



## Specifications and Product Information

### Sea Buckthorn Pulp CO2 Extract Organic

#### INCI

Hippophae Rhamnoides (Seabuckthorn) Fruit Extract	99.9 %
Helianthus Annuus Seed Oil	0.07%
Rosmarinus Officinalis (Rosemary) Leaf Extract	0.03%

**Raw material:** *Hippophae rhamnoides* - Fruit Pulp, dried, from organic farming.

**Production:** By supercritical fluid extraction with natural carbon dioxide, no solvent residues, no inorganic salts, no heavy metals, no reproducible microorganisms [1]. The extract is stabilized with Rosemary Antioxidant Organic.

**D/E - ratio:** 8.0 – 14.0 kg raw material yield 1 kg product.

**Organoleptic description:** Orange-red clear to turbid oil, with characteristic seabuckthorn odour, at room temperature turbidness by precipitates.

**Ingredients:** Fatty oil with 30 - 40 % palmitic acid (C16:0), 22 - 40 % palmitoleic acid (C16:1) and 1 - 7 % of unsaponifiable ingredients such as carotenoids, alkanols, tocopherols, sterols.

**Description:** Contains all CO2-soluble lipophilic components. Orange-red clear to turbid oil, with characteristic seabuckthorn odour, at room temperature turbidness by precipitates, stabilized with Rosemary Antioxidant (Organic) in sunflower oil.

**Declaration:** In cosmetics: INCI-Name: Hippophae Rhamnoides Fruit Extract, CAS-No. 90106-68-6, EINECS-No. 290-292-8 and Rosmarinus Officinalis Leaf Extract, CAS-No. 84604-14-8, EINECS-No. 283-291-9 (INCI Key G: less than or equal to 0,1 %)

#### Application:

Traditional use: Sea buckthorn oil promotes wound healing and has an analgesic effect, which is why it is traditionally used in Russia in particular for skin damage caused by high-energy radiation (e.g. sunlight). It is also used for burns and for the treatment of necrotic wounds and stomach ulcers [2,3,4]. Internal applications of sea buckthorn oil reduce the cholesterol level in the blood and can thus prevent cardiovascular diseases. In folk medicine, the oil is used to relieve the symptoms of chronic stomach ulcers and other stomach diseases [5].

In cosmetics: The sea buckthorn extract contains the rarely occurring palmitoleic acid, which is also a component of the skin fat and stimulates regenerative processes in the epidermis and promotes

the healing of wounds. Therefore, the sea buckthorn extract can help to activate skin regeneration and minimize scars. The other unsaturated fatty acids contained in the extract increase the skin moisture. In addition, sea buckthorn oil has antioxidant and anti-inflammatory effects. The extract is therefore particularly suitable for use in anti-aging products, skin care products, especially for dry and chapped skin, products against skin impurities and caring soaps. Sea buckthorn can also be used in sunscreen and after sun products. In addition, sea buckthorn oil strengthens the hair, which is why it is also used in shampoos, conditioners and other hair products that aim to restore damaged hair [5,6].

**Handling:** Warm up 40°C (104°F) and shake before use! The concentrated extracts are the basic ingredients for the product formulation. They are therefore not intended for direct consumption in food, nor for direct application to the skin in cosmetics, perfumery and aromatherapy. Keep away from children!

**Stability:** Unopened containers at least 5 years under exclusion of light and following conditions: Store in a cool, dry place!

**Transport:** No dangerous good in the sense of the transport regulations.

**REACH - Status:** The substance is exempted from registration under annex V entry 9 of the reach regulation (EC) No 1907/2006.

**Conformity:** The product complies with the requirements of Regulation (EC) No. 1334/2008 on flavourings and with the requirements of Regulation (EC) No.1223/2009 on cosmetic products in the currently valid version.

**Literature:** [1] P. Manninen, E. Häivälä, S. Sarimo, H. Kallio, Distribution of microbes in supercritical CO<sub>2</sub> extraction of sea buckthorn

(Hippophae rhamnoides) oils, Zeitschrift für Lebensmitteluntersuchung und -Forschung / Springer-Verlag (1997) 204: 202-205

[2] K.W. Quirin, D. Gerard (1993), Sanddornlipide - interessante Wirkstoffe für die Kosmetik, Parfümerie und Kosmetik 10:618–625, Dr. Alfred Hüthig Verlag GmbH

[3] Yang Baoru, Lipophilic components of Sea Buckthorn (Hippophae rhamnoides) seeds and berries and physiological effects of seabuckthorn oils., Dissertation, University of Turku, 2001

[4] Alam Zeb, Important Therapeutic Uses of Sea Buckthorn (Hippophae): A Review, Journal of Biological Sciences, Volume 4 (5): 687-693

[5] A. Zielińska and I. Nowak, Abundance of active ingredients in seabuckthorn oil, Lipids in Health and Disease (2017) 16:95

[6] M. Koskovic, S. Cupara, M. Kipic, A. Barjaktarevic, O. Milovanovic, K. Kojicic and M. Markovic, Sea Buckthorn Oil—A Valuable Source for Cosmeceuticals, Cosmetics 2017, 4, 40

Version No. 041.007\_06\_S, Date: 03.09.2020

### Analytical Specification

Sensory Check	
Feature	Reference
Appearance:	orange – red at room temperature turbidness by some precipitates possible
Odour:	seabuckthorn typical smell

<b>Analytical Check</b>			
<b>Feature</b>	<b>Method</b>	<b>Limits</b>	<b>Unit</b>
Fatty acid composition:			
Palmitic Acid C16:0	21.156.03, GCFID	30 - 40	%
Palmitoleic Acid C16:1 w7	21.156.03, GCFID	22 - 33	%
Stearic Acid C18:0	21.156.03, GCFID	< 3	%
Oleic Acid C18:1 w9	21.156.03, GCFID	10 - 28	%
Vaccenic Acid C18:1 w7	21.156.03, GCFID	4 - 9	%
Linoleic Acid C18:2 w6	21.156.03, GCFID	1 - 9	%
Alpha Linolenic Acid C18:3 w3	21.156.03, GCFID	< 5	%
Arachidic Acid C20:0	21.156.03, GCFID	n.s.	%
Total Fat	DGF method, C-VI 10b	n.s.	%
Saturated Fatty Acids	DGF method, C-VI 10b	n.s.	%
Monounsaturated Fatty Acids	DGF method, C-VI 10b	n.s.	%
Polyunsaturated Fatty Acids	DGF method, C-VI 10b	n.s.	%
Fat numbers:			
Unsaponifiables	21.020.03, DGF	1 - 7	%
Peroxide Value	21.015.03, DGF, Wheeler	< 11	mg KOH/g
Acid Value	21.016.03, DGF	4 - 18	mg KOH/g
Saponification Value	21.017.02, DGF	170 - 210	mg KOH/g
Ester Value	= SV - AV	160 - 210	mg KOH/g
Sum of Carotenoids (calc. as $\beta$ -Carotene)	21.008.05, Spectrometer	0.10 – 0.20	%
Sum of Sterols (calc. as Sitosterol)	21.132.03, GCFID	> 1	%
Sum of Tocopherols (calc. as alpha Tocopherol)	21.113.03, HPLC	n.s.	%
Content of Water	21.220.01, Karl Fischer method	< 1	%
Aw-Value	LabSwift aw-value Measurement	< 0.7	
Refractive Index (20°C)	21.080.03, Abbe-Refractometer	1.460 – 1.480	
Density (20°C)	21.024.03, Pycnometer	0.900 – 0.925	g/cm <sup>3</sup>
n.s. = not specified n.d. = not detected			

**Stability:** Unopened container under cool storage conditions and exclusion of light at least 5 years.

**Date:** 20.03.2019 **Version no.** 16.164.08