

DL-ALPHA-TOCOPHEROL ACETATE

Version No:3
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

DL-ALPHA-TOCOPHEROL ACETATE

OTHER NAMES

C31-H52-O3, "2, 5, 7, 8 tetramethyl-2-(4', 8', 12'-trimethyltridecyl)-6-chroman-ol, 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"

PRODUCT USE

Vitamin concentrate which is used as food additive.
Material is an antioxidant and should be protected from heat, light and aeration. Oxidised material is considerably more irritating than fresh.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,
248, WORLI,

MUMBAI- 400030.INDIA.

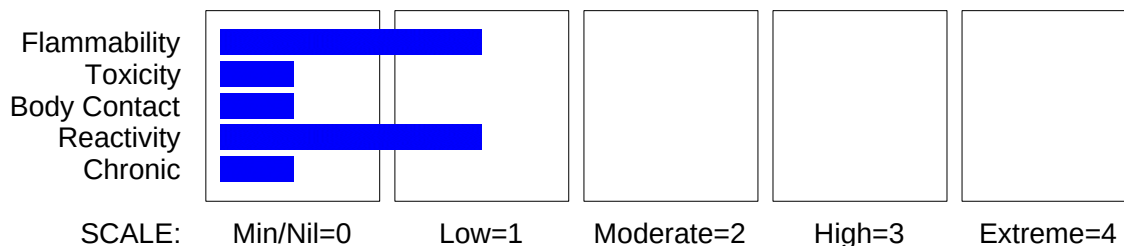
technical@sdfine.com

Telephone: 91- 22- 24959898

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Fax: 91- 22- 24937232

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 5

continued...

DL-ALPHA-TOCOPHEROL ACETATE

EMERGENCY OVERVIEW

HAZARD

WARNING

Determined by using GHS criteria:

H303

May be harmful if swallowed

PRECAUTIONARY STATEMENTS

Response

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

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

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

If this product comes in contact with eyes:

- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

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

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

FIRE/EXPLOSION HAZARD

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Combustion products include: carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

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

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Slippery when spilt.

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

MAJOR SPILLS

Slippery when spilt.

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.

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Section 6 - ACCIDENTAL RELEASE MEASURES

- Increase ventilation.
 - Stop leak if safe to do so.
 - Contain spill with sand, earth or vermiculite.
 - Collect recoverable product into labelled containers for recycling.
 - Absorb remaining product with sand, earth or vermiculite.
 - Collect solid residues and seal in labelled drums for disposal.
 - Wash area and prevent runoff into drains.
 - If contamination of drains or waterways occurs, advise emergency services.
- Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

SUITABLE CONTAINER

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid strong acids, bases.
Avoid reaction with oxidising agents.

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.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+



+



+



+



+



+

continued...

DL-ALPHA-TOCOPHEROL ACETATE

- +: May be stored together
O: May be stored together with specific preventions
X: Must not be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

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

MATERIAL DATA

No exposure limits set by NOHSC or ACGIH.

INGREDIENT DATA

ALPHA-TOCOPHEROL:

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

- the architecture of the air spaces remain intact,
- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

- are insoluble or poorly soluble* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload).

PERSONAL PROTECTION



EYE

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Wear general protective gloves, eg. light weight rubber gloves.

OTHER

No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Barrier cream.
- Eyewash unit.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	A- AUS P	-
1000	50	-	A- AUS P
5000	50	Airline *	-
5000	100	-	A- 2 P
10000	100	-	A- 3 P
	100+		Airline**

* - Continuous Flow

** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts,	1- 2.5 m/s (200- 500 f/min)

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

gas discharge (active generation into zone of rapid air motion)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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.

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Floats on water.

Molecular Weight: 472.83
Melting Range (°C): Not applicable.
Solubility in water (g/L): Immiscible
pH (1% solution): Not applicable
Volatile Component (%vol): Not available
Relative Vapour Density (air=1): Not applicable.
Lower Explosive Limit (%): >110
Autoignition Temp (°C): Not available.
State: Liquid

Boiling Range (°C): 224 (0.3 mm Hg)
Specific Gravity (water=1): 0.953
pH (as supplied): Not applicable
Vapour Pressure (kPa): Negligible
Evaporation Rate: Not available
Flash Point (°C): Not available.
Upper Explosive Limit (%): Not available.
Decomposition Temp (°C): Not available.
Viscosity: Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

Limited evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.

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. Storage of the vitamin occurs in adipose tissue, liver, and muscle. The US recommended dietary allowance is 30 mg/day. Adults receiving 2-3 gm/day of Vitamin E developed skin rashes and mild gastrointestinal irritation with diarrhoea; 1 gm/day was tolerated for months with apparent ill-effect.

The oral median lethal dose found in several species is 2 gm/kg, and adverse effects usually are observed at doses greater than 1 gm/kg, which is equivalent to 200-500 mg/kg in humans. Most deleterious effects have been observed in small studies and in case reports.

High doses (800 IU/day) of Vitamin E (tocopherol) may produce fatigue and weakness. The symptoms resolve with removal of the drug. Another study reported emotional disturbances in several women taking the same dosages. These symptoms have not been observed in other large series. Transient nausea and gastric distress have been observed in a few patients taking high dosages of vitamin E, 2000-2500 IU/day. Diarrhea and intestinal cramps have been reported at a dosage of 3200 IU/day. Other nonspecific adverse effects, which have been reported rarely, include fatigue, muscle weakness, delayed wound healing, and headache.

Thyroid hormone levels of triiodothyronine and thyroxine were decreased in healthy students administered 600 IU/day. Similar findings have been observed in animal studies.

EYE

Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, 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.

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CHRONIC HEALTH EFFECTS

Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

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.

TOXICITY AND IRRITATION

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

TOXICITY

Oral (mouse) LD50: >49700 mg/kg

IRRITATION

Eye (rabbit): non- irritating *

Skin (rabbit): non- irritating *

* [ROCHE]

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.

May cause skin and eye irritation *

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

* Alfa Aesar MSDS

ALPHA-TOCOPHEROL:

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

TOXICITY

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

Oral (mouse) LD50: >49700 mg/kg

Oral (mouse) LD50: >49700 mg/kg

Oral (Mouse) LD50: >5000 mg/kg *

[ROCHE]

Use in foodstuffs is consistent with low order of toxicity.

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.

IRRITATION

Skin (rabbit): Irritant *

Skin : Moderate

Section 12 - ECOLOGICAL INFORMATION

No data for DL-alpha-tocopherol acetate.

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Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

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

Section 15 - REGULATORY INFORMATION

REGULATIONS

DL-alpha-tocopherol acetate (CAS: 7695-91-2) is found on the following regulatory lists;
OECD Representative List of High Production Volume (HPV) Chemicals

No data available for DL-alpha-tocopherol acetate as CAS: 1406-70-8.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

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

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 2-Oct-2017