

Analytical report AR-19-HD-003629-02

Testing laboratory:

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Customer:

Heaven Labs s.r.o.
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Sample reception date: 13.02.2019

Date of Testing: 13.02.2019 - 21.02.2019

Issue date 21.02.2019

Sample code 540-2019-00006462

Sample information:

Sample name, extended: Sunflower oil - M11705

Physical and chemical tests

Parameter	Unit	Result	Uncertainty*	Method	Method principle	TZ
Arsenic (As)	mg/kg	<0.030		LS-PP-CH-85	ICP-MS	SA
Potassium (K)	mg/kg	<10.0		LS-PP-CH-2/19	F-AAS	SA
Total phosphorus	mg/kg	<6.0		LS-PP-CH-2/28	ICP-OES	SA
Aluminium (Al)	mg/kg	<0.50		LS-PP-CH-2/27	ICP-OES	SN
Magnesium (Mg)	mg/kg	1.9	20%	LS-PP-CH-2/23	ICP-OES	SA
Chlorides	mg/kg	201		ŠPP INO.M.011/B	Titrimetry (potentiometric)	SN
Chromium (Cr)	mg/kg	<0.050		LS-PP-CH-85	ICP-MS	SA
Manganese (Mn)	mg/kg	<0.50		LS-PP-CH-2/21	ICP-OES	SA
Copper (Cu)	mg/kg	<0.10		LS-PP-CH-85	ICP-MS	SA
Lead (Pb)	mg/kg	<0.050		LS-PP-CH-85	ICP-MS	SA
C4:0 Butyric acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C6:0 Caproic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C8:0 Caprylic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C10:0 Capric acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C11:0 Undecanoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C12:0 Lauric acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C13:0 Tridecanoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C14:0 Myristic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C14:1(n-5)cis Myristoleic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C15:0 Pentadecanoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C15:1(n-5)cis Pentadecenoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C16:0 Palmitic acid	g/100 g fat	6.42	8%	ŠPP ORG.M.047	GC-FID	SA
C16:1(n-7)cis Palmitoleic acid	g/100 g fat	0.1	8%	ŠPP ORG.M.047	GC-FID	SA
C17:0 Heptadecanoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C17:1(n-7)cis Heptadecenoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C18:0 Stearic acid	g/100 g fat	3.65	8%	ŠPP ORG.M.047	GC-FID	SA
C18:1(-6)trans Petroselaic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C18:1(n-9)trans Elaidic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C18:1(n-11)trans Vaccenic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C18:1(n-9)cis Oleic acid	g/100 g fat	27.1	8%	ŠPP ORG.M.047	GC-FID	SA
C18:1(n-11)cis Aselepic acid	g/100 g fat	0.98	8%	ŠPP ORG.M.047	GC-FID	SA
C18:2(n-6)trans Linoleaidic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C18:2(n-6)cis Linoleic acid	g/100 g fat	59.7	8%	ŠPP ORG.M.047	GC-FID	SA
C18:3(n-3)cis alpha-Linolenic acid	g/100 g fat	0.6	8%	ŠPP ORG.M.047	GC-FID	SA

Physical and chemical tests

Parameter	Unit	Result	Uncertainty*	Method	Method principle	TZ
C18:3(n-6)cis gamma-Linolenic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C20:0 Arachidic acid	g/100 g fat	0.28	8%	ŠPP ORG.M.047	GC-FID	SA
C20:1(n-11)cis Eicosenoic acid	g/100 g fat	0.2	8%	ŠPP ORG.M.047	GC-FID	SA
C20:2(n-6)cis Eicosadienoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C20:3(n-6)cis Dihomo-gamma-linolenic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C20:3(n-3)cis Eicosatrienoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C20:4(n-6)cis Arachidonic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C20:5(n-3)cis Eicosapentaenoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C21:0 Heneicosanoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C22:0 Behenic acid	g/100 g fat	0.71	8%	ŠPP ORG.M.047	GC-FID	SA
C22:1(n-9)cis Erucic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C22:2(n-6)cis Docosadienoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C22:5(n-3)cis Docosapentaenic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C22:6(n-3)cis Docosahexaenoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C23:0 Tricosanoic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
C24:0 Lignoceric acid	g/100 g fat	0.22	8%	ŠPP ORG.M.047	GC-FID	SA
C24:1(n-9)cis Nervonic acid	g/100 g fat	<0.1		ŠPP ORG.M.047	GC-FID	SA
Saturated fatty acids	g/100 g fat	11.34	8%	ŠPP ORG.M.047	GC-FID	SA
Monounsaturated fatty acids	g/100 g fat	28.37	8%	ŠPP ORG.M.047	GC-FID	SA
Polyunsaturated fatty acids	g/100 g fat	60.29	8%	ŠPP ORG.M.047	GC-FID	SA
Trans fatty acids	g/100 g fat	<0.10		ŠPP ORG.M.047	GC-FID	SA
Omega-3 fatty acids	g/100 g fat	0.60	8%	ŠPP ORG.M.047	GC-FID	SA
Omega-6 fatty acids	g/100 g fat	59.69	8%	ŠPP ORG.M.047	GC-FID	SA
Mercury (Hg)	mg/kg	<0.02		LS-PP-CH-30	Spectrophotometry	SA
Selenium (Se)	mg/kg	<0.030		LS-PP-CH-85	ICP-MS	SA
Sodium (Na)	mg/kg	<10.0		LS-PP-CH-2/18	F-AAS	SA
Calcium (Ca)	mg/kg	<6.0		LS-PP-CH-2/22	ICP-OES	SA
Zinc (Zn)	mg/kg	<0.50		LS-PP-CH-85	ICP-MS	SA
Iron (Fe)	mg/kg	<0.50		LS-PP-CH-2/20	ICP-OES	SA
alpha-Tocopherol (vitamin E)	mg/100 g	39.4	5.99	EN 12822:2014, 807	LC-FLD	SA

Notes: SOP, ŠPP - Standard operation procedure
 ND - not detected by given method
 CFU - Colony forming unit
 NM - necessary quantity
 m - the highest allowed value at the case of one sample
 M, c - "M" highest allowed value for the number "c" at the case of 5 sample's evaluation
 * - extent uncertainty determined by extension coefficient k=2 (with probability of 95 %) does not include the uncertainty of sampling.
 Traces - Detected < LOQ See additional information

TT - type of test
 A - accredited test executed at the own test laboratory
 N - non accredited test executed at the own test laboratory
 SA - accredited test executed under the subcontract
 SN - unaccredited test executed under the subcontract

Gauges and measuring equipment used for testing were calibrated or attested in accordance with the valid metrological instructions. The above mentioned test results refer to the tested sample only! The result given in this Test Certificate and marked as non accredited test shall not be a subject of accreditation. The result given in this Test Certificate and marked as sub- delivery is the result of a Subcontractor's gauging made under the terms and conditions of a contract concluded eith him. The Certificate can be issued only in full form and with the approval of testing laboratory EUROFINS CZ in writting!

Worked out by: Kristína Vicenová
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Test Certificate approved by:

Jiří Bastl
Head of testing laboratory

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