Safety Data Sheet

1. Identification

Product identifier	**Nitrolock AV (Green)**
Other means of identification	Not available.
Synonyms	Nitrogen stabilizer
Recommended use	Agrochemicals
Recommended restrictions	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
Contact person	EH&S/Regulatory Department
Emergency phone number	CHEMTREC (24 hours): 1-800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Serious eye damage/eye irritation	Category 1
Skin corrosion/Irritation	Category 2
Reproductive toxicity	Category 1B

OSHA defined hazards Not classified.

Label elements

Hazard symbols

Signal word Danger!

Hazard statement Causes serious eye damage. Causes skin irritation.
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 above 10°F and below 100°F. Keep contianer 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	%
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	< 2*

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

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 irritation of the eye and eyelid tissue. Take exposed individual to a health care professional, preferably an opthalmologist, 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.

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_2). 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

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Polyether	US WEEL	TWA aerosol	10 mg/m3
Diethylene glycol	US WEEL	TWA	10 mg/m3

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	7.50 (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	1.160 @ 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

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

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

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		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	> 2823 mg/kg

Solvent Blend (CAS Proprietary)

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects are not anticipated from swallowing small amounts.
Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Acute inhalation toxicity
At room temperature exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. No adverse effects are anticipated from single exposure to mist. For respiratory irritation and narcotic effects: No relevant data found.

Skin corrosion/irritation
Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye Irritation
Causes serious eye damage.

Respiratory sensitization
Not classified.
Skin sensitization
Not classified.
Germ cell mutagenicity
Not classified.
Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
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
No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity
Non-mandatory section - information about this substance not compiled for this reason.
Persistence and degradability
Non-mandatory section - information about this substance not compiled for this reason.
Bioaccumulative potential
Non-mandatory section - information about this substance not compiled for this reason.
Mobility in soil
Non-mandatory section - information about this substance not compiled for this reason.
Other adverse effects
Non-mandatory section - information about this substance not compiled for this reason.

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 goods.
IMDG	Not regulated as a dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

OSHA Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Serious eye damage or eye irritation
Skin irritation
Reproductive toxicity

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US state regulations

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
Diethylene glycol CAS# 111-46-6
US Rhode Island RTK
Not regulated.
US California Proposition 65
This product contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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.

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

Issue date	21-November-2022
Revision date	NA
Version #	SDS v1.0

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 their employees, agents, contractors and customers who will use the product of this (M)SDS.