

KOCH FERTILIZER CANADA, ULC

1. Identification

Product identifier AGROTAIN® Treated UAN

Other means of identification
Product code KFC_AgrotianTreatUAN_CA_EN

Recommended use Fertiliser.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Koch Fertilizer Canada ULC
Address 1400 17th Street East
 Brandon
 MB
 R7A 7C4
 CA

Telephone 204-729-2900
e-mail kochmsds@kochind.com

Emergency phone number For Chemical Emergency
 Call CHEMTREC day/night
 USA 1.800.424.9300
 Emergency Assist Response 1.204.729.2999
 To Request SDS 1.316.828.7672

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statements

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Other hazards 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	< 0.15
N-(n-butyl)-thiophosphoric triamide	94317-64-3	< 0.1

N-methyl-2-pyrrolidone	872-50-4	< 0.1
Propylene glycol	57-55-6	< 0.1

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 person to fresh air. If the affected person is not breathing, apply artificial respiration. Get medical attention if discomfort develops or persists.

Skin contact Immediately flush skin with plenty of water. Get medical attention if irritation develops and persists.

Eye contact Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops or persists.

Ingestion Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

Most important symptoms/effects, acute and delayed Symptoms include itching, burning, redness, and tearing of eyes.

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. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical Slight fire hazard. When water evaporates from this product residues may contain ammonium nitrate, and solid ammonium nitrate when sensitized during decomposition may become unstable and explosive.

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

General fire hazards The product is not flammable.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear suitable protective clothing. 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. After removal flush contaminated area thoroughly with water.
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions Never return spills to original containers for re-use. For waste disposal, see Section 13 of the SDS. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers or watercourses.

7. Handling and storage

Precautions for safe handling Avoid inhalation of vapours/spray and contact with skin and eyes. Use only with adequate ventilation. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

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

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	STEL	24 mg/m3
	TWA	35 ppm
		17 mg/m3
		25 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

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

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

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

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Free Ammonia (CAS 7664-41-7)	STEL	35 ppm	
	TWA	25 ppm	
N-methyl-2-pyrrolidone (CAS 872-50-4)	TWA	400 mg/m3	
Propylene glycol (CAS 57-55-6)	TWA	155 mg/m3	Vapor and aerosol.
		10 mg/m3	Aerosol
		50 ppm	Vapor and aerosol.

Canada. Quebec OELs. (Ministry of Labour - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Free Ammonia (CAS 7664-41-7)	STEL	24 mg/m3
	TWA	35 ppm
		17 mg/m3
		25 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling time
N-methyl-2-pyrrolidone (CAS 872-50-4)	100 mg/l	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Follow standard monitoring procedures.

Appropriate engineering controls

Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mist. Provide adequate general and local exhaust ventilation. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear approved safety glasses or goggles.
Skin protection	
Hand protection	Chemical resistant 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.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
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. Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment.
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. Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties

Appearance	Clear to brownish-clear liquid.
Physical state	Liquid.
Form	Liquid.
Colour	Clear to brownish-clear.
Odour	Slight ammonia.
Odour threshold	Not available.
pH	6.8 - 8.5
Melting point/freezing point	Not available.
Initial boiling point and boiling range	107.22 °C (225 °F)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	1.05 - 1.35
Relative density temperature	30 °C (86 °F)
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.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
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	Vapours and spray mist may irritate throat and respiratory system and cause coughing. No adverse effects due to inhalation are expected.
Skin contact	Prolonged or repeated skin contact may cause irritation.
Eye contact	May cause eye irritation.
Ingestion	May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms include itching, burning, redness, and tearing of eyes.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Components	Species	Test results
Ammonium nitrate (CAS 6484-52-2)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Inhalation		
<i>Dust</i>		
LC50	Rat	> 88.8 mg/l, 4 Hours
Oral		
LD50	Rat	> 2000 mg/kg
Free Ammonia (CAS 7664-41-7)		
Acute		
Inhalation		
LC50	Rat	5.1 mg/l, 1 Hours
Oral		
LD50	Rat	350 mg/kg as Ammonium hydroxide
N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Wistar rat	> 2.1 mg/l, 4 hours
Oral		
LD50	Wistar rat	> 2000 mg/kg

Components	Species	Test results
N-methyl-2-pyrrolidone (CAS 872-50-4)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Inhalation		
<i>Mist</i>		
LC50	Rat	> 5.1 mg/l, 4 hours
Oral		
LD50	Rat	3605 mg/kg
Propylene glycol (CAS 57-55-6)		
Acute		
Dermal		
LD50	Rabbit	20800 mg/kg
Oral		
LD50	Rat	22000 mg/kg
Urea (CAS 57-13-6)		
Acute		
Oral		
LD50	Rat	14300 mg/kg

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

Irritation Corrosion - Skin

N-methyl-2-pyrrolidone (CAS 872-50-4)

Result: Slightly irritating
Species: Rabbit

Serious eye damage/eye irritation May cause eye irritation.

Eye

N-methyl-2-pyrrolidone (CAS 872-50-4)

Result: Moderately irritating
Species: Rabbit
Observation Period: 14 days

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitiser.

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

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

Carcinogenicity Not available.

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.

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		
<i>Acute</i>		
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		
Fish	LC50	Chinook salmon (<i>Oncorhynchus tshawytscha</i>)
		0.43 - 0.47 mg/l, 96 hours
N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)		
Aquatic		
Algae	EC50	<i>Selenastrum capricornutum</i>
		280 mg/l, 96 hours
Crustacea	EC50	<i>Daphnia magna</i>
		290 mg/l, 48 hours
	LC50	<i>Daphnia</i>
		350 mg/l, 48 hours
Fish	LC50	<i>Lepomis macrochirus</i>
		1140 mg/l, 96 hours
N-methyl-2-pyrrolidone (CAS 872-50-4)		
Aquatic		
<i>Acute</i>		
Algae	EC50	<i>Scenedesmus subspicatus</i>
		> 500 mg/l, 72 Hours
Crustacea	EC50	<i>Daphnia magna</i>
		> 1000 mg/l, 24 Hours
Fish	LC50	<i>Oncorhynchus mykiss</i>
		> 500 mg/l, 96 Hours
<i>Chronic</i>		
Crustacea	NOEC	<i>Daphnia magna</i>
		12.5 mg/l, 21 days
Urea (CAS 57-13-6)		
Aquatic		
Fish	LC50	<i>Leuciscus idus</i>
		> 6810 mg/l, 96 hours

Persistence and degradability

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

N-methyl-2-pyrrolidone (CAS 872-50-4)	-0.54
Propylene glycol (CAS 57-55-6)	-0.92
Urea (CAS 57-13-6)	-2.11

Mobility in soil

This product is water soluble and may disperse in soil.

Other adverse effects

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

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

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 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).

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

TDG

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

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

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)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
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

Issue date	08-February-2017
Revision date	-
Version No.	01
List of abbreviations	EC50: Effective Concentration, 50%. LC50: Lethal Concentration, 50%.
References	EPA: AQUIRE database HSDB® - Hazardous Substances Data Bank

Disclaimer

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