

## 1. Identification

<b>Product identifier</b>	<b>Nitrolock NBPT/DCD Blend (Green)</b>
<b>Other means of identification</b>	Not available.
<b>Synonyms</b>	Nitrogen stabilizer
<b>Recommended use</b>	Agrochemicals
<b>Recommended restrictions</b>	None known.

### Manufacturer / Importer / Supplier / Distributor Information

**Manufacturer / Supplier**  
**MicroSource, LLC**  
 7632 County Road 101  
 Shakopee, MN 55379 US

**Telephone** 1-952-445-6570  
**Website** [www.gavilon.com](http://www.gavilon.com)  
**Contact person** EH&S/Regulatory Department  
**Emergency phone number** CHEMTREC (24 hours): 1-800-424-9300

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Serious eye damage/eye irritation	Category 1
	Skin corrosion/Irritation	Category 2
	Acute toxicity (Oral)	Category 4
	Reproductive toxicity	Category 2

**OSHA defined hazards** Not classified.

### Label elements

**Hazard symbols**



**Signal word**

Danger!

**Hazard statement**

Causes serious eye damage. Causes skin irritation. Harmful if swallowed. Suspected of damaging fertility.

**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 above 10°F and below 100°F. Keep container tightly closed.

**Disposal**

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

**Hazard(s) not otherwise classified (HNOC)**

Not classified.

**Supplemental information**

Not applicable.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	CAS number	%
Proprietary Solvent Blend	*Proprietary	55 – 75
N-(n-butyl)-thiophosphoric triamide	94317-64-3	10 – 25
Dicyandiamide	461-58-5	10 - 25
Blue/yellow colorant	Mixture	0 - 2

\*Proprietary indicates that the chemical identity of this component is claimed as a trade secret per the HCS 29CFR 1910.1200

#### Composition comments

All concentrations are in 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

#### Eye contact

Check for and remove contact lenses. Flush immediately with copious amounts of water or normal saline (minimum of 15 minutes), holding eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Take exposed individual to a health care professional, preferably an ophthalmologist, for further evaluation.

#### Skin contact

Remove contaminated clothing, shoes and equipment. Wash exposed area with plenty of soap and water. Repeat washing. If redness or irritation occurs, seek medical attention. Wash contaminated clothing before reuse.

#### Inhalation

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.

#### 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 (CO<sub>2</sub>). 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

Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

**Fire-fighting equipment/instructions**

Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from the fire area if you can do so without risk.

**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 with 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. Always use oldest stock first.

**8. Exposure controls/personal protection**

**Occupational exposure limits**

No exposure limits noted for ingredient(s).

**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. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and mists. 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 vapors, use suitable respiratory equipment.

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 consideration

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

Physical State	Green liquid.
Form	Liquid.
Color	Green.
Odor	Mild, sulfur-like
Odor threshold	Not available.
pH	9.50 (neat)
Melting point/freezing point	< -17.7°C (0°F)
Initial boiling point and boiling range	Unknown.
Flash point	>=94°C (201°F) PMCC
Evaporation Rate	No data available.
Flammability (solid, gas)	No data available.
Upper/lower flammability	
Flammability limit-lower (%)	No data available.
Flammability limit-upper (%)	No data available.
Vapor pressure	No data available.
Vapor Density (Air=1)	No data available.
Relative density	1.154 @ 15.5°C
Solubility	Completely soluble.
Partition coefficient (n-octanol/water)	No data available.
Decomposition temperature	No data available.
Auto-ignition temperature	No data available.
Viscosity	
Other information	
Percent volatile	Not available.

## 10. Stability and reactivity

Reactivity	This product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Extreme temperatures.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	During combustion: Carbon monoxide. Carbon dioxide. Nitrogen oxides. Sulfur oxides.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	Harmful if swallowed.
<b>Inhalation</b>	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
<b>Skin contact</b>	Prolonged or repeated skin contact may cause irritation.
<b>Eye contact.</b>	Causes serious eye damage.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	May cause serious eye damage. May cause irritation to nose and throat if inhaled. Skin sensitization may develop.
---	---

### Information on toxicological effects

<b>Acute toxicity</b>	May cause discomfort if swallowed.
-----------------------	------------------------------------

Components	Species	Test Results
N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 2823 mg/kg

<b>Skin corrosion/irritation</b>	Prolonged contact may cause slight skin irritation with local redness.
----------------------------------	--

<b>Serious eye damage/eye Irritation</b>	Causes serious eye damage.
--	----------------------------

<b>Respiratory sensitization</b>	Not classified.
<b>Skin sensitization</b>	Not classified.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Reproductive toxicity</b>	Suspected of damaging fertility.

<b>Specific target organ toxicity-single exposure</b>	Not classified.
---	-----------------

<b>Specific target organ toxicity-repeated exposure</b>	Not classified.
---	-----------------

<b>Aspiration hazard</b>	Not classified.
--------------------------	-----------------

<b>Chronic effects</b>	Prolonged exposure may cause chronic effects.
------------------------	---

<b>Further information</b>	No other specific acute or chronic health impact noted.
----------------------------	---

## 12. Ecological information

<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.
--------------------	--

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

<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	This product is water soluble and may disperse in soil.
<b>Other adverse effects</b>	No data available.

### 13. Disposal considerations

<b>Disposal instructions</b>	Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	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.
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

### 14. Transport information

<b>DOT</b>	Not regulated as a hazardous material by DOT.
<b>IATA</b>	Not regulated as a dangerous goods.
<b>IMDG</b>	Not regulated as a dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not established.

### 15. Regulatory information

<b>US federal regulations</b>	All components of this product are on the U.S. EPA TSCA Inventory List or are exempt from TSCA inventory requirements. 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)**

<b>Hazard categories</b>	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
--------------------------	--

<b>SARA 302 Extremely hazardous substance</b>	No
---	----

<b>SARA 311/312 Hazardous chemical</b>	Yes
--	-----

<b>SARA 313 (TRI reporting)</b>	Not regulated.
---------------------------------	----------------

## 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

Not regulated.

### Administration (FDA)

## 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 Minnesota 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

#### US – California Proposition 65 – Carcinogens & Reproductive Toxicity (CRT): Listed substances

Not listed.

## 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** 24-June-2016

**Revision date** 27-March-2017

**Version #** SDS v2.0

### NFPA Ratings



### List of abbreviations

EC50: Effective concentration, 50%.

LC50: Lethal concentration, 50%.

### References

EPA: Acquire database

HSDB® – Hazardous Substances Data Bank

IARC Monographs. Overall Evaluation of Carcinogenicity

National Toxicology Program (NTP) Report on Carcinogens

ACGIH Documentation of the Threshold Limit Value and Biological Exposure Indices

### Preparation

The preparation of this MSDS was in accordance with ANSI Z400.1-2010.

## 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.