

SAFETY DATA SHEET

1. Identification

Product identifier AGROTAIN® Ultra Liquid Nitrogen Stabilizer

Other means of identification

SDS Number KAS_AgroUltra_US_EN

Recommended use Fertilizer Coating

Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer/Supplier Koch Agronomic Services, LLC
4111 E 37th St N
Wichita, KS 67220 US
kochmsds@kochind.com
1.866.863.5550

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 Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 1
Reproductive toxicity Category 1B
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage. May damage fertility or the unborn child. May cause respiratory irritation.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist/vapors/spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If exposed or concerned: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

Storage Store locked up. Store in a well-ventilated place. Keep container tightly closed.

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

Hazard(s) not otherwise classified (HNOC) Not classified.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

| Chemical name | CAS number | % |
|-------------------------------------|-------------|---------|
| Propylene glycol | 57-55-6 | 40 - 70 |
| N-(n-butyl)-thiophosphoric triamide | 94317-64-3 | 15 - 40 |
| N-methyl-2-pyrrolidone | 872-50-4 | 10 - 30 |
| Non-hazardous dye | Proprietary | 1 - 5 |

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 immediately.

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

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

Most important symptoms/effects, acute and delayed Risk of serious damage to eyes. Skin irritation. Respiratory tract irritation.

Indication of immediate medical attention and special treatment needed Treat symptomatically. 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. Water spray. Carbon dioxide (CO2). Foam.

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

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

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 should be worn when fighting chemical fires.

Fire-fighting equipment/instructions Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Avoid inhalation of vapors and spray mist 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

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.

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 vapors/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. 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

US. Workplace Environmental Exposure Level (WEEL) Guides

| Components | Type | Value | Form |
|---------------------------------------|------|--------------------|----------|
| N-methyl-2-pyrrolidone (CAS 872-50-4) | TWA | 40 mg/m3 | |
| Propylene glycol (CAS 57-55-6) | TWA | 10 ppm 10 mg/m3 | Aerosol. |

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.

US WEEL Guides: Skin designation

N-methyl-2-pyrrolidone (CAS 872-50-4) Can be absorbed through the skin.

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

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles are recommended.

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 mist, 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.

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 practice.

9. Physical and chemical properties

| | |
|--|--------------------|
| Appearance | Green liquid. |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Green. |
| Odor | Ammonia-like. |
| Odor threshold | 0.1 ppm |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | 178.0 °F (81.1 °C) |
| Evaporation rate | Not available. |

| | |
|---|--------------------------------------|
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not Applicable. |
| Flammability limit - upper (%) | Not Applicable. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | 1.07 |
| Solubility(ies) | Soluble |
| Partition coefficient (n-octanol/water) | Log Pow = 0.444 |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Flammability | Does not support combustion at 187°F |

10. Stability and reactivity

| | |
|---|---|
| Reactivity | The product is stable and non reactive under normal conditions of use, storage and transport. |
| Chemical stability | Stable under normal temperature conditions. |
| Possibility of hazardous reactions | 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. |

11. Toxicological information

Information on likely routes of exposure

| | |
|---------------------|------------------------------------|
| Ingestion | May cause discomfort if swallowed. |
| Inhalation | May cause respiratory irritation. |
| Skin contact | Causes skin irritation. |
| Eye contact | Causes serious eye damage. |

Symptoms related to the physical, chemical and toxicological characteristics Risk of serious damage to eyes. Skin irritation. Respiratory tract irritation.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

| Components | Species | Test Results |
|--|----------------|---------------------|
| N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rat | > 2000 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | > 2823 mg/kg |
| N-methyl-2-pyrrolidone (CAS 872-50-4) | | |
| Acute | | |
| <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 |

| Components | Species | Test Results |
|---|---|--------------|
| Propylene glycol (CAS 57-55-6) | | |
| Acute | | |
| <i>Oral</i> | | |
| LD50 | Rat | 30 g/kg |
| Skin corrosion/irritation | Causes skin irritation. | |
| Serious eye damage/eye irritation | Causes serious eye damage. | |
| Respiratory sensitization | No data available. | |
| Skin sensitization | No data available. | |
| Germ cell mutagenicity | No data available. | |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. | |
| Reproductive toxicity | May damage fertility or the unborn child. | |
| Specific target organ toxicity - single exposure | May cause respiratory irritation. | |
| Specific target organ toxicity - repeated exposure | No data available. | |
| Aspiration hazard | Not classified. | |
| Chronic effects | Prolonged exposure may cause chronic effects. | |
| 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 | | |
| Crustacea | EC50 | 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 |
| Propylene glycol (CAS 57-55-6) | | |
| Aquatic | | |
| Crustacea | EC50 | Water flea (Daphnia magna) |
| | | > 10000 mg/l, 48 hours |
| Fish | LC50 | Fathead minnow (Pimephales promelas) |
| | | 710 mg/l, 96 hours |

Persistence and degradability The product is not readily biodegradable.

Bioaccumulative potential No data available.

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 |

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

Other adverse effects No data available.

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

Waste from residues / unused products 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.

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

14. Transport information

DOT

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 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)

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)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

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 No

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|------------------------|------------|----------|
| N-methyl-2-pyrrolidone | 872-50-4 | 10 - 30 |

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)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

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)

Propylene glycol (CAS 57-55-6)

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

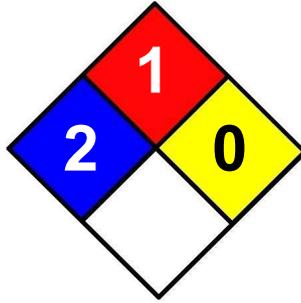
| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*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 08-January-2014
Revision date -
Version # 01
NFPA Ratings



Disclaimer

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