



NHR ORGANIC OILS
24 CHATHAM PLACE, BRIGHTON, BN1 3TN, UK
+44 (0)1273 746505 info@nhrorganicoils.com www.nhrorganicoils.com

Certificate of Analysis Sheet

Organic Milk Thistle Oil (*Silybum marianum*)

Batch number: **130524-1**

Determination	Specification	Result
Description	Viscous liquid of yellow colour with a characteristic plant odour. Immiscible with water and/or ethanol 96%. Soluble in hexane. Plant of origin: <i>Silybum marianum</i> (L.) Gaertn.	Complies
*Identity	The retention times of fatty acids peaks on GC plot correspond to reference solution.	Proved
Acid Value (Determined from 5 g of matter)	$I_A \leq 5 \text{ mg(KOH).g}^{-1}$	$I_A = 3.1 \text{ mg(KOH).g}^{-1}$
Relative Density	$d_{16} = 0.905 - 0.925$	$d_{16} = 0.915$
Refractive Index	$n_D^{20} = 1.469 - 1.476$	$n_D^{20} = \mathbf{1.470}$
Peroxide Value	$/p \leq 5 \text{ mmol.kg}^{-1}$	$/p = 1.2 \text{ mmol.kg}^{-1}$
Iodine Value (Determined from 0.2 g of matter)	$J_i \leq 100 \text{ Q(Iodine).(100 g)}^{-1}$	$J_i = 136.9 \text{ (Iodine).(100 g)}^{-1}$
*Unsaponifiable Matter (Determined from 5 g of matter)	$/u \leq 2.0 \% \text{ (w/w)}$	$I_A = 0.7 \text{ mg(KOH).g}^{-1}$
*Fatty Acid Composition: Palmitic Acid Oleic Acid Linoleic Acid Erucic acid	7 - 12 % (Area) 15 - 29 % (Area) 46 - 65 % (Area) Max. 50 g/kg and max. 5 % sum of fatty acids	8 % (Area) 22 % (Area) 59 % (Area) 0.3 %

*Sterols Composition: 13- Sitosterol A ⁷ -Stigmasterol Stigmasterol Cholesterol Campesterol t/-Campesterol ⁵ -Avenasterol A ⁷ -Avenasterol Fucosterol	Not Defined - Relative Composition in% (Area)	37 % (Area) 26 % (Area) 0.2 % (Area) 5 % (Area) 5 % (Area) 8 % (Area) 1.5 % (Area) 3.5 % (Area) < 0.01 % (Area)
*Heavy Metals: Cd Pb Hg	MPL (Maximum permissible level) 1.0 mg/kg 0.1 mg/kg 0.1 mg/kg	<0.10 mg/kg <0.05 mg/kg <0.01 mg/kg
*Microbial contamination - Total plate count - Total number offungi - Enterobacteria, gramnegativ bacteria - <i>Escherichia coli</i> - <i>Salmonella</i> - <i>Staphylococcus aureus</i> - <i>Listeria monocytogenes</i>	Max. 10 ⁴ CFU/g Max. 10 ² CFU/g Max. 10 ² CFU/g Absence in 1 g Absence in 10g Absence in 1 g Max. 100 CFU/g	Complies
*Mycotoxins Aflatoxin B1 Sum of 81, 82, G1, G2	Max. 2.0 µg/kg Max. 4.0 µg/kg	Complies
*Toxic substances		
- Benzo(a)pyren - Polycyclic Aromatic Hydrocarbons (PAH)	Max. 2.0 µg/kg Max. 10.0 µg/kg	
- Sum of dioxins (WHO- PCDD/F-TEQ) - Sum of dioxins and dioxin- like PCBs (WHO-PCDD/F- PCB- TEQ)	Max. 0.75 pg/g Max. 1.25 pg/g	Complies
- Sum of PCB28, PCB52, PCB101, PCB138, PCB153	Max. 40 ng/g	
and PCB180		
- Glycidyl fatty acid esters (glycidol)	Max. 1 000 µg/kg	

Date: 25.03.2024