



SPECIFICATION

Borage (Starflower) Oil, refined

- Quality according EP -

Article No.: 20-000016

Definition:

Fatty oil obtained from seeds of *Borago officinalis* L. by mechanical pressing and subsequent refining. In one gram oil 0,5 mg of a mixed tocopherols concentrate is added as an antioxidant.

Characters:

Appearance: clear, light yellow or yellow liquid
Solubility: practically insoluble in water and in ethanol (96 per cent), miscible with light petroleum
Relative density: about 0,921
Refractive index: about 1,476

Identification: It complies with the test for the composition of fatty acids.

<u>Tests according EP</u>	<u>Specification</u>	<u>Method</u>
<u>Acid value (mg KOH/g):</u>	≤ 0,5*	EP 2.5.1
<u>Peroxide value (meq/kg):</u> (according EP ≤ 10,0 meq/kg)	≤ 2,0*	EP 2.5.5.A
<u>Unsaponifiable matter (%):</u>	≤ 2,0	EP 2.5.7
<u>Brassicasterol (ppm):</u>	≤ 5 complies with ≤ 0,3% in the Sterol content	EP 2.4.23
<u>Water (%):</u>	≤ 0,1	EP 2.5.32
<u>Alkaline impurities (ml 0,01 N HCl/10ml):</u>	complies with the test for alkaline impurities in fatty oils	EP 2.4.19
<u>Composition of fatty acids (%):</u>		EP 2.4.22 (mod.)
Saturated fatty acids of chain length less than C ₁₆ :	≤ 0,3	
Palmitic acid C 16:0	9,0 – 12,0	
Palmitoleic acid C 16:1	≤ 0,6	
Stearic acid C 18:0	2,0 - 6,0	
Oleic acid C 18:1	12,0 – 22,0	
Linoleic acid C 18:2 ω6	30,0 – 41,0	
Gamma-Linolenic acid C 18:3 ω6 (according EP 17.0-27.0%)	18,0 – 25,0	
Alpha-Linolenic acid C 18:3 ω3	≤ 0,5	
Arachidic acid C 20:0	≤ 0,5	
Eicosenoic acid C 20:1	2,8 - 4,4	
Erucic acid C 22:1	≤ 3,0	
Nervonic acid C 24:1	≤ 4,5	

*At time of drumming



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<i>Additional Tests</i>	<i>Specification</i>	<i>Method</i>
<u>Colour according Gardner:</u>	1 – 7	Goerlich 001
<u>Anisidine value:</u>	≤ 20	EP 2.5.36
<u>Iodine value:</u>	130 - 150	DGF C-V-11b
<u>Saponification value:</u>	184 - 194	EP 2.5.6
<u>Heavy metals (ppm):</u>		EN 13805
Lead:	< 0,100	EN 14083
Cadmium:	< 0,050	EN 14083
Mercury:	< 0,050	EN 13806
Arsenic:	< 0,100	EPA 206.2
<u>Pesticides (according test list):</u>	according EP	EP 2.8.13 (mod.)
<u>Pyrrrolizidine alkaloids (µg/kg):</u>	≤ 1,0	Goerlich 002 GC-MS
<u>Dioxine (pg WHO-PCDD/F-TEQ/g)**:</u>	≤ 0,75	DIN 38414/EPA 1613
<u>Benzo(a)pyren (EC-Reg. Nr. 208/2005 - µg/kg)**:</u>	≤ 2,0	DGF CIII 17a (mod.)
<u>Total Aflatoxines (B1, B2, G1, G2) (EC-Reg. Nr. 466/2001 - µg/kg)**:</u>	≤ 4,0	DIN EN 14123
<u>Microbiological quality**:</u>	according EP Cat. 3b	EP 2.6.12 & 13

** These items are tested 2 times per year

Storage:

Under an inert gas (nitrogen), in a well-filled, airtight container, protected from light, cool (10-25 °C)

Durability:

18 months in original containers blanketed with nitrogen, proper storage provided

Remark:

This product is in accordance with Regulations (EC) No. 1829/2003 and No. 1830/2003. A labelling regarding presence of genetically modified organisms (GMO) is therefore not necessary.