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Certificate of Analysis Sheet

Organic Seabuckthorn Kernel Oil

(*Hippophae rhamnoides*)

Sea Buckthorn seed oil is the fixed oil expressed from the seeds of the Sea Buckthorn, *Hippophae rhamnoides* L., Elaeagnaceae

Product name	Organic seabuckthorn seed oil, cold pressed
Batch number:	140726-4
Latin name	<i>Hippophae rhamnoides</i> L., Elaeagnaceae
INCI (EU)	HIPPOPHAE RHAMNOIDES SEED OIL
CAS Registry Number (EU)	225234-03-7
EINECS/ ELINCS	273-313-5 ¹
Customs tariff number	1515 90 59

¹ Number of an expressed oil of vegetable origin consisting primarily of triglycerides of fatty acids (Vegetable oil /Olus oil).

Physicochemical characteristics		
Parameter	Method	Range & unit
Density	20 °C, DGF C-1V 2d, densimetry	0,924 g/ml
Refractive index	20 °C, DIN EN ISO 6320, refractometry	1,4784
Acid value	DGF C-V 2, titration	≤ 4,0 ¹ mg KOH/ (KOH = NaOH)
Free fatty acids (FFA)	Calculated in oleic acid (DGF C-V 2)	≤ 2,02 ¹ %
Saponification value	DIN EN ISO 3657, calculation	194 mg KOH/g (KOH = NaOH)
Iodine value	DGF-C-V 11d, Wijs	160 g I ₂ /100g Not drying
Peroxide value	§ 64 LFGB L 13.00-40, potentiometry	≤ 20,0 ¹ meq O ₂ /kg oil
Solvent	-	None, free of alcohol (mechanical pressing)

¹ The acid value and free fatty acids increase steadily during storage. However, the product will have under suitable storage conditions at the end of the best before date an acid value ≤ 4.0 mg KOH / g and free fatty acids ≤ 2.02 %.

² Sea buckthorn seed oil is very unstable. The Peroxide value exceeds rapidly the value of 10 at a room temperature.

Composition of the main fatty acids According to DGF C-VI 10a (GC-FID)				
Name, molecular structure	Identifiers	Symbol ¹	Interval values (%)	% *
Palmitic acid	Saturated	16:0	3 – 10	7,2
Stearic acid	Saturated	18:0	2 – 6	3,8

Palmitoleic acid (9-cis-hexadecenoic acid)	Omega-7, mono unsaturated	16:1	≤ 4	1,3
Oleic acid (9-cis-octadecenoic acid)	Omega-9, mono unsaturated	18:1	13 – 27	18,8
Cis-vaccenic acid (11-cis-octadecenoic acid)	Omega-7, mono unsaturated	18:1	≤ 4	1,3
Linoleic acid (9-cis,12-cis-octadecadienoic acid)	Omega-6, poly unsaturated	18:2	31 – 45	37,1
Alpha-Linolenic acid (all-Cis-9,12,15-octadecatrienoic acid)	Omega-3, poly unsaturated (ALA)	18:3	21 – 35	28,7

¹ Number of carbon atoms and of double bonds.

Further ingredients¹ (Unsaponifiable fraction)	mg/kg(ppm) *
beta-carotene (Provitamin A)	
Carotenoids (carotenes and xanthophylls)	480
Flavonoids	
Lecithin	
Sterols (Method: LC-GC-FID, according to the Analysis report executed by EUROFINS on 2023-February-20)	4920 ± 295
Tocopherols	1850
Vitamin E, active	
Vitamin K	
Zinc	

¹ The oil is free of additives. The above Ingredients are naturally present in the oil.

² Beta-Carotene is the precursor of vitamin A. Vitamin A is only found in animal foods (as Retinyl Palmitate or Retinol). That is why we speak of Provitamin A (beta-carotene) in vegetable oils.

Sterols	%*
24-methylen-cholesterol	0,7
Beta-sitosterol	62,2
Campestanol	0,6
Campesterol	9,9
Cholesterol (Cholesterin) ¹	0,4
Clerosterol	1,2
Delta-5,23-stigmastadienol	0,3
Delta-5,24-stigmastadienol	1,9
Delta-5-avenasterol	11,7
Delta-7-avenasterol	1,9
Delta-7-campesterol	0,7
Delta-7-stigmastenol	2,9
Sitostanol	1,5
Stigmasterol	4,4

¹ According to EU Health Claims Regulation No. 1024/2006 it is principally not permitted to use the term “Free of Cholesterol” on any product packaging, even in case that the oil not contain more than 5 mg Cholesterol per 100 g.

The given values are to be considered as approximate average values, which are based on scientific references and/or analysis.