



**Commodities International
Shipping and Survey**



**FOSFA
INTERNATIONAL**

CISS Group PTE. LTD.

10, Anson Road, #29-05 A, International Plaza, Singapore, 079903.

e-mail: inspection@ciiss-group.com

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CERTIFICATE No.: UA01178/1

ORIGINAL

CERTIFICATE OF ANALYSIS

In pursuance of an order received from our principal, requesting us to carry out inspection we hereby confirm as follows:

Description of goods:	UKRAINIAN CRUDE SUNFLOWER SEED OIL IN BULK
Vessel:	MT MRC SEMIRAMIS
Quantity:	2900,490 MT
B/L No. & Date:	NO.1, 2 AND 3 DD 12.12.2021
Shipper:	"TOP EXPORT" LLC 04111, Kyiv, Ruzhynska Street, building 18/59, office 43 "IZMAIL-TRANSBULKTERMINAL" LLC ADDRESS: UKRAINE, ODESSA REGION, IZMAIL, AERODROMNE SHOSSE,2 LLC "MEISEN" UKRAINE 54001, NIKOLAEV, NIKOLSKAYA STR., BUILDING 61/11
Consignee:	TO ORDER
Notify address:	BUNGE ITALIA SPA, VIA BAIONA, 203 RAVENNA, ITALY
Port of loading:	IZMAIL, UKRAINE
Port of discharge:	RAVENNA, ITALY
Vessel Tanks Nos.:	1P, 2P, 3P, 4P, 5P, 6P, 1S, 2S, 3S, 4S, 5S AND 6S

RESULTS OF QUALITY INSPECTION

Representative samples of the oil have been drawn from each ship's tank 1P, 2P, 3P, 4P, 5P, 6P, 1S, 2S, 3S, 4S, 5S AND 6S of MT MRC SEMIRAMIS and sealed from vessel's tanks after competition of loading according to FOSFA CONTRACT No.54. One vessel's sample were submitted for analysis to FOSFA approved chemical laboratory. The following results of analysis have been obtained:

No	Test Description	Units	Method	Results
1	Moisture and volatile matter	%	ISO 662:2016	0,18
2	Insoluble Impurities	%	ISO 663:2017	0,09
3	FFA as oleic acid	%	ISO 660:2009	0,64
4	Phosphorus content	ppm	ISO 10540-1:2003	233
5	Flash point at 121°C	n/a	ISO 15267:1998	no flash





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1	MERCURY	EN 13806:2002	0,050	mg/kg	ND,less than 0,050
2	LEAD	ISO 12193:2004	0,050	mg/kg	ND,less than 0,050
3	CADMIUM	ISO 15774:2000	0,010	mg/kg	ND,less than 0,010
4	COPPER	ISO 8294:1994	0,400	mg/kg	ND,less than 0,400
5	IRON	ISO 8294:1994	1,000	mg/kg	ND,less than 1,000
6	ARSENIC	EN 14627:2005	0,050	mg/kg	ND,less than 0,050

No	Test Description	Method	Units	LOQ*	Results
1	Capronat acid (C6:0)	DSTU ISO 5508-2001	%	0,05	ND,less than 0,05
2	Caprylat acid (C8:0)		%	0,05	ND,less than 0,05
3	Caprycat acid (C10:0)		%	0,05	ND,less than 0,05
4	Lauriat acid (C12:0)		%	0,05	ND,less than 0,05
5	Myristat acid (C14:0)		%	0,05	0,07
6	Palmitat acid (C16:0)		%	0,05	6,09
7	Palmitoleic acid (C16:1)		%	0,05	0,10
8	Margaric acid (C17:0)		%	0,05	ND,less than 0,05
9	Heptadecenoic acid (C17:1)		%	0,05	ND,less than 0,05
10	Stearat acid (C18:0)		%	0,05	3,56
11	Oleat acid (C18:1)		%	0,05	30,97
12	Linoleat acid (C18:2)		%	0,05	57,70
13	Linolenat acid (C18:3)		%	0,05	0,05
14	Arachidate acid (C20:0)		%	0,05	0,24
15	Gadoleic acid (C20:1)		%	0,05	0,13
16	Eicosadienoic acid (C20:2)		%	0,05	ND,less than 0,05
17	Behenat acid (C22:0)		%	0,05	0,71
18	Erucate acid (C22:1)		%	0,05	ND,less than 0,05
19	Docosadienoic acid (C22:2)		%	0,05	ND,less than 0,05
20	Lignocerat acid (C24:0)		%	0,05	0,25
21	Nervonic acid (C24:1)		%	0,05	ND,less than 0,05

No	Test Description	Method	Units	LOQ*	Results
1	Mineral oil (Hydrocarbons C10-C56)	ISO 17780:2015	mg/kg	20,0	ND,less than 20

No	Test Description	MRL	Method	LOQ*	Units	Results
1	Aflatoxin B1	NS	DSTU EN 12955-2001	1,0	µg/kg	ND,less than 1,0
2	Sum of aflatoxins B1,B2,G1,G2	NS	DSTU EN 12955-2001	2,5	µg/kg	ND,less than 2,5





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No	Test Description	Method	LOQ*	Units	Results
1	Benzo[a]pyrene	ISO 15753:2016	0,2	µg/kg	1,3
2	Benz(a)anthracene	ISO 15753:2016	0,2	µg/kg	1,9
3	Benz(b)fluoranthrene	ISO 15753:2016	0,3	µg/kg	1,7
4	Chrysene	ISO 15753:2016	0,2	µg/kg	2,1

No	Test Description	Method	Units	Results
1	Cholesterol	ISO 12228-1:2014	%	0,14
2	Brassicasterol		%	ND, less than 0,10
3	Campesterol		%	8,63
4	Stigmasterol		%	8,50
5	Beta-sitosterol		%	56,10
6	Delta-5-avenasterol		%	5,36
7	Delta-7-stigmastenol		%	11,43
8	Delta-7-avenasterol		%	4,68
9	Others		%	5,17
10	Total sterols		mg/kg	4117,0

No	Test Description	Method	LOQ*	Units	Results
1	Acetamidiprid	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
2	Aldrin	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
3	Amitraz	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
4	Acephate	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
5	Azinphos-methyl	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
6	Acetochlor	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
7	Alachlor	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
8	Atrazine	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
9	Azoxystrobin	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
10	Anthraquinone	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
11	Bifenthrin	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
12	Boscalid (Nicobifen)	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
13	Biphenyl	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
14	Bromopropylate	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
15	Captafol	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
16	Carbaryl	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
17	Carbofuran	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
18	Carboxin	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
19	Chlordane	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
20	Chlorothalonil	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
21	Chlorfenvinphos	EN 1528:1996	0,020	mg/kg	ND, less than 0,020





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No	Test Description	Method	LOQ*	Units	Results
22	Chlorpyrifos	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
23	Chlorpyrifos-methyl	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
24	Cyfluthrin	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
25	Cyhalothrin-Lambda	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
26	Cypermethrin	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
27	Cyproconazole	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
28	Cyprodinil	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
29	DDT	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
30	DDD	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
31	DDE	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
32	Dimethoate	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
33	Deltamethrin	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
34	Diazinon	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
35	Dichlorvos	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
36	Dieldrin	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
37	Difenoconazole	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
38	Disulfoton	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
39	Endosulfan	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
40	Endosulfan alfa	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
41	Endosulfan beta	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
42	Endosulfan sulfate	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
43	Endrin	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
44	Ethion	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
45	Ethoxyquin	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
46	Famaxodone	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
47	Fenitrothion	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
48	Fenthion	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
49	Fipronil	EN 1528:1996	0,005	mg/kg	ND, less than 0,005
50	Fenvalerate	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
51	Fludioxonil	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
52	Heptachlor	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
53	Heptachlor epoxide	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
54	Haloxypomethyl	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
55	Haloxypop-p-methyl	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
56	Hexachlorobenzene (HCB)	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
57	HCH alfa isomer	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
58	HCH beta isomer	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
59	HCH gamma isomer (Lindane)	EN 1528:1996	0,010	mg/kg	ND, less than 0,010





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No	Test Description	Method	LOQ*	Units	Results
60	Imazalil	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
61	Iprodione	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
62	Isoprothiolane	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
63	Linuron	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
64	Malathion	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
65	Metalaxyl	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
66	Methamidophos	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
67	Methidathion	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
68	Methoxychlor	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
69	Monocrotophos	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
70	Metazachlor	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
71	Mepiquat	EN 15662:2018	0,500	mg/kg	ND, less than 0,500
72	Methomyl	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
73	Naled	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
74	Nitrofen	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
75	Omethoate	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
76	Oxadixyl	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
77	Ortho-phenyl phenol	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
77	Phorate	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
79	Parathion-methyl	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
80	Pendimethalin	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
81	Permethrin	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
82	Pirimiphos-methyl	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
83	Prochloraz	EN 1528:1996	0,100	mg/kg	ND, less than 0,100
84	Procymidone	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
85	Propiconazole	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
86	Phosphamidone	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
87	Simazine	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
88	Tetramethrin	EN 1528:1996	0,050	mg/kg	ND, less than 0,050
89	Tebuconazole	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
90	Thiamethoxam	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
91	Trifloxystrobin	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
92	Trichlorfon	EN 1528:1996	0,020	mg/kg	ND, less than 0,020
93	Trifluralin	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
94	Terbufos	EN 1528:1996	0,010	mg/kg	ND, less than 0,010
95	Vinclozolin	EN 1528:1996	0,020	mg/kg	ND, less than 0,020





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No	Test Description	Method**	Units***	Results
1	Sum of dioxins (WHO-PCDD/Fs-TEQ)	EN 16215:2020	pg/g fat	<0,75
2	Sum of dioxins and dioxin-like PCBs (WHO-PCDD/Fs-PCB-TEQ)	EN 16215:2020	pg/g fat	<1,25
3	Sum of PCBs non-dioxin-like	EN 16215:2020	ng/g fat	<40
4	2,3,7,8-TCDD	EN 16215:2020	pg/g fat	<0,04
5	1,2,3,7,8-PeCDD	EN 16215:2020	pg/g fat	<0,04
6	1,2,3,4,7,8-HxCDD	EN 16215:2020	pg/g fat	<0,01
7	1,2,3,6,7,8-HxCDD	EN 16215:2020	pg/g fat	<0,01
8	1,2,3,7,8,9-HxCDD	EN 16215:2020	pg/g fat	<0,01
9	1,2,3,4,6,7,8-HpCDD	EN 16215:2020	pg/g fat	<0,001
10	OCDD	EN 16215:2020	pg/g fat	<0,00006
11	2,3,7,8-TCDF	EN 16215:2020	pg/g fat	<0,004
12	1,2,3,7,8-PeCDF	EN 16215:2020	pg/g fat	<0,0012
13	2,3,4,7,8-PeCDF	EN 16215:2020	pg/g fat	<0,012
14	1,2,3,4,7,8-HxCDF	EN 16215:2020	pg/g fat	<0,01
15	1,2,3,6,7,8-HxCDF	EN 16215:2020	pg/g fat	<0,01
16	2,3,4,6,7,8-HxCDF	EN 16215:2020	pg/g fat	<0,01
17	1,2,3,7,8,9-HxCDF	EN 16215:2020	pg/g fat	<0,01
18	1,2,3,4,6,7,8-HpCDF	EN 16215:2020	pg/g fat	<0,001
19	1,2,3,4,7,8,9-HpCDF	EN 16215:2020	pg/g fat	<0,001
20	OCDF	EN 16215:2020	pg/g fat	<0,00006
21	dioxin-like PCB 77	EN 16215:2020	pg/g fat	0,0002
22	dioxin-like PCB 81	EN 16215:2020	pg/g fat	<0,00015
23	dioxin-like PCB 126	EN 16215:2020	pg/g fat	<0,05
24	dioxin-like PCB 169	EN 16215:2020	pg/g fat	<0,015
25	dioxin-like PCB 105	EN 16215:2020	pg/g fat	0,002
26	dioxin-like PCB 114	EN 16215:2020	pg/g fat	<0,0003
27	dioxin-like PCB 118	EN 16215:2020	pg/g fat	0,003
28	dioxin-like PCB 123	EN 16215:2020	pg/g fat	<0,0003
29	dioxin-like PCB 156	EN 16215:2020	pg/g fat	<0,0003
30	dioxin-like PCB 157	EN 16215:2020	pg/g fat	<0,0003
31	dioxin-like PCB 167	EN 16215:2020	pg/g fat	<0,0003
32	dioxin-like PCB 189	EN 16215:2020	pg/g fat	<0,0003
33	non-dioxin-like PCB 28	EN 16215:2020	ng/g fat	<0,100
34	non-dioxin-like PCB 52	EN 16215:2020	ng/g fat	<0,100
35	non-dioxin-like PCB 101	EN 16215:2020	ng/g fat	<0,100
36	non-dioxin-like PCB 138	EN 16215:2020	ng/g fat	<0,100
37	non-dioxin-like PCB 153	EN 16215:2020	ng/g fat	<0,100
38	non-dioxin-like PCB 180	EN 16215:2020	ng/g fat	<0,100





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No	Test Description	Method**	Units***	Results
39	TEQ (WHO) for PCDD/Fs including LOQ for non-quantified congener	EN 16215:2020	pg/g fat	0,170
40	TEQ (WHO) for dioxin-like PCBs including LOQ for non-quantified congener	EN 16215:2020	pg/g fat	0,072
41	TEQ (WHO) for PCDD/Fs + dioxin-like PCBs including LOQ for non-quantified congener	EN 16215:2020	pg/g fat	0,242
42	Non-dioxin-like PCBs	EN 16215:2020	ng/g fat	0,600

Remarks:

*LOQ — limit of quantification.

**In accordance with Directive (EU) nr. 2017/644 (for Food).

***Content of PCDD/Fs and dioxin-like PCBs is recalculated to Toxic Equivalents (TEQ) values excluding non-dioxin-like PCBs.

The oil is homogeneous, of good, sound and merchantable quality.

DATED: 15th of DECEMBER, 2021

For and on behalf of CISS GROUP Ukraine LLC

Registered Superintendent and Surveyor Member of FOSFA

