

**1. Identification**

**Product identifier** Urea Liquor

**Other means of identification**

**Product code** KF\_UreaLiquor\_US\_EN

**Synonyms** Urea Liquor 13-0-0, Urea Liquor 18-0-0

**Recommended use** Fertilizer.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Company Name** Koch Fertilizer, LLC  
4111 E 37th Street North  
PO Box 2219  
Wichita, KS, 67201-2219  
kochmsds@kochind.com  
1-316-828-7672

**Emergency** For Chemical Emergency  
Call CHEMTREC day or night  
1.800.424.9300  
Mexico - 1.800.681.9531  
Outside USA/Canada  
1.703.527.3887  
(collect calls accepted)

**2. Hazard(s) identification**

**Physical hazards** Not classified.

**Health hazards** Not classified.

**Environmental hazards** Hazardous to the aquatic environment, acute Category 3 hazard

**OSHA defined hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** None.

**Hazard statement** Harmful to aquatic life.

**Precautionary statement**

**Prevention** Avoid release to the environment.

**Response** Wash hands after handling.

**Storage** Store away from incompatible materials.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

**3. Composition/information on ingredients****Mixtures**

Chemical name	CAS number	%
Urea	57-13-6	25 - 60
Water	7732-18-5	40 - 75

Biuret	108-19-0	< 0.7
Free Ammonia	7664-41-7	< 0.5

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.  
This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

#### 4. First-aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed** Direct contact with eyes may cause temporary irritation.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters** Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions** Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk.

**General fire hazards** No unusual fire or explosion hazards noted.

#### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions** Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

#### 7. Handling and storage

**Precautions for safe handling** Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	PEL	35 mg/m <sup>3</sup>
		50 ppm

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	STEL	27 mg/m <sup>3</sup>
		35 ppm
	TWA	18 mg/m <sup>3</sup> 25 ppm

#### US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m <sup>3</sup>	Total particulate.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	Follow standard monitoring procedures.
<b>Appropriate engineering controls</b>	Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and mists.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear approved safety glasses or goggles.
<b>Skin protection</b>	
<b>Hand protection</b>	Neoprene gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
<b>Other</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134 and ANSI Z88.2.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Appearance</b>	Colorless liquid.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Not available.
<b>Odor</b>	Slight ammonia.
<b>Odor threshold</b>	Not available.
<b>pH</b>	7 - 10 (depending on free Ammonia content)
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	223 °F (106.11 °C) (50% urea solution)

Urea Liquor

938789 Version #: 01 Revision date: - Issue date: 12-July-2017

SDS US

3 / 7

<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	1.14 (50% urea solution) 1.18 (70% urea solution)
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	100 %
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	This product may react with strong oxidizing agents.
<b>Chemical stability</b>	Normally stable. May gradually give off ammonia.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	High temperatures. Contact with incompatible materials.
<b>Incompatible materials</b>	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
<b>Hazardous decomposition products</b>	Ammonia. Nitrogen oxides (NOx). Biuret.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Prolonged inhalation may be harmful.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	May cause discomfort if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

**Acute toxicity** May cause discomfort if swallowed.

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
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Free Ammonia (CAS 7664-41-7)

#### Acute

#### **Inhalation**

LC50

Rat

5.1 mg/l, 1 Hours

Components	Species	Test Results
<b>Oral</b> LD50	Rat	350 mg/kg as Ammonium hydroxide
Urea (CAS 57-13-6)		
<b>Acute</b> <b>Oral</b> LD50	Rat	14300 mg/kg
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.	
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.	
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Not listed.		
<b>NTP Report on Carcinogens</b>		
Not listed.		
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>		
Not regulated.		
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Specific target organ toxicity - single exposure</b>	Not classified.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	
<b>Chronic effects</b>	Prolonged inhalation may be harmful.	

## 12. Ecological information

<b>Ecotoxicity</b>	Harmful to aquatic life.		
<b>Components</b>	<b>Species</b>	<b>Test Results</b>	
Free Ammonia (CAS 7664-41-7)			
<b>Aquatic</b>			
Fish	LC50	Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	0.43 - 0.47 mg/l, 96 hours
Urea (CAS 57-13-6)			
<b>Aquatic</b>			
Algae	EC10	Algae	47 mg/l, 192 hours
Crustacea	LC50	Water flea ( <i>Daphnia magna</i> )	> 10000 mg/l, 24 hours
Fish	LC50	<i>Leuciscus idus</i>	> 6810 mg/l, 96 hours
<b>Persistence and degradability</b>	No data available.		
<b>Bioaccumulative potential</b>			
<b>Partition coefficient n-octanol / water (log Kow)</b>			
Urea (CAS 57-13-6)			-2.11
<b>Mobility in soil</b>	This product is water soluble and may disperse in soil.		
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

### 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose in accordance with applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

#### DOT

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

### 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

Free Ammonia (CAS 7664-41-7) LISTED

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

#### SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
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Free Ammonia	7664-41-7	100	500		
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**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**  
Not regulated.

#### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Free Ammonia (CAS 7664-41-7)

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**US. Massachusetts RTK - Substance List**

Free Ammonia (CAS 7664-41-7)

**US. New Jersey Worker and Community Right-to-Know Act**

Free Ammonia (CAS 7664-41-7)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Free Ammonia (CAS 7664-41-7)

**US. Rhode Island RTK**

Free Ammonia (CAS 7664-41-7)

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

<b>Issue date</b>	12-July-2017
<b>Revision date</b>	-
<b>Version #</b>	01
<b>HMIS® ratings</b>	Health: 1 Flammability: 0 Physical hazard: 0

**NFPA ratings****Disclaimer**

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.