

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name : redivivo® 10% CWS/S-TG

**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, Colouring agent for food and  
pharmaceutical products

**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)

psi,psi-carotene	502-65-8 207-949-1	Aquatic Chronic 4; H413	>= 10 - < 25
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	>= 1 - < 5

For explanation of abbreviations see section 16.

## 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 : 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.

Avoid dust formation.

### 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.

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## 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.

Keep container tightly closed and dry.

To maintain product quality, do not store in heat or direct sunlight.

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

### 7.3 Specific end use(s)

Specific use(s) : Not applicable

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
psi,psi-carotene	502-65-8	TWA	0.6 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 : violet - brown
- Odour : slight
- Odour Threshold : No information available.
- pH : No data available
- Melting point/range : Not applicable
- Boiling point/boiling range : Not applicable
- 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 : 5 ( 23 °C, VDI 2263-1)
- Dust explosion class : St(H)2 (Milled sample, Median value of the tested sample 0.055 mm, Loss on drying 2.7 %; The value was determined in the modified Hartmann tube.)
- Minimum ignition energy : 3 - 10 mJ (Milled sample, Median value of the tested sample 0.055 mm, Loss on drying 2.7 %, EN 13821)  
The Minimum ignition energy (MIE) of a dust/air mix of this product depends on the separation forces exerted on the product. The indicated dust explosion characteristics are only

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	valid for this product and are sensitive to the sample's parameters.
	: 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+12 Ohmm (Product sample, Median value of the tested sample 0.308 mm, Loss on drying 1.1 %) The material can accumulate static charge and can therefore cause electrical ignition.
Minimum ignition temperature of a dust/air mix	: 350 °C (Median value of the tested sample 0.308 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

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg (Calculation method)
Skin irritation	: This information is not available.
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.

Genotoxicity in vivo $\psi,\psi$ -carotene	: not genotoxic (Various test systems)
Carcinogenicity	: No indication for carcinogenicity known.
Reproductive toxicity	: No indication for adverse effects on fertility known.
Teratogenicity	: not teratogenic not embryotoxic NOAEL: 500 mg/kg bw/d (Rat, OECD Test Guideline 416, 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 (Oral, Rat) : 250 mg/kg bw/d Test substance: Active ingredient Chronic toxicity study (1 year)  : NOAEL (Oral, Rat) : 50 mg/kg bw/d Test substance: Active ingredient Chronic toxicity study (2 years)
Further information	: May cause skin discolorations.
Aspiration toxicity	: No aspiration toxicity classification

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## SECTION 12: Ecological information

### 12.1 Toxicity

No data is available on the product itself.

### 12.2 Persistence and degradability

Biodegradability  
 $\psi,\psi$ -carotene : Not readily biodegradable.  
Test performed using a similar product.

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 environmental 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 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

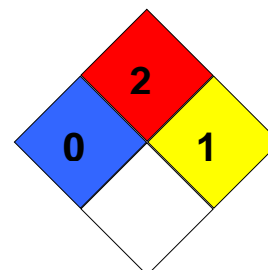
Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

**NFPA Classification** : Health hazard: 0  
Fire Hazard: 2  
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 : Long-term (chronic) aquatic hazard  
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  
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 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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