

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

### 1.1 Product identifier

Trade name : Dry Vitamin A Acetate 325 CWS/A

### 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  
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)

Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Reproductive toxicity, Category 1B	H360D: May damage the unborn child.

### 2.2 Label elements

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

Hazard pictograms	:		
Signal word	:	Danger	
Hazard statements	:	H315	Causes skin irritation.
		H319	Causes serious eye irritation.
		H360D	May damage the unborn child.
Precautionary statements	:	<b>Prevention:</b>	
		P201	Obtain special instructions before use.
		P202	Do not handle until all safety precautions have been read and understood.
		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
		<b>Response:</b>	
		P308 + P313	IF exposed or concerned: Get medical advice/ attention.
		P337 + P313	If eye irritation persists: Get medical advice/ attention.
		<b>Disposal:</b>	
		P501	Dispose of contents/ container to an ap-

||| proved waste disposal plant.

Hazardous components which must be listed on the label:

|||127-47-9 retinyl acetate

**Additional Labelling:**

EUH208 Contains dl- $\alpha$ -tocopherol. May produce an allergic reaction.

**Other hazards**

Risk of dust explosion.  
Women of childbearing age must avoid any overexposure.

**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)
gum arabic	9000-01-5 232-519-5	Eye Irrit. 2; H319	>= 20 - < 30
retinyl acetate	127-47-9 204-844-2	Skin Irrit. 2; H315 Repr. 1B; H360D Aquatic Chronic 4; H413	>= 10 - < 20
3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol	10191-41-0 233-466-0	Skin Sens. 1B; H317 Aquatic Chronic 4; H413	>= 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

**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.  
After any accidental exposure women should seek medical advice from a physician.

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.

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- 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 : Headache, Irritability, Tiredness, Drowsiness, Nausea, Vomiting, Signs of increased intracranial pressure, Generalized desquamation of the skin (after ca. 24 hours), Skin irritation

## 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 : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
Consider dust explosion hazard.

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## SECTION 6: Accidental release measures

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

- Evacuate personnel to safe areas.  
Use personal protective equipment.  
Ensure adequate ventilation.  
Avoid dust formation.  
Avoid breathing dust.

### 6.2 Environmental precautions

- Do not flush into surface water or sanitary sewer system.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

### 6.3 Methods and material for containment and cleaning up

Pick up and arrange disposal without creating dust.  
Keep in suitable, closed containers for disposal.

### 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 formation of respirable particles.  
Avoid exposure - obtain special instructions before use.  
For personal protection see section 8.  
Dispose of rinse water in accordance with local and national regulations.  
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 : When using do not eat or drink. When using do not smoke.  
Avoid contact with skin, eyes and clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Protect against light.  
Protect from humidity.  
  
Keep container tightly closed and dry.
- Recommended storage temperature : < 15 °C

### 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
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.			
retinyl acetate	127-47-9	TWA	0.23 mg/m <sup>3</sup>	DSM Internal Limit
	established for men			
		TWA	0.06 mg/m <sup>3</sup>	DSM Internal Limit
	established for women			

## 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.  |

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

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|--|---|
| Appearance                             | : free flowing particles                                    |
| Colour                                 | : light yellow  |
| Odour                                  | : No information available.                                 |
| 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  |
| Thermal decomposition                  | : Decomposes on heating.<br>Potential for exothermic hazard |
| Explosive properties                   | : Not explosive   |
| Oxidizing properties                   | : No data available   |

### 9.2 Other information

- |   |  |
|---|--|
| Combustibility index for deposited dust | : 3 ( 25 °C)   |
|   | : 3 ( 100 °C)  |
| Dust explosion properties               | : KSt value: 171 bar·m/s (Milled sample, Median value of the tested sample 0.064 mm; ISO 6184) |

Dust explosion class	: St1 (Milled sample, Median value of the tested sample 0.064 mm; ISO 6184)
Maximum explosion over-pressure	: 7.8 bar (Milled sample, Median value of the tested sample 0.064 mm; ISO 6184)
Minimum ignition energy	: 10 - 30 mJ (Milled sample, Median value of the tested sample 0.054 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. 7E+11 Ohmm (Product sample, Median value of the tested sample 0.313 mm, Loss on drying 2.7 %) 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 0.313 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	: Acute toxicity estimate : > 5,000 mg/kg (Calculation method)
Skin irritation retinyl acetate	: Irritating to skin.

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- 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol : Mild skin irritation (Rabbit)
- Eye irritation : May irritate eyes.
- 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.
- Carcinogenicity : No indication for carcinogenicity known.
- Genotoxicity in vitro  
retinyl acetate : not mutagenic, not genotoxic (Various test systems)
- Teratogenicity  
retinyl acetate : Teratogenic  
embryotoxic
- 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  
retinyl acetate : RDA (Recommended Daily Allowance) 0.8 mg pure vitamin A (retinol) per day established for men  
RDA (Recommended Daily Allowance) ca. 0.7 mg pure vitamin A (retinol) per day established for women
- Experience with human exposure: Skin contact  
retinyl acetate : Skin contact may provoke the following symptoms:  
Local irritation
- Experience with human exposure: Ingestion  
retinyl acetate : Acute overdose produces the following symptoms:  
Headache, Irritability, Tiredness, Drowsiness, Nausea, Vomiting, Signs of increased intracranial pressure, Generalized desquamation of the skin (after ca. 24 hours)
- Further information : May cause irritation of respiratory tract.
- Aspiration toxicity : No aspiration toxicity classification

## SECTION 12: Ecological information

### 12.1 Toxicity

No data is available on the product itself.

### 12.2 Persistence and degradability

Biodegradability  
retinyl acetate : Not readily biodegradable.  
33 % (28 d)  
(OECD Test Guideline 301B)

3,4-dihydro-2,5,7,8-  
tetramethyl-2-(4,8,12-  
trimethyltridecyl)-2H-  
benzopyran-6-ol : Not readily biodegradable.  
8 % (28 d)  
(OECD Test Guideline 301F)

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 : not determined

### 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 73/78 and the IBC Code**

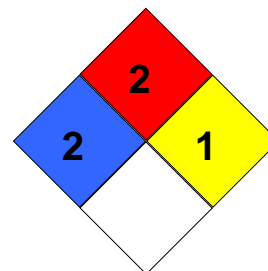
Not applicable for product as supplied.

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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**

H315 : Causes skin irritation.  
H317 : May cause an allergic skin reaction.  
H319 : Causes serious eye irritation.  
H360D : May damage the unborn child.  
H413 : May cause long lasting harmful effects to aquatic life.

**Full text of other abbreviations**

Aquatic Chronic : Chronic aquatic toxicity  
Eye Irrit. : Eye irritation  
Repr. : Reproductive toxicity  
Skin Irrit. : Skin 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 -

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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 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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