of water

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P332+P313 If skin irritation occurs: Get medical advice / attention

P337+P313 If eye irritation persists: Get medical advice / attention

P402 Harmful to aquatic life

P501 Dispose of contents / container according to local, regional, national, and international regulations

Section 3 – Composition

Ingredients	Component	CAS. No.	Percent by
	Urea (CO(NH ₂) ₂)	57-13-6	40.0%
	Ammonia (NH ₃)	7664-41-7	0.03%
	Biuret (H ₂ NC(O)NHC(O)NH ₂)	108-19-0	< 0.25%
	Water (H ₂ O)	7732-18-5	Balance

Section 4 – First Aid Measures

Inhalation	If inhaled: Remove person to fresh air and keep comfortable for breathing. Provide artificial respiration if necessary. Seek medical attention if necessary.
Skin Contact	If on skin (or hair): Take off all contaminated clothing. Rinse skin with soap and water for at least 15 minutes. Seek medical attention if irritation persists. Wash contaminated clothing before reuse.
Eye Contact	If in eyes: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Seek medical attention if irritation persists.
Ingestion	If swallowed: Do NOT induce vomiting. If vomiting occurs, attempt to keep head lower than chest so that vomit does not enter into the lungs. Drink large amounts of water. Never give anything by mouth to an unconscious person. Seek medical attention. If affected person requires CPR, avoid mouth to mouth contact. Call for emergency transportation to a hospital if the exposed person feels sick or has breathing difficulties.

Acute Health Hazards May cause mild eye irritation. Prolonged skin contact may cause irritation with redness and itching. Inhalation of mists may cause upper respiratory tract irritation. Swallowing large amounts may cause gastric irritation.

Chronic Health Hazards None expected under normal conditions. Prolonged skin contact may result in dermatitis (inflammation and redness of skin).

Section 5 – Fire Fighting Measures

Suitable Extinguishing Techniques & Equipment Not combustible or reactive, use extinguishing media suitable for surrounding material. Wear self-contained breathing apparatus and full protective gear.

Chemical Hazards From Fire In a fire this material may decompose and produce carbon oxides, oxides of nitrogen and ammonia.

Special Fire Fighting Procedures Use extinguishing agent most appropriate to surrounding materials.

NFPA Rating
Health - 1 (Slight)
Fire - 0 (Least)
Reactivity - 0 (Least)



Other Do not allow run-off from fire fighting to enter drains or water courses.

Section 6 – Accidental Release Measure

Personal Precautions Avoid splashing. Prevent exposure to spilled material with the use of proper PPE.

Protective Equipment PPE should include gloves, goggles and protective clothing.

Containment In Case of Spill Avoid release to environment. Control the flow of product using dikes of soil, sand bags or other commercially available inert sorbent socks or booms. Absorb product with inert absorbent. Avoid splashing or spraying. Contain and pick up spill in diked area. Prevent discharge to sewers or water ways. If uncontaminated, recover and re-use.

Section 7 – Safe Handling & Storage

Precautions for Safe Handling & Storage	Store in a well ventilated cool dry place. Containers should be kept closed and properly labeled. Keep away from open flames, hot surfaces and sources of ignition. No smoking, eating or drinking while using this product. Avoid all unnecessary exposure. Do not breathe mist, vapor or spray.
Incompatibility	Avoid contact with flammable and combustible materials, strong reducing agents, strong acids, strong bases and oxidizing materials. Avoid contact with Sodium nitrate, phosphorus pentachloride, and nitrosyl or gallium perchlorate. Urea will form Urea Nitrate when mixed with nitric acid at a low pH.
Additional Hazards when Processed	If this product is intended to be used in an elevated temperature or high temperature process, a thorough hazard assessment review should be performed to assure that safe operating conditions are established, met and maintained. When heated, urea releases ammonia and when heated to decomposition it emits toxic fumes of nitrogen oxides (NOx), ammonia, and cyanuric acid.

Section 8 – Exposure Controls / Personal Protection

Exposure Limits	Component	Permissible Exposure Limit	Threshold Limit Value	Short Term Exposure Limit	Immediately Dangerous to Life or Health
	Urea (CO(NH ₂) ₂)	Not Established	Not Established	Not Established	Not Established
	Ammonia (NH ₃)	50 ppm TWA	25 ppm	35 ppm	500 ppm
	Biuret (H ₂ NC(O)NHC(O)NH ₂)	Not Established	Not Established	Not Established	Not Established
	Water (H ₂ O)	Not Established	Not Established	Not Established	Not Established

Engineering Controls Local or general exhaust. Eyewash and emergency shower facilities should be available.

Personal Protective Equipment	Eyes	Chemical safety goggles or safety glasses.
	Hands	Impervious chemical protective gloves.
	Respiratory	None required under normal conditions. NIOSH approved respirator if there is a mist of the product.
	Protective Clothing	



Gloves



Protective Clothing



Goggles



Respiratory Protection

Section 9 – Physical & Chemical Properties

Appearance and Odor	Colorless liquid may have a slight ammonia odor.	Specific Gravity	1.1160 @ 68°F (20°C)
Boiling Point	220°F at 1 atmosphere (104.4°C)	Molecular Weight	No Data Available
Freezing Point	No Data Available	Solubility in Water	Miscible in water
Vapor Pressure	No Data Available	Flash Point	Not flammable
Weight per Gallon	9.3 lbs/gal @ 68°F	pH	6.5 - 8.5
Gallons per Ton	215 gal / ton	Salt-Out Temp	35°F (0.56°C)
Flammability Limits	No Data Available	Auto Ignition Temp	Not Flammable
UEL	No Data Available	LEL	No Data Available

Section 10 – Stability & Reactivity

Reactivity	Product is not reactive under normal conditions. Avoid interaction with heat (flames), oxidizers, acids or alkalis.
Stability	Product is stable under normal conditions.
Hazardous Reactions	None known. Hazardous polymerization will not occur.
Conditions to Avoid	Do not allow product to evaporate to dryness. Keep away from direct heat sources. Avoid heating within a confined space. Avoid incompatibilities and contamination from metals, dust or organic materials. Elevated temperatures may cause container to rupture. Avoid extreme high temperatures and extreme low temperatures.
Incompatible Materials	Avoid contact with flammable and combustible materials, strong reducing agents, strong acids, strong bases and oxidizing materials. Avoid contact with Sodium nitrate, phosphorus pentachloride, and nitrosyl or gallium perchlorate. Urea will form Urea Nitrate when mixed with nitric acid at a low pH.

Hazardous Decomposition Products Extreme heat may cause decomposing to carbon oxides, ammonia and nitrogen oxides.

Section 11 – Toxicology Information

Routes of Exposure	Inhalation, ingestion or skin/eye absorption	
Symptoms and Signs of Exposure	Eyes	Mild eye irritation.
	Skin	Mild irritant.
	Inhalation	May irritate respiratory tract and mucous membranes.
	Ingestion	Can cause abdominal pain, vomiting, diarrhea and methemoglobinemia.
Long Term Effects	Methemoglobinemia is the primary long-term health effect of over-exposure.	
Toxicity	No limits have been set for this material.	

Acute Toxicity	Product	Criteria	Species	Dose
	Urea	LD50 Oral	Rat - Male, Female	8,471 mg / kg
	Water	LD50 Oral	Rat	>90 g / kg
	Conclusion:	Very low toxicity to humans		

Specific Target Organ Toxicity (Single Exposure) No Data Available

Specific Target Organ Toxicity (Repeated Exposure) No Data Available

Exposure Symptoms

Eye contact:	Irritation, watering
Inhalation:	May cause respiratory irritation
Skin Contact:	May cause mild skin irritation
Ingestion:	Over exposure by ingestion is unlikely under normal working conditions. Adverse symptoms may include nausea or vomiting, stomach pains, diarrhea.

Potential Chronic Health Effects

General	No known significant effects or critical hazards
Carcinogenicity	Not classified
Mutagenicity	Not classified
Teratogenicity	Not classified
Developmental Effects	Not classified
Fertility Effects	Not classified

Carcinogen The International Agency for Research on Cancer has not classified Urea Ammonium Nitrate for its carcinogenic potential (IARC 1987).

California Prop 65 Components of this product are not listed on the active California Prop 65 database.

Section 12 – Ecological Information

Water	High concentrations may be harmful to fish and other aquatic organisms.				
Ecotoxicity	Product	Criteria	Result	Species	Exposure
	Urea	Acute EC50	3910000 µg/l fresh water	Daphnia - Daphnia Magna - Neonate	48 hours
		Acute LC50	1,000 mg/l Marine Water	Crustaceans - Chaetogammarus marinus - young	48 hours
		Acute LC50	5,000 µg/l fresh water	Fish - Colisa Fasciata - Fingerling	96 Hours
		Chronic NOEC	2 g/L Fresh water	Fish - Heteropneustes fossils	30 days
		LC50	>6810 mg/l	Leuciscus Idus	96 Hours
	Ammonia	LC50	0.44 mg/l	Cyprinus Carpio	96 hours
		EC50	25.4 mg/l	Daphnia Magna	48 Hours
		LC50	.026 - 4.6 mg/l	Lepmis Macrochirus	96 hours
	Persistence and Degradability	Urea is rapidly hydrolyzed to ammonia and carbon dioxide in environmental systems.			
Bioaccumulative potential	The potential for bioconcentration in aquatic organisms is expected to be low.				
Mobility in soil	Urea is highly mobile in soil.				
Other adverse effects	Harmful to aquatic life. Harmful to the environment if released in large quantities. Excessive nutrient runoff to a body of water may result in eutrophication.				

Section 13 – Disposal Considerations

Waste	This material is harmful to the aquatic environment. Keep out of sewers and waterways. Disposal must be done in accordance with local, state and federal environmental regulations. Place waste in an appropriate container with correct labeling.
Additional Information	Dispose of used containers at an approved waste handling facility. Empty containers may contain residue of the product, follow label warnings even after container is emptied.

Section 14 – Transport Information

DOT	Not regulated as dangerous goods
IMDG	Not regulated as dangerous goods
IATA	Not regulated as dangerous goods
TDG	Not regulated as dangerous goods
Mexico Classification	Not regulated as dangerous goods

Section 15 – Regulatory Information

United States - SARA Hazard Category This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (SARA) and is considered, under applicable definitions, to meet the following categories:

Fire - No Pressure - No Reactive - No Acute - No Chronic - No

SARA Title III Information This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical	CAS No.	CERCLA RQ (lbs.)	SARA Reporting		
			302	304	313
Urea	57-13-6	N/A	N/A	N/A	N/A

CERCLA / Superfund, 40 CFR Part 117, 302 If this product contains components subject to substances designated as CERCLA reportable Quantity (RQ) Substances, it will be designated in the above table with the RQ value in pounds. If there is a release of RQ Substance to the environment, notification to the National Response Center, Washington DC (800-424-8802) is required.

TSCA All components of this product are listed on the Active TSCA inventory.

Section 16 – Other Information

Issue Date **12/10/2024**

Date of Revision December 2024 SDS updated technical information and added new salt out temperature. February 2022 revision prepared in accordance with 29 CFR 1910.1200 Appendix D to meet Global Harmonization Standards.

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