SAFETY DATA SHEET

1. Identification

Product identifier
AGROTAIN® Dry Nitrogen Stabilizer

Other means of identification

MSDS Number
KAS_AgroDry_US_EN

Synonyms
AGROTAIN® Dry

Recommended use
Fertilizer Coating

Recommended restrictions
Use in accordance with supplier's recommendations.

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
Serious eye damage/eye irritation Category 1
Reproductive toxicity Category 2

OSHA hazard(s)
Not classified.

Label elements

Hazard symbol

Signal word
Danger

Hazard statement
Causes serious eye damage. Suspected of damaging fertility.

Precautionary statement

Prevention
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves/protective clothing/eye protection/face protection.

Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. IF exposed or concerned: Get medical advice/attention.

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.

3. Composition/information on ingredients

Mixture

Hazardous components

Chemical name
N-(n-butyl)-thiophosphoric triamide

Common name and synonyms

CAS number
94317-64-3

% 40 - 70
### Non-hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hazardous Component</td>
<td>Proprietary</td>
<td>30 - 60</td>
<td></td>
</tr>
<tr>
<td>Non-hazardous dye</td>
<td>Proprietary</td>
<td>&lt; 3</td>
<td></td>
</tr>
</tbody>
</table>

#### 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

Remove from area of exposure. For breathing difficulties, oxygen may be necessary. Get medical attention if any discomfort occurs.

#### Skin contact

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

#### Eye contact

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.

#### 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.

#### Most important symptoms/effects, acute and delayed

Risk of serious damage to eyes. Respiratory tract irritation.

#### Indication of immediate medical attention and special treatment needed

Treat symptomatically. The effects might be delayed.

#### General information

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

### 5. Fire-fighting measures

#### Suitable extinguishing media


#### 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

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

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

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

#### Methods and materials for containment and 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.

#### Environmental precautions

Prevent further leakage or spillage if safe to do so.

### 7. Handling and storage

#### Precautions for safe 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.

#### Conditions for safe storage, including any incompatibilities

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), 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. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust (CAS -)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust (CAS -)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 millions of particle</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 millions of particle</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

**US. ACGIH Threshold Limit Values**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust (CAS -)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable particles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Inhalable particles.</td>
</tr>
</tbody>
</table>

**Biological limit values**

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

**Exposure guidelines**

Follow standard monitoring procedures.

**Appropriate engineering controls**

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

**Individual protection measures, such as personal protective equipment**

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

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

- **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.

- **Thermal hazards**
  Wear appropriate thermal protective clothing, when necessary.

- **General hygiene considerations**
  Wash hands after handling. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

**Appearance**

Green powder.

**Physical state**

Solid.

**Form**

Powder.

**Color**

Green.

**Odor**

Slight amine odor.

**Odor threshold**

Not available.

**pH**

7.5 - 8.2 Aqueous solution

**Melting point/freezing point**

Not available.

**Initial boiling point and boiling range**

Not available.

**Flash point**

Not applicable.

**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.

Explosive limit - lower (%)
Not available.

Explosive limit - upper (%)
Not available.

Vapor pressure
Not available.

Vapor density
Not available.

Relative density
Not available.

Solubility(ies)
Soluble.

Partition coefficient (n-octanol/water)
Not available.

Auto-ignition temperature
Not available.

 Decomposition temperature
Not available.

Viscosity
Not available.

Other information
Density
26 - 28 lb/ft³ @ 20 °C

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

Hazardous decomposition products

11. Toxicological information
Information on likely routes of exposure

Ingestion
May cause irritation of the gastrointestinal tract.

Inhalation
Dusts of this product may cause irritation of the nose, throat, and respiratory tract.

Skin contact
Non-irritating to the skin.

Eye contact
Risk of serious damage to eyes.

Symptoms related to the physical, chemical and toxicological characteristics
Contact may cause eye irritation with redness, tearing, pain, and/or blurred vision.

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOAEL</td>
<td>Rat</td>
<td>445 mg/kg, 1 day</td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2823 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Non-irritating to the skin.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory sensitization
Not classified.

Skin sensitization
Not classified.

Germ cell mutagenicity
Not classified.

Carcinogenicity
Not classified.

Reproductive toxicity
Suspected of damaging fertility.

Specific target organ toxicity - single exposure
Not classified.
Specific target organ toxicity - repeated exposure
Not classified.
Aspiration hazard
Not classified.
Chronic effects
Prolonged exposure may cause chronic effects.
Further information
Symptoms may be delayed.

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.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia, 290 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fish, 1140 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability
The product is not readily biodegradable.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Mobility in general
The product is soluble in water.

Other adverse effects
No data available.

13. Disposal considerations
Disposal instructions
Do not discharge into drains or water courses.

Local disposal regulations
Dispose of in accordance with local 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 all applicable regulations.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

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 applicable.

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. N-(n-butyl)-thiophosphoric triamide (NBPT) is subject to a Significant New Use Rule (SNUR) codified in 40 CFR 721.6090.

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 on regulatory list.

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

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.

US state regulations
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List
Not regulated.
US. New Jersey Worker and Community Right-to-Know Act
Not regulated.
US. Pennsylvania RTK - Hazardous Substances
Not regulated.
US. Rhode Island RTK
Not regulated.
US. California Proposition 65
Not regulated.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AIICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “Yes” indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last version

Issue date
03-19-2013
Revision date
-
Version #
01

List of abbreviations
LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.

References
ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
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