

## SPECIFICATION

**Production name** DL-Alpha-Tocopherol 96 % (E307) (for food use)  
**Product code** YYES04  
**Production unit** Zhejiang NHU Company

### Description

**Synonym** DL-alpha-Tocopherol, Tocopherol, Alpha-Tocopherol  
**Formula**  $C_{29}H_{50}O_2$   
**Molecular weight** 430,71 g/mol  
**CAS No** 10191-41-0  
**EC No** 233-466-0

### Properties

**Shelf life** 24 months after production date, in unopened original packaging  
**Aspect** Clear, colourless or yellowish-brown, viscous, oily liquid  
**Assay** 96 % to 102 % (JECFA)  
**Solubility** Practically insoluble in water, freely soluble in acetone, in anhydrous ethanol  
**Spectrophotometry** In absolute ethanol the maximum absorption is about 292 nm  
**Specific rotation**  $[\alpha]_D^{25} 0^\circ \pm 0,05^\circ$  (1 in 10 solution in chloroform)  
**Specific absorption**  
**in ethanol**  $E_{1\text{cm}}^{1\%}$  (292 nm): 71,0 - 76,0 (JECFA)  
**Refractive index (20 °C)**  $[n]_D^{20}$  1,503 – 1,507 (JECFA)  
**Acid value** Max. 1,0 ml of 0,1 N NaOH (JECFA)  
**Sulphated ash** Max. 0,1 % (JECFA)  
**Heavy metals** Max. 10 mg/kg (JECFA)  
**Lead (Pb)** Max. 0,5 mg/kg (JECFA)  
**Arsenic (As)** Max. 1 mg/kg (JECFA)

### Handling

**Stability** DL-alpha-Tocopherol oxidizes and darkens in air and on exposure to light  
**Storage** Protect with a blanket of an inert gas  
If the container is opened and not used immediately, it is recommended to flush the containers with an inert gas and to use up their contents as quickly as possible

Classified as **hazardous** as per EU regulation!

The product meets the latest editions of JECFA and EU Regulation No. 231/2012 of 9. March 2012.

## NHU EUROPE GmbH

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### Description

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**Product code** YYES04  
**CAS No** 10191-41-0  
**EC No** 233-466-0

### Properties

**Shelf life** 24 months after production date, in unopened original packaging  
**Aspect** clear, colourless or yellowish-brown, viscous, oily liquid (EP)  
**Assay** 96 % - 102 % (EP/USP)  
**Solubility** practically insoluble in water, freely soluble in acetone, in anhydrous ethanol

**Specific absorption in ethanol**

$E_{1\%}^{1\text{cm}}$  (292 nm): 71,0 - 76,0 (EP/ USP)

**Identification A, B, C**

A: Optical rotation:  $-0.01^\circ$  to  $+0.01^\circ$   
B: Infrared absorption spectrophotometry: Both spectra in the product and the Reference Spectrum exhibit similar intensities of absorption at the same wave numbers. (EP)  
C: Chromatography: The retention time of the major peak for alpha-tocopherol of the Sample solution corresponds to that of the standard solution, as obtained in the assay. (USP)  
TLC: The principal spot in the chromatogram obtained with the test solution is similar in position and size to the principal spot in the chromatogram obtained with the reference solution. (EP)

**Acid value**

Max. 1,0 ml of 0,1 N NaOH (USP)

**Related substances (EP)**

**Impurity A** Max 0,5 %  
**Impurity B** Max 1,5 %  
**Sum of impurity C + D** Max 1,0 %  
**Any other impurities** Max 0,25 %  
**Total impurities** Max 2,5 %

## Handling

### Stability

DL-alpha-Tocopherol becomes darker in colour as soon as it is exposed to air and light.

### Storage

If the container is opened and not used immediately, it is recommended to flush the containers with an inert gas and to use up their contents as quickly as possible.

Classified as **hazardous** as per EU regulation!

The product meets the latest editions of USP and EP.

## NHU EUROPE GmbH

## SPECIFICATION

**Production name** DL-Alpha-Tocopherol 96 % (E307) (for feed use)  
**Product code** YYES04  
**Production unit** Zhejiang NHU Company

### Description

**Synonym** DL-alpha-Tocopherol, Tocopherol, Alpha-Tocopherol  
**Formula**  $C_{29}H_{50}O_2$   
**Product code** YYES04  
**CAS No** 10191-41-0  
**EC No** 233-466-0

### Properties

**Aspect** Clear, colourless or yellowish-brown, viscous, oily liquid  
**Shelf life** 24 months after production date, in unopened original packaging  
**Stability** DL-alpha-Tocopherol oxidizes and darkens in air and on exposure to light

**Assay** not less than 96 % and not more than 102 %  
**Solubility** Practically insoluble in water, freely soluble in acetone, in anhydrous ethanol

**Specific absorption**  
**in ethanol**  $E^{1\%}_{1cm}$  (292 nm): 71,0 - 76,0 (JECFA)  
**Sulphated ash** Max. 0,1 %

**Heavy metals** Max. 10 mg/kg  
**Arsenic (As)** Max. 1 mg/kg  
**Lead (Pb)** Max. 0,5 mg/kg

### Handling

**Usage** Product can be used as feed additive, which consists of alpha-tocopherol.

**Storage** If the container is opened and not used immediately, it is recommended to flush the containers with an inert gas and to use up their contents as quickly as possible.

Classified as **hazardous** as per EU regulation!

## NHU EUROPE GmbH