



NHR ORGANIC OILS
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Certificate of Analysis Sheet

Organic Amaranth Seed Oil (*Amaranthus caudatus*)

Amaranth seed oil is the fixed oil expressed from the seeds of *Amaranthus caudatus*, Amarathaceae.

Product description		
Product name	Organic amaranth seed oil, cold pressed	
Batch number:	010524-1	
Latin name	Amaranthus caudatus	
INCI (EU)	AMARANTHUS CAUDATUS SEED OIL	
CAS Registry Number (EU)	68956-68-3	
EC# (EINECS/ ELINCS)	273-313-5	
Spreadingbehaviour	Medium	
Physicochemicalcharacteristics		
Parameter	Method	Range
Relative Density	20 °C, DGF C-IV 2	0,911 g/ml
Refractive index	DIN EN ISO 6320, Refractometry	1,4743
Acid value	DGF C-V 2, Titration	≤ 4,0 mg KOH/g (KOH = NaOH)
Free fatty acids (FFA)	Calculated in oleic acid (DGF C-V 2)	2,02 %
Saponification value	EN ISO 3657, Calculated	195 mg KOH/g (KOH =NaOH)
Iodine alue	DGF-C-V 11d, Wijs	84 g I2/100g Semi-drying
Solvent		None, free of alcohol (mechanical pressing)
Peroxide value	§ 64 LFGB L13.00-40, potentiometry	≤ 10,0 1 meq O2/kg oil

The acid value, peroxide 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, a peroxide value ≤ 10.0 meq O₂ / kg oil and free fatty acids ≤ 2.02 %.

Fatty Acids composition According to DGF C-VI 10a				
Name	Family	Symbol 1	Interval values (%)	%*
Palmitic acid	Saturated	16:0	14 – 25	18,3
Stearic acid	Saturated	18:0	2 – 7	4,5
Oleic acid	Omega-9, mono unsaturated	18:1	23 – 38	30,3
Linoleic	Omega-6, poly unsaturated	18:2	32 – 49	41,8

Further ingredients	mg/kg (ppm)
Squalane (5 – 8%)	54.000
Sterols	24.600
Tocopherols	653
Tocotrienols	
Vitamin E, active	283,2

Sterols	According to Leon-Camacho et al. (2001) (%)	According to AOCS Firestone et al. (2013), page 14(%)
24-methylen-cholesterol	0,3	-
Beta-sitosterol	1,3	-
Campesterol	1,6	-
Clerosterol	42,0	-
Delta-5-avenasterol	2,0	-
Delta-7-avenasterol	11,9	-
Delta-7-Ergosterol	-	14
Delta-7-campesterol	24,8	-
Delta-7-stigmastenol	15,2	-
Delta-7-stigmasterol	-	16
Spinasterol	-	54
Stigmasterol	0,9	8
Vitamin E/ Tocopherols	mg/kg (ppm)	
Vitamin E, active	283,2	
Alpha-Tocopherol (α)	133	
Beta-Tocopherol (β)	268	
Gamma-Tocopherol (γ)	57	
Delta-Tocopherol (δ)	195	

Allergen status

According to the REGULATION (EU) No 1169/2011 of 2011-October-25, Annex II, in this regard the oil contains the following allergens subject to labeling: **none**

Allergen status (if cosmetic product)

The oil does not contain substances listed in Annex II to VI of REGULATION (EC) No 1223/2009 of 2009-November-30 as ingredients. Contaminations with forbidden/restricted substances are not expected but not analysed.