MARLESHWAR INTERNATIONAL

PRODUCT DATA SHEET

MIXED TOCOPHEROLS – 70 %

DESCRIPTION

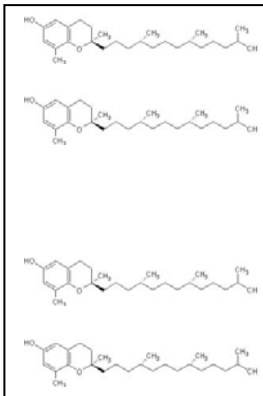
TOCOPHEROL 70 % is a clear brownish red viscous oil with mild odor and taste characteristic of vegetable oil. It contains natural mixed tocopherols which are obtained from edible vegetable oils., sunflower oil / soya oil

ASSAY

TOCOPHEROL 70 % contains not less than 700 mg/g of total tocopherols of which not less than 80% are non-alpha tocopherols.

d-α-Tocopherol (%)	6 - 16
d-β+γ-Tocopherol (%)	38 - 48
d-δ-Tocopherol (%)	13 - 22

Slight variations of typical composition due to variability of vegetable oil feedstocks from tocopherols origin can occur.



d-α-Tocopherol $C_{29}H_{50}O_2$
Molecular Weight 430.69

d-β-Tocopherol $C_{28}H_{48}O_2$
Molecular Weight 416.66

d-γ-Tocopherol $C_{28}H_{48}O_2$
Molecular Weight 416.66

d-δ-Tocopherol $C_{27}H_{46}O_2$
Molecular Weight 402.64

CURRENT EU LEGISLATION COMPLIANCE

1: EC REG. EU 835/2011
2: EC REG. EU 1881/2006
3: EC REG. EU 231/2012
4: EC REG. EU 396/2005
5: EC REG. EU 2073/2005
6: EC REG. EU 1259/2011
7: EC REG. EU 1169/2011
8: EC REG. EU 834/2007
9: EC REG. EU 889/2008

PRODUCT CHARACTERISTICS

Quality Control Data (Measured on each Lot)	
Total Tocopherols (%)	Min. 70
Non-alpha Tocopherols (%)	Min. 56
Acidity (ml 0.1N NaOH7g)	Max. 1.0
Additional Technical Data (Determined Regularly)	
Viscosity (cP @60°C)	120-210
Specific Rotation3	Min. +20
Relative Density (20/20°C)	0.92 - 0.96
Gardner Colour	Max. 14
Benzo (a) pyrene (ppb)[1]	Max. 2.0
PAH4 (ppb)[1]	Max. 10.0
Contaminants	
Organic Volatile Impurities	Pass USP 32, Method IV
Heavy Metals as Pb (mg/Kg)	Max. 10
Arsenic (mg/Kg)[2,3]	Max. 0.2
Lead (mg/Kg)[2,3]	Max. 0.5
Mercury (mg/Kg)[2,3]	Max. 0.1
Cadmium (mg/Kg)[2,3]	Max. 0.2
Pesticide Residues (ppm)[4]	Max. 2.0
Sulphated Ash (%)3	Max. 0.1
Dioxins	
Sum of dioxins (WHO-PCDD/F-TEQ) (ppb)[2,6]	Max.0.75
Sum of dioxins and dioxin like PCBS (WHO-PCDD/F-PCB-TEQ) (ppb)[2,6]	Max. 1.25
Sum of PCB28, PCB52, PCB101, PCB153 & PCB180 (ICES-6)[2,6]	Max. 40.0
Microbiology	
Total plate count (CFU/g)[5]	Max. 100
Yeast (CFU/g)[5]	Max. 25
Moulds (CFU/g) [5]	Max. 25
Coliforms (CFU/G)[5]	Max. 10
Salmonella (/10g)[5]	Negative
Escherichia coli (/10g)[5]	Negative
Staphylococcus aureus (/10g)[5]	Negative
Mycotoxins (Aflatoxin B1)[5]	Negative

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STANDARD

TOCOPHEROL 70 % meets the Monograph requirements of the current National Formulary (NF, Tocopherol Excipient) and FCC (RRR-Tocopherols, concentrate, mixed, low alpha type); as of those of the European Community (E 306, Tocopherol rich extract).

Produced according GMP, Codex Alimentarius. Non GMO Cert Id, Certified Kosher and Halal.

The U.S. FDA has recognized tocopherols as safe (GRAS) as a nutrient and as preservative (21 CFR, Part 182.8890 &

182.3890); and are GRAS exempt for the requirement for pre-market approval (21 CFR, Part 170.36) for certain food categories.

TOCOPHEROL 70 % is TSE & BSE free; does not contain any meat or animal derived products, Gluten, Lactose, nor Alco-hol, and has not been irradiated. It does not contain aller-gens7, and does not require labelling declaration as being potential allergen. The product is suitable for use to Organic Farming8,9.

Soluble in oils and fats. Insoluble in water. Sparingly soluble in ethanol, miscible with organic solvents

APPLICATIONS

TOCOPHEROL 70 % is used as a natural antioxidant in food and cosmetic industries. The product is completely soluble in oils and fats.

Dosage will depend on each particular application, being most recommended concentration 100 ppm to 600 ppm of tocopherols on oil or fat content.

We suggest to carry tests at different concentrations to determine most appropriate level for each specific case.