

## Chemical names of active ingredient

5,7,8-trimethyltolcol or RRR-alpha-tocopherol or D-alpha-tocopherol  
5,8-dimethyltolcol or RRR-beta-tocopherol or D-beta-tocopherol  
7,8-dimethyltolcol or RRR-gamma-tocopherol or D-gamma-tocopherol  
8-methyltolcol or RRR-delta-tocopherol or D-delta-tocopherol

EU: Tocopherol-rich extract (E 306)

US: Natural mixed tocopherols

CAS-No.	D-alpha-tocopherol	59-02-9
	D-beta-tocopherol	16698-35-4
	D-gamma-tocopherol	54-28-4
	D-delta-tocopherol	119-13-1

EINECS-No.	D-alpha-tocopherol	200-412-2
	D-beta-tocopherol	240-747-1
	D-gamma-tocopherol	200-201-5
	D-delta-tocopherol	204-299-0

**PRD-No.**  
30533889\*

\* The product is kosher

## Articles\*

50210255	10 kg plastic pail
50221893	190 kg metal drum

\* packed under inert gas

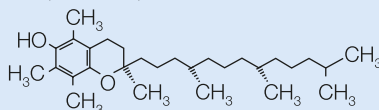
## Country of origin

USA

## Description

Covi-ox<sup>®</sup> T-90 EU is a clear amber viscous oil with mild taste and odor. It contains natural mixed tocopherols which are obtained from edible vegetable oils by suitable physical means. Covi-ox<sup>®</sup> T-90 EU is intended for use as an antioxidant in the dietary supplement and food industry.

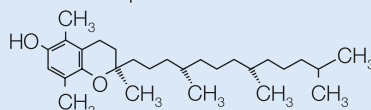
### D-alpha-tocopherol



$C_{29}H_{50}O_2$

Molar mass 430.7 g/mol

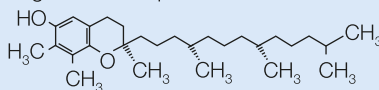
### D-beta-tocopherol



$C_{28}H_{48}O_2$

Molar mass 416.7 g/mol

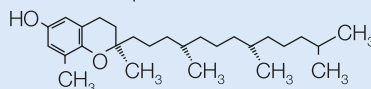
### D-gamma-tocopherol



$C_{28}H_{48}O_2$

Molar mass 416.7 g/mol

### D-delta-tocopherol



$C_{27}H_{46}O_2$

Molar mass 402.6 g/mol

## Composition

Ingredients in descending order of weight:  
tocopherol-rich extract\* (E 306), sunflower oil.

\* derived from soy beans

The typical tocopherol composition is:

14% D-alpha-tocopherol  
2% D-beta-tocopherol  
60% D-gamma-tocopherol  
24% D-delta-tocopherol

Due to the variability of vegetable oil feedstocks used to derive the tocopherols, slight variations from this typical composition will be found, wide variations are not expected but they may occur.

## Solubility

Insoluble in water, sparingly soluble in ethanol, miscible with organic solvents, vegetable oils and fats.

## Specification

Assay (total tocopherols) min. 900 mg/g

Assay (non-alpha-tocopherols) min. 720 mg/g

For further information see separate document: "Standard Specification" (not for regulatory purposes) available via BASF's WorldAccount: <https://worldaccount.basf.com> (registered access).

## Monographs

The active ingredient of Covi-ox® T-90 EU meets the monograph requirements of the current USP-NF and FCC (RRR-Tocopherols Concentrate, Mixed, Low-alpha-Type). Furthermore, the active ingredient complies with the current specification for food additives of EU Regulation (E 306).

## Regulations

Covi-ox® T-90 EU is derived from IP-certified, not genetically modified raw materials, and is thus not subject to labelling under EU Regulations (EC) 1829/2003 and 1830/2003.

Mixed tocopherols are approved for a use as an antioxidant and as a vitamin E source in most countries. However, specific regulations on the product in the respective countries and for its intended use have to be observed.

## Stability, Storage and Handling

Stored in its unopened original packaging at ambient temperature max. 25 to 30 °C, the product is stable for at least 36 months. The product is sensitive to atmospheric oxygen, light and heat. It should therefore be stored in the tightly sealed, lightproof packaging in a cool place. Once opened, it is recommended to flush the packaging with an inert gas and to use the remaining contents as quickly as possible.

## Applications

### Dietary supplements, food and beverage products:

Covi-ox® T-90 EU is used as a natural antioxidant in a wide variety of food products and in industrial applications. The product has low volatility, excellent carry-through effect and is completely miscible with oils and fats. Covi-ox® T-90 EU should be added as early in the production process as possible.

The amount of Covi-ox® T-90 EU to be used will vary with each particular application. For most oils and fats, the recommended concentration of tocopherols in the product will range from 100 ppm to 400 ppm relative to the fat or oil content. For oils containing highly polyunsaturated fatty acids, tocopherol concentrations of up to 2000 ppm relative to the oil content may be necessary. It is recommended to test 3 different mixed tocopherol concentrations to determine the optimum level which gives the desired antioxidant protection for each individual product.

Mixed tocopherols tend to darken over time, therefore it is recommended that in capsule applications, an amber shell is used.

## Note

Covi-ox® T-90 EU must be handled in accordance with the Safety Data Sheet.

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July 2014