

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

### 1.1 Product identifier

Trade name : β-Carotene 10% B

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

Use of the Sub-  
stance/Mixture : For the fortification 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.

#### Additional Labelling:

EUH208 Contains dl-α-tocopherol. May produce an allergic reaction.

### 2.3 Other hazards

Risk of dust explosion.

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## SECTION 3: Composition/information on ingredients

Brief description of the product : Mixture (preparation) containing active ingredient and auxiliary substances

### 3.1 Substances

Not applicable

### 3.2 Mixtures

#### Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
β,β-carotene	7235-40-7 230-636-6 01-2119967394-26	Eye Irrit. 2; H319	>= 10 - < 20
3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol (dl-α-tocopherol)	10191-41-0 233-466-0 01-2120086658-39	Skin Sens. 1B; H317	>= 1 - < 5
6-O-palmitoylascorbic acid (L-ascorbyl palmitate)	137-66-6 205-305-4	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 1 - < 2.5

For explanation of abbreviations see section 16.

#### Further ingredients

Chemical name	CAS-No. EC-No. Registration number	GHS Classification	Concentration [%]
Starch	9005-25-8 232-679-6		>= 10 - < 30
glycerol	56-81-5 200-289-5		>= 10 - < 30

## 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.  
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of 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.

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### 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.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

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

#### 6.2 Environmental precautions

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

#### 6.3 Methods and material for containment and 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.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.  
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
starch	9005-25-8	TWA (inhalable dust)	10 mg/m <sup>3</sup>	GB EH40
		TWA (Respirable dust)	4 mg/m <sup>3</sup>	GB EH40
	The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m <sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m <sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit.			
glycerol	56-81-5	TWA (Mist)	10 mg/m <sup>3</sup>	GB EH40
	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			
β,β-carotene	7235-40-7	TWA	1.5 mg/m <sup>3</sup>	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 : free flowing particles

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Colour	: red brown
Odour	: very faint
Odour Threshold	: No information available.
pH	: No data available
Melting point/range	: not determined
Boiling point/boiling range	: not determined
Flash point	: Not applicable
Flammability (solid, gas)	: May form combustible dust concentrations in air.
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Density	: not determined
Water solubility	: practically insoluble
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: No data available
Thermal decomposition	: Decomposes on heating. Potential for exothermic hazard
Explosive properties	: Not explosive
Oxidizing properties	: No data available

### **9.2 Other information**

Combustibility index for deposited dust	: 5 (ca. 22 °C)
Dust explosion class	: St(H)1 (Product sample; The value was determined in the modified Hartmann tube.)
Minimum ignition temperature of a dust/air mix	: ca. 390 °C determined in the BAM oven

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## **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

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## 10.6 Hazardous decomposition products

No decomposition if used as directed.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

- Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg  
(Calculation method)
- Skin irritation : May cause skin irritation and/or dermatitis.
- Eye irritation  
β,β-carotene : Eye irritation (In vitro study, OECD Test Guideline 492)
- 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol : slight irritation (Rabbit, Draize Test)  
temporary redness
- 6-O-palmitoylascorbic acid : No eye irritation (Bovine cornea, OECD Test Guideline 437)  
Eye irritation (In vitro study)
- Sensitisation : Does not cause skin sensitisation. (Mouse, Local Lymph Node Assay (LLNA), OECD Test Guideline 429)  
Tested with a similar product containing 5% dl-alpha-tocopherol.
- Genotoxicity in vivo : No indication for mutagenicity known.
- Carcinogenicity : No indication for carcinogenicity known.
- Reproductive toxicity : No indication for adverse effects on fertility known.
- Teratogenicity : not teratogenic  
not embryotoxic  
(several species, Active ingredient)
- STOT - single exposure (Acute exposure) : The substance or mixture is not classified as specific target organ toxicant, single exposure.
- STOT - repeated exposure : NOAEL (feed admix, Dog) : 250 mg/kg bw/d  
Test substance: Active ingredient  
Chronic toxicity study (2 years)
- Further information : May cause skin discolorations.  
: May cause irritation of respiratory tract.

Aspiration toxicity : No aspiration toxicity classification

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish  
6-O-palmitoylascorbic acid : Salmo gairdneri (rainbow trout)  
LC50 (96 h) 51 mg/l  
suspension

No data is available on the product itself.

### 12.2 Persistence and degradability

Biodegradability  
β,β-carotene : Inherently biodegradable.  
88 - 99 % (17 d)  
(OECD Test Guideline 302B)

6-O-palmitoylascorbic acid : Readily biodegradable.  
93 % (28 d)  
(OECD Test Guideline 301B)

No data is available on the product itself.

### 12.3 Bioaccumulative potential

Bioaccumulation : No data available

Partition coefficient: n-  
octanol/water : Not applicable

### 12.4 Mobility in soil

Distribution among environ-  
mental compartments : No data available

### 12.5 Results of PBT and vPvB assessment

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

Additional ecological informa-  
tion : There is no data available for this product.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : 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.

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## 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

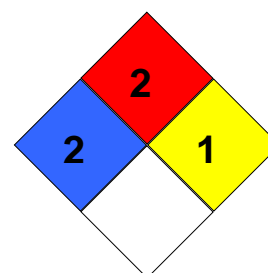
Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

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



### 15.2 Chemical safety assessment

Not applicable

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## SECTION 16: Other information

### Full text of H-Statements

H317 : May cause an allergic skin reaction.  
H319 : Causes serious eye irritation.  
H412 : Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

Aquatic Chronic : Chronic aquatic toxicity



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Eye Irrit. : Eye irritation  
Skin Sens. : Skin sensitisation

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

## 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 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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