



# SAFETY DATA SHEET

## DREXEL X-NBPT

### Section 1: Material Identification

**Product Name:** Drexel X-NBPT

**CAS NO:** 94317-64-3

**Formula:** C<sub>4</sub>H<sub>14</sub>N<sub>3</sub>PS

**Company:** Drexel Chemical Company  
1700 Channel Avenue  
Memphis, TN 38106

**Synonyms:** N-(n-butyl)-thiophosphoric triamide (NBPT)

**Recommended use:** Fertilizer coating

**Recommended restrictions:** None available

**Identifiers:**  
DOT information: See Section 14 for Transportation Information

**Emergency Telephone Number:**

CHEMTREC	Drexel Chemical Co.
Tel: 1-800-424-9300	901-774-4370

### Section 2: Hazard Identification (As defined by the OSHA Hazard Communication Standard, 29)

**GHS classification:**

<b>Health Hazards:</b>	Skin corrosion/irritation	Category 2
	Serious eye damage/irritation	Category 1
	Acute toxicity	Category 4
	Reproductive toxicity	Category 2
	Respiratory tract irritation	Category 3

**GHS label elements:**

**Signal word:** Danger



<b>Further information:</b>	The product does not need to be labeled in accordance with EC directives or respective national laws.
<b>Hazard statements:</b>	Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. Possible risk of impaired fertility.
<b>Precautionary statements:</b>	
<b>Prevention:</b>	Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection, face protection, protective clothing, protective gloves. Use only outdoors or in well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/sprays. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
<b>Response:</b>	<b>IF IN EYES:</b> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Immediately call a POISON CENTER/doctor. <b>IF ON SKIN OR CLOTHING:</b> Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. <b>If skin irritation occurs:</b> Get medical advice/attention. <b>IF SWALLOWED:</b> Call poison center or doctor/physician if you feel unwell. <b>IF INHALED:</b> Move person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. <b>IF EXPOSED OR CONCERNED:</b> Get medical advice/attention.
<b>Storage:</b>	Store locked up in a well-ventilated place. Keep container tightly closed. Store below 100°F.
<b>Disposal:</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Specific hazards:</b>	None available <b>Target organs:</b> Skin. Eyes. Inhalation. <b>Signs and symptoms:</b> May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. <b>Potential environmental effects:</b> This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have harmful or damaging effect on the environment.

### Section 3: Composition Information

<u>Components</u>	<u>CAS No.:</u>	<u>% By Wt.:</u>	<u>OSHA PEL:</u>	<u>ACGIH TLV:</u>
Active ingredient: N-(n-butyl)-thiophosphoric triamide (NBPT)	94317-64-3	26.7%	N/A	5 mg/m <sup>3</sup>
Other ingredients:	Mixture	73.3%	N/A	N/A

### Section 4: First-Aid Measures

**Eye Contact:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Call poison control center or doctor for treatment advice.

**Skin Contact:** Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse.

**Inhalation:** Move person to fresh air; If not breathing call 911 and give artificial respiration. Call poison control center or doctor for treatment advice.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

### Section 5: Fire Fighting Measures

**Suitable extinguishing media:** Foam solution, CO<sub>2</sub>, water fog, water spray. Do not use water jet as this will spread fire.

**Specific hazards arising from the chemical:** During a fire, irritating, corrosive and /or toxic gases may be produced. Can be dangerous when exposed to extreme heat and flame. Do not breathe mist/vapors/spray.

**Protective equipment and precautions for firefighters:** Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

**NFPA: Health: Flammability: Reactivity:**

2                      1                      0

(Rating: 4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Insignificant)

### Section 6: Accidental Release Measures

**Personal Precautions:** Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**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.

**Methods for containment:** Stop the flow of material, if this is without risk. Collect and dispose of spillage as indicated in Section 13. Prevent entry into waterways, sewers, basements or confined areas.

**Methods for cleaning up:** Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material if 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.

## Section 7: Handling and Storage

### KEEP OUT OF REACH OF CHILDREN

**Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Handle in accordance with good industrial hygiene and safety procedures. Avoid inhalation of vapors / spray and contact with eyes, skin and clothing. Do not breathe mist or vapor. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage.

**Storage:** Store in a dry place, well-ventilated area. Store in original container. Keep container tightly closed Do not store near food, foodstuffs, drugs or potable water supplies. Store away from incompatible materials. Long term storage at temperatures above 100°F (37.8°C), and long term storage of opened container will cause product to degrade. As the product degrades, it can release harmful gases. Store below 100°F (37.8°C) and use opened containers within 30 days. Always use oldest stock first.

## Section 8: Exposure Controls / Personal Protection

**Occupational exposure limits:**

**Control Parameters:**

**U.S. Workplace Exposure Level (WEEL) Guides:**

<u>Components:</u>	<u>CAS No.:</u>	<u>Type:</u>	<u>Value:</u>
N-methyl-2-pyrrolidone	872-50-4	TWA	40 mg/m <sup>3</sup>

**Biological limit:**

**ACGIH Biological Exposure Indices:**

<u>Components:</u>	<u>CAS No.:</u>	<u>Type:</u>	<u>Value:</u>
N-methyl-2-pyrrolidone	872-50-4	100 mg/L	Urine

**Engineering controls:**

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

**Personal protective equipment:**

**Eye/Face Protection:** Use chemical goggles.

**Skin Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber (“nitrile” or “NBR”), or Polyvinyl chloride (“PVC” or “vinyl”). The use of neoprene gloves is recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory Protection:** In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. Wear respiratory protection during operations where spraying or misting occurs. Wear air supplied respiratory protection. In the U.S.A., if respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

## Section 9: Physical and Chemical Properties

<b>Physical state:</b>	Liquid
<b>Color:</b>	Yellow - orange
<b>Form:</b>	Liquid
<b>Odor:</b>	Mild
<b>Odor threshold:</b>	Not available
<b>pH:</b>	7.0-7.5 (neat)
<b>Melting/freezing point:</b>	less than 20°F
<b>Boiling point:</b>	Not available
<b>Flash point:</b>	178.0°F / 81.1°C
<b>Evaporation rate:</b>	Not available
<b>Flammability:</b>	Does not support combustion at 187°F
<b>Flammability limits in air, lower:</b>	Not available
<b>Flammability limits in air, upper:</b>	Not available
<b>Vapor pressure:</b>	Not available
<b>Vapor density:</b>	Not available
<b>Relative density:</b>	9.39 lbs/gal. (1.12 grams/cc)
<b>Solubility:</b>	Soluble
<b>Octanol/water coefficient:</b>	log Kow: N-methyl-2-pyrrolidone = -0.54.
<b>Auto-ignition temperature:</b>	Not data available
<b>Decomposition temperature:</b>	Not determined. Recommendation is to store below 100°F.
<b>Viscosity:</b>	less than 100 cst

**Note:** These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items

## Section 10: Stability and Reactivity

**Reactivity:** Stable

**Chemical stability/instability:** Stable under normal temperatures condition.

**Conditions to avoid:** Avoid extreme temperatures and open flames. Do not store above 100°F.

**Incompatible materials:** Strong oxidizers, Acids, Strong reducing agents.

**Possibility of hazardous reactions:** No reactions known under normal conditions. Will not polymerize.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Oxides of Carbon, oxides of Nitrogen. Oxides of Sulfur.

## Section 11: Toxicological Information

### Toxicology data:

#### Components:

(N-methyl-2-pyrrolidone)  
(N-(n-butyl)-thiophosphoric triamide (NBPT))  
(N-(n-butyl)-thiophosphoric triamide (NBPT))  
(N-methyl-2-pyrrolidone)  
(N-methyl-2-pyrrolidone)

#### Test results:

LC50, (rat): > 5.10 mg/l  
LD50, Oral (rat): >2,823 mg/kg  
LD50, Dermal (rat): >2,000 mg/kg  
LD50, Oral (rat): 3,914 mg/kg  
LD50, Dermal (rabbit): 8,000 mg/kg

**Routes of exposure:** Skin contact, eye contact

**Acute effects:** Moderate skin irritation. Severe eye irritation. May be harmful if swallowed.

**Sensitization (guinea pig):** Not a sensitizer

**Chronic effects:** No data available

**Carcinogenicity:** No data available

**Mutagenicity:** No data available

**Reproductive effects:** No data available

**Epidemiology:** No data available

**Skin corrosion/irritation:** Causes skin irritation

**Serious eye damage/eye irritation:** Causes eye irritation

**Specific target organ toxicity - single exposure:** Not classified

**Specific target organ toxicity - repeated exposure:** Not classified

**Aspiration:** No data available

**Other information:** Not available

## Section 12: Ecological Information

### Ecotoxicological data:

N-(n-butyl)-thiophosphoric triamide (CAS: 94317-64-3)

<u>Components:</u>		<u>Species:</u>	<u>Test Results:</u>
Aquatic			
Crustacea	EC50	Daphnia	290 mg/l, 48 hours
	NOEL	Daphnia	150 mg/l
Fish	LC50	Fish	1,140 mg/l, 96 hours

N-methyl-2-pyrrolidone (CAS: 872-50-4):

<u>Components:</u>		<u>Species:</u>	<u>Test Results:</u>
Aquatic			
Crustacea	EC50	Daphnia magna	> 1,000 mg/l, 24 hours

Drift or runoff may adversely affect non-target plants.

Do not apply directly to water.

Do not contaminate water when disposing of equipment wash water.

Do not apply when weather conditions favor drift from target area.

**Persistence and degradability:** Biodegradability: The product is not readily biodegradable.

**Bioaccumulation:** No data available

**Mobility in soil:** The product is water soluble and may disperse in soil.

**Other adverse effects:** Assessments: No data available

## Section 13: Disposal Considerations

**Disposal methods:** Do not reuse containers for any purpose. Container is recyclable, and is to be disposed of at a container collection site. Contact your local dealer/distributor for the location of the nearest collection site. Before taking container to the collection site: Triple or pressure-rinse the empty container, adding the rinsate to the spray tank. Make the empty container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Do not contaminate water, food or feed by storage or disposal. Dispose of in accordance with label instructions and all applicable regulations.

**Contaminated packaging:** Do not contaminate water, food or feed by storage or disposal. Dispose of in accordance with label instructions applicable federal, state and local regulations.

## Section 14: Transport Information

**In accordance with ICAO/IATA/DOT/TDG:** Not regulated as a Hazardous Material in all modes of transportation.

**Freight description:** Fertilizing compounds (manufactured fertilizers), noi; liquid (nmfc 68140, sub 6; class 70)

**ERG Guide No.:** 171

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## Section 15: Regulatory Information

**International inventories:**

**TSCA:** Complies

**EINECS/ELINCS:** Complies

**ENCS:** Complies

**IECSC:** Complies

**KECL:** Complies

**PICCS:** Complies

**AICS:** Complies

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312:**

**Immediate (Acute) Health Hazard:** Yes

**Delayed (Chronic) Health Hazard:** Yes

**Fire Hazard:** No

Reactive Hazard: No

Sudden Release of Pressure Hazard: No

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313:**

- This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

<u>Component</u>	<u>CAS No.</u>
N-methyl-2-pyrrolidone	872-50-4

Reportable Quantity (RQ) under U.S. CERCLA: Not listed

RCRA Waste Code: Not listed

**CA Proposition 65: WARNING:** This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

## Section 16: Other Information

*Drexel Chemical Company recommends that each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.*

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