



MATERIAL NAME: UREA LIQUOR

SAFETY DATA SHEET

SECTION 1 ♦ IDENTIFICATION

CVR Partners, LP
2277 Plaza Drive, Suite #500
Sugar Land, TX 77479

FOR EMERGENCY SOURCE INFORMATION CONTACT:

- ♦ SDS@CVRENERGY.COM
- ♦ CHEMTREC: (800) 424-9300 (24-hour contact)
- ♦ CCN5198

GHS PRODUCT IDENTIFIER: Urea Liquor, Urea Solution (32%) or Diesel Exhaust Fluid

CHEMICAL FAMILY: Amide
FORMULA: $\text{CH}_4\text{N}_2\text{O} + \text{H}_2\text{O}$

PRODUCT USES: Diesel Exhaust, NOx Reducing Agent

SECTION 2 * HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Serious eye damage/eye irritation - Category 2A

GHS LABEL ELEMENTS

Urea Liquor

GHS PICTOGRAM



SIGNAL WORD

Warning

HAZARD STATEMENT

May cause eye and skin irritation

PRECAUTIONARY STATEMENTS

Prevention

Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Storage

Keep container tightly closed and store away from incompatible materials.

Disposal

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

SUPPLIER INFORMATION

CVR Partners, LP

2277 Plaza Drive, Suite #500

Sugar Land, TX 77479

SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Water	7732-18-5	67-68
Urea	57-13-6	32-33
Alkalinity, as Ammonia	7664-41-7	<0.1%



SECTION 4 + FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid.

SKIN: If material comes in contact with the skin, promptly wash the contaminated skin with water. If material penetrates the clothing, promptly remove the clothing and wash the skin with water. If irritation persists after washing, get medical attention.

INGESTION: Rinse mouth with water and afterwards drink plenty of water. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

INHALATION: If a person breathes in large amounts of this material, move the exposed person to fresh air at once. Other measures are usually unnecessary. If not breathing, give cardiopulmonary resuscitation

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY AND SUPPORTIVELY

SECTION 5 % FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Use fire extinguishing media appropriate for surrounding materials.

HAZARDOUS REACTIONS/DECOMPOSITION: Material will not burn, but thermal decomposition may result in flammable/toxic gases being formed after material evaporates to dryness. These products include nitrogen oxides, ammonia, ammonium cyanate and carbon monoxide.

SPECIAL PROTECTIVE ACTIONS FOR FIREFIGHTERS: For fires involving this material, do not enter any enclosed or confined space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies. If firefighters cannot work upwind of the fire, respiratory protective equipment must be worn. Cool tanks and containers exposed to fire with water. Notify appropriate authorities if liquid enters sewer/waterways.

SEE SECTION 9 FOR FLAMMABILITY PROPERTIES

SECTION 6 ♦ ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Ensure adequate ventilation. Stop leak if you can do so without risk. Use personal protective equipment as necessary as recommended in section 8 of the SDS.
METHODS FOR CONTAINMENT AND METHODS FOR CLEANING UP	Collect or recover any reusable product and prevent entry into waterways, drains and sewers. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Dike far ahead of liquid spill for later use or disposal.
OTHER INFORMATION	None

SECTION 7 ✕ HANDLING AND STORAGE

Prior to working with this product workers should be trained on its proper handling and storage.

PRECAUTIONS FOR SAFETY HANDLING	➤ Avoid contact with skin and eyes. ➤ Keep away from heat, sparks, and open flame!
STORAGE PROCEDURES	➤ Keep container tightly closed and in a well-ventilated place. Store away from incompatible materials. ➤ Keep this material away from food, drink and animal feed.
INCOMPATIBILITIES	➤ Avoid high temperatures on pipes, valves or tanks that contain urea solution until they are thoroughly rinsed. Ammonia, nitrous oxides, ammonia cyanate and carbon monoxide can evolve. ➤ Incompatible with sodium nitrite, steel, phosphorus pentachloride, and nitrosyl or gallium perchlorate. Urea will form urea nitrate when mixed with nitric acid at low pH. Urea nitrate may become unstable and/or explosive under certain conditions. ➤ Solution may detonate if subjected to heat and pressure.



SECTION 8 ▣ EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH TLV (2025)	OSHA PEL	NIOSH IDLH
Urea	TWA: Not Applicable STEL: Not Applicable	TWA: Not Applicable STEL: Not Applicable	Not Applicable
Anhydrous Ammonia	TWA: 25 ppm STEL: 35 ppm	TWA: 50 ppm	300 ppm

ENGINEERING CONTROLS: Use adequate ventilation, as needed.

PERSONAL PROTECTIVE EQUIPMENT

- **EYES:** ANSI Z87.1 approved eye protection should be worn whenever there is a likelihood of any type of exposure. Suitable eyewash station should be available. Contact lenses must not be worn.
- **SKIN/BODY:** Chemical protective clothing may be recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for specific information.
- **HAND PROTECTION:** Gloves constructed of PVC, nitrile or equivalent is recommended. Consult manufacturer specifications for specific information.
- **RESPIRATORY PROTECTION:** Generally not required.
- **OTHER HYGIENIC AND WORK PRACTICES:** Safety shower and eyewash or equivalent should be available for emergency use. Use good personal hygiene practices. In case of skin contact, wash with mild soap and water or a waterless hand cleaner. Immediately remove soaked clothing and wash thoroughly before reuse.

SECTION 9 ⚡ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG): ~219 °F/ ~104 °C		PERCENT VOLATILE BY VOLUME: Not applicable	
SPECIFIC GRAVITY (H ₂ O = 1):	1.07-1.093	VISCOSITY UNITS, TEMP: Not Applicable	
FREEZING POINT: ~10.4 °F/ ~12 °C		PH: 9.8-10	
EVAPORATION RATE (BuAc = 1): Not applicable		VAPOR DENSITY (AIR =1): Not Applicable	
VAPOR PRESSURE AT 100 °F: No Data		SOLUBILITY IN WATER: Soluble	
APPEARANCE AND ODOR: Clear liquid material, slight ammonia (pungent) odor.			MELTING POINT: 195 °F/ 90.56 °C
FLASH POINT: (Method Used) Not Applicable		FLAMMABLE LIMITS:	LEL: Not Applicable UEL: Not Applicable
AUTOIGNITION TEMPERATURE: Not Applicable		VOC CONTENT: Not Applicable	

SECTION 10 ☒ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures

HAZARDOUS REACTION POTENTIAL: Will not occur

CONDITIONS TO AVOID: Contact with incompatible materials. Heat, sparks, flames, elevated temperatures. Urea will form urea nitrate when mixed with nitric acid at low pH. Urea nitrate may become unstable and/or explosive under certain conditions.

INCOMPATIBLE PRODUCTS: Incompatible with strong reducing agents or other oxidizers. Possible incompatibility with finely powdered metals (cadmium, copper, lead, cobalt, nickel, bismuth, chromium, magnesium, zinc, sodium, potassium and aluminum).

MATERIALS TO AVOID: Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.

HAZARDOUS DECOMPOSITION PRODUCTS: These products include nitrogen oxides, ammonia, ammonium cyanate and carbon monoxide.

HAZARDOUS POLYMERIZATION: Has not been reported



SECTION 11 ☼ TOXICOLOGICAL INFORMATION								
UREA								
Toxicity								
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	8,471 mg/Kg	LC ₅₀ (inh)	Rat (15 minute)	No data available	LC ₅₀ (inh)	Rat (4 hours)	No data available
Specific organ toxicity, single exposure: No data available					Specific organ toxicity, repeated exposure: No data available			
CARCINOGENICITY								
IARC		Not Listed						
NTP		Not Listed						
California (Prop 65): Not Listed		NIOSH: Not Listed			ACGIH: Not Listed		OSHA: Not Listed	
MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS								
Respiratory or Skin sensitization: No data available					Germ cell mutagenicity: No data available			
Reproductive toxicity: No data available					Teratogenicity: No data available			
Skin Corrosion/irritation: No data available					Serious eye damage: No data available			
Synergistic effects: No data available					Aspiration hazard: No data available			
RTECS #: YR6250000								
ANHYDROUS AMMONIA								
Anhydrous Ammonia is extremely irritating and damaging to the eyes, nose, mucous membranes and respiratory system. Exposure to liquefied ammonia gas may cause frostbite injury and possibly severe burns with more localized deep tissue damage.								
Toxicity								
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	Not Available	LC ₅₀ (inh)	Rat (15 minute)	17,401 ppm	LC ₅₀ (inh)	Rat (4 hours)	2,000 ppm
Specific organ toxicity, single exposure: No data available					Specific organ toxicity, repeated exposure: No data available			
CARCINOGENICITY								
IARC		Not Listed						
NTP		Not Listed						
California (Prop 65): Not Listed		NIOSH: Not Listed			ACGIH: Not Listed		OSHA: Not Listed	
MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS								
Respiratory or Skin sensitization: No data available					Germ cell mutagenicity: No data available			
Reproductive toxicity: No data available					Teratogenicity: No data available			
Skin Corrosion/irritation: Gas is highly irritating and damaging to the skin.					Serious eye damage: Gas is highly irritating and damaging to the eyes.			
Synergistic effects: No data available					Aspiration hazard: No data available			
SECTION 12 ☼ ECOLOGICAL INFORMATION								
UREA								
TOXICITY								
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result			
EC ₅₀	<i>Daphnia magna</i>	3,910 mg/L (96 hours)	LC ₅₀	Fathead Minnow	100 - 500 mg/L (96 hours)			
PERSISTENCE AND DEGRADABILITY/BIOACCUMULATIVE POTENTIAL/ MOBILITY IN SOIL								



MATERIAL NAME: UREA LIQUOR

In soil, urea degrades rapidly, usually within 24 hours. May degrade to ammonia.					
ANHYDROUS AMMONIA					
TOXICITY					
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	Daphnia magna	25.4 mg/L 48 hour	LC ₅₀	Fathead Minnow	24 mg/L 96 hours
PERSISTENCE AND DEGRADABILITY/BIOACCUMULATIVE POTENTIAL/ MOBILITY IN SOIL					
Product is biodegradable and unlikely to persist in the environment.			Mobility in soil- The product is soluble in water.		
SECTION 13 ★ DISPOSAL CONSIDERATIONS					
Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations					
Dispose of in accordance with local regulations.					
Waste Disposal Method: Should not be released into the environment.					
Contaminated Packaging: Dispose of in accordance with local regulations.					
SECTION 14 ☐ TRANSPORTATION INFORMATION					
Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations					
Element	U.S. DOT		IMDG		IATA
UN Number	Not Regulated		Not Regulated		Not Regulated
UN Proper Shipping Name					
Hazard Class					
Placard/Label					
Environmental Hazard					
Packing Group					
SECTION 15 ∩ REGULATORY INFORMATION					
Agency			Listing Guidance only, consult specific regulations		
OSHA			Not Listed		
40 CFR Part 355 (EPCRA)			Not Listed		
40 CFR Part 302 (CERCLA)			Not Listed		
40 CFR Part 370 (Hazardous Chemical Reporting: Community Right to Know SARA 304/311/312: Extremely hazardous substance			Listed		
40 CFR Part 372 (Toxic Chemical Release Reporting: Community Right to Know) SARA 313			Listed		
TSCA Inventory			Listed		
EPA Form R Toxic Chemical Release Inventory			A nitrate compound is covered by TRI regulations only when in water and only if dissociated.		
Clean Air Act Section 112 Hazardous Air Pollutants (HAPs)			Not Listed		
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)			Listed based on free ammonia		
State Regulations: Massachusetts, California, New Jersey, and Pennsylvania			Not Listed		
State Regulations: California			Not Listed		



MATERIAL NAME: UREA LIQUOR

SECTION 16 ⌘ OTHER INFORMATION



NFPA LABEL



HMIS III LABEL

Personal Protection Index
National Paint and Coatings Association recommends that PPE codes be determined by the employer, who is familiar with the actual conditions under which chemicals in the facility are used.

Acronym List

°F=degrees Fahrenheit	°C=degrees Celsius	ACGIH= American Conference of Industrial Hygienists
APR=Air Purifying Respirator	BCF= Bioconcentration Factor	BuAc=Butyl Acetate
CAS=Chemical Abstract Service	CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act	
CHEMTREC= Chemical Transportation Emergency Center	CNS=Central Nervous System	CWA=Clean Water Act
DOT=Department of Transportation	EC50= Effective Concentration Fifty	EPA=Environmental Protection Agency
g/Kg=Grams per Kilogram	g/M ³ =Grams per Cubic Meter	GHS=Global Harmonization System
H ₂ O=Water	HAP=Hazardous Air Pollutants	HMIS= Hazardous Materials Identification System
IARC= International Agency for Research on Cancer	IATA= International Air Transport Association	IMDG= International Maritime Dangerous Goods
LC ₅₀ =Lethal Concentration Fifty	LD ₅₀ =Lethal Dose Fifty	LEL=Lower Explosive Limit
Log P _{ow} =Octanol/water partition coefficient	mg/Kg=Milligrams per Kilogram	mg/L=Milligrams per Liter
mL/Kg=Milliliters per Kilogram	mm HG=millimeters of mercury	NFPA=National Fire Protection Association
NIOSH= National Institute for Occupational Safety and Health	NTP=National Toxicology Program	OSHA=Occupational Safety and Health Administration
PEL=Permissible Exposure Limit	ppm=Parts per Million	RCRA=Resource Conservation and Recovery Act
RQ=Reportable Quantities	RTECS=Registry of Toxic Effects of Chemical Substances	SARA= Superfund Amendments and Reauthorization Act
SDS=Safety Data Sheet	STEL=Short Term Exposure Limit	
TLV=Threshold Limit Value	TPQ=Threshold Planning Quantity	TSCA=Toxic Substance and Control Act
TWA=Time Weighted Average	UEL=Upper Explosive Limit	VOC=Volatile Organic Compounds

SDS REVISIONS: Update ingredients list

SDS CREATION DATE: 01/09/14

REVISION #3: 09/15/25

DISCLAIMER

The information in this SDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED, REGARDING ITS ACCURACY.** Some conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.** All product measurements such as flash point, *etc.* are considered approximate values. All data provided by CVR Energy, Inc. This SDS was prepared by PROtect, LLC. and is to be used only for this product.