

## NBPT

Version number: 1.0

### SECTION 1: Identification

#### 1.1 Product identifier

**Identification of the substance** N-butylphosphorothioic triamide

**Trade name** NBPT

**CAS number** 94317-64-3

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Relevant identified uses** Additive for fertilizer

#### 1.3 Details of the supplier of the safety data sheet

Valudor Products, LLC  
179 Calle Magdalena Suite 100  
Encinitas, California CA 92024  
United States

Telephone: +1 (760) 635 8500  
e-mail: info@valudor.com  
Website: www.valudor.com

#### 1.4 Emergency telephone number

**Emergency information** 800-535-5053 (Infotrac)

As above or nearest toxicological information centre.

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
A.7	reproductive toxicity	2	Repr. 2	H361f

For full text of abbreviations: see SECTION 16

#### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

**Signal word** danger

## Pictograms

GHS05, GHS08



## Hazard statements

- H318** Causes serious eye damage.  
**H361f** Suspected of damaging fertility (if swallowed).

## Precautionary statements

- P201** Obtain special instructions before use.  
**P202** Do not handle until all safety precautions have been read and understood.  
**P260** Do not breathe dust.  
**P280** Wear protective gloves/protective clothing/eye protection/face protection.  
**P305+P351+P338** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P308+P313** If exposed or concerned: Get medical advice/attention.  
**P405** Store locked up.  
**P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

## 2.3 Other hazards

### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

<b>Name of substance</b>	N-butylphosphorothioic triamide
<b>Identifiers</b>	
CAS No	94317-64-3
<b>Molecular formula</b>	C <sub>4</sub> H <sub>14</sub> N <sub>3</sub> PS
<b>Molar mass</b>	167.2 g/mol

## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

#### General notes

- Self-protection of the first aider.
- Remove affected person from the danger area and lay down.
- Do not leave affected person unattended.
- Take off immediately all contaminated clothing.
- In all cases of doubt, or when symptoms persist, seek medical advice.

## **Following inhalation**

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

## **Following skin contact**

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

If skin irritation occurs: Get medical advice/attention.

## **Following eye contact**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Remove contact lenses, if present and easy to do. Continue rinsing.

## **Following ingestion**

Rinse mouth. Do not induce vomiting.

In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Get medical advice/attention.

## **Notes for the doctor**

None.

## **4.2 Most important symptoms and effects, both acute and delayed**

This information is not available.

## **4.3 Indication of any immediate medical attention and special treatment needed**

None.

## **SECTION 5: Fire-fighting measures**

### **5.1 Extinguishing media**

#### **Suitable extinguishing media**

water, foam, alcohol resistant foam, fire extinguishing powder

#### **Unsuitable extinguishing media**

water jet

### **5.2 Special hazards arising from the substance or mixture**

Combustible.

Hazardous decomposition products: Section 10.

Deposited combustible dust has considerable explosion potential.

#### **Hazardous combustion products**

nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), phosphorus oxides (P<sub>x</sub>O<sub>y</sub>), sulfur oxides (SO<sub>x</sub>)

## 5.3 Advice for firefighters

Keep containers cool with water spray.  
In case of fire and/or explosion do not breathe fumes.  
Coordinate firefighting measures to the fire surroundings.  
Do not allow firefighting water to enter drains or water courses.  
Collect contaminated firefighting water separately.  
Fight fire with normal precautions from a reasonable distance.

### Special protective equipment for firefighters

chemical protective clothing, Wear self-contained breathing apparatus

## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

Remove persons to safety.  
Ventilate affected area.  
Avoid contact with skin and eyes.  
Do not breathe dust.  
Control of dust.  
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

#### For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water.  
Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

#### Advice on how to contain a spill

Take up mechanically.

#### Advice on how to clean up a spill

Take up mechanically.  
Collect spillage.

#### Other information relating to spills and releases

Place in appropriate containers for disposal.  
Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5.  
Personal protective equipment: see section 8.  
Incompatible materials: see section 10.  
Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

#### Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Keep away from sources of ignition - No smoking.

Removal of dust deposits.

#### Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

#### Measures to protect the environment

Avoid release to the environment.

#### Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Wash hands after use.

Preventive skin protection (barrier creams/ointments) is recommended.

Remove contaminated clothing and protective equipment before entering eating areas.

Avoid breathing dust.

Do not get in eyes, on skin, or on clothing.

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

#### Explosive atmospheres

Removal of dust deposits.

#### Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### Incompatible substances or mixtures

Incompatible materials: see section 10.

#### Protect against external exposure, such as

heat, sunlight

#### Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

#### Ventilation requirements

Provision of sufficient ventilation.

#### Specific designs for storage rooms or vessels

Keep container tightly closed and in a well-ventilated place.

Keep cool.

Protect from sunlight.

#### Storage temperature

recommended storage temperature: 10 - 25 °C

# NBPT

## Packaging compatibilities

Keep only in original container.

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

The following constituents are the only constituents of the product which have a PEL, a TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Notation	Source
US	Particulates not otherwise regulated	-	PEL (CA)	-	10	-	-	dust	Cal/OSHA PEL
US	Particulates not otherwise regulated	-	PEL (CA)	-	5	-	-	r	Cal/OSHA PEL
US	particulates not otherwise classified	-	REL	-	-	-	-	appx-D	NIOSH REL
US	particulates not otherwise classified (PNOC)	-	PEL	1,766	15	-	-	partml, i, dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)	-	PEL	529.5	5	-	-	partml, r, dust	29 CFR 1910.1000

#### Notation

appx-D see Appendix D - Substances with No Established RELs

dust as dust

i inhalable fraction

partml particles/ml

r respirable fraction

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

### 8.2 Exposure controls

Avoid contact during pregnancy/while nursing.

# NBPT

## Appropriate engineering controls

Use local and general ventilation.

## Individual protection measures (personal protective equipment)

### Eye/face protection

Wear eye/face protection.

### Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
NBR: acrylonitrile-butadiene rubber	≥ 0,4 mm	>480 minutes (permeation: level 6)
CR: chloroprene (chlorobutadiene) rubber	≥ 0,5 mm	>480 minutes (permeation: level 6)
IIR: isobutene-isoprene (butyl) rubber	≥ 0,7 mm	>480 minutes (permeation: level 6)

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

### Body protection

Protective clothing for use against solid particulates.

### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Particle filter device (DIN EN 143).

Self-contained breathing apparatus.

### Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	solid (crystalline)
Color	white
Odor	characteristic
Odor threshold	not determined

## NBPT

---

### Other safety parameters

<b>pH (value)</b>	not applicable
<b>Melting point/freezing point</b>	56 – 60 °C
<b>Boiling point or initial boiling point and boiling range</b>	264 °C at 1 atm
<b>Flash point</b>	96 °C (c.c.)
<b>Evaporation rate</b>	not determined
<b>Flammability (solid, gas)</b>	this material is combustible, but will not ignite readily
<b>Explosive limits</b>	not determined
Explosion limits of dust clouds	not determined
<b>Vapor pressure</b>	1.7 Pa at 25 °C (Qsar)
Density	1.22 g/cm <sup>3</sup> at 20 °C (EU method A.3)
Relative density	1.22 (water = 1)
Relative vapour density	not applicable
<b>Solubility(ies)</b>	
Water solubility	4.3 g/l at 25 °C
<b>Partition coefficient</b>	
n-octanol/water (log KOW)	-0.32 (pH value: 7, 25 °C) (Qsar)
Auto-ignition temperature	not determined
<b>Decomposition temperature</b>	not relevant
<b>Viscosity</b>	not relevant (solid)
<b>Explosive properties</b>	none
<b>Oxidizing properties</b>	none
<b>Information for relevant hazard classes according to GHS</b>	hazard classes acc. to GHS (physical hazards): not relevant



## 9.2 Other information

Temperature class (USA, acc. to NEC 500)

T2

(maximum permissible surface temperature on the equipment: 300°C)

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Control of dust.

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

### 10.5 Incompatible materials

acids, bases, oxidizers

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgment (weight of evidence determination).

#### **Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)**

##### **Acute toxicity**

Shall not be classified as acutely toxic (oral).

Shall not be classified as acutely toxic (dermal).

## NBPT

Exposure route	Endpoint	Value	Species
oral	LD50	>2,000 mg/kg	rat
dermal	LD50	>2,000 mg/kg	rabbit

### **Skin corrosion/irritation**

Shall not be classified as corrosive/irritant to skin.

### **Serious eye damage/eye irritation**

Causes serious eye damage.

### **Respiratory or skin sensitization**

#### **Skin sensitization**

Shall not be classified as a skin sensitizer.

### **Respiratory sensitization**

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### **Germ cell mutagenicity**

Shall not be classified as germ cell mutagenic.

### **Carcinogenicity**

#### **IARC Monographs**

not listed

#### **National Toxicology Program (United States)**

not listed

#### **OSHA Carcinogens**

Not listed.

### **Reproductive toxicity**

Suspected of damaging fertility (if swallowed).

### **Specific target organ toxicity - single exposure**

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### **Specific target organ toxicity - repeated exposure**

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

### **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

## **11.2 Other information**

There is no additional information.

**SECTION 12: Ecological information**

**12.1 Toxicity**

**Aquatic toxicity (acute)**

Based on available data, the classification criteria are not met.

Endpoint	Exposure time	Value	Species	Method
LC50	96 h	1,140 mg/l	bluegill ( <i>Lepomis macrochirus</i> )	OECD Guideline 203
EC50	48 h	290 mg/l	daphnia magna	OECD Guideline 202
ErC50	96 h	280 mg/l	algae ( <i>pseudokirchneriella subcapitata</i> )	OECD Guideline 201

**Aquatic toxicity (chronic)**

No data available.

**12.2 Persistence and degradability**

**Biodegradation**

Not readily biodegradable.

**Persistence**

No data available.

**12.3 Bioaccumulative potential**

**n-octanol/water (log KOW)**

-0.32 (pH value: 7, 25 °C)  
(Qsar)

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

According to the results of its assessment, this substance is not a PBT or a vPvB.

**12.6 Other adverse effects**

Data are not available.

**Remarks**

None.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packages

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

#### Remarks

Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

14.1 UN number not assigned

14.2 UN proper shipping name -

14.3 Transport hazard class(es) -

14.4 Packing group -

14.5 Environmental hazards -

14.6 Special precautions for user -

14.7 Transport in bulk according to IMO instruments -

### 14.8 Information for each of the UN Model Regulations

#### Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information

Not subject to transport regulations.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### National regulations (United States)

Toxic Substance Control Act (TSCA) Substance is listed (ACTIVE)

#### Superfund Amendment and Reauthorization Act (SARA TITLE III )

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Not listed

#### Specific Toxic Chemical Listings (EPCRA Section 313)

# NBPT

Not listed

## **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**

### **List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)**

Not listed

## **Clean Air Act**

Not listed

## **Right to Know Hazardous Substance List**

### **Toxic or Hazardous Substance List (MA-TURA)**

Not listed

### **Hazardous Substances List (MN-ERTK)**

Not listed

### **Hazardous Substance List (NJ-RTK)**

Not listed

### **Hazardous Substance List (Chapter 323) (PA-RTK)**

Not listed

### **Hazardous Substance List (RI-RTK)**

Not listed

## **California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987**

Not listed

## **Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)**

Not listed

## **SECTION 16: Other information, including date of preparation or last revision**

Date of preparation: 2023-08-17

### **Abbreviations and acronyms**

<b>Abbr.</b>	<b>Descriptions of used abbreviations</b>
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)

## NBPT

Abbr.	Descriptions of used abbreviations
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IARC Mono-graphs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
ppm	Parts per million
STEL	Short-term exposure limit
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H318	Causes serious eye damage.
H361f	Suspected of damaging fertility (if swallowed).

# NBPT

---

## **Responsible for the safety data sheet**

Chemical Regulatory Compliance Com- Telephone: +1 (630) 410-1660  
pany e-Mail: GHS@crc-us.com  
Jasper, GA Website: www.crc-us.com  
USA

## **Disclaimer**

This information is based upon the present state of our knowledge.  
This SDS has been compiled and is solely intended for this product.