

## 1. Product and Company Identification

<b>Material name</b>	<b>SuperU® Stabilized Nitrogen Fertilizer</b>		
<b>Version #</b>	01		
<b>Issue date</b>	25-July-2013		
<b>Revision date</b>	-		
<b>Supersedes date</b>	-		
<b>CAS #</b>	Mixture		
<b>MSDS Number</b>	KFC_SuperU_CA_EN		
<b>Manufacturer information</b>	Koch Fertilizer Canada ULC 1400 17th Street East Brandon, MB R7A 7C4 Canada kochmsds@kochind.com		
		204-729-2900	
	For Chemical Emergency Call CHEMTREC day or night		
	USA/Canada	1.800.424.9300	
	Outside USA/Canada	1.703.527.3887	
	(collect calls accepted)		

## 2. Hazards Identification

<b>Emergency overview</b>	Dust may irritate the respiratory tract, skin and eyes.
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Eye contact. Skin contact. Inhalation.
<b>Eyes</b>	Contact may cause eye irritation. Dust or powder may irritate eye tissue.
<b>Skin</b>	Dust or powder may irritate the skin.
<b>Inhalation</b>	Dust may irritate throat and respiratory system and cause coughing.
<b>Ingestion</b>	Ingestion of this product may cause nausea, vomiting and diarrhea.
<b>Signs and symptoms</b>	Symptoms can include irritation, redness, scratching of the cornea, and tearing.
<b>Potential environmental effects</b>	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.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
Urea	57-13-6	60 - 100
Non hazardous dye	Proprietary	< 3
Dicyandiamide	461-58-5	0.1 - 1
N-(n-butyl)-thiophosphoric triamide	94317-64-3	< 0.1
N-Methyl-2-pyrrolidone	872-50-4	< 0.1
Non hazardous component	Proprietary	< 0.1

<b>Composition comments</b>	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.
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## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Dust in the eyes: Do not rub eyes. Remove contact lenses, if present and easy to do. Flush eyes immediately with large amounts of water. Get medical attention if irritation develops and persists.

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

**Inhalation** Remove from area of exposure. For breathing difficulties, oxygen may be necessary.

**Ingestion** Rinse mouth thoroughly. 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.

**Notes to physician** Treat symptomatically. The effects might be delayed.

**General advice** Show this safety data sheet to the doctor in attendance.

## 5. Fire Fighting Measures

**Flammable properties** The product is not flammable.

**Extinguishing media**

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

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

**Protection of firefighters**

**Specific hazards arising from the chemical** Fire may produce irritating, corrosive and/or toxic gases.

**Protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.

**Fire fighting equipment/instructions** Use standard firefighting procedures and consider the hazards of other involved materials. Cool material exposed to heat with water spray and remove it if no risk is involved.

**Specific methods** Cool material exposed to heat with water spray and remove it if no risk is involved.

**Explosion data**

**Sensitivity to static discharge** Not available.

**Sensitivity to mechanical impact** Not available.

## 6. Accidental Release Measures

**Personal precautions** Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stay upwind.

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Powder Spills: Cover powder spill with plastic sheet or tarpaulin to minimize spreading and keep powder dry. Shovel into dry containers. Cover and move the containers. Flush the area with water. Avoid the generation of dusts during clean-up.

## 7. Handling and Storage

**Handling** Avoid exposure - obtain special instructions before use. Wear appropriate personal protective equipment. Avoid generation and spreading of dust. Avoid inhalation of dust and contact with eyes. Avoid prolonged exposure. Handle and open container with care. Wash before eating, drinking and/or smoking. Wash thoroughly after handling.

**Storage** Avoid exposure - obtain special instructions before use. Use care in handling/storage. Store in tightly closed original container in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Store in accordance with local/regional/national/international regulation. Keep out of reach of children. Long term storage at temperatures above 100°F (36°C) can adversely affect the efficacy of products containing N-(n-butyl)-thiophosphoric triamide.

## 8. Exposure Controls / Personal Protection

### Occupational exposure limits

#### ACGIH Biological Exposure Indices

Components	Type	Value
N-Methyl-2-pyrrolidone (CAS 872-50-4)	BEI	100 mg/l

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Dust (CAS -)	TWA	3 mg/m <sup>3</sup>	Respirable particles.

## US. ACGIH Threshold Limit Values

Components	Type	Value	Form
		10 mg/m <sup>3</sup>	Inhalable particles.

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

Components	Type	Value	Form
Dust (CAS -)	TWA	3 mg/m <sup>3</sup>	Respirable particles.
		10 mg/m <sup>3</sup>	Total particulate.

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

Components	Type	Value	Form
Dust (CAS -)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Total dust.

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

Components	Type	Value	Form
Dust (CAS -)	TWA	3 mg/m <sup>3</sup>	Respirable particles.
		10 mg/m <sup>3</sup>	Inhalable
N-Methyl-2-pyrrolidone (CAS 872-50-4)	TWA	400 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Dust (CAS -)	TWA	10 mg/m <sup>3</sup>	Total dust.

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

Components	Type	Value	Form
Dust (CAS -)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

## US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Dust (CAS -)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 millions of particle	Total dust.
		15 millions of particle	Respirable fraction.

**Engineering controls** Provide adequate general and local exhaust ventilation. Provide eyewash station.

### Personal protective equipment

**Eye / face protection** Chemical goggles are recommended.

**Skin protection** Neoprene gloves. Chemical resistant clothing is recommended. Routinely wash work clothing and protective equipment to remove contaminants.

**Respiratory protection** Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter. Wear respiratory protection during operations where spraying or misting occurs.

## 9. Physical & Chemical Properties

**Appearance** Light to medium blue granules

**Physical state** Solid.

**Form** Granules.

**Color** Light to medium blue

**Odor** Slight sulfurous

**Odor threshold** Not available.

<b>pH</b>	7.2 (10% in water)
<b>Vapor pressure</b>	Not Applicable.
<b>Vapor density</b>	Not Applicable.
<b>Boiling point</b>	Not Applicable.
<b>Melting point/Freezing point</b>	275 °F (135 °C) Decomposes
<b>Solubility (water)</b>	Soluble.
<b>Specific gravity</b>	1.32
<b>Flash point</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not Applicable.
<b>Flammability limits in air, lower, % by volume</b>	Not Applicable.
<b>Auto-ignition temperature</b>	Not available.
<b>Evaporation rate</b>	Not Applicable.
<b>Other data</b>	
<b>Density</b>	47.00 lb/ft <sup>3</sup>
<b>Flammability (solid, gas)</b>	Not applicable.

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Conditions to avoid</b>	Extreme temperatures.
<b>Incompatible materials</b>	Acids. Strong reducing agents. Strong oxidizing agents.
<b>Hazardous decomposition products</b>	During combustion: Carbon oxides. Nitrogen oxides. Sulfur oxides.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

### Toxicological data

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)		
<b>Acute</b>		
NOAEL	Rat	445 mg/kg, 1 day
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 2823 mg/kg
N-Methyl-2-pyrrolidone (CAS 872-50-4)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	8000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 5.1 mg/l
<i>Oral</i>		
LD50	Rat	3914 mg/kg
Urea (CAS 57-13-6)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	14300 mg/kg

**Toxicological information** Occupational exposure to the substance or mixture may cause adverse effects.

<b>Acute effects</b>	Dust in the eyes will cause irritation. Dust may irritate skin. High concentrations of dust may irritate throat and respiratory system and cause coughing.
<b>Local effects</b>	May cause redness and pain. Ingestion may cause irritation and malaise.
<b>Chronic effects</b>	The product contains a substance which can have a cumulative effect.
<b>Carcinogenicity</b>	Not classified.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive effects</b>	The product contains a small amount of substance that is suspected of damaging fertility or the unborn child.
<b>Teratogenicity</b>	Not classified.
<b>Symptoms and target organs</b>	Contact may cause eye irritation with redness, tearing, pain, and/or blurred vision. May adversely affect the liver and kidney based on animal testing
<b>Epidemiology</b>	No epidemiological data is available for this product.

## 12. Ecological Information

### Ecotoxicological data

Components		Species	Test Results
N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)			
<b>Aquatic</b>			
Crustacea	EC50	Daphnia	290 mg/l, 48 hours
	NOEL	Daphnia	150 mg/l
Fish	LC50	Fish	1140 mg/l, 96 hours
N-Methyl-2-pyrrolidone (CAS 872-50-4)			
<b>Aquatic</b>			
Crustacea	EC50	Daphnia magna	> 1000 mg/l, 24 hours
Urea (CAS 57-13-6)			
<b>Aquatic</b>			
Fish	LC50	Leuciscus idus	> 6810 mg/l, 96 hours
<b>Ecotoxicity</b>	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.		
<b>Environmental effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.		
<b>Persistence and degradability</b>	The product is not readily biodegradable.		
<b>Partition coefficient</b>			
N-Methyl-2-pyrrolidone (CAS 872-50-4)		-0.54	
Urea (CAS 57-13-6)		-2.11	
<b>Mobility in environmental media</b>	The product is soluble in water.		

## 13. Disposal Considerations

<b>Disposal instructions</b>	Do not discharge into drains or water courses.
<b>Waste from residues / unused products</b>	Dispose in accordance with all applicable regulations.
<b>Contaminated packaging</b>	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.

## 15. Regulatory Information

<b>Canadian regulations</b>	This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
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## 16. Other Information

**Recommended restrictions**

Use in accordance with supplier's recommendations.

**Further information**

HMIS® is a registered trade and service mark of the NPCA.

**HMIS® ratings**

Health: 1  
Flammability: 1  
Physical hazard: 0

**NFPA ratings**

Health: 1  
Flammability: 1  
Instability: 0

**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.