

# Safety data sheet

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BASF Safety data sheet

Date / Revised: 27.06.2025

Product: **Dry Vitamin A-Palmitate 500**

Version: 8.0

(30041047/SDS\_GEN\_VN/EN)

Date of print: 16.10.2025

## 1. Substance/preparation and manufacturer/supplier identification

### Product name:

Dry Vitamin A-Palmitate 500

Use: Vitamin

#### Manufacturer/supplier:

BASF Vietnam Co. Ltd.

Level 23, Deutsches Haus, 33 Le Duan,

Sai Gon Ward, Ho Chi Minh City, Vietnam

Telephone: +84 28 3824 3833

Telefax number: +84 28 3824 3832

E-mail address: minh-triet.thieu@basf.com

#### Emergency information:

18001703 (Vietnam)

Telefax number: +84 28 3824 3832

International emergency number:

Telephone: +49 180 2273-112

## 2. Hazard identification

Classification of the substance and mixture:

Skin irritation: Cat.3

Reproductive toxicity: Cat.1B (unborn child)

Hazardous to the aquatic environment - acute: Cat.2

Hazardous to the aquatic environment - chronic: Cat.2

Label elements and precautionary statement:

Pictogram:

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Signal Word:  
Danger

Hazard Statement:

|      |  |
|------|--|
| H316 | Causes mild skin irritation.                     |
| H360 | May damage the unborn child.                     |
| H401 | Toxic to aquatic life.                           |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary Statements (Prevention):

|      |  |
|------|--|
| P273 | Avoid release to the environment.  |
| 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.          |

Precautionary Statements (Response):

|             |   |
|-------------|---|
| P308 + P313 | IF exposed or concerned: Get medical attention.   |
| P391        | Collect spillage.                                 |
| P332 + P313 | If skin irritation occurs: 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:

The product is under certain conditions capable of dust explosion.

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### 3. Composition/information on ingredients

#### Chemical nature

Substance nature: mixture

Preparation based on:

retinyl palmitate

500 000 I.U./g

embedded in: carbohydrates

, Gelatins

stabilized with:

2,6-di-tert-butyl-p-cresol

#### Hazardous ingredients

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retinyl palmitate

Content (W/W):  $\geq 25\%$  -  $< 50\%$ 

CAS Number: 79-81-2

Skin Irrit.: Cat. 3

Repr.: Cat. 1B (unborn child)

Aquatic Chronic: Cat. 4

2,6-di-tert-butyl-p-cresol

Content (W/W):  $\geq 1\%$  -  $< 3\%$ 

CAS Number: 128-37-0

Aquatic Acute: Cat. 1

Aquatic Chronic: Cat. 1

M-factor chronic: 1

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## 4. First-Aid Measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

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

On skin contact:

Immediately wash thoroughly with soap and water, seek medical attention.

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.

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.

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## 5. Fire-Fighting Measures

Suitable extinguishing media:

dry powder, carbon dioxide, water spray, foam

Unsuitable extinguishing media for safety reasons:

water spray

Additional information:

Avoid whirling up the material/product because of the danger of dust explosion.

Specific hazards:

carbon oxides, harmful vapours

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The substances/groups of substances mentioned can be released in case of fire. Generation of fumes/fog. Dust explosion hazard.

Special protective equipment:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Cool endangered containers with water-spray. 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.

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## 6. Accidental Release Measures

### Personal precautions:

Use personal protective clothing. Information regarding personal protective measures, see section 8. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust.

### Environmental precautions:

Do not discharge into drains/surface waters/groundwater. Inform authorities in the event of product spillage to water courses or sewage systems.

### Methods for cleaning up or taking up:

For small amounts: Contain with dust binding material and dispose of.

For large amounts: Sweep/shovel up. Collect waste in suitable containers, which can be labeled and sealed.

Dispose of absorbed material in accordance with regulations. Avoid raising dust. Cleaning operations should be carried out only while wearing breathing apparatus.

Additional information: Dust can form an explosive mixture with air.

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## 7. Handling and Storage

### Handling

Avoid dust formation. Provide exhaust ventilation. This product may cause irritations; wash your hands after every contact.

Protection against fire and explosion:

Avoid dust formation. The product is capable of dust explosion. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Use explosion-proof apparatus and fittings.

### Storage

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Aluminium

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Protect from air. Protect from the effects of light.

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## 8. Exposure controls and personal protection

### Components with occupational exposure limits

sucrose, 57-50-1;

TWA value 10 mg/m<sup>3</sup> (ACGIHTLV)

2,6-di-tert-butyl-p-cresol, 128-37-0;

TWA value 2 mg/m<sup>3</sup> (ACGIHTLV), Inhalable fraction and vapor

Starch, hydrogen octenylbutanedioate, aluminum salt, 9087-61-0;

TWA value 2 mg/m<sup>3</sup> (OEL (VN))

STEL value 4 mg/m<sup>3</sup> (OEL (VN))

TWA value 2 mg/m<sup>3</sup> (OEL (VN))

STEL value 4 mg/m<sup>3</sup> (OEL (VN))

### Personal protective equipment

Respiratory protection:

Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with high efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P3 or FFP3).

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. Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.

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:

Under no circumstances should the product come into contact with the skin of pregnant women or be inhaled by them. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Handle in accordance with good industrial hygiene and safety practice. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift. Store work clothing separately.

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## 9. Physical and Chemical Properties

|                            |   |  |
|----------------------------|---|--|
| Form:                      | free flowing fine granules  |  |
| Colour:                    | light yellow  |  |
| Odour:                     | not applicable  |  |
| Odour threshold:           | Not determined due to potential health hazard by inhalation.  |  |
| pH value:                  | 5.5<br>(10 %(m), 20 °C)   |  |
| melting range:             | The substance / product decomposes therefore not determined.  |  |
| Boiling point:             | not applicable  |  |
| Flash point:               | not applicable, the product is a solid  |  |
| Evaporation rate:          | The product is a non-volatile solid.  |  |
| Flammability (solid/gas):  | not highly flammable  | (UN Test N.1 (ready combustible solids)) |
| Lower explosion limit:     | For solids not relevant for classification and labelling.   |  |
| Upper explosion limit:     | For solids not relevant for classification and labelling.   |  |
| Thermal decomposition:     | > 160 °C<br>self-accelerating reaction  | (DSC (DIN 51007))                        |
| Self heating ability:      | It is not a substance capable of spontaneous heating according to UN transport regulations class 4.2. | (UN Test N.4 (self heating substances))  |
| SADT:                      | Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.        |  |
| Minimum ignition energy:   | The product is capable of dust explosion.   | (VDI 2263, sheet 1, 2.5 (May 1990))      |
| Explosion hazard:          | Product is not explosive, however a dust explosion could result from an air / dust mixture.           |  |
| Fire promoting properties: | Based on its structural properties the product is not classified as oxidizing.                        |  |
| Vapour pressure:           | not applicable  |  |

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Density: No information is available for the absolute density. Instead the bulk density was determined as a more relevant value.

Bulk density: approx. 600 kg/m<sup>3</sup>

Relative vapour density (air): not applicable, The product is a non-volatile solid.

Solubility in water: dispersible  
(35 - 40 °C)

Partitioning coefficient n-octanol/water (log Pow): not applicable for mixtures

Viscosity, kinematic: not applicable, the product is a solid

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## 10. Stability and Reactivity

Conditions to avoid:  
Avoid heat. Avoid light. Avoid dust formation. Avoid all sources of ignition: heat, sparks, open flame.  
See SDS section 7 - Handling and storage.

Thermal decomposition: > 160 °C (DSC (DIN 51007))  
self-accelerating reaction

Substances to avoid:  
atmospheric moisture, atmospheric oxygen

Corrosion to metals: Corrosive effects to metal are not anticipated.

Hazardous reactions:  
Dust explosion hazard.

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.

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## 11. Toxicological Information

**Routes of exposure**

**Assessment of acute toxicity**

Virtually nontoxic after a single ingestion.

### 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:

Not irritating to the eyes. Skin contact causes slight irritation.

Information on: retinyl palmitate

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant. (BASF-Test)

Skin corrosion/irritation rabbit: Slightly irritating. (OECD Guideline 404)

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Information on: retinyl palmitate

Experimental/calculated data:

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

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### Respiratory/Skin sensitization

Assessment of sensitization:

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

Information on: retinyl palmitate

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies.

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### Germ cell mutagenicity

Assessment of mutagenicity:

Based on the ingredients, there is no suspicion of a mutagenic effect.

Information on: retinyl palmitate

Assessment of mutagenicity:

In the majority of tests performed (bacteria/microorganisms/cell cultures) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

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### Carcinogenicity

Assessment of carcinogenicity:

The whole of the information assessable provides no indication of a carcinogenic effect.

Information on: retinyl palmitate

Assessment of carcinogenicity:



Results from a number of long-term carcinogenicity studies and short-term tests are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic. Literature data.

Information on: 2,6-di-tert-butyl-p-cresol

Assessment of carcinogenicity:

The whole of the information assessable provides no indication of a carcinogenic effect.

### **Reproductive toxicity**

Assessment of reproduction toxicity:

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

### **Developmental toxicity**

Assessment of teratogenicity:

The substance caused malformations/developmental toxicity in laboratory animals.

Information on: retinyl palmitate

Assessment of teratogenicity:

May cause harm to the unborn child.

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

Assessment of repeated dose toxicity:

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

Information on: retinyl palmitate

Assessment of repeated dose toxicity:

Repeated exposure to large quantities may affect certain organs.

Information on: 2,6-di-tert-Butyl-p-cresol-----

### **Aspiration hazard**

No aspiration hazard expected.

### **Other relevant toxicity information**

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

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## **12. Ecological Information**

### **Ecotoxicity**

Assessment of aquatic toxicity:

Acutely toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

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Information on: 2,6-di-tert-butyl-p-cresol

Toxicity to fish:

LC0 (96 h)  $\geq$  0.57 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 84/449/EWG, C.1, semistatic)

The statement of the toxic effect relates to the analytically determined concentration. Limit concentration test only (LIMIT test).

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Information on: 2,6-di-tert-butyl-p-cresol

Aquatic invertebrates:

EC0 (48 h) 0.48 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

The statement of the toxic effect relates to the analytically determined concentration.

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Information on: 2,6-di-tert-butyl-p-cresol

Aquatic plants:

EC50 (72 h)  $>$  0.40 mg/l (growth rate), Scenedesmus subspicatus (Guideline 92/69/EEC, C.3, static)

The statement of the toxic effect relates to the analytically determined concentration.

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Information on: 2,6-di-tert-butyl-p-cresol

Microorganisms/Effect on activated sludge:

EC0 (3 h) 1,000 mg/l, activated sludge (DIN EN ISO 8192-OECD 209-88/302/EEC, P. C, aerobic)

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## Mobility

Assessment transport between environmental compartments:

No data available.

Information on: retinyl palmitate

Assessment transport between environmental compartments:

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

Adsorption to solid soil phase is expected.

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## Persistence and degradability

Assessment biodegradation and elimination (H<sub>2</sub>O):

Product is not expected to be readily biodegradable.

Information on: retinyl palmitate

Information on: 2,6-di-tert-butyl-p-cresol

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Information on: retinyl palmitate

Elimination information:

40 - 50 % BOD of the ThOD (28 d) (OECD 301F; ISO 9408; 92/69/EWG, C.4-D) (aerobic, activated sludge, domestic)

Information on: 2,6-di-tert-butyl-p-cresol

Elimination information:

4.5 % BOD of the ThOD (28 d) (OECD 301C; ISO 9408; 92/69/EWG, C.4-F) (aerobic, activated sludge)

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## Bioaccumulation potential

Assessment bioaccumulation potential:  
No data available.

Information on: retinyl palmitate

Assessment bioaccumulation potential:

The product will not be readily bioavailable due to its consistency and insolubility in water. No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

Information on: 2,6-di-tert-butyl-p-cresol

Bioaccumulation potential:

Bioconcentration factor: 330 - 1,800 (28 d), Cyprinus carpio (OECD Guideline 305 C)

Bioconcentration factor: 230 - 2,500 (56 d), Cyprinus carpio (OECD Guideline 305 C)

## Additional information

Other ecotoxicological advice:

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

## 13. Disposal Considerations

Information on disposal regulations: Must comply with regulations on hazardous waste such as:

- Decree No. 08/2022/ND-CP of the Government: detailing a number of articles of the Law on Environmental Protection.

- Circular No. 02/2022/TT-BTNMT of the Ministry of Natural Resources and Environment: detailing a number of articles of the Law on Environmental Protection.

Observe national and local legal requirements.

## 14. Transport Information

### Domestic transport:

UN number or ID number: UN 3077

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2,6-DI-TERT-BUTYL-P-CRESOL)

Transport hazard class(es): 9, EHS

Packing group: III

Environmental hazards: yes

Special precautions for user: None known

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**Sea transport****IMDG**

UN number or ID number: UN 3077  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(2,6-DI-TERT-BUTYL-P-CRESOL)  
Transport hazard class(es): 9, EHSM  
Packing group: III  
Environmental hazards: yes  
Marine pollutant: YES  
Special precautions for user: EmS: F-A; S-F

**Air transport****IATA/ICAO**

UN number or ID number: UN 3077  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(2,6-DI-TERT-BUTYL-P-CRESOL)  
Transport hazard class(es): 9, EHSM  
Packing group: III  
Environmental hazards: yes  
Special precautions for user: None known

**Maritime transport in bulk according to IMO instruments**

Maritime transport in bulk is not intended.

**Further information**

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 kg or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2:10.2.7; IATA: A197; TDS: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

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**15. Regulatory Information****Other regulations**

Legal information on safety, health and environment for chemicals:

Law on Chemicals No. 06/2007/QH12

Chemical Safety Sheets (SDS) are compiled in accordance with international regulations on chemical classification and labelling (GHS) as well as relevant applicable legal regulations:

- QCVN 05A:2020/BCT National Technical Regulation on safety in production, trading, use, preservation and transportation of hazardous chemicals.

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- Amendment 1:2024 QCVN 05A:2020/BCT National technical regulation on safety in production, trading, use, preservation and transportation of hazardous chemicals.
- Decree No. 113/2017/ND-CP dated 09/10/2017 of the Government detailing and guiding the implementation of a number of articles of the Law on Chemicals;
- Circular No. 32/2017/TT-BCT dated 28/12/2017 of the Ministry of Industry and Trade specifying and guiding the implementation of a number of articles of the Law on Chemicals and Decree No. 113/2017/ND-CP dated 09/10/2017 of the Government detailing and guiding the implementation of a number of articles of the Law on Chemicals;
- Decree No. 82/2022/ND-CP dated October 18, 2022 of the Government amending and supplementing a number of articles of the Government's Decree No. 113/2017/ND-CP dated October 09, 2017 detailing and guiding the implementation of a number of articles of the Law on Chemicals
- Circular No. 17/2022/TT-BCT dated October 27, 2022 of the Ministry of Industry and Trade amending and supplementing a number of articles of Circular No. 32/2017/TT-BCT dated December 28, 2017 of the Minister of Industry and Trade specifying and guiding the implementation of a number of articles of the Law on Chemicals and the Government's Decree No. 113/2017/ND-CP dated October 09, 2017 detailing and guiding the exam a number of articles of the Law on Chemicals
- Decree No. 161/2024 ND-CP dated December 18, 2024 of the Government regulating the list of dangerous goods, transportation of dangerous goods and the order and procedures for issuance of licenses and certificates of completion of training programs for drivers or escorts transporting dangerous goods on roads;
- Decree 34/2024/ND-CP dated 31/03/2024 regulating the list of dangerous goods, transporting dangerous goods by road motor vehicles and inland waterway vehicles
- Circular No. 37/2020/TT-BCT dated 30/11/2020 of the Ministry of Industry and Trade stipulating the list of dangerous goods that must be packed in the process of transporting and transporting dangerous goods by road, railway and inland waterway motor vehicles.
- Decree No. 71/2019/ND-CP dated August 30, 2019 of the Government stipulating the sanctioning of administrative violations in the field of chemicals and industrial explosives.

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

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## 16. Other Information

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

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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.