

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

### 1.1 Product identifier

Trade name : FloraGLO® Lutein 5% CWS/S-TG

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

Use of the Sub-  
stance/Mixture : Ingredient for capsules and/or tablets, 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)

Not a hazardous substance or mixture.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

#### Additional Labelling:

EUH210 Safety data sheet available on request.  
EUH208 Contains dl- $\alpha$ -tocopherol. May produce an allergic reaction.

### 2.3 Other hazards

Risk of dust explosion.

## SECTION 3: Composition/information on ingredients

Brief description of the prod-  
uct : 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)

$\beta,\epsilon$ -carotene-3,3'-diol	127-40-2 204-840-0	Aquatic Chronic 4; H413	$\geq 5 - < 10$
3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol (dl- $\alpha$ -tocopherol)	10191-41-0 233-466-0 01-2120086658-39	Skin Sens. 1B; H317	$\geq 1 - < 5$

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		$\geq 10 - \leq 30$

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : No hazards which require special first aid measures.
- If inhaled : Move to fresh air.  
If symptoms persist, call a physician.
- In case of skin contact : Take off contaminated clothing and shoes immediately.  
Wash off with soap and plenty of water.
- In case of eye contact : Flush eyes with water as a precaution.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.
- 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.

## 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

Use personal protective equipment.  
Avoid dust formation.

### 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.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.

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 : Protect from humidity.  
To maintain product quality, do not store in heat or direct sunlight.

Keep container tightly closed and dry.

Advice on common storage : No special restrictions on storage with other products.

### 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)	4 mg/m <sup>3</sup>	GB EH40

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according to Regulation (EC) No. 1907/2006



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		dust)		
	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.			
β,ε-carotene-3,3'-diol	127-40-2	TWA	1 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 : No personal respiratory protective equipment normally required.  
In case of high dust concentration use a dust mask applicable to local conditions.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance : free flowing particles
- Colour : reddish - red
- Odour : characteristic
- 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 : dispersible
- 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	: 3 ( 22 °C)
	: 3 ( 100 °C)
Dust explosion class	: St(H)1 (Milled sample, Median value of the tested sample 0.063 mm, Loss on drying 4.1 %; The value was determined in the modified Hartmann tube.)
Minimum ignition energy	: 10 - 30 mJ (Milled sample, Median value of the tested sample 0.063 mm, Loss on drying 4.1 %, 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. 2E+10 Ohmm (Product sample, Median value of the tested sample 0.294 mm, Loss on drying 5.0 %) The material can accumulate static charge and can therefore cause electrical ignition.
Minimum ignition temperature of a dust/air mix	: 370 °C (Median value of the tested sample 0.063 mm) 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

### 10.6 Hazardous decomposition products

No decomposition if used as directed.

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
(calculated from LD50 of components)

Skin irritation	: Prolonged skin contact may cause skin irritation.
Eye irritation	: 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) Tested with a similar product containing 5% dl-alpha-tocopherol.
Genotoxicity in vitro	: No indication for mutagenicity known.
Carcinogenicity	: No indication for carcinogenicity known.
Reproductive toxicity	: This information is not available.
Teratogenicity	: not teratogenic not embryotoxic Test substance: active ingredient
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.
Aspiration toxicity	: No aspiration toxicity classification

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to algae 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol	: Pseudokirchneriella subcapitata (microalgae) ErC50 (72 h) > 25.8 mg/l No toxicity at the limit of solubility (OECD Test Guideline 201)
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No data is available on the product itself.

### 12.2 Persistence and degradability

Biodegradability	: No data available
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### 12.3 Bioaccumulative potential

Bioaccumulation	: No data available
Partition coefficient: n-octanol/water	: Not applicable

#### 12.4 Mobility in soil

Distribution among environmental compartments : No data available

#### 12.5 Results of PBT and vPvB assessment

Assessment : not determined

#### 12.6 Other adverse effects

Additional ecological information : 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.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.

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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

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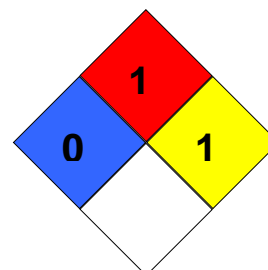
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**NFPA Classification** : Health hazard: 0  
Fire Hazard: 1  
Reactivity Hazard: 1



## 15.2 Chemical safety assessment

Not applicable

## SECTION 16: Other information

### Full text of H-Statements

H317 : May cause an allergic skin reaction.  
H413 : May cause long lasting harmful effects to aquatic life.

### Full text of other abbreviations

Aquatic Chronic : Chronic aquatic toxicity  
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; 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 guid-



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