

## KOCH FERTILIZER CANADA, ULC

June 4, 2015

Ms. Tracey Braun
Director
Environmental Approvals Branch
Conservation and Water Stewardship
123 Main Street Suite 160
Winnipeg, Manitoba R3C 1A5

RE: Koch Fertilizer Canada, ULC (KFC ULC) - SuperU® Production

Dear Ms. Braun:

## Request for Approval:

KFC ULC is requesting approval from the Environmental Approvals Branch of Manitoba Conservation and Water Stewardship (MCWS) for continued production of Super U® stabilized nitrogen (material safety data sheet attached).

## Background:

For background, KFC ULC received approval for a one year production trial from the Environmental Approvals Branch on May 23, 2013 to produce SuperU® stabilized nitrogen within KFC ULC's existing urea manufacturing plant. The production trial started on September 3<sup>rd</sup>, 2013. KFC ULC received an extension to the production trial to March 31, 2016.

SuperU® stabilized nitrogen fertilizer is a ready-to-use stabilized nitrogen fertilizer containing both urease and nitrification inhibitors to reduce nitrogen loss on and below the soil surface. Urea is a nitrogen based fertilizer with a 46% nitrogen content. It is manufactured by reacting ammonia with carbon dioxide to produce a urea solution. The urea solution is either granulated to produce solid urea or blended as a solution with ammonium nitrate solution and water to make urea ammonium nitrate, which are both agricultural nitrogen-based fertilizers.

SuperU® stabilized nitrogen is manufactured with the existing urea manufacturing plant (see process and instrument diagram attached), and involves two additives, Dicyandimide (DCD) and n-butyl-thiophosphoric triamide (NBPT) which is then granulated into a dry product. Material safety data sheets for each additive are included with this submission. The DCD is received in dry powder form in one cubic meter super sacs, which are off-loaded into a surge bin. The NBPT is a liquid product and is received in 1200 liter chemical totes. Liquid blue dye results in the SuperU® stabilized nitrogen being blue in color compared to the regular white urea. The content of each additive is analyzed routinely at KFC ULC and validated by a third party on a monthly basis.



During the production trial period KFC ULC has alternated between production of SuperU® stabilized nitrogen and regular urea, including periods with production of neither product, depending on the demand of the agricultural market.

## **Environmental Impacts and Licence Conditions:**

Currently KFC ULC is evaluating the infrastructure and equipment required to allow for more efficient handling of the additive chemicals. This includes potentially receiving the three products (DCD, NBPT and blue dye) in a single slurry. KFC ULC's continued assessment, after about 20 months of production, is that manufacturing of this product does not result in any adverse environmental or health and safety effects. Infrastructure modifications will not result in a new emission to atmosphere beyond those already approved in the trial period, nor result in a change to the plant liquid effluent. Further, there will be no adverse environmental effects associated with the product handling or storage, no significant increased energy usage, and no increase in noise, dust or other nuisances. Throughout the production trial period KFC ULC has and will continue to conform to the licence limits as listed in Environment Act Licence 1535 RR. No change is anticipated in this going forward. If a new building is constructed to house this equipment it will be completed with the appropriate construction permit from the City of Brandon.

The safety and health risks associated with these products are mitigated with existing personnel protection equipment that is mandatory for use on site and with the standard operating procedures in place for use and handling of these products.

KFC ULC is seeking approval from the Environmental Approvals Branch of Manitoba for the continued manufacturing of SuperU® stabilized nitrogen on a permanent basis within the existing urea manufacturing process.

If you have any questions or concerns with respect to the information contained within this report, do not hesitate to contact me at (204) 729-2981.

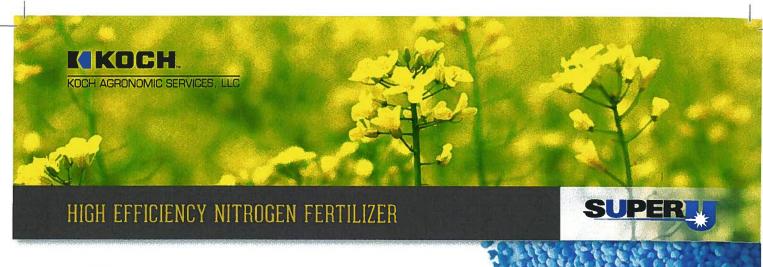
Yours truly,

KOCH FERTILIZER CANADA, ULC

Rodi Sveistrup

Compliance Team Leader

cc: Peter Crocker, Conservation and Water Stewardship, Brandon, Manitoba



## SUPERU™ FERTILIZER REDUCES LOSSES DUE TO:

- Volatilization
- Denitrification
- Leaching

SUPERU™ fertilizer has an analysis of 46-0-0 and is stabilized with both nitrification and urease inhibitors to maximize the efficiency of surfaced-applied nitrogen when losses are likely to occur. It can be used as a nitrogen source for all crops that require N.

SuperU<sup>\*\*</sup> fertilizer is easily used in many application methods without the need for incorporation, such as:

- Broadcast
- Side Banded
- Pre-Seed
- Mid-Row Banded
- Post-Seed

Broadcasted SuperU™ fertilizer can replace banded application of urea. This could increase the number of acres you can cover in a day. Ask your dealer for SuperU™ fertilizer this season.

SurenU<sup>re</sup> fertilizer has the same characteristics as urea and is not intended for seed placement. No seed place safety claims are made with this product.

SuperU FERTILIZ	ZER SPECIFICATIONS
TOTAL NITROGEN	46%
FORM	GRANULAR UREA WITH TWO INHIBITORS
SGN.	265-300

'Size Guide Number

www.honestagriculture.com | 866-863-5550

NOTICE. This program provides selected information about Secretic findinger and particular uses or the product is a tour provide a complete statement of and does not constitute a representation, examinity or quaranty with regard to the product as a tour provides uses, substitute for the international regions and that disposal control that general public are advised of any ricks.

Samuel and this Sensit\* keps are underlinks of Kirch Agronomic Services, LLC. The Kech logic is a imagenizate of knoth ladustnes. Inc. 47/2013 Koch Agronomic Services, LLC. 13-0786-West

# KKOCH

## **SAFETY DATA SHEET**

KOCH FERTILIZER CANADA, ULC

#### 1. Identification

**Product identifier** 

SuperU® Stabilized Nitrogen Fertilizer

Other means of identification

Product code

KFC\_SuperU\_US\_EN

Recommended use

Fertilizer.

Recommended restrictions

Use in accordance with supplier's recommendations.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer/Supplier

Koch Fertilizer Canada ULC 1400 17th Street East

Brandon, MB R7A 7C4, Canada 204-729-2900

**Emergency** 

For Chemical Emergency Call CHEMTREC day or night USA/Canada - 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.

**OSHA** defined hazards

Not classified.

Label elements

**Hazard symbol** 

None.

Signal word

None.

**Hazard statement** 

The mixture does not meet the criteria for classification.

Precautionary statement

Prevention

Use personal protective equipment as required.

Response

Wash hands after handling.

Storage

Store away from incompatible materials.

Disposal

Hazard(s) not otherwise

Dispose of waste and residues in accordance with local authority requirements. Not classified.

classified (HNOC)
Supplemental information

Not applicable.

#### 3. Composition/information on ingredients

#### **Mixtures**

Chemical name	CAS number	%	
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	

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 Skin contact Eye contact

Move person to fresh air. Get medical attention if any discomfort continues.

Wash off with plenty of water. Get medical attention if irritation develops or persists.

Symptoms can include irritation, redness, scratching of the cornea, and tearing.

Do not rub eye. Remove contact lenses, if present and easy to do. Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion

Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort occurs.

Most important symptoms/effects, acute and

delayed

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 Unsuitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

None known.

Specific hazards arising from

the chemical

Urea is non-combustible under most conditions. However, during a fire, irritating/toxic gases may be generated. The dust can be ignited at very high temperatures, but not expected to explode (minimum ignition temperature (cloud) = 900 deg C.

Special protective equipment and precautions for firefighters

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

Fire-fighting equipment/instructions Move containers from fire area if you can do it without risk. Use water spray to prevent dust formation, absorb heat, keep containers cool and protect fire-exposed material.

#### 6. Accidental release measures

Personal precautions. protective equipment and emergency procedures

Avoid inhalation of dust and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. After removal flush contaminated area thoroughly with water.

Never return spills to original containers for re-use.

**Environmental precautions** 

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 dust and contact with skin and eyes. Use only with adequate ventilation, Use work methods which minimize dust production. Keep the workplace clean.

Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Store in a cool, dry place. Keep container tightly closed. Store away from incompatible materials. 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

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910,1000)

Components	Туре	Value	Form
Dust (CAS -)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

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

Components		Type		,	Value	Form
Dust (CAS -)		TWA			5 mg/m3	Respirable fraction.
					15 mg/m3	Total dust.
					50 millions of	Total dust.
					particle	
					15 millions of particle	Respirable fraction.
US. ACGIH Threshold L	imit Values				<b></b>	
Components		Туре			Vaiue	Form
Dust (CAS -)		TWA			3 mg/m3	Respirable particles.
					10	Inhalabla andialas
					10 mg/m3	inhalable particles.
US. Workplace Environ	mental Exposure i	Levei (V	VEEL) Guides		ro mg/ms	innalable particles.
US. Workplace Environ	mental Exposure i	Levei (V Type	VEEL) Guides		Value	Form
•	mental Exposure I	•	VEEL) Guides	<u> </u>		·
Components N-Methyl-2-pyrrolidone	mental Exposure I	Туре	VEEL) Guides		Value	·
Components N-Methyl-2-pyrrolidone (CAS 872-50-4)	mental Exposure I	Туре	VEEL) Guides		Value 40 mg/m3	·
Components N-Methyl-2-pyrrolidone (CAS 872-50-4) Urea (CAS 57-13-6)	mental Exposure I	Type	VEEL) Guides		Value 40 mg/m3 10 ppm	Form
Components N-Methyl-2-pyrrolidone (CAS 872-50-4)		Type	VEEL) Guides		Value 40 mg/m3 10 ppm	Form
Components N-Methyl-2-pyrrolidone (CAS 872-50-4) Urea (CAS 57-13-6) logical limit values		Type	VEEL) Guides		Value 40 mg/m3 10 ppm 10 mg/m3	Form  Total particulate.

<sup>\* -</sup> For sampling details, please see the source document.

#### **Exposure guidelines**

#### **US WEEL Guides: Skin designation**

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

AS 872-50-4) Can be absorbed through the skin.

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of

Appropriate engineering

controls

inhalation of dust.

et hyl-2-pyrr olidone

individual protection measures, such as personal protective equipment

Eye/face protection

Use tight fitting goggles if dust is generated.

Skin protection

Hand protection

Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove

supplier.

Other

Risk of contact: Wear appropriate clothing to prevent any possibility of 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 dust, use suitable respiratory equipment with particle filter. 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.

Thermai 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 practice.

## 9. Physical and 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.

SuperU® Stabilized Nitrogen Fertilizer

SDS US

915302 Version #: 01 Revision date: - Issue date: 06-September-2013

Hq 7.2 (10% in water)

Melting point/freezing point 275 °F (135 °C) Decomposes

Initial boiling point and boiling

range

Not Applicable.

Not available. Flash point Not Applicable. **Evaporation rate** 

Flammability (solid, gas) Not applicable. Upper/lower flammability or explosive limits

Flammability limit - lower

Not Applicable.

Flammability limit - upper

Not Applicable.

(%)

Explosive limit - lower (%) Explosive limit - upper (%) Not available. Not available.

Vapor pressure

Not Applicable.

Vapor density

Not Applicable.

Relative density

1.32

Solubility(ies)

Soluble.

Partition coefficient

Not available.

(n-octanol/water)

Auto-ignition temperature

Not available.

**Decomposition temperature** 

Not available.

Viscosity

Not available.

Other information

Density

47.00 lb/ft3

## 10. Stability and reactivity

Reactivity

The product is stable and non reactive under normal conditions of use, storage and transport,

Chemical stability

Possibility of hazardous

Stable under normal temperature conditions. Hazardous polymerization does not occur.

reactions

Conditions to avoid

Extreme temperatures.

Incompatible materials

Acids. Strong reducing agents. Strong oxidizing agents.

Hazardous decomposition

During combustion: Carbon oxides. Nitrogen oxides. Sulfur oxides.

products

## 11. Toxicological information

#### Information on likely routes of exposure

Ingestion

May cause discomfort if swallowed.

Inhaiation

High concentrations of dust may irritate throat and respiratory system and cause coughing.

Skin contact

Dust may irritate skin.

Eye contact

Dust may irritate the eyes.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms can include irritation, redness, scratching of the comea, and tearing.

#### Information on toxicological effects

**Acute toxicity** 

May cause discomfort if swallowed.

Components **Test Results** Species

N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)

Acute Dermal

LD50

> 2000 mg/kg

Oral LD50

Rat

Rat

> 2823 mg/kg

SDS US

Components Species **Test Results** N-Methyl-2-pyrrolidone (CAS 872-50-4) Acute Dermal LD50 Rabbit 8000 mg/kg Inhalation LC50 Rat > 5.1 mg/l Oral LD50 Rat 3914 mg/kg Urea (CAS 57-13-6) Acute Oral LD50 Rat 14300 mg/kg Skin corrosion/irritation May cause irritation through mechanical abrasion. Serious eye damage/eye Product dust or powder may cause mechanical eye irritation. irritation Respiratory sensitization Based on available data, the classification criteria are not met. Skin sensitization Not a skin sensitizer. Germ cell mutagenicity Based on available data, the classification criteria are not met. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Carcinogenicity Reproductive toxicity Based on available data, the classification criteria are not met. Specific target organ toxicity -Inhalation of dusts may cause respiratory irritation. single exposure Specific target organ toxicity -Based on available data, the classification criteria are not met. repeated exposure **Aspiration hazard** Not an aspiration hazard. **Chronic effects** Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. **Further information** No other specific acute or chronic health impact noted. 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** N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3) Aquatic **EC50** Crustacea Daphnia 290 mg/l, 48 hours Fish LC50 Fish 1140 mg/l, 96 hours N-Methyl-2-pyrrolidone (CAS 872-50-4) **Aquatic** Crustacea **EC50** Daphnia magna > 1000 mg/l, 24 hours Urea (CAS 57-13-6) Aquatic Fish LC50 Leuciscus idus > 6810 mg/l, 96 hours Persistence and degradability No data available. **Bioaccumulative potential** No data available. Partition coefficient n-octanol / water (log Kow) N-Methyl-2-pyrrolidone (CAS 872-50-4) -0.54Urea (CAS 57-13-6) -2.11Mobility in soil This product is water soluble and may disperse in soil. No data available. Other adverse effects 13. Disposal considerations **Disposal instructions** Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

Hazardous waste code

Not regulated.

Waste from residues / unused

products

Contaminated packaging

Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Since emptied containers may retain product residue, follow label warnings even after container is

emptied.

#### 14. Transport information

Not regulated as a hazardous material by DOT.

**IATA** 

Not regulated as a dangerous good.

**IMDG** 

Not regulated as a dangerous good.

Transport in bulk according to

Not applicable.

Annex II of MARPOL 73/78 and

the IBC Code

#### 15. Regulatory information

US federal regulations

This product is not known to be 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)

N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3) 1.0 % One-Time Export Notification only.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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

Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** 

Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

**SARA 302 Extremely** 

hazardous substance

SARA 311/312 Hazardous

No

chemical

SARA 313 (TRI reporting)

Not regulated.

#### Other federal regulations

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

Not requiated.

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

Not regulated.

Safe Drinking Water Act

Not regulated.

(SDWA)

**Food and Drug** 

Not regulated.

Administration (FDA)

**US state regulations** 

WARNING: This product contains a chemical known to the State of California to cause birth

defects or other reproductive harm.

US. Massachusetts RTK - Substance List

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

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

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

500 lbs

US. Pennsylvania RTK - Hazardous Substances

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

US. Rhode Island RTK

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

**US. California Proposition 65** 

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

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

#### International Inventories

Country(s) or region

Inventory name

On inventory (yes/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

Issue date

06-September-2013

Revision date

01

Version # **NFPA Ratings** 

List of abbreviations

LC50: Lethal Concentration, 50%.

LD50: Lethal Dose, 50%.

References

IARC: International Agency for Research on Cancer.

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2009)

National Toxicology Program (NTP) Report on Carcinogens

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.



## Material Safety Data Sheet

## SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Dicyandiamide 99.5% min.

MANUFACTURER:

Ningxia Jiafeng Chemicals Co., Ltd.

Changcheng zone, Hongguozi, Huinong

Dist., Shizuishan, Ningxia, China.

Tel:

+86-952-7682302

Fax:

+86-952-7681172

# SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number:

461-58-5

Chemical

Dicyandiamide White Crystal

Purity:

99.5% min.

Chemical Name: Cyanoguanidine Product Class:

Description:

Superfine grade

## SECTION 3 - HAZARDS IDENTIFICATION

PRODUCT SIGNAL WORD:

Caution

PRODUCT HAZARDS:

Nuisance Dust

CHRONIC EFFECTS:

None

EYE:

May cause eye irritation

INHALATION:

Inhalation of dust particles will cause

respiratory irritation.

SKIN CONTACT:

Possible skin irritant May cause gastroenteritis

INGESTION: HMIS HAZARD RATING:

HEALTH - 0 FLAMMABILITY - 1 REACTIVITY - 0

PERSONAL PROTECTION - C

NFPA HAZARD RATING:

HEALTH - 1 FLAMMABILITY - 1 REACTIVITY - 0 Not listed as an IARC, OSHA OR ACGIH potential

CARCINOGENICITY:

carcinogen

SPECIAL PRECAUTIONS IN Handle as appropriate for any potentially

hazardous chemical.

SECTION 4 - FIRST AID MEASURES

EYES: Flush with water immediately. Continue to flush for 30

minutes and obtain emergency medical attention.

SKIN: Wash exposed skin with soap and water. Remove contaminated

clothing and launder before re-use, if irritation develops

get medical attention.

INGESTION: Induce vomiting only if person is conscious. Obtain

emergency medical help.

INHALATION: Remove to fresh air and get medical attention.

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SECTION 5 - FIREFIGHTING MEASURES

FLAMMABILITY CLASSIFICATION: Not flammable

LOWER EXPLOSIVE LIMITS:

N/A

FIRE & EXPLOSIVE HAZARDS:

Will decompose only at high

temperatures

FLASH POINT:

N/A

EXTINGUISHING MEDIA:

Carbon dioxide, foam, water Use self-contained breathing

SPECIAL FIREFIGHTING

apparatus and impervious turn out

gear

PROCEDURES:

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN Sweep up using sweeping compound to prevent the

generation of airborne

THE EVENT OF A SPILL: Dust particles or vacuum with a filter type

vacuum system.

WASTE DISPOSAL: Spilled material, unused contents and empty

> drums must be disposed of following federal, state and local regulations. Do not reuse drum

unless it is professionally cleaned.

SECTION 7 - HANDLING AND STORAGE

ISO 9001-2000

HANDLING: Avoid contact with skin, eyes and clothing. Avoid

inhalation of dust. Wash thoroughly after handling.

Keep in closed or covered containers when not in use. Store STORAGE:

in cool dry place with adequate ventilation. Do not store

near heat or open flames.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION: Use and store only with adequate ventilation or use

respiratory protection.

If dust is present, use a NIOSH/MSHA approved dust RESPIRATORY:

respirator.

If potential for spilling is present, dust resistant EYE PROTECTION:

goggles or a full face shield should be worn.

SKIN PROTECTION: If potential for skin contact is present, impervious

protection lothing should be worn.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR DENSITY: N/A

SOLUBILITY IN WATER: Soluble

APPEARANCE:

White crystal

FREEZING POINT:

410°F (210°C)

SPECIFIC GRAVITY:

1.4

ODOR:

Slight

SECTION 10 - STABILITY AND REACTIVITY

above

176°F (80°C)

HAZARDOUS POLYMERIZATION:

Will not occur

HAZARDOUS DECOMPOSITION

NOx, Will produce ammonia if decomposing

Stable when dry. Will decompose in water

PRODUCTS:

STABILITY:

in contact with water

CONDITIONS TO AVOID:

Open flame, high heat

INCOMPATIBILITY

(Materials to Avoid): Oxidizing materials

#### SECTION 11 - TOXICOLOGICAL INFORMATION

LD50 ORAL: >10,000 mg/kg (rat)

SECTION 12 - ECOLOGICAL INFORMATION

No information available.

\_\_\_\_\_\_

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Remove contaminated materials for disposal at

permitted facility using registered

transporters. Not

considered a hazardous waste.

SECTION 14 - TRANSPORTATION INFORMATION

DEPARTMENT OF TRANSPORTATION

49CFR172.101-102 CLASSFICATION: Not Hazardous

DOT SHIPPING NAME:

Not Regulated

(Dicyandiamide)

SECTION 15 - REGULATORY INFORMATION

LISTED INVENTORIES: TCSA on 40CFR710 Section 8b Chemical Substances

Inventory

Canadian Domestic Substances List

EINECS Number: 207-312-8 Philippines PICCS Listed

China SEPA Listed Japan MITI Listed Korea ECL Listed

Australia AICS Listed

SARA/TITLE III:

Section 311/312: None

Section 313 Listed None

ISO 9001-2000

Chemicals:

CERCLA:

Not subject to any special reporting

requirements

WHMIS:

None

## SECTION 16 - OTHER INFORMATION

The information contained above is given in good faith based on the best data available at this time. No warranty, expressed or implied is made. User assumes full responsibility for determining appropriate use and

application of the product.

# KKOCH

## **MATERIAL SAFETY DATA SHEET**

KOCH FERTILIZER CANADA, ULC

## 1. Product and Company Identification

Material name

**AGROTAIN® Manufacturing Concentrate 43%** 

Version #

Issue date

25-June-2013

Revision date

Supersedes date

CAS#

Mixture

**MSDS Number** 

KFC\_AgroCon43\_NA\_EN

Product use

**Fertilizer Coating** 

Manufacturer information

Manufacturer/Supplier

Koch Fertilizer Canada ULC 1400 17th Street East

Brandon, MB R7A 7C4, Canada

204-729-2900

**Emergency** 

For Chemical Emergency

Call CHEMTREC day or night USA/Canada - 1.800.424.9300 Mexico - 1.800.681.9531

Outside USA/Canada - 1.703.527.3887

(collect calls accepted)

#### 2. Hazards Identification

Physical state

Liquid.

**Appearance** 

Clear, dark green liquid.

**Emergency overview** 

**WARNING** 

Causes eye irritation. May cause skin and respiratory tract irritation. Possible reproductive hazard -

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

contains material that may cause adverse reproductive effects.

**OSHA** regulatory status

Potential health effects

Routes of exposure

Inhalation. Ingestion. Skin absorption.

Eyes

Causes eye irritation.

Skin

Irritating to skin.

Inhalation

Irritating to respiratory system.

ingestion

Irritating to mouth, throat, and stomach.

**Target organs** 

Skin. Eyes. Inhalation

**Chronic effects** 

Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Pregnant women or women of child-bearing age should not be exposed to this product.

Signs and symptoms

May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory

system.

Potentiai environmentai effects

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
N-(n-butyl)-thiophosphoric triamide	94317-64-3	40 - 70
N-methyl-2-pyrrolidone	872-50-4	15 - 40
Propylene glycol	57-55-6	10 - 30

Components	4	CAS#	Percent	
Non-hazardous reaction by-product	0.0	Proprietary	3-7	

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

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention

immediately.

Skin contact inhalation

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

Move person to fresh air. If the affected person is not breathing, apply artificial respiration. Get medical attention immediately.

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.

Notes to physician General advice

Treat symptomatically. The effects might be delayed.

Keep victim warm. Keep victim under observation. Show this safety data sheet to the doctor in

attendance.

## 5. Fire Fighting Measures

Fiammable properties

The product is not flammable.

Extinguishing media

Suitable extinguishing

media

Water fog. Water spray. Carbon dioxide (CO2). 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 and precautions 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.

Specific methods

Cool containers exposed to heat with water spray and remove container, if no risk is involved.

#### 6. Accidental Release Measures

Personal precautions Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them.

**Environmental precautions** Methods for containment

Prevent further leakage or spillage if safe to do so. Do not contaminate water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements

or confined areas.

Methods for cleaning up

Should not be released into the environment.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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 in original containers for re-use. For waste disposal, see Section 13 of the MSDS.

#### 7. Handling and Storage

Handiing Avoid exposure - obtain special instructions before use. Do not breathe mist or vapor, Wear

> personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container

with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

Storage Avoid exposure - obtain special instructions before use. Store in a well-ventilated place. Store in

original tightly closed container. Keep away from food, drink and animal feeding stuffs. Use care in handling/storage. 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), and long term storage of opened containers, will cause the product to degrade. As the product degrades, it can release harmful gases. Store below 100°F (36°C) and use opened containers within 30 days.

Always use oldest stock first.

#### 8. Exposure Controls / Personal Protection

#### Occupational exposure limits

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

Components	Туре	Value	
N-methyl-2-pyrrolidone (CAS 872-50-4)	TWA	400 mg/m3	

**Exposure guidelines** 

Follow standard monitoring procedures.

**US WEEL Guides: Skin designation** 

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

Can be absorbed through the skin.

**Engineering controls** 

Provide adequate general and local exhaust ventilation. Provide eyewash station.

Personai protective equipment

Eye / face protection

Chemical goggles are recommended.

Skin protection

Chemical resistant clothing is recommended. Routinely wash work clothing and protective equipment to remove contaminants. The use of neoprene gloves is recommended. Be aware that

the liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection

In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. Wear respiratory protection during operations where spraying or misting occurs. Wear air supplied respiratory protection. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Wear air supplied respiratory protection if exposure concentrations are unknown.

#### 9. Physical & Chemical Properties

Appearance

Clear, dark green liquid.

Physical state

Liquid.

**Form** 

Liquid.

Color

Dark green.

Odor

Slight amine odor.

**Odor threshold** 

Not available.

Нα

7.7 - 8 in 10% solution

Vapor pressure

Vapor density

< 1 mm Hg @20°C

Not available.

**Boiling point** 

> 395.6 °F (> 202 °C)

> 212.0 °F (> 100.0 °C)

Melting point/Freezing point

-2 °C

Solubility (water)

Soluble.

Specific gravity

1.1 @ 25 °C

Flash point Fiammability limits in air,

upper, % by volume

Not Applicable.

**Auto-ignition temperature** 

Flammability limits in air,

Not Applicable.

iower, % by volume

AGROTAIN® Manufacturing Concentrate 43%

Not available.

Molecular weight

167.21

Other data

**Fiammability** 

Not Applicable.

Fiammability (solid, gas)

Not applicable.

**Species** 

## 10. Chemical Stability & Reactivity Information

Chemical stability

Stable under normal temperature conditions.

Hazardous polymerization does not occur.

Conditions to avoid

Extreme temperatures.

Incompatible materials

Acids. Strong reducing agents. Strong oxidizing agents.

**Hazardous decomposition** 

products

During combustion: Carbon oxides. Nitrogen oxides. Sulfur oxides.

Possibility of hazardous

reactions

**Test Resuits** 

## 11. Toxicological Information

#### Toxicological data

Components

Components	Ohecies	i est results	
N-(n-butyl)-thiophosphoric triamic	ie (CAS 94317-64-3)		
Acute			
NOAEL	Rat	445 mg/kg, 1 day	
Dermal			
LD50	Rat	> 2000 mg/kg	
Oral			
LD50	Rat	> 2823 mg/kg	
N-methyl-2-pyrrolidone (CAS 872	?-50-4)		
Acute			
Dermal			
LD50	Rabbit	8000 mg/kg	
Inhalation			
LC50	Rat	> 5.1 mg/l	
Oral			
LD50	Rat	3914 mg/kg	
Propylene glycol (CAS 57-55-6)			
Acute			
Oral			
LD50	Rat	30 g/kg	
Sensitizat <del>i</del> on	Not classified as a sensitizer.		
Acute effects	May cause severe imitation or bums to system.	o the eyes, skin, gastrointestinal tract, and respiratory	
Locai effects	May cause skin and respiratory tract irritation. Irritating to eyes. Risk of serious damage to eyes. Prolonged exposure may cause chronic effects. May damage fertility or the unborn child. Not classified.  No epidemiological data is available for this product.  Not classified.  Possible reproductive hazard.		
Chronic effects			
Carcinogenicity			
Epidemiology			
Mutagenicity			
Reproductive effects			
Teratogenicity	Avoid contact during pregnancy/while	nursing.	
Symptoms and target organs	Contact may produce eye irritation with associated redness, swelling, tears and pain. May adversely affect the liver and kidney based on animal testing		
Further information	Symptoms may be delayed.		

## 12. Ecological Information

Ecotoxicological data

Ecotoxicological data			_ 8
Components		Species_	Test Results
N-(n-butyl)-thiophosphoric tr	iamide (CAS 943	17-64-3)	
Aquatic			
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	S 872-50-4)		
Aquatic			
Crustacea	EC50	Daphnia magna	> 1000 mg/l, 24 hours
Propylene glycol (CAS 57-55	5-6)		
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas	) 710 mg/l, 96 hours
Ecotoxicity		uct is not classified as environmentally hazard v that large or frequent spills can have a harmf	
Environmental effects	An enviro	nmental hazard cannot be excluded in the eve	ent of unprofessional handling or disposal.

Persistence and degradability

The product is not readily biodegradable.

Bioaccumulation / Accumulation

No data available.

Partition coefficient

Log Pow = 0.444

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

-0.54

Propylene glycol (CAS 57-55-6)

-0.92

Mobility in environmental

The product is soluble in water.

media

#### 13. Disposal Considerations

Disposai instructions

Do not discharge into drains or water courses.

Waste from residues / unused

Dispose in accordance with all applicable regulations.

products

#### 14. Transport Information

Not regulated as a hazardous material by DOT.

IATA

Not regulated as dangerous goods.

**IMDG** 

Not regulated as dangerous goods.

**TDG** 

Not regulated as dangerous goods.

#### 15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

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

N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3) 1.0 % One-Time Export Notification only.

Clean Air Act (CAA) Section 112 Hazardous Air Poliutants (HAPs) List

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

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

1.0 %

AGROTAIN® Manufacturing Concentrate 43%

905266 Version #: 01 Revision date: - Issue date: 25-June-2013

#### US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

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

Listed.

#### CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

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

Hazard categories

Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

Section 302 extremely

hazardous substance (40 CFR 355, Appendix A)

No

SARA 311/312 Hazardous

chemical

Yes

**Drug Enforcement** 

Administration (DEA) (21 CFR

1308.11-15)

Not controlled

Canadian regulations

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.

WHMIS status

Controlled

WHMIS classification

D2A - Other Toxic Effects-VERY TOXIC

D2B - Other Toxic Effects-TOXIC

#### WHMIS labeling



State regulations

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

#### US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

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

## US - California Proposition 65 - CRT: Listed date/Developmental toxin

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

Listed: June 15, 2001 Developmental toxin.

US - New Jersey RTK - Substances: Listed substance

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

Listed.

US, Massachusetts RTK - Substance List

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

Listed.

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

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

500 lbs

US. Pennsylvania RTK - Hazardous Substances

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

Listed.

#### **Mexico regulations**

This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

## 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: 2\* Flammability: 1 Physical hazard: 0

NFPA ratings

Health: 2 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.



# **Material Safety Data Sheet**



**DOT** Not regulated

**HMIS Graphic** 

MATERIAL PROPERTY.	1
Reactivity	0

Revision Date 10-Apr-2013

**Revision Number 0** 

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Product Code Recommended Use AGROTAIN BLUE PG 01791 Color Additive

Contact Manufacturer Sensient Colors LLC 2526 Baldwin Street St. Louis, MO 63106-1949 Telephone: 314 889-7600 Fax: 314 286-7160

**Emergency Teiephone Number** 

Chemtrec 1-800-424-9300 Emergency Phone Number (24 hours)

Outside US: 1-703-527-3887

Chemtrec Adminstrative Office Telephone Number 1-800-262-8200

## 2. HAZARDS IDENTIFICATION

**Emergency Overview** 

Based upon information available, this product does not contain substances that in the liquid state and at the given

concentration present significant health hazards

Color Not available

Physical State Liquid

**Odor Not available** 

**OSHA Regulatory Status** 

This material is not considered hazardous by the OSHA Hazard Communication Standard (29

CFR 1910.1200).

**Potential Health Effects** 

**Principle Routes of Exposure** 

Eye contact, Skin contact

**Acute Effects** 

Eyes

May cause irritation.

Skin Inhalation Ingestion Substance may cause slight skin irritation in sensitive individuals.

None reported or known to exist for the product. Avoid breathing vapors or mists.

May be harmful if swallowed.

**Chronic Effects** 

Repeated contact may cause allergic reactions in very susceptible persons.

**Aggravated Medical Conditions** 

No Information available.

interactions with Other Chemicals

No Information available.

**Potential Environmental Effects** 

There is no known ecological information for this product.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### **Hazardous Components**

Chemical Name	CAS-No	Weight %
PROPYLENE GLYCOL	57-55-6	60-70

Non-Hazardous Components

Tron-nazaraous components				
Chemical Name	CAS-No	Weight %		
BRILLIANT BLUE FCF	3844-45-9	PROPRIETARY		

#### 4. FIRST AID MEASURES

**Eye Contact** 

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if

continued irritation is noted.

**Skin Contact** 

To reduce coloration of the skin, wash off Immediately with soap and plenty of water removing

all contaminated clothes and shoes to avoid coloration of the skin.

inhalation

Move to fresh air. If breathing is difficult provide oxygen.

Ingestion

If the individual is conscious, clean mouth with water and afterwards drink plenty of water.

Consult a physician if necessary.

Notes to Physician

Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

**Flammability** 

Non-Fiammable

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Unsultable extinguishing media

Not available.

**Hazardous Combustion Products** 

As long as the material is not altered, it is non-combustible. If the liquid boils off, combustion products of the material would include carbon dioxide and carbon monoxide Material is non-combustible

**Expiosion Data** 

Sensitivity to static discharge

Material is not sensitive to static discharge.

Sensitivity to mechanical impact

Material is not sensitive to mechanical impact.

Specific Hazards Arising from the Chemical

**Protective Equipment and Precautions for Firefighters** 

Use self-contained breathing apparatus and full protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** 

Ensure adequate ventilation. Avoid contact with the eyes to prevent irritation. Barriers and protective equipment for the skin may be used to avoid discoloration.

**Environmental Precautions** 

Prevent further leakage or spillage if safe to do so.

**Methods for Containment** 

Contain spill with Inert absorbent material such as sand, paper, cloth, silica gel, universal binder, sawdusts, or commerically available chemically absorbant socks.

**Methods for Clean-up** 

Dam up. Soak up with Inert absorbent material. Sweep or vacuum. Collect in a suitable container. Water or other cleanser may be used to facilitate clean up of buildings or equipment. Note: water contacting the product will be colored and should be disposed off in

accordance with local requirements.

Other Information

Not applicable

#### 7. HANDLING AND STORAGE

Handling

Handle in accordance with good industrial hygiene and safety practice to minimize splashing. Wear personal protective equipment.

Storage

Keep containers tightly closed in a cool, well-ventilated place.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### **Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	Ontario	Mexico	NIOSH IDLH
PROPYLENE GLYCOL			TWAEV: 10 mg/m <sup>3</sup>		
			TWAEV: 155 mg/m³		
		- 80-41	TWAEV: 50 ppm		ì

01791 - AGROTAIN BLUE PG

Revision Date 10-Apr-2013

**Engineering Measures** 

Local exhaust ventilation may be necessary to control air contaminants during the use of this

product.

Personal Protective Equipment Eye/face Protection **Skin Protection Respiratory Protection** 

Safety giasses with side-shields.

Long sleeved clothing.

No special protective equipment required under conditions of normal use.

**General Hygiene Considerations** 

Handie In accordance with good Industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State** 

Liquid

## **10. STABILITY AND REACTIVITY**

**Chemical Stability** 

**Conditions to Avoid** 

**Incompatible Materials** 

**Hazardous Decomposition Products** 

**Possibility of Hazardous Reactions** 

Stable under normal conditions.

Heat, flames and sparks.

No materials to be especially mentioned.

None under normal use. Material is non-combustible.

None under normal processing.

## 11. TOXICOLOGICAL INFORMATION

## **Acute Toxicity**

Component Information

Chemical Name	LD50 Oral	LD50 Dermai	LC50 Inhalation
PROPYLENE GLYCOL	20000 mg/kg (Rat)	20800 mg/kg (Rabbit)	

#### **Chronic Toxicity**

Carcinogenicity

There are no known carcinogenic chemicals in this product

**Subchronic Toxicity** 

irritation

Not available.

Corrosivity

Not available

Sensitization

Not available

**Neurological Effects** 

Not available

**Mutagenic Effects** 

Not available

**Reproductive Effects** 

Not available

**Developmental Effects** 

Not available

**Target Organ Effects** 

Not available

## 12. ECOLOGICAL INFORMATION

#### **Ecotoxicity**

Ecotoxicity effects.

Chemical Name	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
PROPYLENE GLYCOL	h EC50 96 (19000mg/L)	h LC50 96 Oncorhynchus mykiss		h EC50 48 (>10000mg/L)
1		(51 <b>600</b> mg/L)		1000011,000
1		h LC50 96 Oncorhynchus mykiss		
1		(41-47ml/L)		
1		h LC50 96 Pimephales prometas		
1		(51400mg/L)		1
1		h LC50 96 Pimephales prometas		
		(710mg/L)	Company State Section 1	1

Persistence/Degradability

Not available

**Bioaccumulation/ Accumulation** 

Not available

**Mobility in Environmental Media** 

Not available

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method** 

Dispose of in accordance with local regulations.

**Contaminated Packaging** 

Empty containers should be taken for local recycling, recovery or waste disposal.

**US EPA Waste Number** 

Not available

## 14. TRANSPORT INFORMATION

DOT

Not regulated

**LATA** 

Not regulated

IMDG/IMO

Not regulated

## 15. REGULATORY INFORMATION

#### International inventories

**Non-Hazardous Components** 

Chemical Name TSCA DSL NDSL EINECS ELINCS ENCS CHINA KECL PICCS AICS BRILLIANT BLUE FCF X X - X - X X X X X X X X	Chamlest Name		001	MAG							
BRILLIANT BLUE FCF X X - X - X X X X X		ISCA	DSL	NDSL	EINECS	ELINC8	ENC8	CHINA	KECL	PICCS	AICS
	BRILLIANT BLUE FCF	] X	l X	-	Х	-	X	х	X	X	Y

#### USA

#### **Federal Regulations**

**SARA 311/312 Hazardous Categorization** 

Acute Health Hazard No
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

Clean Air Act, Section 112 Hazardous Air Poliutants (HAPs) (see 40 CFR 61)

#### State Regulations

#### California Proposition 65

This product does not contain any Proposition 65 chemicals.

#### State Right-to-Know

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illnois	Rhode Island
PROPYLENE GLYCOL		X	X		X
BRILLIANT BLUE FCF					

## Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Chemical Name	Canada - WHMIS - Classifications of Substances
PROPYLENE GLYCOL	Uncontrolled product according to WHMIS classification criteria

## **16. OTHER INFORMATION**

**Revision Date** 

10-Apr-2013

**Revision Summary** 

Not available

#### **Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**