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MATERIAL SAFETY DATA SHEET

EMERGENCY TELEPHONE NUMBERS
Transportation: 800-424-9300 (CHEMTREC)

IDENTIFICATION

Product Identifier: AGROTAIN®
General Use: Urease inhibitor
Common Name: NBPT in solvent

COMPOSITION

COMPONENT	CAS No.	%	OSHA PEL	ACGIH TLV
N-(n-Butyl)-thiophosphoric triamide	94317-64-3	20 – 25	None	None
N-methyl pyrrolidone ¹	872-50-4	13 - 15	None	None
Other non-hazardous ingredients	Proprietary	60-65	None	None

¹ N-methyl pyrrolidone is a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

PHYSICAL DATA

APPEARANCE: Green clear liquid.
ODOR: Ammonia-like
ODOR THRESHOLD: 0.1 ppm
VAPOR PRESSURE: Not available
SPECIFIC GRAVITY: 1.06
SOLUBILITY in water: Soluble
pH: 8.9 to 9.1

FIRE AND EXPLOSION

FLASH POINT and METHOD: 204°F (96°C) Tag Closed Cup
FLAMMABLE LIMITS - Lower: Not available • Upper: Not available
EXTINGUISHING MEDIA: Use carbon dioxide or dry chemical for small fires; alcohol foam for large fires.
SPECIAL FIRE-FIGHTING PROCEDURES: Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus and full protective equipment.
UNUSUAL FIRE and EXPLOSION HAZARDS: Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition will produce oxides of carbon, nitrogen and sulfur.

REACTIVITY DATA

STABILITY: Stable at normal temperatures.
HAZARDOUS POLYMERIZATION: Will not occur.
INCOMPATIBILITY: Incompatible with acids, strong oxidizing agents; reducing agents.
HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: Thermal decomposition will produce oxides of carbon, nitrogen, and sulfur.

HEALTH HAZARD

EMERGENCY OVERVIEW: Green clear liquid. Causes eye irritation. May cause skin irritation. May cause sensitization. Avoid contact with skin, eyes or clothing.
POTENTIAL HEALTH EFFECTS: **INHALATION**: Product is not expected to cause any adverse effects when used with adequate ventilation (large volumes of air movement).
EYE CONTACT: Product causes moderate to severe irritation to the eyes. Symptoms may include redness, itching, burning and /or swelling.
SKIN CONTACT: Product may be irritating to the skin. **INGESTION**: Product may be slightly toxic. **CHRONIC**: Possible mild sensitizer.
CARCINOGENICITY: None of the components in this material is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.
INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.

SKIN CONTACT: Wash thoroughly with soap and water immediately. Get medical attention if irritation develops.

EYE CONTACT: In cases of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION: If swallowed, drink 1 or 2 glasses of water. Immediately call a physician or a Poison Control Center and follow their advice. Do not induce vomiting or give anything by mouth to an unconscious person.

SPILL & DISPOSAL

GENERAL: Consult an expert on the disposal of recovered material. Ensure disposal is in compliance with government requirements and ensure conformity of local disposal regulations. Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill.

SPECIFIC: Evacuate personnel, thoroughly ventilate area, and use self-contained breathing apparatus. Remove all sources of ignition. Dike spill. Absorb with inert material and collect for disposal. Scrub contaminated area with detergent and water. Prevent clean-up liquid from entering sewers, waterways or low areas. Soak up with sand or other absorbent material.

Store in a well ventilated area. Store at a temperature between 32 - 100° F, (0 - 38° C). Keep container tightly closed. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Wear protective clothing and equipment such as safety glasses and rubber gloves. **See Special Protection Section.** Clean protective clothing, as needed.

Use only with adequate ventilation. Keep container tightly closed.

PERSONAL PROTECTION

RESPIRATORY: Use only with adequate ventilation (large volumes of air movement). If used with inadequate ventilation wear NIOSH/MSHA approved organic vapor/mist respirator. If used in a confined space or if a mist is generated wear a full facepiece respirator with supplied air.

PROTECTIVE GLOVES: Use ANSELL EDMONT NEOX Neoprene gloves Number 9-912 or equivalent.

EYE PROTECTION: Wear safety glasses or goggles, when appropriate, to prevent contact with eyes.

OTHER: Washing facilities should be available.

PRECAUTION

ACUTE INHALATION: No data

ACUTE SKIN: LD₅₀ > 2000 mg/kg

ACUTE ORAL: LD₅₀ > 5000 mg/kg

IRRITATION: **EYES:** Moderate to severe irritation **SKIN:** Slight irritation

SUBCHRONIC EFFECTS: (NBPT) (1 to 5 days) NOEL (rats) = 250 mg/kg/day (based on inhibition of cholinesterase)

CHRONIC EFFECTS/CARCINOGENICITY (NBPT): No data.

MUTAGENICITY (NBPT): Ames, *in vitro* mammalian cell gene mutation, and *in vivo* mammalian chromosome damage tests were each negative.

SENSITIZATION (NBPT): Mild sensitizer.

Information on the effects of the solvents is available in the literature or from this supplier upon request. The following data on NBPT has been developed: NBPT has a very low toxicity to aquatic organisms. NBPT has no effect on the growth of soil bacterial populations.

ACUTE AQUATIC for NBPT: 96-hour LC₅₀(Bluegill) = 1,140 mg/L 48-hour EC₅₀(Daphnia magna) = 290 mg/L LC₅₀(Daphnia magna) = 350 mg/L NOEL (Daphnia magna) = 150 mg/L 96-hour EC₅₀(freshwater algae) = 280 mg/L NOEL (freshwater algae) = 75 mg/L

Treatment, storage, transportation and disposal must be in accordance with applicable federal, state/provincial, and local regulations. Do not flush to surface water or sanitary sewer system.

D.O.T. Not regulated AIR TRANSPORT Not regulated

(not meant to be all-inclusive)

UNITED STATES TSCA (Toxic Substance Control Act): In compliance with all applicable sections of TSCA. N-(n-butyl) thiophosphoric triamide is subject to a Section 5(e) consent order based on the anticipated large-scale exposure. As a consequence, it is also subject to Section 12(b) export notification obligations.

CERCLA (Comprehensive Emergency Response Compensation, and Liability Act): Not listed.

SARA TITLE III (Superfund Amendments and Reauthorization Act):

311/312 Hazard Categories: Acute health, delayed health

313 Reportable Ingredients: N-Methyl pyrrolidone

CANADA: WHMIS: Class D, 2B CEPA: All components are on the DSL.

Fertilizer Act: Agrotain has been approved for use in Canada under this Act.

EC Regulations: Symbols: Xi Irritant, R-phrases: R41 Risk of serious damage to eyes, R62 Possible risk of impaired fertility, S-phrases: S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice, S39 wear eye/face protection.

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