

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

**SECTION 1. IDENTIFICATION**

Product name : dl- $\alpha$ -Tocopherol

Substance name : 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-

**Manufacturer or supplier's details**

Company name of supplier : DSM Nutritional Products

Address : 45 Waterview Blvd  
Parsippany NJ 07054-1298

Telephone : (908) 475-7373

Telefax : (908) 475-7406

Emergency telephone number : 1-800-424-9300 (24 HR CHEMTREC, CA & US); Outside CA & US +1-703-572-3887 (COLLECT CALLS ACCEPTED)

E-mail address of person responsible for the SDS : sds.nutritionalproducts@dsm.com

**Recommended use of the chemical and restrictions on use**

Recommended use : Additive for the stabilisation of foods  
Ingredient for pharmaceutical products  
Ingredient for personal care products

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with 29 CFR 1910.1200**

Skin sensitisation : Sub-category 1B

**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.

Precautionary statements :

**Prevention:**

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P272 Contaminated work clothing must not be allowed out of the workplace.

P280 Wear protective gloves.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

|                                  |                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------|
| Synonyms                         | : Vitamin E                                                                           |
| Molecular formula                | : C <sub>29</sub> H <sub>50</sub> O <sub>2</sub>                                      |
| Brief description of the product | : Substance                                                                           |
| Substance name                   | : 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)- |
| CAS-No.                          | : 10191-41-0                                                                          |

**Hazardous components**

| Chemical name                                                                   | CAS-No.    | Concentration (% w/w) |
|---------------------------------------------------------------------------------|------------|-----------------------|
| 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol | 10191-41-0 | >= 90 - <= 100        |

Actual concentration is withheld as a trade secret

**SECTION 4. FIRST AID MEASURES**

|                                                             |                                                                                                                                                                                       |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice                                              | : Move out of dangerous area.<br>Show this safety data sheet to the doctor in attendance.                                                                                             |
| If inhaled                                                  | : Move to fresh air.<br>Consult a physician after significant exposure.                                                                                                               |
| In case of skin contact                                     | : Take off contaminated clothing and shoes immediately.<br>Wash off with soap and plenty of water.<br>If symptoms persist, call a physician.                                          |
| In case of eye contact                                      | : Flush eyes with water as a precaution.<br>Remove contact lenses.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed                                                | : Rinse mouth with water.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>Obtain medical attention.                          |
| Most important symptoms and effects, both acute and delayed | : Nausea<br>Vomiting<br>Diarrhoea<br>Fatigue<br>Weakness                                                                                                                              |
| Notes to physician                                          | : Treat symptomatically.                                                                                                                                                              |

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Alcohol-resistant foam  
Dry chemical  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire-fighting : None known.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Ensure adequate ventilation.
- Environmental precautions : Try to prevent the material from entering drains or water courses.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.

**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge.  
Product will burn under fire conditions.
- 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.
- Conditions for safe storage : To maintain product quality, do not store in heat or direct sunlight.  
Keep under inert gas.  
  
Keep container tightly closed and dry.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

| Components                         | CAS-No.    | Value type<br>(Form of exposure) | Control parameters /<br>Permissible concentration | Basis        |
|------------------------------------|------------|----------------------------------|---------------------------------------------------|--------------|
| 3,4-dihydro-2,5,7,8-tetramethyl-2- | 10191-41-0 | TWA                              | 7.3 mg/m <sup>3</sup>                             | DSM Internal |

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

|                                                                                                                                                                                                                |  |  |  |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|-------|
| <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> <div> (4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol </div> </div> |  |  |  | Limit |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|-------|

**Personal protective equipment**

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
- Hand protection  
Remarks : 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
- Eye protection : Safety glasses with side-shields
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.  
Wash hands before breaks and at the end of workday.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

- Appearance : viscous, oily liquid
- Colour : colourless - yellowish brown
- Odour : odourless
- Odour Threshold : No information available.
- pH : No data available
- Melting point/range : 2.5 - 3.5 °C
- Boiling point/boiling range : ca. 393 °C (1,013 hPa)  
265 °C (3.75 hPa)
- Flash point : 574 °F (301 °C) (ISO 2719)
- Evaporation rate : not determined
- Lower explosion limit : not determined
- Upper explosion limit : not determined
- Vapour pressure : < 0.001 hPa (20 °C)
- Relative vapour density : not determined
- Density : 0.95 g/cm<sup>3</sup> (25 °C)
- Water solubility : < 1 mg/l (20 °C)  
practically insoluble
- Solubility in other solvents : Ethanol: soluble  
Chloroform: soluble  
Acetone: soluble  
Ether: soluble  
Oils and fats: soluble

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

|                                        |                                                 |
|----------------------------------------|-------------------------------------------------|
| Partition coefficient: n-octanol/water | : log Pow 12.2 (calculated value)               |
| Ignition temperature                   | : 757 °F (403 °C) (at 984 hPa, DIN 51794)       |
| Thermal decomposition                  | : Decomposes on heating in the presence of air. |
| Viscosity, dynamic                     | : 5,174 mPa.s (20 °C)                           |
| Explosive properties                   | : Not explosive                                 |
| Oxidizing properties                   | : Not oxidizing                                 |

**Other information**

|                  |                          |
|------------------|--------------------------|
| Refractive index | : 1.503 - 1.507 (589 nm) |
| Molecular weight | : 430.71 g/mol           |
| Surface tension  | : 8.1 mN/m (430 °C)      |

---

**SECTION 10. STABILITY AND REACTIVITY**

|                                    |                                                                                                   |
|------------------------------------|---------------------------------------------------------------------------------------------------|
| Reactivity                         | : No hazards to be specially mentioned.                                                           |
| Chemical stability                 | : Stable under recommended storage conditions.                                                    |
| Possibility of hazardous reactions | : Possible incompatibility with materials listed under section 10.5.                              |
| Conditions to avoid                | : Exposure to light.<br>Heat                                                                      |
| Incompatible materials             | : Oxygen<br>Oxidizing agents<br>Ferric salts<br>Silver salts<br><br>Strong acids and strong bases |
| Hazardous decomposition products   | : Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).                              |

---

**SECTION 11. TOXICOLOGICAL INFORMATION**

|                                          |                                                                                                        |
|------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Information on likely routes of exposure | : Skin Absorption                                                                                      |
| Acute oral toxicity                      | : LD50 (Rat): > 4,000 mg/kg<br>: LD50 (Mouse): > 4,000 mg/kg                                           |
| Acute dermal toxicity                    | : LD50 (Rat): > 3,000 mg/kg                                                                            |
| Skin irritation                          | : Mild skin irritation (Rabbit)<br>: no phototoxic skin reaction (Guinea pig, OECD Test Guideline 432) |

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

|                                              |                                                                                                                                                                  |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye irritation                               | : slight irritation (Rabbit, Draize Test)<br>temporary redness                                                                                                   |
| Sensitisation                                | : Causes sensitisation. (Guinea pig, Maximisation Test, OECD Test Guideline 406)<br><br>: no photoallergenic skin reaction (Guinea pig, OECD Test Guideline 432) |
| Genotoxicity in vitro                        | : not mutagenic (Various test systems)                                                                                                                           |
| Carcinogenicity                              | : Did not show carcinogenic effects in animal experiments.                                                                                                       |
| IARC                                         | No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.          |
| OSHA                                         | No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.                                         |
| NTP                                          | No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.                          |
| Teratogenicity                               | : not teratogenic<br>not embryotoxic                                                                                                                             |
| STOT - single exposure (Acute exposure)      | : The substance or mixture is not classified as specific target organ toxicant, single exposure.                                                                 |
| STOT - repeated exposure                     | : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.                                                               |
| Experience with human exposure               | : RDA (Recommended Daily Allowance) 8 - 10 mg<br><br>: Therapeutic dosage 100 - 300 mg/day                                                                       |
| Experience with human exposure: Skin contact | : Skin sensitisation<br>(Cases have been reported rarely.)                                                                                                       |
| Experience with human exposure: Ingestion    | : Acute overdose produces the following symptoms:<br><br>: Nausea, Vomiting, Diarrhoea, Fatigue, Weakness                                                        |
| Further information                          | : The product passes into and partly through the skin of rats and pigs.                                                                                          |
| Aspiration toxicity                          | : No aspiration toxicity classification                                                                                                                          |

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

---

**SECTION 12. ECOLOGICAL INFORMATION****Toxicity**

- Toxicity to fish : Salmo gairdneri (rainbow trout)  
LC0 (96 h)  $\geq$  10 mg/l
- Toxicity to daphnia and other aquatic invertebrates : Daphnia magna (Water flea)  
EC50 (48 h)  $>$  100 mg/l  
(OECD Test Guideline 202)
- Toxicity to algae : Pseudokirchneriella subcapitata (microalgae)  
ErC50 (72 h)  $>$  25.8 mg/l  
No toxicity at the limit of solubility  
(OECD Test Guideline 201)  
: NOEC 25.8 mg/l
- Toxicity to bacteria : activated sludge  
Concentration of the substance 100 mg/l  
No inhibition was observed under the biodegradation test conditions.  
(OECD Test Guideline 301F)

**Persistence and degradability**

- Biodegradability : Not readily biodegradable.  
8 % (28 d)  
(OECD Test Guideline 301F)
- : Inherently biodegradable.  
70 - 80 % (63 d)  
(OECD Test Guideline 301F)  
publicly available data

**Bioaccumulative potential**

- Partition coefficient: n-octanol/water : log Pow 12.2 (calculated value)

**Mobility in soil**

- Distribution among environmental compartments : No data available
- Surface tension : 8.1 mN/m ( 430 °C)

**Results of PBT and vPvB assessment**

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

**Other adverse effects**

- Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
- Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

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

---

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : User must determine if any wastes generated exhibit hazardous characteristics as per 40 CFR Part 261 or other national / local legislation.

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****International Regulations****UNRTDG**

Not regulated as a dangerous good

**IATA-DGR**

Not regulated as a dangerous good

**IMDG-Code**

Not regulated as a dangerous good

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**National Regulations****49 CFR**

Not regulated as a dangerous good

---

**SECTION 15. REGULATORY INFORMATION****EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Respiratory or skin sensitisation

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

**SARA 313**

: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

**US State Regulations****Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H- 10191-41-0  
benzopyran-6-ol

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**TSCA list**

No substances are subject to a Significant New Use Rule.

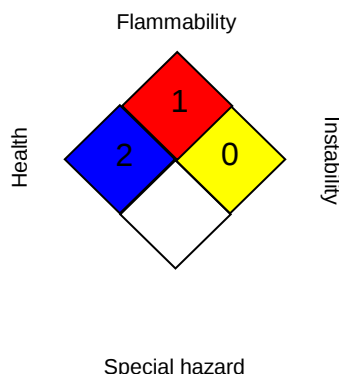
No substances are subject to TSCA 12(b) export notification requirements.

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

**SECTION 16. OTHER INFORMATION****Further information****NFPA 704:****HMIS® IV:**

|                        |          |          |
|------------------------|----------|----------|
| <b>HEALTH</b>          | <b>1</b> | <b>2</b> |
| <b>FLAMMABILITY</b>    | <b>1</b> |          |
| <b>PHYSICAL HAZARD</b> | <b>0</b> |          |

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

ACGIH = American Conference of Governmental Industrial Hygienists. CFR = Code of Federal Regulations. EPA = Environmental Protection Agency. NIOSH = National Institute of Occupational Safety and Health.

**dl- $\alpha$ -Tocopherol****0410276**

Version 6.0

Revision Date 10/16/2020

Date of last issue: 07/18/2017

al Safety and Health. OSHA = Occupational Safety and Health Administration. STEL = Short term exposure limit. TLV = Threshold Limit Value. TLV-C = Ceiling Limit Value. TWA = Time Weighted Average.

Revision Date : 10/16/2020

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.

US / EN