UREA SOLUTION

SAFETY DATA SHEET

1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product identifier:	Urea Solution
Synonym(s):	Carbamide, Carbonyldiamide.
Chemical Family:	Carboxylic acids.
Molecular Weight:	32.5 – 50 as 100% Urea.
CAS No.	Mixtures

1.2 Recommended use of the chemical and restrictions on use

Identified Use(s):	Fertilizer, Emissions control.
Uses Advised Against:	None Known

1.3 Supplier's details

Company Identification

Physical Address:	Transliquid Technologies LLC 10120 Hirsch Rd Houston, TX 77016
Mailing Address:	330 Rayford Rd, #208 Spring, TX 77386
Telephone:	281-377-5845
E-mail:	info@transliquidtechnologies.com

1.4 Emergency Phone No.

CHEMTREC (USA and Canada)	1-800-424-9300 (24hr)
CHEMTREC (Outside of USA and Canada)	+1-703-527-3887 (24hr)

2. SECTION 2: HAZARDS INDENTIFICATION

2.1 Classification of the substance or mixture: Not classified as dangerous for supply/use.

2.2 Label elements

Hazard Pictogram(s):	None.
Signal Word(s):	None.
Hazard Statement(s):	None.
Precautionary Statement(s):	None.

2.3 Other Hazards: None.

2.4 Additional Information: None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Hazardous Ingredient(s)	CAS No.	%W/W
Urea	57-13-6	<32.5 - 50
Water	7732-18-5	>67.5 - 50
Ammonia, anhydrous	7664-41-7	<1

3.2 Additional Information: None.

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid and measures

Inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, obtain medical attention.
Skin contact:	Wash affected skin with soap and water. If symptoms persist obtain medical attention.
Eye contact:	Flush eyes with water for at least 15 minutes while holding eyelids open. If symptoms persist, obtain medical attention.
Ingestion:	Rinse mouth. Drink one glass of water. Do not give anything by mouth to an unconscious person. . If symptoms persist, obtain medical attention.
4.2 Most important symptoms and effects, both acute and delayed:	Unlikely to be required but if necessary treat symptomatically.
4.3 Indication of any immediate medical attention and special treatment needed	No special requirements.

5. SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing media:	Extinguish with water spray, dry chemical, sand or carbon dioxide.
Unsuitable extinguishing media:	None known.
5.2 Special hazards arising from the substance or mixture:	Decomposition products: Ammonia, Carbon monoxide, Carbon dioxide, oxides of nitrogen.
5.3 Advice for fire-firefighters	Firefighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire

6. SECTION 6: ACCIDENTAL RELREASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation. Stop leak if safe to do so. Wear protective gloves/eye protection. Wash hands thoroughly after handling.

6.2 Environmental precautions: Do not allow to enter drains, sewers or waterways

6.3 Methods and materials for containment and cleaning up: Cover spills with inert absorbent material. Transfer to a container for disposal. Wash the spillage area with water.

6.4 Reference to other sections: See also section 8, 13.

7. SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling: Provide adequate ventilation. Wear protective gloves/eye protection. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handing.

7.2 Conditions for safe storage, including

any incompatibilities:
7.2.1 Storage temperature: Ambien temperatures.
7.2.2 Storage life: Stable under normal conditions.
7.2.3 Incompatible materials: Oxidizing agents, Steel.

8. SECTION 8. EXPOSURE CONTROL/ PERSONAL PROTECTION

8.1 Control parameters
Occupational Exposure limits:

Substance	CAS No.	LTEL (8hr TWA mg/m3)	LTEL (8 hr TWA mg/m3)	STEL (ppm)	STEL (mg/m3)	Note
Ammonia, anhydrous	7664-41-7	25	18	35	27	USA (NIOSH/OSHA)
		50	35	-	-	TLV(ACGIH)

Source: NIOSH= National Institute of Occupational Safety & Health
OSHA= Occupational Safety and Health Administration
TLV=Threshold Limit Value
ACGIH= American Conference of Industrial Hygienists

8.2 Appropriate engineering controls: Provide adequate ventilation.

8.3 Individual protection measures such as personal protective equipment (PPE)

Eye/Face: Wear protective eyeglasses for protection against liquid splashes. Wear close fitting goggles or full-face shield.

Skin protection: Wear Suitable protective clothing and gloves. Wear impervious gloves and boots.

Respiratory protection: Normally no personal respiratory protection is necessary. Wear suitable respiratory equipment if exposure to levels above the occupational exposure limit is likely.

Thermal hazards: Not applicable.

9. SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical Properties

Appearance: Colorless.
Color: Liquid.
Odor: Ammoniacal.
Odor Threshold: Not available.
PH: ~7 - 10
Melting point/freezing point: 18 °C (64 °F)
Initial boiling point and boiling range: ~106 °C (222.8 °F)
Flash point: Not applicable
Evaporation rate: Not available
Flammability (solid /gas) Non-Flammable
Upper/ Lower flammability or explosive limit: Not applicable.
Vapor pressure: ~80Pa @ 20°C
Vapor density: Not available.
Relative density: 1.1 – 1.15

Solubility (ies):	Soluble in water.
Partition coefficient: n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	100 °C (212 °F)
Viscosity:	Not available
Explosive properties:	Not explosive
Oxidizing properties:	Not oxidizing

9.2 Other information

Percent volatile by volume (%)	1.0-1.5

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions
10.2 Chemical stability	Stable under normal conditions
10.3 Possibility of hazardous reactions	Stable under normal conditions
10.4 Conditions to avoid	Stable under normal conditions
10.5 Incompatible materials	Oxidizing agents, steel
10.6 Hazardous decomposition products:	Ammonia, carbon monoxide, carbon dioxide, oxides of nitrogen.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Oral:	Low acute toxicity. LD50 (rat) > 5000mg/kg
Dermal:	Low acute toxicity. LD50 (rat) > 200 mg /kg
Inhalation:	Dried urea dust: may cause irritation.
Skin corrosion/irritation	Product as supplied: non-irritant Dried urea dust: may cause irritation.
Serious eye damage/irritation	Not classified
Respiratory or skin sensitization	It is not a skin sensitizer
Germ cell mutagenicity	There is no evidence of mutagenic potential.
Carcinogenicity	None anticipated
Reproductive toxicity	None anticipated
STOT- single exposure	None anticipated
STOT- repeated exposure	None anticipated
Aspiration hazard	None anticipated

11.2 Other information	None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Low toxicity to aquatic organisms
12.2 Persistence and degradability:	The product is biodegradable. The product is unlikely to persist in the environment. Urea (OECD 302): 96%
12.3 Bio accumulative potential	The product has no potential for bioaccumulation.
12.4 Mobility in soil	The product is soluble in water.
12.5 Other adverse effects:	None anticipated.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Bury on an authorized landfill site or incinerate under approved controlled conditions.
13.2 Additional information	Disposal should be in accordance with local, state or national legislation.

US RCRA Hazard Class	Not listed.

14. SECTION 14: TRANSPORT INFORMATION

D.O.T Classification
Not classified as dangerous for transport.

14.1 UN number	Not applicable
14.2 Proper shipping name	Not applicable
14.3 Transport hazard class(es)	Not applicable
14.4 packing group	Not applicable
14.5 environmental hazards	Not applicable
14.6 special precautions for user	Not applicable
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable

15. SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations
Legislation specific for the substance or mixture

15.1.1 OSHA Toxic and hazardous substance (29 CFR 1910.1900)	Not listed
Requirements for preparation, adoption And submittal of implementation plans (40 CFR 51.100)	Not listed
National emission standards for hazardous Air pollutants (40 CFR 61.01)	Not listed
15.1.2 Title III Consolidated list of lists CAA section 112(r) list of substances for Accidental release prevention	Ammonia (CAS No: 7664-41-7) Listed (>=20%) Product as supplied: <1% Ammonia
15.1.3 OSPAR List of chemicals for priority action	Not listed
15.1.4 State rights to know lists	Ammonia (CAS No: 7664-41-7): California, New Jersey, Pensylvania, Minnesota, Massachusetts.
15.1.5 TSCA	All ingredients are listed.
15.1.6 Proposition 65 (California)	Not listed
15.1.7 Ozone Depleting Substances	Not listed

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

NFPA		HMIS	
Health	1	Health	1
Fire	0	Flammability	0
Instability	0	Physical hazard	0

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
STOT	Specific Target Organ Toxicity
OSHA	Occupational Safety and Health Administration
TSCA	Toxic Substances Control Act
NFPA	National fire Protection Association
HMIS	Hazardous Material Information System
OECD	Organization for Economic Co-operation and Development

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