KOCH FERTILIZER

SAFETY DATA SHEET

1. Identification

Product identifier **Urea Ammonium Nitrate Solution**

Other means of identification

SDS Number KF_UAN_US_EN

Synonyms UAN 28% Nitrogen, UAN 30% Nitrogen, UAN 32% Nitrogen, UN-28, UN-30, UN-32, URAN, TRI-N-28, TRI-N-30, TRI-N-32, STCC 2871315.

Recommended use Fertilizer.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

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 Serious eye damage/eye irritation Category 2A

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Causes serious eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling. Wear eye protection/face protection.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Not assigned.

Disposal Not assigned.

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

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Ammonium nitrate	6484-52-2	35 - 55
Urea	57-13-6	25 - 40
Water	7732-18-5	15 - 32
Free Ammonia	7664-41-7	< 0.2

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

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

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 (CO2).

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

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

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. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. 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

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 discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in 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 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	PEL	35 mg/m3
		50 ppm

US. ACGIH Threshold Limit Values (TLV)

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

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	IDLH	15 %
		300 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	STEL	27 mg/m3
		35 ppm
	TWA	18 mg/m3
		25 ppm

US. OARS. Workplace Environmental Exposure Level (WEEL) Guide

Components	Type	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m3	Total particulate.

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear suitable protective clothing.

Respiratory protection 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. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations 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.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color	Colorless.
Odor	Slight ammonia.
Odor threshold	Not available.
pH	6.8 - 8.5
Melting point/freezing point	Not available.
Initial boiling point and boiling range	225 °F (107.22 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.05 - 1.35 @ 30 °C
Solubility(ies)	
Solubility (water)	100%
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Heat, sparks, flames, elevated temperatures. UAN will form urea nitrate when mixed with nitric acid at low pH. Urea nitrate may become unstable and/or explosive under certain conditions.
Incompatible materials	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Ammonia. Biuret. Cyanide compounds.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged or repeated skin contact may cause irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity	May be harmful if swallowed.

Components	Species	Test Results
Ammonium nitrate (CAS 6484-52-2)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Inhalation		
Dust		
LC50	Rat	> 88.8 mg/l, 4 Hours
Oral		
LD50	Rat	> 2000 mg/kg
Free Ammonia (CAS 7664-41-7)		
Acute		
Inhalation		
Gas		
LC50	Mouse	2940 mg/m3, 1 Hours
	Rat	5137 mg/m3, 1 Hours
Urea (CAS 57-13-6)		
Acute		
Oral		
LD50	Rat	14300 mg/kg

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ammonium nitrate (CAS 6484-52-2) 2A Probably carcinogenic to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Ammonium nitrate (CAS 6484-52-2)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	555 mg/l, 24 Hours
Fish	LC50	Oncorhynchus mykiss	> 100 mg/l, 96 Hours

Components		Species	Test Results
Free Ammonia (CAS 7664-41-7)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	25 mg/l, 48 Hours
Fish	LC50	Rainbow Trout	> 0.16 - < 0.37 mg/l, 96 Hours
Chronic			
Crustacea	NOEC	Daphnia magna	0.42 mg/l, 21 days
Fish	NOEC	Pink salmon (Oncorhynchus gorbuscha)	1.2 mg/l, 21 days
Urea (CAS 57-13-6)			
Aquatic			
Algae	EC10	Algae	47 mg/l, 192 hours
Fish	LC50	Leuciscus idus	> 6810 mg/l, 96 hours
Acute			
Crustacea	LC50	Water flea (Daphnia magna)	> 10000 mg/l, 24 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Free Ammonia (CAS 7664-41-7)	-2.66
Urea (CAS 57-13-6)	-2.11

Mobility in soil This product is water soluble and may disperse in soil.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local 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).

Contaminated packaging 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.

CERCLA Hazardous Substance List (40 CFR 302.4)

Free Ammonia (CAS 7664-41-7) Listed.

SARA 304 Emergency release notification

Ammonia; Ammonia (anhydrous) (CAS 7664-41-7) 100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components of the mixture on the TSCA 8(b) inventory are designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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)
Free Ammonia	7664-41-7	100	500		

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Ammonium nitrate	6484-52-2	35 - 55

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) Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

US. Massachusetts RTK - Substance List

Ammonium nitrate (CAS 6484-52-2)
Free Ammonia (CAS 7664-41-7)

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

Ammonium nitrate (CAS 6484-52-2)
Free Ammonia (CAS 7664-41-7)

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

Ammonium nitrate (CAS 6484-52-2)
Free Ammonia (CAS 7664-41-7)

US. Rhode Island RTK

Free Ammonia (CAS 7664-41-7)

California Proposition 65

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. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Free Ammonia (CAS 7664-41-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	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)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply 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

Issue date 31-January-2017

Revision date 16-August-2023

Version # 02

HMIS® ratings
Health: 1
Flammability: 1
Physical hazard: 1

NFPA ratings

Disclaimer

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