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Safety data sheet

BASF Safety data sheet
Date / Revised: 20.11.2025 Version: 1.0
Product: **Limus Direct**

(30785851/SDS_GEN_AU/EN)
Date of print: 11.03.2026

1. Substance/preparation and manufacturer/supplier identification

Product name:
Limus Direct

Use: fertilizers

Manufacturer/supplier:
BASF Australia Limited (ABN 62 008 437 867)
Level 23, 40 City Road, Southbank
Victoria 3006, AUSTRALIA
Telephone: +61 3 8855-6600

Emergency information:
BASF Emergency Advice Number: 1800 803 440 (24h) [within Australia]
BASF Emergency Advice Number: + 61 3 8855 6666 [outside Australia]

2. Hazard identification

Classification of the substance and mixture:
Acute toxicity: Cat.4 (oral)
Serious eye damage/eye irritation: Cat.1
Reproductive toxicity: Cat.2 (fertility)

Label elements and precautionary statement:

Pictogram:

Signal Word:
Danger

Hazard Statement:

H318	Causes serious eye damage.
H302	Harmful if swallowed.
H361	Suspected of damaging fertility.

Precautionary Statement:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P330	Rinse mouth.
P308 + P313	IF exposed or concerned: Get medical attention.

Precautionary Statements (Storage):

P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

Other hazards which do not result in classification:
See section 12 - Results of PBT and vPvB assessment.
Contains Phosphorothioic triamide, N-butyl- The repeated administration of high dose levels is suspected to cause reduction of Cholinesterase activity.

3. Composition/information on ingredients

Chemical nature

Substance nature: mixture

fertilizers

Hazardous ingredients

N-butylphosphorothioic triamide (NBPT)
Content (W/W): 30 % Acute Tox.: Cat. 5 (oral)
CAS Number: 94317-64-3 Eye Dam.: Cat. 1
Repr.: Cat. 2 (fertility)

N-propylphosphorothioic triamide (NPPT)
Content (W/W): 10 % Eye Irrit.: Cat. 2B
CAS Number: 916809-14-8 Repr.: Cat. 2 (fertility)

Diethylene glycol
Content (W/W): < 60 % Acute Tox.: Cat. 4 (oral)
CAS Number: 111-46-6

4. First-Aid Measures

General advice:
Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Note to physician:
Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

Specific hazards:
carbon monoxide, carbon dioxide, hydrogen chloride, nitrogen oxides, Phosphorus compounds, halogenated compounds, sulfur oxides
The substances/groups of substances mentioned can be released in case of fire.

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

Personal precautions:
Do not breathe vapour/spray.Use personal protective clothing.Avoid contact with the skin, eyes and clothing.

Environmental precautions:
Do not discharge into the subsoil/soil.Do not discharge into drains/surface waters/groundwater.

Methods for cleaning up or taking up:
For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
For large amounts: Dike spillage. Pump off product.
Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

7. Handling and Storage

Handling

No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Protection against fire and explosion:
Vapours may form ignitable mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Storage

Segregate from foods and animal feeds.
Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

Storage stability:
Storage duration: 24 Months

8. Exposure controls and personal protection

Components with occupational exposure limits

Diethylene glycol, 111-46-6;
TWA value 100 mg/m3 ; 23 ppm (AU NOEL)

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Combination filter for gases/vapours of organic, inorganic, acid inorganic, alkaline compounds and toxic particles (e. g. EN 14387 Type ABEK-P3)

Hand protection:
Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	liquid
Colour:	colourless
Odour:	moderate odour, ammonia-like
Odour threshold:	Not determined due to potential health hazard by inhalation.
pH value:	approx. 8 - 10 (CIPAC standard water D, 1 %(m), 20 °C)
Melting point:	approx. 0 °C
Boiling point:	approx. 140 °C
Flash point:	140 °C
Evaporation rate:	not applicable
Flammability (solid/gas):	not applicable

Lower explosion limit:
As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Upper explosion limit:
As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Ignition temperature: 310 °C

Thermal decomposition: 200 °C , 504 kJ/kg

Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

SADT: > 75 °C
Heat accumulation / Dewar 500 ml (SADT, UN-Test H.4, 28.4.4)

Explosion hazard: not explosive

Fire promoting properties: not fire-propagating

Vapour pressure:
The product has not been tested.

Density: approx. 1.136 g/cm3
(20 °C)

Relative vapour density (air):
not applicable

Solubility in water: mainly soluble

Partitioning coefficient n-octanol/water (log Pow):
The statements are based on the properties of the individual components.

Information on: N-butylphosphorothioic triamide (NBPT)
Partitioning coefficient n-octanol/water (log Pow): 0.444 (OECD Guideline 107)
(20 °C; pH value: approx. 7)

Information on: N-propylphosphorothioic triamide (NPPT)
Partitioning coefficient n-octanol/water (log Pow): < 0.3 (OECD Guideline 117)
(24 °C)

Viscosity, dynamic: approx. 83 mPa.s
(20 °C)

Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular form. -

10. Stability and Reactivity

Conditions to avoid:
See SDS section 7 - Handling and storage.

Thermal decomposition: 200 °C, 504 kJ/kg

Thermal decomposition: Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

Substances to avoid:
strong acids, strong bases, strong oxidizing agents

Hazardous reactions:
No hazardous reactions if stored and handled as prescribed/indicated.

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

Chemical stability:
The product is stable if stored and handled as prescribed/indicated.

Reactivity:
No hazardous reactions if stored and handled as prescribed/indicated.

11. Toxicological Information

Routes of exposure

Assessment of acute toxicity

The product has not been tested. The statement has been derived from the properties of the individual components. Of moderate toxicity after single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation.

Information on: Diethylene glycol

Acute oral toxicity

Experimental/calculated data:
LD (human) human (oral): approx. 1,000 mg/kg (other)

Information on: N-butylphosphorothioic triamide (NBPT)

Acute oral toxicity

Experimental/calculated data:
LD50 rat (oral): 2,823 mg/kg (OECD Guideline 401)

Information on: N-propylphosphorothioic triamide (NPPT)

Acute oral toxicity

Experimental/calculated data:
LD50 rat (oral): > 2,000 mg/kg (OECD Guideline 423)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Analogous: Assessment derived from products with similar chemical character.

Information on: N-butylphosphorothioic triamide (NBPT)

Acute inhalation toxicity

Experimental/calculated data:
LC50 rat (by inhalation): > 2.1 mg/l 4 h (OECD Guideline 403)
Tested as dust aerosol.

Information on: N-butylphosphorothioic triamide (NBPT)

Acute dermal toxicity

Experimental/calculated data:
LD50 rabbit (dermal): > 2,000 mg/kg (OECD Guideline 402)

Information on: N-propylphosphorothioic triamide (NPPT)

Acute dermal toxicity

Experimental/calculated data:
LD50 rat (dermal): > 2,000 mg/kg (OECD Guideline 402)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Analogous: Assessment derived from products with similar chemical character.

Symptoms

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.
(Further) symptoms and / or effects are not known so far

Irritation

Assessment of irritating effects:
The product has not been tested. The statement has been derived from the properties of the individual components. Not irritating to the skin. May cause severe damage to the eyes.

Information on: N-butylphosphorothioic triamide (NBPT)
Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

Information on: N-propylphosphorothioic triamide (NPPT)
Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Analogous: Assessment derived from products with similar chemical character.

Information on: N-butylphosphorothioic triamide (NBPT)
Experimental/calculated data:
Serious eye damage/irritation rabbit: irreversible damage (OECD Guideline 405)

Information on: N-propylphosphorothioic triamide (NPPT)
Experimental/calculated data:
Serious eye damage/irritation rabbit: Irritant. (OECD Guideline 405)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Analogous: Assessment derived from products with similar chemical character.

Respiratory/Skin sensitization

Assessment of sensitization:
The product has not been tested. The statement has been derived from the properties of the individual components. There is no evidence of a skin-sensitizing potential.

Information on: N-butylphosphorothioic triamide (NBPT)
Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing.

Information on: N-propylphosphorothioic triamide (NPPT)
Experimental/calculated data:
Mouse Local Lymph Node Assay (LLNA) mouse: Non-sensitizing. (OECD Guideline 429)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Analogous: Assessment derived from products with similar chemical character.

Germ cell mutagenicity

Assessment of mutagenicity:
The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

Assessment of carcinogenicity:
The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity:
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: N-butylphosphorothioic triamide (NBPT)
Assessment of reproduction toxicity:
The results of animal studies suggest a fertility impairing effect.

Information on: N-propylphosphorothioic triamide (NPPT)
Assessment of reproduction toxicity:
The potential to impair fertility cannot be excluded. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Assessment of teratogenicity:
The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Specific target organ toxicity (single exposure)

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Remarks: The product has not been tested. The statement has been derived from the properties of the individual components.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: N-butylphosphorothioic triamide (NBPT)
Assessment of repeated dose toxicity:
The substance may cause damage to the liver after repeated ingestion of high doses, as shown in animal studies. The substance may cause damage to the kidney after repeated ingestion of high doses, as shown in animal studies.

Information on: Diethylene glycol
Assessment of repeated dose toxicity:
The substance may cause damage to the kidney after repeated ingestion of high doses, as shown in animal studies. The substance may cause damage to the liver after repeated ingestion of high doses, as shown in animal studies. The effects were only observed at doses/concentrations not relevant for classification and/or practical use conditions. These effects are not relevant to humans at occupational levels of exposure.

Aspiration hazard

The product has not been tested. The statement has been derived from the properties of the individual components.

Other relevant toxicity information

Misuse can be harmful to health.

12. Ecological Information

Ecotoxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms.
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: N-butylphosphorothioic triamide (NBPT)
Toxicity to fish:
LC50 (96 h) 1,140 mg/l, Lepomis macrochirus (OPPTS 820.1075 (EPA-Guideline), static)
The details of the toxic effect relate to the nominal concentration.

Information on: N-propylphosphorothioic triamide (NPPT)
Toxicity to fish:
LC50 (96 h) > 120 mg/l, Danio rerio (OECD Guideline 203, static)
Nominal concentration.
Analogous: Assessment derived from products with similar chemical character.

Information on: N-butylphosphorothioic triamide (NBPT)
Aquatic invertebrates:
EC50 (48 h) 290 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
The details of the toxic effect relate to the nominal concentration.

Information on: N-propylphosphorothioic triamide (NPPT)
Aquatic invertebrates:
EC50 (48 h) >= 120 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
Nominal concentration.
Analogous: Assessment derived from products with similar chemical character.

Information on: N-butylphosphorothioic triamide (NBPT)
Aquatic plants:
EC50 (72 h) 280 mg/l, Scenedesmus subspicatus (OECD Guideline 201, static)
The details of the toxic effect relate to the nominal concentration.

No observed effect concentration (72 h) 75 mg/l, Scenedesmus subspicatus (OECD Guideline 201, static)
The details of the toxic effect relate to the nominal concentration.

Information on: N-propylphosphorothioic triamide (NPPT)
Aquatic plants:
No observed effect concentration (72 h) >= 120 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
Nominal concentration.
Analogous: Assessment derived from products with similar chemical character.

Mobility

Assessment transport between environmental compartments:
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: N-butylphosphorothioic triamide (NBPT)
Assessment transport between environmental compartments:
The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Information on: N-propylphosphorothioic triamide (NPPT)
Assessment transport between environmental compartments:
The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: N-butylphosphorothioic triamide (NBPT)
Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).

Information on: N-propylphosphorothioic triamide (NPPT)

Bioaccumulation potential

Assessment bioaccumulation potential:
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: N-butylphosphorothioic triamide (NBPT)
Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Information on: N-propylphosphorothioic triamide (NPPT)
Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Additional information

Other ecotoxicological advice:
Do not discharge product into the environment without control.

13. Disposal Considerations

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. Transport Information

Domestic transport:

	Not classified as a dangerous good under transport regulations
UN number or ID number	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Sea transport
IMDG

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
	Marine pollutant: no
Special precautions for user	None known

Air transport
IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number or ID number	Not applicable
Proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

15. Regulatory Information

Other regulations

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP): Schedule 6

Registration status:

AICIS, AU

Contains categorised (according to AICIS scheme), non-listed substance., Can be purchased domestically from BASF., For import, individual registration may be required., Restrictions/information requirement obligations may apply., Please contact your BASF representative.

16. Other Information

Vertical lines in the left hand margin indicate an amendment from the previous version.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.