

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Mixture
Product name	: Urea Liquor
Formula	: CO(NH ₂) ₂
Product code	: ULQ325, ULQ40, ULQ50, ULQ52, ULQ62, ULQ65
Other means of identification	: Aqueous Solutions of Urea

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: Industrial use. Animal feed.
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1.3. Details of the supplier of the safety data sheet

PCS Sales (USA), Inc.
1101 Skokie Blvd.
Suite 400
Northbrook, IL 60062
T 800-241-6908 / 847-849-4200

Suite 500
122 1st Avenue South
Saskatoon, Saskatchewan Canada S7K7G3
T 800-667-0403 (Canada) / 800-667-3930 (USA)

SDS@PotashCorp.com - www.PotashCorp.com

1.4. Emergency telephone number

Emergency number	: 800-424-9300 CHEMTREC
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315
Eye Irrit. 2A H319

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H315 - Causes skin irritation

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H319 - Causes serious eye irritation

Precautionary statements (GHS-US) : P264 - Wash hands thoroughly after handling
P280 - Wear eye protection, protective gloves, protective clothing
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
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
P362 - Take off contaminated clothing

2.3. Other hazards

Hazardous to the aquatic environment

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

Name	Product identifier	% by weight	GHS-US classification
Urea	(CAS No.) 57-13-6	31 - 70	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Water	(CAS No.) 7732-18-5	30 - 69	
Biuret	(CAS No.) 108-19-0	0 - 1	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Alkalinity, as Ammonia		0 - 0.7	

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If medical advice is needed, have product container or label at hand.

First-aid measures after inhalation : If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Obtain medical attention if breathing difficulty persists.

First-aid measures after skin contact : Wash skin thoroughly with mild soap and water. Obtain medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Immediately rinse with water for a prolonged period (at least 15 minutes) while holding the eyelids wide open. Obtain medical attention if irritation develops or persists.

First-aid measures after ingestion : If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Irritation to eyes, skin and respiratory tract.

Symptoms/injuries after inhalation : Overexposure may be irritating to the respiratory system.

Symptoms/injuries after skin contact : May cause skin irritation.

Symptoms/injuries after eye contact : May cause eye irritation.

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Symptoms/injuries after ingestion : If a large quantity has been ingested : Abdominal pain. Diarrhea. Nausea. Vomiting. May cause drowsiness and loss of coordination.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Not flammable. Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Under conditions of fire this material may produce: Ammonia. Nitrogen oxides. Carbon Dioxide.

Explosion hazard : Avoid contact with strong oxidizers (chlorine, peroxide, chromates, nitric acid, perchlorates, concentrated oxygen, and permanganates) which can generate heat, fire or explosions or release toxic fumes.

Reactivity : Stable at ambient temperature and under normal conditions of use.

5.3. Advice for firefighters

Firefighting instructions : Not flammable.

Protection during firefighting : Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Handle in accordance with good industrial hygiene and safety practice. Caution : this product can cause the floor to be very slippery.

6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.

Emergency procedures : Absorb and/or contain spill with inert material, then place in suitable container. Ventilate area. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye/face protection.

Emergency procedures : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. If possible, stop flow of product. Ventilate area. Evacuate unnecessary personnel.

6.2. Environmental precautions

If spill could potentially enter any waterway, including intermittent dry creeks, contact the U.S. COAST GUARD NATIONAL RESPONSE CENTER at 800-424-8802. In case of accident or road spill notify CHEMTREC at 800-424-9300. In other countries call CHEMTREC at (International code) +1-703-527-3887.

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6.3. Methods and material for containment and cleaning up

- For containment : Contain any spills with dikes or inert absorbents to prevent migration and entry into sewers or streams. Do not allow into drains or water courses or dispose of where ground or surface waters may be affected.
- Methods for cleaning up : Clean up any spills as soon as possible, using an inert absorbent material to collect it. Collect absorbed material and place into a sealed, labelled container to be disposed at an appropriate disposal facility according to current applicable laws and regulations and product characteristics at time of disposal.
- Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Handle in accordance with good industrial hygiene and safety procedures. Avoid contact with skin and eyes. Avoid breathing mist. Wear recommended personal protective equipment.
- Hygiene measures : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Protect from physical damage. This material is vented in storage.
- Special rules on packaging : Avoid containers, piping or fittings made of brass, bronze, or other copper-bearing alloys or galvanized metal.

7.3. Specific end use(s)

Industrial Use. Aniaml Feed.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No exposure limits were found.

8.2. Exposure controls

- Appropriate engineering controls : Ensure adequate ventilation, especially in confined areas.
- Personal protective equipment : Gloves. Safety glasses. Protective clothing.



- Hand protection : Impermeable protective gloves.
- Eye protection : Chemical safety goggles or face shield. Do not wear contact lenses.

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Skin and body protection	: Wear suitable protective clothing. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	: Not required under normal conditions of use. Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of vapor or mist are expected to exceed exposure limits.
Environmental exposure controls	: Ensure adequate ventilation, especially in confined areas.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear
Colour	: Colorless
Odour	: Slight ammonia
Odour threshold	: No data available
pH	: 10 (approximately)
Molecular Weight	: 60.07 (100% UREA)
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: 11.3°F (-11.5°C)
Boiling point	: 106 °C (223 °F) (50 % Urea solution)
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure at 20°C	: 13.8 mm Hg (50 % Urea solution)
Relative vapour density at 20 °C	: 0.79
Specific Gravity	: 1.080 - 1.175
Density	: 9.09 – 9.70 lb/gal
Solubility	: Water: Miscible
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: 0.85 cSt @ 140°F (50% Urea Solution)
Viscosity, dynamic	: 0.94 cP @ 140°F (50% Urea Solution)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

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9.2. Other information

Salt Out Temperature

32.5% AT -11.5°C (11.3 °F)

50% AT 17 °C (63 °F)

65% AT 46 °C (115 °F)

70% AT 57 °C (135 °F)

Foliar - pH 7-8, Density 9.7 lbs /gallon@75°F –prepared by neutralizing alkalinity in Urea 50 using Sulfuric Acid

Specific Gravity: 32.5%: 1.090 @ 68°F 20°C

Density (lbs / gal): 9.09 @ 68°F 20°C (32.5%)

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable at ambient temperature and under normal conditions of use.

10.2. Chemical stability

Stable at standard temperature and pressure.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Protect from moisture. Keep away from heat. Evaporation residue should not be heated above its melting point, 106 °C (223 °F). Decomposes to hazardous products.

10.5. Incompatible materials

Avoid contact with strong oxidizers (chlorine, peroxide, chromates, nitric acid, perchlorates, concentrated oxygen, and permanganates) which can generate heat, fire or explosions or release toxic fumes.

10.6. Hazardous decomposition products

Under conditions of fire this material may produce: Ammonia. Nitrogen oxides. Carbon Dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Urea (57-13-6)	
LD50 oral rat	8471 mg/kg

Skin corrosion/irritation : Causes skin irritation.
pH: 10

Serious eye damage/irritation : Causes serious eye irritation.
pH: 10

Respiratory or skin sensitisation : Not classified

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Germ cell mutagenicity	: Not classified	Bacterial reverse mutation assay – Salmonella typhimurium: Negative Chromosomal aberration test – Chinese hamster: Positive (very high dose) Mouse lymphoma TK locus assay: Positive (very high dose) Bone marrow cytogenic test – Mouse: Positive (extremely high dose)
Carcinogenicity	: Not classified	
Reproductive toxicity	: Not classified	No toxic effects on mouse gonads up to 6,750 mg/kg/day. No toxic effects on rat gonads up to 2,250 mg/kg/day. Not teratogenic.
Specific target organ toxicity (single exposure)	: Not classified	
Specific target organ toxicity (repeated exposure)	: Not classified	

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	EPA Ecological Toxicity rating :	
	Acute Toxicity to Fish:	96 -h : (<i>Barillius barna</i>) LC ₅₀ (96 hr) > 9,100 mg/L.
	Chronic Toxicity to Fish:	No data available
	Acute Toxicity to Aquatic Invertebrates:	(<i>Daphnia magna</i>): 24 - h EC ₅₀ = > 10,000 mg/L . [DIN 38412 Part II modified]
	Chronic Toxicity to Aquatic Invertebrates:	No data available
	Acute Toxicity to Aquatic Plants:	(<i>Scenedesmus quadricauda</i>) 192-hr cell multiplication inhibition test- TT > 10,000 mg/L. [Call multiplication inhibitor test]
	Toxicity to Other Non-Mammalian Terrestrial Species:	(Pigeon)-Subcutaneous-LDL ₀ =16,000 mg/kg.
	Toxicity to Terrestrial Plants:	No data available
Environmental Fate:	Stability in Water:	T _{1/2} > 1 year. Since Urea is a fertilizer, it may promote eutrophication in waterways. Non-toxic to aquatic organisms as defined by USEPA.
	Stability in Soil:	(<i>Glycine max</i> (L.) Merr.: Leaf tip necrosis [7 day exposure to 9 mg urea/leaf]
	Transport and Distribution:	Transport: 0.16% in air; 99.84% in water [Calculated fugacity Level 1 type]
Toxicity:	No known toxicity	
Degradation Products:	Biodegradation:	Ultimately biodegradable. [OECD Guideline 302B]
	Photodegradation:	No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

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Waste disposal recommendations : Place in an appropriate container and dispose of the contaminated material at a licensed site.

Additional information : Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: Transport information

In accordance with DOT / TDG / ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Urea Liquor	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
Urea (57-13-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Biuret (108-19-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State regulations

The following states have an OSH program approved by OSHA. If you are located in any of these states you may be under state jurisdiction rather than federal jurisdiction and your state may have more stringent requirements than OSHA. You should consult your state regulations to ensure compliance.

Alaska	Indiana	Minnesota	North Carolina	Utah
Arizona	Iowa	Nevada	Oregon	Vermont
California	Kentucky	New Mexico	Puerto Rico	*Virgin Islands
*Connecticut	Maryland	*New Jersey	South Carolina	Virginia
Hawaii	Michigan	*New York	Tennessee	Washington
*Illinois				Wyoming

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*The state plans in these states apply only to public sector employers. In these states private sector employers are subject to USOL – OSHA jurisdiction. All other state plans apply to both public and private sector employers.

Urea (57-13-6)
U.S. - Minnesota - Hazardous Substance List
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

15.3. Canadian regulations

Urea Liquor	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
Urea (57-13-6)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Biuret (108-19-0)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	

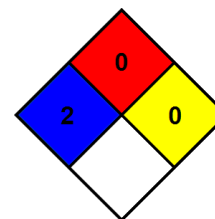
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

SECTION 16: Other information

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



Full text of H-phrases:

Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Irrit. 2	Skin corrosion/irritation Category 2
H315	Causes skin irritation
H319	Causes serious eye irritation

Previous PotashCorp MSDS Number : MSDS 36 – Urea Liquor

Logo Change : No other information changes; kept same date

SDS US (GHS HazCom 2012)

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