

Safety data sheet

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BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)

Date / Revised: 20.12.2023

Version: 2.0

Product: **Limus Care**

(ID no. 30789584/SDS_GEN_00/EN)

Date of print 27.06.2024

1. Identification

Product identifier

Limus Care

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

Relevant identified uses: fertilizers

Details of the supplier of the safety data sheet

Company:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Crop Protection

Telephone: +49 621 60-27777

E-mail address: Produktinformation-Pflanzenschutz@basf.com

Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Skin Corr./Irrit. 2

Eye Dam./Irrit. 2A

Repr. 2 (fertility)

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:



Signal Word:

Warning

Hazard Statement:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
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.
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.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical attention.
P332 + P313	If skin irritation occurs: Get medical attention.
P337 + P313	If eye irritation persists: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Storage):

P405	Store locked up.
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Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.
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According to UN GHS criteria

Hazard determining component(s) for labelling: N-butylphosphorothioic triamide (NBPT), N-propylphosphorothioic triamide (NPPT)

Other hazardsAccording to UN GHS criteria

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**Substances**

Not applicable

MixturesChemical nature

fertilizers

Hazardous ingredients (GHS)

According to UN GHS criteria

N-butylphosphorothioic triamide (NBPT)

Content (W/W): 18,75 %

CAS Number: 94317-64-3

EC-Number: 435-740-7

Acute Tox. 5 (oral)

Eye Dam./Irrit. 1

Repr. 2 (fertility)

H318, H303, H361

N-propylphosphorothioic triamide (NPPT)

Content (W/W): 6,25 %

CAS Number: 916809-14-8

Eye Dam./Irrit. 2B

Repr. 2 (fertility)

H320, H361

2,2'-Oxydiethanol

Content (W/W): < 60 %

CAS Number: 111-46-6

EC-Number: 203-872-2

INDEX-Number: 603-140-00-6

Acute Tox. 4 (oral)

H302

For the classifications not written out in full in this section the full text can be found in section 16.

4. First-Aid Measures**Description of first aid measures**

Remove contaminated clothing.

If inhaled:

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Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Wash thoroughly with soap and water

On contact with eyes:

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.

Most important symptoms and effects, both acute and delayed

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

Hazards: 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

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:

water spray, dry powder, foam, carbon dioxide

Special hazards arising from the substance or mixture

Carbon monoxide, Carbon dioxide, nitrogen oxides, Phosphorus compounds, sulfur oxides

The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

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, protective equipment and emergency procedures

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 and material for containment and cleaning 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**Precautions for safe 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.

Conditions for safe storage, including any incompatibilities

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

Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. Exposure Controls/Personal Protection**Control parameters**Components with occupational exposure limits

111-46-6: 2,2'-Oxydiethanol

Exposure controlsPersonal protective equipment

Respiratory protection:

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

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:

| Safety glasses with side-shields (frame 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

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

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	liquid
Colour:	orange
Odour:	ammonia-like, moderate odour
Odour threshold:	Not determined due to potential health hazard by inhalation.
pH value:	approx. 8 - 10 (CIPAC standard water D, 1 %(m), 20 °C)
Freezing point:	approx. 0 °C
Boiling point:	The product has not been tested.
Flash point:	131 °C
Evaporation rate:	not applicable
Flammability:	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:	229 °C Information applies to the solvent.

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Vapour pressure:	The product has not been tested.	
Density:	approx. 1,13 g/cm ³ (20 °C)	
Relative vapour density (air):	not applicable	
Solubility in water:	mainly soluble (20 °C)	
Partitioning coefficient n-octanol/water (log K _{ow}):	The statements are based on the properties of the individual components.	
	<i>Information on: N-butylphosphorothioic triamide (NBPT)</i>	
	<i>Partitioning coefficient n-octanol/water (log K_{ow}): 0,444</i>	<i>(OECD Guideline 107)</i>
	<i>(20 °C; pH value: approx. 7)</i>	
	<i>Information on: N-propylphosphorothioic triamide (NPPT)</i>	
	<i>Partitioning coefficient n-octanol/water (log K_{ow}): < 0,3</i>	<i>(OECD Guideline 117)</i>
	<i>(24 °C)</i>	

Thermal decomposition:	197 °C, 155 kJ/kg (onset temperature) Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.	
Viscosity, dynamic:	approx. 71 mPa.s (20 °C)	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

Other information

Other Information:

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

10. Stability and Reactivity

Reactivity

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

Chemical stability

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

Possibility of hazardous reactions

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

Conditions to avoid

See SDS section 7 - Handling and storage.

Incompatible materials

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

Hazardous decomposition products

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

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

LD50 rat (oral): > 2.000 mg/kg (OECD Guideline 423)

No mortality was observed.

LD50 rat (dermal): > 5.000 mg/kg (OECD Guideline 402)

Information on: 2,2'-Oxydiethanol

Experimental/calculated data:

LC50 rat (by inhalation): 4,6 mg/l 4 h (other)

Highest concentration technically achievable. No mortality was observed. An aerosol was tested.

Irritation

Assessment of irritating effects:

Skin contact causes irritation. Eye contact causes irritation. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant.

Serious eye damage/irritation rabbit: Irritant.

Respiratory/Skin sensitization

Assessment of sensitization:

The product has not been tested. The statement has been derived from the properties of the individual components. No sensitizing effect.

Information on: N-butylphosphorothioic triamide (NBPT)

Experimental/calculated data:

Guinea pig maximization test guinea pig: Non-sensitizing.

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-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.

Information on: N-butylphosphorothioic triamide (NBPT)

Assessment of reproduction toxicity:

The results of animal studies suggest a fertility impairing effect.

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)

Assessment of STOT single:

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: 2,2'-Oxydiethanol

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.

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.

Aspiration hazard

| not applicable

Other relevant toxicity information

Misuse can be harmful to health.

12. Ecological Information

Toxicity

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-propylphosphorothioic triamide (NPPT)

Toxicity to fish:

LC50 (96 h) > 120 mg/l, Brachydanio rerio (OECD Guideline 203, static)

Nominal concentration.

Analogous: Assessment derived from products with similar chemical character.

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)

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 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 plants:

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*No observed effect concentration (72 h) \geq 120 mg/l (growth rate), *Desmodemus subspicatus* (OECD Guideline 201, 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.

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-propylphosphorothioic triamide (NPPT)

Assessment biodegradation and elimination (H₂O):

Not readily biodegradable (by OECD criteria).

Information on: N-butylphosphorothioic triamide (NBPT)

Assessment biodegradation and elimination (H₂O):

Not readily biodegradable (by OECD criteria).

Bioaccumulative 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.

Mobility in soil

Assessment transport between environmental compartments:

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

Information on: N-propylphosphorothioic triamide (NPPT)

Assessment transport between environmental compartments:

Volatility: The substance will not evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

Information on: N-butylphosphorothioic triamide (NBPT)

Assessment transport between environmental compartments:

Volatility: The substance will slowly evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

Results of PBT and vPvB assessment

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

Other adverse effects

The product does not contain substances that are listed in the Montreal Protocol on substances that deplete the ozone layer.

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control.

13. Disposal Considerations

Waste treatment methods

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

Land transport

ADR

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

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	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

Inland waterway transport

ADN

	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

Transport in inland waterway vessel

Not evaluated

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
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
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

Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

15. Regulatory Information**Safety, health and environmental regulations/legislation specific for the substance or mixture**

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
Repr.	Reproductive toxicity
Acute Tox.	Acute toxicity
H318	Causes serious eye damage.
H303	May be harmful if swallowed.
H361	Suspected of damaging fertility.
H320	Causes eye irritation.
H302	Harmful if swallowed.

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.

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