

## Safety data sheet

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BASF Safety data sheet

Date / Revised: 27.01.2025

Product: **Vitamin A-Palmitate 1.6 Mio IU/G Feed**

Version: 2.0

(30041042/SDS\_GEN\_SG/EN)

Date of print: 15.10.2025

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

#### Product name:

Vitamin A-Palmitate 1.6 Mio IU/G Feed

Use: feed additive(s)

#### Manufacturer/supplier:

BASF South East Asia Pte Ltd.

128 Beach Road #18-01

Guoco Midtown, 189773, Singapore

Telephone: +65 8322 4420

Telefax number: +65 6 334-0330

E-mail address: benny.zou@basf.com

#### Emergency information:

Singapore Emergency Toll-Free Number:

Telephone: 1800-723-1361

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.3

Hazardous to the aquatic environment - chronic: Cat.3

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.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P273	Avoid release to the environment.
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.
P332 + P313	If skin irritation occurs: Get medical attention.

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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Other hazards which do not result in classification:

When finely distributed on porous material, self-ignition is possible. High risk of slipping due to leakage/spillage of product.

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### 3. Composition/information on ingredients

#### Chemical nature

Substance nature: mixture

Preparation based on:  
retinyl palmitate

dissolved in:  
sunflower oil

stabilized with:  
2,6-di-tert-butyl-p-cresol

#### Hazardous ingredients

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retinyl palmitate

Content (W/W):  $\geq 75\%$  -  $\leq 100\%$   
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:

water spray, carbon dioxide, dry powder, foam

Unsuitable extinguishing media for safety reasons:

water jet

Specific hazards:

harmful vapours, carbon oxides

The substances/groups of substances mentioned can be released in case of fire. Burning produces harmful and toxic fumes.

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Special protective equipment:

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

Further information:

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. Cool endangered containers with water-spray.

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## 6. Accidental Release Measures

### Personal precautions:

Avoid contact with the skin, eyes and clothing. Do not breathe vapour/spray. Ensure adequate ventilation. Use personal protective clothing. Information regarding personal protective measures, see section 8.

### 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: Pick up with suitable absorbent material. Do not use saw-dust or other combustible substances as an absorbant during cleanup.

For large amounts: Dike spillage. Pump off product.

Dispose of absorbed material in accordance with regulations. Mop up spills with non-flammable adsorbents (e.g. vermiculite, spill mats). Soiled textiles / cleaning rags / adsorbents and Silica are capable of self ignition and should be wetted with water and must be disposed of in a safe manner.

Additional information: High risk of slipping due to leakage/spillage of product. Soiled textiles/cleaning rags made of natural fibres (e.g. of pure wool or of pure cotton) are capable of ignition and should not be used and/or must be desposed of in a safe manner.

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## 7. Handling and Storage

### Handling

Avoid contact with the skin, eyes and clothing. Wear suitable protective clothing and eye/face protection. Ensure thorough ventilation of stores and work areas. Keep container tightly sealed.

Protection against fire and explosion:

Risk of self-ignition when a large surface area is produced due to fine dispersion. Soiled textiles / cleaning rags / adsorbents and Silica are capable of self ignition and should be wetted with water and must be disposed of in a safe manner. Take precautionary measures against static discharges. Avoid all sources of ignition: heat, sparks, open flame.

### Storage

Segregate from oxidants.

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. Keep under nitrogen.

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## 8. Exposure controls and personal protection

### Components with occupational exposure limits

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

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

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

sunflower oil, 8001-21-6;

TWA value 10 mg/m<sup>3</sup> (OEL (SG)), Particulate

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

TWA value 3 mg/m<sup>3</sup> (ACGIHTLV), Respirable particles

TWA value 10 mg/m<sup>3</sup> (OEL (SG)), Mist

### Personal protective equipment

Respiratory protection:

Respiratory protection in case of vapour/aerosol release. 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. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Store work clothing separately. 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.

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## 9. Physical and Chemical Properties

Form: liquid, partially crystallized  
Colour: light yellow

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Odour:	almost odourless	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
pH value:	substance/mixture is non-soluble (in water)	
Melting point:	approx. 26 °C	
Boiling point:	The substance / product decomposes therefore not determined.	
Flash point:	approx. 194 °C Information based on the main component/s.	(ISO 2719)
Evaporation rate:	No data available.	
Flammability (solid/gas):	not flammable	(derived from flash point)
Lower explosion limit:	For liquids not relevant for classification and labelling.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	approx. 261 °C	(DIN EN 14522)
Thermal decomposition:	170 °C The values mentioned are those of the active ingredient.	(DSC (DIN 51007))
Self ignition:	Risk of self-ignition when a large surface area is produced due to fine dispersion.	
Self heating ability:	not applicable, the product is a liquid	
SADT:	No data available.	
Explosion hazard:	not explosive	
Fire promoting properties:	not fire-propagating	
Vapour pressure:	0.01 mbar (100 °C)	
Density:	0.88 g/cm <sup>3</sup> (20 °C)	
Relative density:	No data available.	
Relative vapour density (air):	not determined	
Solubility in water:	sparingly soluble (20 °C)	
Solubility (qualitative) solvent(s):	organic solvents soluble	

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

Viscosity, dynamic: 44 mPa.s  
(60 °C)

Viscosity, kinematic:  
No data available.

#### Particle characteristics

Particle size distribution: No data available. -

Specific Surface Area:  
No data available.

Particle Shape:  
No data available.

Dustiness:  
No data available.

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## 10. Stability and Reactivity

Conditions to avoid:  
Temperature: > 60 °C  
Disregard of the conditions mentioned may result in undesirable decomposition reactions.

Thermal decomposition: 170 °C (DSC (DIN 51007))  
The values mentioned are those of the active ingredient.

Substances to avoid:  
oxidizing agents

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

Hazardous reactions:  
Self-ignition is possible when finely distributed on flammable surfaces in the presence of air.

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**

#### **Acute oral toxicity**

Experimental/calculated data:

(oral):No data available.

**Acute inhalation toxicity**

(by inhalation):No data available.

**Acute dermal toxicity**

(dermal):No data available.

**Assessment of acute toxicity**

Virtually nontoxic after a single ingestion.

Information on: retinyl palmitate

**Acute oral toxicity**

Experimental/calculated data:

LD50 rat (oral): > 2,000 mg/kg (BASF-Test)

No mortality was observed. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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

**Acute oral toxicity**

Experimental/calculated data:

LD50 rat (oral): > 2,930 mg/kg (OECD Guideline 401)

No mortality was observed.

LD50 rat (oral): 6,000 mg/kg (OECD Guideline 401)

Information on: retinyl palmitate

**Assessment of acute toxicity**

Virtually nontoxic after a single ingestion.

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

**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:

May cause slight irritation to the skin. Not irritating to the eyes.

Experimental/calculated data:

Skin corrosion/irritation:No data available.

Serious eye damage/irritation:No data available.

Information on: retinyl palmitate

Assessment of irritating effects:

Not irritating to the eyes. May cause slight irritation to the skin.



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### **Respiratory/Skin sensitization**

Assessment of sensitization:

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

Experimental/calculated data:

No data available.

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:

In the majority of tests performed (microorganisms) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays.

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:

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. No carcinogenic potential can be deduced from other studies with rats and mice.

Experimental/calculated data:

No data available.

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:

Based on available data, the classification criteria are not met. IARC Group 3 (not classifiable as to human carcinogenicity).

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### **Reproductive toxicity**

Assessment of reproduction toxicity:

No applicable information available.

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Experimental/calculated data:  
No data available.

Information on: retinyl palmitate  
Assessment of reproduction toxicity:  
No reliable data are available concerning reproduction toxicity.  
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### **Developmental toxicity**

Assessment of teratogenicity:  
May cause harm to the unborn child.

Information on: retinyl palmitate  
Assessment of teratogenicity:  
May cause harm to the unborn child.  
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### **Specific target organ toxicity (single exposure)**

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

### **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.

Experimental/calculated data:  
No data available.

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  
Assessment of repeated dose toxicity:  
The information available on the product provides no indication of toxicity on target organs after repeated exposure.  
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### **Aspiration hazard**

No data available.

### **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:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to fish:

No data available.

Aquatic invertebrates:

No data available.

Aquatic plants:

No data available.

Microorganisms/Effect on activated sludge:

No data available.

Chronic toxicity to fish:

No data available.

Chronic toxicity to aquatic invertebrates:

No data available.

Information on: retinyl palmitate

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

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

Information on: retinyl palmitate

Toxicity to fish:

LC50 (96 h) > 10,000 mg/l, *Leuciscus idus* (DIN 38412 Part 15, static)

The details of the toxic effect relate to the nominal concentration. The product has not been tested.

The statement has been derived from substances/products of a similar structure or composition.

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

Toxicity to fish:

LC0 (96 h) >= 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).

LC50 (96 h) 0.199 mg/l, Fish

LC50 (96 h) 1.1 mg/l, *Oryzias latipes*

Information on: retinyl palmitate

Aquatic invertebrates:

EC50 (48 h) > 100 mg/l, *Daphnia magna* (Screening test, static)

The details of the toxic effect relate to the nominal concentration. The product has not been tested.

The statement has been derived from substances/products of a similar structure or composition.

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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.

EC50 (48 h) 0.31 mg/l, *Daphnia magna*

EC50 (48 h) 0.92 mg/l, *Daphnia magna*

EC50 (48 h) 0.78 mg/l, Zebra Mussel

EC50 (48 h) 0.84 mg/l, *Daphnia magna* (OECD Guideline 202, part 1)

Information on: retinyl palmitate

Aquatic plants:

EC50 (72 h) 152.94 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9, static)

The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested.

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.

No observed effect concentration (72 h) 0.4 mg/l (growth rate), *Desmodesmus subspicatus*  
(Guideline 92/69/EEC, C.3)

(96 h) 0.758 mg/l, algae  
(estimated)

(72 h) > 0.24 mg/l, *Pseudokirchneriella subcapitata*

Assessment of terrestrial toxicity:

No data available.

## Mobility

Assessment transport between environmental compartments:

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

Adsorption to solid soil phase is expected.

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.

## Persistence and degradability

Information on: retinyl palmitate

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

## Bioaccumulation potential

Assessment bioaccumulation potential:

The product contains components with potential for bioaccumulation

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

Assessment bioaccumulation potential:

May be accumulated in organisms.

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## Additional information

Add. remarks environm. fate & pathway:

The product has not been tested. The statements on environmental fate and pathway have been derived from the properties of the individual components.

Other ecotoxicological advice:

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

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## 13. Disposal Considerations

Observe national and local legal requirements.

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## 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

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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.

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## 15. Regulatory Information

### Other regulations

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.