

DL- α -Tocopherol acetate

sc-214934



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

DL- α -Tocopherol acetate

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

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EMERGENCY

ChemWatch
Within the US & Canada: 877-715-9305
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(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

C31-H52-O3, "2, 5, 7, 8 tetramethyl-2-(4', 8', 12' -trimethyltridecyl)-6-chromanol, ", acetate, "vitamin E acetate", "2H-1-benzopyran-6-ol, 3, 4-dihydro-2, 5, 7, 8-tetramethyl-", "2-(4, 8, 12-trimethyltridecyl)-, acetate", "D, L-alpha-tocopherol acetate", "(+/-)-alpha-tocopherol acetate", "alpha-tocopheryl acetate", covitol

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	2	
Body Contact:	2	
Reactivity:	1	
Chronic:	0	

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Irritating to eyes and skin.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Accidental ingestion of the material may be damaging to the health of the individual.
- Vitamin E is a fat-soluble vitamin that acts as an antioxidant and free radical scavenger in lipophilic environments and is consumed by approximately 20% of the US population.

It requires bile for absorption, and 25% of the vitamin is absorbed orally.

EYE

- This material can cause eye irritation and damage in some persons.

SKIN

- This material can cause inflammation of the skin on contact in some persons.
- The material may accentuate any pre-existing dermatitis condition.
- Skin contact is not thought to have harmful health effects, however the material may still produce health damage following entry through wounds, lesions or abrasions.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

- The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified using animal models).

Nevertheless, adverse effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

- Not normally a hazard due to non-volatile nature of product.
- Limited evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.

CHRONIC HEALTH EFFECTS

- Exposure to the material may result in a possible risk of irreversible effects. The material may produce mutagenic effects in man. This concern is raised, generally, on the basis of appropriate studies with similar materials using mammalian somatic cells in vivo. Such findings are often supported by positive results from in vitro mutagenicity studies.

Premature infants with low birthweight have shown life-threatening adverse effects from vitamin E. Sepsis and necrotizing enterocolitis have occurred only in premature infants with low birthweight. A syndrome of ascites, hepatomegaly, and thrombocytopenia resulting in death occurred in the 1980s in association with an intravenous vitamin E preparation used in premature infants with low birthweight. Presumably, the cause was a polysorbate carrier of the vitamin, and the syndrome has not occurred since its removal.

An increased risk of sepsis occurred in one clinical trial (14% vs 6%) of premature neonates with a birth weight less than 1500 g to whom vitamin E was administered. When high-dose vitamin E of up to 30 mg/kg/d was administered to this population to prevent retrolental fibroplasia, necrotizing enterocolitis occurred. Incidence of necrotizing enterocolitis increased 2-fold (12%) in 2 studies; however, others have shown no difference. These findings may be secondary to the compounding effects of prematurity and the effect of the vitamin on the immune system. No other population has demonstrated these findings.

One study has shown that alpha-tocopherol, at dosages of 50 mg/d, increased the risk of subarachnoid hemorrhage by 50% (95% confidence interval [CI], P = 0.07) and fatal subarachnoid hemorrhage by 181% (95% CI, P = 0.01) in men aged 50-69 years who smoked cigarettes compared to placebo. The risk of cerebral infarction was decreased 14% in the same patients. These results have not been found in any previous studies.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
DL-alpha-tocopherol acetate	7695-91-2	98-100
alpha-tocopherol	59-02-9	1
heavy metals, maximum		20 ppm
lead	7439-92-1	trace ^
typically 10 ppm		
arsenic	7440-38-2	trace ^
typically 3 ppm		

Section 4 - FIRST AID MEASURES

SWALLOWED

· If swallowed do NOT induce vomiting. · If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Other measures are usually unnecessary.

NOTES TO PHYSICIAN

■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	0.953
Lower Explosive Limit (%):	>110

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible.
 - Slight fire hazard when exposed to heat or flame.
- Combustion products include: carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.
May emit poisonous fumes.
May emit corrosive fumes.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

Respirator:

Type A-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Slippery when spilt.
- Remove all ignition sources.
- Clean up all spills immediately.

MAJOR SPILLS

- Slippery when spilt.
- Moderate hazard.
- Clear area of personnel and move upwind.
 - Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS

- Metal can or drum
- Packing as recommended by manufacturer.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.

- Protect containers against physical damage and check regularly for leaks.
 - Observe manufacturer's storing and handling recommendations.
- Store below 25 deg.C.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
US - Idaho - Acceptable Maximum Peak Concentrations	alpha-tocopherol (Lead and its inorganic compounds (Z37.11-1969))		0.2						
Canada - British Columbia Occupational Exposure Limits	alpha-tocopherol (Lead - elemental and inorganic compounds, as Pb)		0.05						Elemental 2B; R/Other inorganic 2A, R
Canada - Alberta Occupational Exposure Limits	alpha-tocopherol (Lead elemental & inorganic compounds, as Pb)		0.05						
US OSHA Permissible Exposure Levels (PELs) - Table Z1	alpha-tocopherol (Lead, inorganic (as Pb); see 1910.1025)		0.05						If an employee is exposed to lead for more than 8 hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:
US ACGIH Threshold Limit Values (TLV)	alpha-tocopherol (Lead - elemental and inorganic compounds (as Pb))		0.05						TLV Basis: central nervous system impairment; peripheral nervous system impairment; hematologic effects. BEI
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	alpha-tocopherol (Lead inorganic (as Pb); see 1910.1025.)						For independent pigments, lead		
US - California Permissible Exposure Limits for Chemical Contaminants	alpha-tocopherol (Lead (metallic) and inorganic compounds, dust and fume, as Pb (see also Section 5198))		0.05						

Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	alpha-tocopherol (Lead, and inorganic compounds, (as Pb))	0.05			
US - Hawaii Air Contaminant Limits	alpha-tocopherol (Lead inorganic (as Pb))	0.05			See °12-202-33.1 and 12-148.1
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	alpha-tocopherol (Lead and inorganic compounds, (as Pb))	0.05		0.15	T20
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	alpha-tocopherol (Lead, inorganic, fumes and dusts (as Pb))	0.15	-	0.45	
US - Washington Permissible exposure limits of air contaminants	alpha-tocopherol (Lead, inorganic (as Pb) (see WAC 296-62-07521 and 296-155-176))	0.05			
Canada - Nova Scotia Occupational Exposure Limits	alpha-tocopherol (Lead - elemental and inorganic compounds (as Pb))	0.05			TLV Basis: central nervous system impairment; peripheral nervous system impairment; hematologic effects. BEI
Canada - Prince Edward Island Occupational Exposure Limits	alpha-tocopherol (Lead - elemental and inorganic compounds (as Pb))	0.05			TLV Basis: central nervous system impairment; peripheral nervous system impairment; hematologic effects. BEI
Canada - Northwest Territories Occupational Exposure Limits (English)	alpha-tocopherol (Lead, inorg., fumes & dusts (as Pb))	0.15		0.45	
US - Michigan Exposure Limits for Air Contaminants	alpha-tocopherol (Lead inorganic (as Pb); see R 325.51901 et seq.F)	0.05			
Canada - Ontario Occupational Exposure Limits	alpha-tocopherol (Elemental lead, inorganic and organic compounds of lead, as Pb except tetraethyl lead / Plomb élémentaire,	0.05			Skin (organic compounds) / Peau (composés organiques)

composés
inorganiques et
organiques du
plomb, en Pb,
sauf le plomb
tétraéthyle)

US - Oregon
Permissible
Exposure Limits
(Z-1)

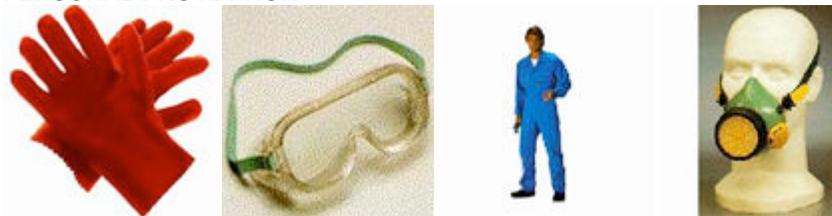
alpha-tocopherol
(Lead, inorganic
as Pb))

0.05 0.05

(See
1910.1025 &
1926.62)
Refers to 8hr
(ppm) and 8hr
(mg/m3)

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

• Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

■ Wear chemical protective gloves, eg. PVC.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

ENGINEERING CONTROLS

■ General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

State	Liquid	Molecular Weight	472.83
Melting Range (°F)	Not applicable.	Viscosity	Not Available
Boiling Range (°F)	435(0.3 mm Hg)	Solubility in water (g/L)	Immiscible
Flash Point (°F)	Not available.	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available.	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	0.953

Lower Explosive Limit (%)	>110	Relative Vapor Density (air=1)	Not applicable.
Volatile Component (%vol)	Not available	Evaporation Rate	Not available

APPEARANCE

Clear yellow viscous oil, floats on water. No odour. Soluble in vegetable oils, alcohol, ether, acetone. Refractive Index 1.503-1.507 @ 20 deg C.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

- Avoid strong acids, bases.
- Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

DL-alpha-tocopherol acetate

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

■ NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.

DL-ALPHA-TOCOPHEROL ACETATE:

TOXICITY	IRRITATION
Oral (mouse) LD50: >49700 mg/kg	Eye (rabbit): non-irritating *
	Skin (rabbit): non-irritating *

* [ROCHE]

May cause skin and eye irritation *

Reproductive and mutagenic effects have been observed in tests with laboratory animals *

* Alfa Aeser MSDS

TOXICITY	IRRITATION
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ALPHA-TOCOPHEROL:

Oral (Rat) LD50: >15000 mg/kg *

Skin
(rabbit):
Irritant
*

Oral (mouse) LD50: 49700 mg/kg

Skin : Moderate

Oral (mouse) LD50: >49700 mg/kg

Oral (Mouse) LD50: 5000 mg/kg *

[ROCHE]

Use in foodstuffs is consistent with low order of toxicity.

CARCINOGEN

PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	
Lead compounds, inorganic	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	2A
Lead and compounds (inorganic)	US EPA Carcinogens Listing	Carcinogenicity	B2
Lead and compounds (inorganic)	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	B2
alpha-tocopherol	US - Rhode Island Hazardous Substance List	IARC	
LEAD COMPOUNDS	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65

INORGANIC LEAD COMPOUNDS	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65-MC
LEAD COMPOUNDS	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65
INORGANIC LEAD COMPOUNDS	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65-MC
Polychlorinated biphenyls (PCBs) (high risk)(P)	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	2A
Polychlorinated biphenyls (PCBs) (low risk)(P)	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	
Lead and lead compounds (inhalation)	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	2B
alpha-tocopherol	US - Maine Chemicals of High Concern List	Carcinogen	B2
PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	CA Prop 65; IARC; NTP 11th ROC

Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
DL-alpha-tocopherol acetate	HIGH	No Data Available	LOW	LOW
alpha-tocopherol	HIGH	No Data Available	LOW	LOW

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____
 _____ Olefin/AI 196 546 NI 0 NR 0 NI 0 0 (0) 0 0 Fp 2 kyl ester 5 copolymer (molecula r weight 2000+)
 (LOA) / CAS:7695- 91- 2 /

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acutemammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

DL-alpha-tocopherol acetate (CAS: 7695-91-2,1406-70-8) is found on the following regulatory lists;

"International Fragrance Association (IFRA) Survey: Transparency List","US FDA Direct Food Substances Generally Recognized as Safe","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

Regulations for ingredients

alpha-tocopherol (CAS: 59-02-9,10191-41-0) is found on the following regulatory lists;

"International Fragrance Association (IFRA) Survey: Transparency List","US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe as used","US EPA High Production Volume Program Chemical List","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US TSCA Section 8 (a) Inventory Update Rule (IUR) - Partial Exemptions"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Ingestion may produce health damage*.
- Exposure may produce irreversible effects*.

* (limited evidence).

Denmark Advisory list for selfclassification of dangerous substances

Substance CAS Suggested codes DL- alpha- tocopherol acetate 7695- 91- 2 Xi; R38 DL- alpha- tocopherol acetate 1406- 70- 8 Xi; R38 alpha- tocopherol 59- 02- 9 Xi; R38 alpha- tocopherol 10191- 41- 0 Xi; R38

Ingredients with multiple CAS Nos

Ingredient Name CAS DL-alpha-tocopherol acetate 7695-91-2, 1406-70-8 alpha-tocopherol 59-02-9, 10191-41-0

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- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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