

Pharmachem Jozef Susnik  
Dipl. Ing., S.P.

production date: 01/2012  
expiry date: 01/2014

Vidovdanska 2  
1000 Ljubljana  
Slovenia

Order No.: Email dd. 10.04.2012

## Certificate of Analysis – KEY BRAND

Bremen, 17.04.2012

### MEDICINAL COD LIVER OIL, PH.EUR., IDENTITY PRESERVED

lot: 5228001 ✓ *12014*  
Ph.Eur.7, 2011, Typ A, USP 34, BP 2012 Type A

Appearance	complies
Specific gravity (20 degree C)	0,920
Refractive index (20 degree C)	1,481
Acid value	0,12
Anisidine value	9,6
Peroxide value	complies
Iodine value	162
Saponification value	184
Water	0,01 %
Unsataponifiable Matter	0,9 %
Cold test 3h at 0°C	clear
Colour gardner	3,6
Colour lovibond 5 1/4" yellow	28,0
Colour lovibond 5 1/4" red	1,0

#### Fatty acid composition

##### Saturated fatty acids:

Lauric acid	(C 12:0)	< 0,05 %
Myristic acid	(C 14:0)	3,33 %
Pentadecane acid	(C 15:0)	0,30 %
Palmitic acid	(C 16:0)	9,74 %
Margaric acid	(C 17:0)	0,46 %
Stearic acid	(C 18:0)	2,26 %
Arachidic acid	(C 20:0)	< 0,05 %
Behenic acid	(C 22:0)	< 0,05 %
Lignoceric acid	(C 24:0)	< 0,05 %

##### Unsaturated fatty acids:

Myristoleic acid	(C 14:1)	0,22 %
Palmitoleic acid	(C 16:1)	6,93 %
cis-Vaccenic acid	(C 18:1 (n-7))	4,68 %
Oleic acid	(C 18:1 (n-9))	14,28 %
Gadoleic acid	(C 20:1 (n-11))	1,72 %
Gondoic acid	(C 20:1 (n-9))	10,86 %
Erucic acid	(C 22:1 (n-9))	0,77 %
Cetoleic acid	(C 22:1 (n-11))	7,55 %

##### Polyunsaturated fatty acids:

FARMADENT d.o.o.	
Minarikova ul. 6	
2000 Maribor	
Prejel: FUJS DRAGO	
<i>[Signature]</i>	
Datum prejema:	17.4.2012
Pregledal: MAJOLT Robert mag. farm., spec.	
<i>[Signature]</i>	
Datum pregleda:	20.4.2012

*[Signature]*  
17.4.12  
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MEDICINAL COD LIVER OIL, PH.EUR., IDENTITY PRESERVED



Ph.Eur.7, 2011, Typ A, USP 34, BP 2012 Type A

lot: 5228001

Linoleic acid	(C 18:2)	1,83 %
Linolenic acid	(C 18:3 (n-3))	1,18 %
Morocctic acid	(C 18:4 (n-3))	2,41 %
Eicosanedienoic acid	(C 20:2)	0,41 %
Eicosanetrienoic acid	(C 20:3 (n-3))	0,07 %
Eicosanetrienoic acid	(C 20:3 (n-6))	0,08 %
Eicosanetraenoic acid	(C 20:4 (n-3))	< 0,05 %
Arachidonic acid	(C 20:4 (n-6))	0,42 %
Eicosapentaenoic acid	(C 20:5 (n-3), EPA)	8,96 %
Docosatetraenoic acid	(C 22:4)	0,26 %
Docosapentaenoic acid	(C 22:5 (n-3), DPA)	1,28 %
Docosahexaenoic acid	(C 22:6 (n-3), DHA)	11,17 %

Vitamin A	1080 i.U./g
Vitamin D3	85 i.U./g

Pesticides

Organochloropesticides	complies to RHmV
Organophosphoruspesticides	complies to RHmV
Toxaphen	complies to RHmV

Polychlorinated biphenyls

28	< 0,02 mg/kg
52	< 0,02 mg/kg
101	< 0,02 mg/kg
138	0,02 mg/kg
153	0,02 mg/kg
180	< 0,02 mg/kg

Dioxin

WHO-PCDD/F-TEQ (Total Dioxins)	0,128 pg/g
WHO-PCDD/F-PCB-TEQ (Dioxins + dioxin-like PCBs)	1,490 pg/g

Identity	complies
Purity	complies

Solvent residues: The pharmaceutical auxiliary material fulfils the requirements made of solvent residues in the European Pharmacopoeia (CPMP/ICH/283/95) and the USP (467 Residual solvents).  
Notwithstanding, the food law requirements are fulfilled.

This product in question is not affected by the GMO problem. Therefore this product does not need to be labelled regarding any genetic modification as per the new GMO regulations 1829/2003 and 1830/2003.

HENRY LAMOTTE OILS GMBH

Computer edited certificate - valid without signature

„PHARMACHEM“  
SUŠNIK JOŽEF dipl. ing. s.p.  
LJUBLJANA, Vidovdanska 2