

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Ascorbyl Palmitate

REACH Registration Number : 01-2120769098-41-0000

Substance name : L-Ascorbic acid, 6-hexadecanoate
CAS-No. : 137-66-6

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

Use of the Sub-
stance/Mixture : Additive for the stabilisation of foods

1.3 Details of the supplier of the safety data sheet

Company : DSM Nutritional Products Europe Ltd
PO Box 2676
CH-4002 Basel

Telephone : +41618157777
Telefax : +41618157770
E-mail address of person
responsible for the SDS : sds.nutritionalproducts@dsm.com

1.4 Emergency telephone number

+41 848 00 11 77 (Carechem 24 International)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2 H319: Causes serious eye irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H319 Causes serious eye irritation.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.
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.
P337 + P313 If eye irritation persists: Get medical advice/ attention.



| | | | |
|--------------------------|---|---|---|
| Signal word | : | Warning | |
| Hazard statements | : | H319 | Causes serious eye irritation. |
| Precautionary statements | : | P264 P280 P305 + P351 + P338 P337 + P313 | Wash skin thoroughly after handling. Wear eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. |

2.3 Other hazards

Risk of dust explosion.

SECTION 3: Composition/information on ingredients

| | | |
|----------------------------------|---|---|
| Synonyms | : | 2,3-Didehydro-L-threo-hexono-1,4-lactone-6-palmitate E 304 |
| Brief description of the product | : | Substance |
| EINECS-No. | : | 205-305-4 |
| Molecular formula | : | C22 H38 O7 |

3.1 Substances

Hazardous components

| Chemical name | CAS-No. EC-No. | Concentration (% w/w) |
|----------------------------|-----------------------|-----------------------|
| 6-O-palmitoylascorbic acid | 137-66-6 205-305-4 | >= 90 - <= 100 |

SECTION 4: First aid measures

4.1 Description of first aid measures

| | | |
|-------------------------|---|--|
| General advice | : | Move out of dangerous area. Show this safety data sheet to the doctor in attendance. |
| If inhaled | : | Move to fresh air. Consult a physician after significant exposure. |
| In case of skin contact | : | Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician. |
| In case of eye contact | : | Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. |

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If eye irritation persists, consult a specialist.

If swallowed : Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No specific symptoms known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media : Water
Foam

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : None known.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Consider dust explosion hazard.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Avoid dust formation.
Avoid breathing dust.

6.2 Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water courses.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up and arrange disposal without creating dust.

6.4 Reference to other sections

For personal protection see section 8.
For disposal considerations see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Advice on safe handling : Avoid contact with skin and eyes.

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For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of work-day.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : To maintain product quality, do not store in heat or direct sunlight.

Keep container tightly closed and dry.

7.3 Specific end use(s)

Specific use(s) : Not applicable

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational Exposure Limits**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|----------------------------|----------|-------------------------------|----------------------|--------------------|
| 6-O-palmitoylascorbic acid | 137-66-6 | TWA | 10 mg/m ³ | DSM Internal Limit |

8.2 Exposure controls**Personal protective equipment**

Eye protection : Safety glasses with side-shields

Hand protection : Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate type of protective gloves.
Glove material: for example nitrile rubber

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance : powder

Colour : white - pale yellow

Odour : odourless

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| | |
|--|--|
| Odour Threshold | : No information available. |
| pH | : No data available |
| Melting point/range | : 107 - 117 °C |
| Boiling point/boiling range | : > 250 °C Decomposes on heating. |
| Flash point | : Not applicable |
| Flammability (solid, gas) | : May form combustible dust concentrations in air. |
| Relative vapour density | : Not applicable |
| Density | : not determined |
| Water solubility | : < 10.3 mg/l (20 °C; OECD Test Guideline 105) practically insoluble |
| Solubility in other solvents | : Methanol: 183 g/l (ca. 22 °C) Ethanol: 125 g/l (ca. 22 °C) Peanut oil: 0.3 g/l (ca. 22 °C) |
| Partition coefficient: n-octanol/water | : log Pow > 6.5 (OECD Test Guideline 117) |
| Auto-ignition temperature | : No data available |
| Thermal decomposition | : Decomposes on heating. Potential for exothermic hazard |
| Explosive properties | : Not explosive |
| Oxidizing properties | : Not oxidizing |

9.2 Other information

| | |
|---|---|
| Combustibility index for deposited dust | : 2 (23 °C) : 2 (100 °C) |
| Dust explosion properties | : KSt value: 231 bar·m/s (Median value of the tested sample 0.018 mm; ISO 6184) |
| Dust explosion class | : St2 (Product sample, Median value of the tested sample 0.018 mm; ISO 6184) |
| Maximum explosion over-pressure | : 8.7 bar (Median value of the tested sample 0.018 mm; ISO 6184) |
| Minimum ignition energy | : 1 - 3 mJ (Milled sample, Median value of the tested sample 0.047 mm, Loss on drying 0.9 %, EN 13821) The Minimum ignition energy (MIE) of a dust/air mix depends on the particle size the water content and the temperature of the dust. The finer and the dryer the dust the lower the MIE. : General remark: The indicated dust explosion characteristics are only valid for this product and are sensitive to the sample's parameters. |
| Powder volume resistivity | : ca. 7E+11 Ohm·m (Product sample, Median value of the tested sample 0.153 mm, Loss on drying 0.3 %) The material can accumulate static charge and can therefore cause electrical ignition. |
| Minimum ignition temperature | : ca. 250 °C (Median value of the tested sample 0.018 mm) |

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ture of a dust/air mix determined in the BAM oven
Molecular weight : 414.54 g/mol
Bulk density : ca. 240 kg/m³

SECTION 10: Stability and reactivity**10.1 Reactivity**

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Dust may form explosive mixture in air.

10.4 Conditions to avoid

Heat

10.5 Incompatible materials

Strong acids and strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if used as directed.

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

Acute oral toxicity : LD50 (Rat): > 10,000 mg/kg
 : LD50 (Mouse): 25,000 mg/kg

Acute dermal toxicity : LD50 (Guinea pig): > 3,000 mg/kg

Skin irritation : No skin irritation (In vitro study, OECD Test Guideline 439)

Eye irritation : No eye irritation (Bovine cornea, OECD Test Guideline 437)
 : Eye irritation (In vitro study, OECD Test Guideline 492)
 : Dust contact with the eyes can lead to mechanical irritation.

Sensitisation : Does not cause skin sensitisation. (Mouse, Local Lymph Node Assay (LLNA), OECD Test Guideline 429)

Genotoxicity in vitro : not mutagenic (Ames test)

Genotoxicity in vivo : No indication for mutagenicity known.

| | |
|--|--|
| Carcinogenicity | : No indication for carcinogenicity known. |
| Teratogenicity | : No indication for teratogenicity known. |
| STOT - single exposure (Acute exposure) | : The substance or mixture is not classified as specific target organ toxicant, single exposure. |
| STOT - repeated exposure | : This information is not available. |
| Experience with human exposure: Skin contact | : May irritate skin. |
| Experience with human exposure: Ingestion | : Oral intake up to 9 g ascorbic acid per day does not produce any serious toxic effects. However, diarrhoea can occur even with lower consumption levels. |
| Experience with human exposure: Eye contact | : May irritate eyes. |
| Further information | : May cause irritation of respiratory tract. |
| Aspiration toxicity | : No aspiration toxicity classification |

SECTION 12: Ecological information

12.1 Toxicity

| | |
|---|--|
| Toxicity to daphnia and other aquatic invertebrates | : Daphnia magna (Water flea) EC50 (48 h) > 0.1 mg/l No toxicity at the limit of solubility (OECD Test Guideline 202) |
| Toxicity to algae | : Pseudokirchneriella subcapitata (green algae) EC50 (72 h) > 0.34 mg/l No toxicity at the limit of solubility (OECD Test Guideline 201) : NOEC (72 h) >= 0.34 mg/l No toxicity at the limit of solubility (OECD Test Guideline 201) |

12.2 Persistence and degradability

| | |
|------------------|---|
| Biodegradability | : Readily biodegradable. 93 % (28 d) (OECD Test Guideline 301B) |
|------------------|---|

12.3 Bioaccumulative potential

| | |
|--|---|
| Partition coefficient: n-octanol/water | : log Pow > 6.5 (OECD Test Guideline 117) |
|--|---|

12.4 Mobility in soil

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Distribution among environmental compartments : No data available

12.5 Results of PBT and vPvB assessment

Assessment : The substance does not fulfill the PBT criteria.
: The substance does not fulfill the vPvB criteria.

12.6 Other adverse effects

Additional ecological information : There is no data available for this product.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Discharge into the environment must be avoided.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



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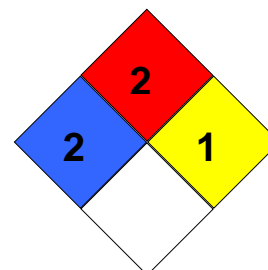
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NFPA Classification : Health hazard: 2
Fire Hazard: 2
Reactivity Hazard: 1



15.2 Chemical safety assessment

Not applicable

SECTION 16: Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative
DNEL - Derived No-Effect Level; NFPA - National Fire Protection Association (USA); PNEC - Predicted No-Effect Concentration; STEL - Short term exposure limit; TLV-C - Ceiling Limit Value; TWA - Time Weighted Average; WEL - Workplace Exposure Limit.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific

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material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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