

CERTIFICATE of QUALITY Copy

Control No: 50699 / 2023 **For:**
Tank No.: S030/GMB5
Sample No 28 / 2023
Delivery doc:
Packing, Tank

HYDRAULIC OIL L-HM 46

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 40° C	46.26	mm ² /s	ASTM D 445-21e1
2	Pour point	-27	° C	ASTM D 97-17b
3	Flash Point COC	236	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8736	g/cm ³	ASTM D 4052-22
5	Total Acid Number	0.57	mg KOH/g	ASTM D 664-18e2
6	Demulsibility at 54° C			ASTM D 1401-21
	-volume of oil	42	ml	
	-volume water	38	ml	
	-volume of emulsion	0	ml	
	-time of separability	10	min	
7	Corrosion action Cu at 120° C, 3 h	1	stop.kor.	ASTM D 130-19
8	Foaming			ASTM D 892-18
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	10	ml	
	-tendency at 24°C ex 93,5°C	0	ml	
9	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 10-01-2023

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract. WT 2/90 wyd.13

Confirm certificate - name: Pracownia Olejów

Publish certificate - name: **Sikora Paweł DC 03**

CERTIFICATE of QUALITY Copy

Control No: 120 / 2023 For:
 Tank No.: 15V025
 Sample No 120 / 2023
 Delivery doc:
 Packing, Tank

HYDRAULIC OIL L-HV 32

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 40° C	32.60	mm ² /s	ASTM D 445-21e1 (A)
2	Pour point	-51	° C	ASTM D 97-17b
3	Flash Point COC	218	° C	ASTM D 92-18
4	Density, at 15.0° C	0.8633	g/cm ³	ASTM D 4052-22
5	Viscosity Index	149		ASTM D 2270-10(2016)
6	Total Acid Number	0.57	mg KOH/g	ASTM D 664-18e2
7	Demulsibility at 54° C			ASTM D 1401-21
	-volume of oil	40	ml	
	-volume water	40	ml	
	-volume of emulsion	0	ml	
	-time of separability	10	min	
8	Corrosion action Cu at 120° C, 3 h	1	stop.kor.	ASTM D 130-19 (A)
9	Foaming			ASTM D 892-18
	-tendency at 24 deg C	10	ml	
	-tendency at 93 deg C	20	ml	
	-tendency at 24° C ex 93,5° C	0	ml	
10	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 10-01-2023

Symbol (A) in the standard column - The tests were performed by LOTOS Lab Ltd. accredited in this respect by the PCA, No.AB 474

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 2/94 wyd.7

Confirm certificate - name: Besler Paweł

Publish certificate - name: Sikora Paweł DC 03

CERTIFICATE of QUALITY Copy

Control No: 5285 / 2022 **For:**
Tank No.: 15V002
Sample No 5285 / 2022
Delivery doc:
Packing, Tank

HYDRAX HLP 32

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 40° C	32.28	mm ² /s	ASTM D 445-21e1
2	Pour point	-33	° C	ASTM D 97-17b
3	Flash Point COC	222	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8692	g/cm ³	ASTM D 4052-22
5	Water	<0,03	% (m/m)	ASTM D 95-13(2018)
6	Total Acid Number	0.54	mg KOH/g	ASTM D 664-18e2
7	Demulsibility at 54° C			ASTM D 1401-21
	-volume of oil	40	ml	
	-volume water	40	ml	
	-volume of emulsion	0	ml	
	-time of separability	10	min	
8	Corrosion action Cu at 120° C, 3 h	1	stop kor.	ASTM D 130-19
9	Foaming			ASTM D 892-18
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	10	ml	
	-tendency at 24° C ex 93,5° C	0	ml	
10	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 05-12-2022

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 91/04 wyd. 7

Confirm certificate - name: Stachulski Ryszard

Publish certificate - name: **Sikora Paweł DC 03**

CERTIFICATE of QUALITY Copy

Control No: 50615 / 2023 **For:**
Tank No.: S030/GMB6
Sample No 28 / 2023
Delivery doc:
Packing, Tank

HYDRAX HLP 46

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 40° C	46.21	mm ² /s	ASTM D 445-21e1
2	Pour point	-27	° C	ASTM D 97-17b
3	Flash Point COC	236	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8736	g/cm ³	ASTM D 4052-22
5	Water	<0,03	% (m/m)	ASTM D 95-13(2018)
6	Total Acid Number	0.57	mg KOH/g	ASTM D 664-18e2
7	Demulsibility at 54° C			ASTM D 1401-21
	-volume of oil	40	ml	
	-volume water	40	ml	
	-volume of emulsion	0	ml	
	-time of separability	20	min	
8	Corrosion action Cu at 120° C, 3 h	1	stop.kor.	ASTM D 130-19
9	Foaming			ASTM D 892-18
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	10	ml	
	-tendency at 24°C ex 93,5°C	0	ml	
10	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 09-01-2023

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 91/04 wyd.7

Confirm certificate - name: Pracownia Olejów

Publish certificate - name: **Sikora Paweł DC 03**

****CERTIFICATE of QUALITY**** Copy

Control No: 4601 / 2018 **For:**
Tank No.: 237/E-6
Sample No 4601 / 2018
Delivery doc:
Packing, Tank

HYDRAX HLP 32

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 40 C	32.7	mm ² /s	ASTM D 445-17a
2	Pour point	-33	stop.C	ASTM D 97-17b
3	Flash Point COC	238	stop.C	ASTM D 92-16b
4	Density, at 15,0 deg C	0.8674	g/cm ³	ASTM D 4052-16
5	Water	none	% (m/m)	ASTM D 95-13e1
6	Total Acid Number	0.52	mg KOH/g	ASTM D 664-11a(e1)
7	Demulsibility at 54 deg C			ASTM D 1401-12e1
	-volume of oil	40	ml	
	-volume water	40	ml	
	-volume of emulsion	0	ml	
	-time of separability	10	min	
8	Corrosion action Cu at 120 deg C 3 h	1	stop.kor.	ASTM D 130-12
9	Corrosion for Synthetic Sea Water	rust free		ASTM D 665-14e1
10	Foaming			ASTM D 892-13
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	10	ml	
	-tendency at 24 deg C ex 93 deg C	0	ml	
11	Stability			ASTM D 892-13e1
	-at 24 deg C	0	ml	
	-at 93 deg C	0	ml	
	-at 24 deg C ex 93 deg C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Test were run in LOTOS Lab Sp. z o.o. Draw certificate date: 09-08-2018

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 91/04 wyd.7

Confirm certificate - name: Jackowski Wojciech

Publish certificate - name: **Wiatr Kamil DG 03**

CERTIFICATE of QUALITY Copy

Control No: 28 / 2023 For:
 Tank No.: 15S030
 Sample No 28 / 2023
 Delivery doc:
 Packing, Tank

HYDRAX HLP 46

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 40° C	46.28	mm ² /s	ASTM D 445-21e1
2	Pour point	-27	° C	ASTM D 97-17b
3	Flash Point COC	236	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8736	g/cm ³	ASTM D 4052-22
5	Water	<0,03	% (m/m)	ASTM D 95-13(2018)
6	Total Acid Number	0.57	mg KOH/g	ASTM D 664-18e2
7	Demulsibility at 54° C			ASTM D 1401-21
	-volume of oil	40	ml	
	-volume water	40	ml	
	-volume of emulsion	0	ml	
	-time of separability	20	min	
8	Corrosion action Cu at 120° C, 3 h	1	stop kor.	ASTM D 130-19
9	Foaming			ASTM D 892-18
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	10	ml	
	-tendency at 24° C ex 93,5° C	0	ml	
10	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 03-01-2023

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 91/04 wyd.7

Confirm certificate - name: Schneider Piotr

Publish certificate - name: **Wiatr Kamil DG 03**

CERTIFICATE of QUALITY Copy

Control No: 4852 / 2022 For:
 Tank No.: 15V024
 Sample No 4852 / 2022
 Delivery doc:
 Packing, Tank

HYDROMIL L-HM BA 22

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 100° C	4.461	mm ² /s	ASTM D 445-21e1
2	Kinematic viscosity at 40° C	22.8	mm ² /s	ASTM D 445-21e1
3	Pour point	-45	° C	ASTM D 97-17b
4	Flash Point COC	204	° C	ASTM D 92-18
5	Density, at 15,0° C	0.8588	g/cm ³	ASTM D 4052-22
6	Viscosity Index	107		ASTM D 2270-10(2016)
7	Water content	0.00	% (m/m)	ASTM D 6304-20
8	Demulsibility at 54° C			ASTM D 1401-21
	-volume of oil	40	ml	
	-volume water	40	ml	
	-volume of emulsion	0	ml	
	-time of separability	7	min	
9	Copper corrosion, 100°C, 3h	1	stop. kor.	ASTM D 130-19
10	Corrosion for Synthetic Sea Water	rust free		ASTM D 665-14e1
11	Air Release Properties at 50° C	1	min	ASTM D 3427-15
12	Foaming			ASTM D 892-18
	-tendency at 24 deg C	10	ml	
	-tendency at 93 deg C	20	ml	
	-tendency at 24°C ex 93,5°C	20	ml	
13	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract. WT 19/19 wyd.3

Confirm certificate - name: Łukowicz Piotr

Publish certificate - name: **Sikora Paweł DC 03**

CERTIFICATE of QUALITY Copy

Control No: 3112 / 2022 **For:**
Tank No.: 105/A10
Sample No 3112 / 2022
Delivery doc:
Packing, Tank

LOTOS ATF IID

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 100° C	7	mm2/s	ASTM D 445-21
2	Pour point	-45	° C	ASTM D 97-17b
3	Flash Point COC	224	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8657	g/cm3	ASTM D 4052-18a
5	Viscosity Brookfield -40° C	15400	mPa*s	ASTM D 2983-17
6	Viscosity Index	174		ASTM D 2270-10(2016)
7	Colour	6.0		ASTM D 1500-12(2017)
8	Copper corrosion, 100°C, 3h	1	stop kor.	ASTM D 130-19
9	Foaming			ASTM D 892-13e1
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	30	ml	
	-tendency at 24°C ex 93,5°C	0	ml	
10	Stability			ASTM D 892-13e1
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

ECOL Sp. z o.o. Draw certificate date: 27-07-2022

ECOL Sp. z o.o.

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 30/05 wyd.3

Confirm certificate - name: ECOL - Kubacki Jakub

Publish certificate - name: **Sikora Paweł DC 03**

****CERTIFICATE of QUALITY**** Copy

Control No: 171 / 2022 For:
Tank No.: surowce
Sample No 171 / 2022
Delivery doc:
Packing, Tank

LOTOS ATF SUPER IIIIG

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 100° C	7.879	mm ² /s	ASTM D 445-21
2	Pour point	-51	° C	ASTM D 97-17b
3	Flash Point COC	188	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8539	g/cm ³	ASTM D 4052-18a
5	Color	red		visual

Certificate of Quality may be duplicated only as a whole.

ECOL Sp. z o.o. Draw certificate date: 16-01-2022

ECOL Sp. z o.o.

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 22/06 wyd.2

Confirm certificate - name: ECOL - Kubacki Jakub

Publish certificate - name: **Sikora Paweł DC 03**

****CERTIFICATE of QUALITY**** Copy

Control No: 5378 / 2022 For:
Tank No.: 226/107
Sample No 5378 / 2022
Delivery doc:
Packing, Tank

SUPEROL CC SAE 30

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 100° C	10.703	mm ² /s	ASTM D 445-21e1
2	Flash Point COC	267	° C	ASTM D 92-18
3	Pour point	-24	° C	ASTM D 97-17b
4	Density, at 15,0° C	0.8833	g/cm ³	ASTM D 4052-22
5	Total Base Number (TBN)	8.2	mg KOH/g	ASTM D 2896-21

Certificate of Quality may be duplicated only as a whole.

Laboratory test ECOL Sp. z o.o. Draw certificate date: 12-12-2022

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract. WT 3/98 wyd.6

Confirm certificate - name: ECOL - Kubacki Jakub

Publish certificate - name: **Sikora Paweł DC 03**

****CERTIFICATE of QUALITY**** Copy

Control No: 5403 / 2022 For:
Tank No.: 15V028
Sample No 5403 / 2022
Delivery doc:
Packing, Tank

SUPEROL CC SAE 30

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 100° C	11.060	mm ² /s	ASTM D 445-21e1 (A)
2	Flash Point COC	268	° C	ASTM D 92-18
3	Pour point	-30	° C	ASTM D 97-17b
4	Density, at 15,0° C	0.8793	g/cm ³	ASTM D 4052-22 (A)
5	Total Base Number (TBN)	9.0	mg KOH/g	ASTM D 2896-21

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 13-12-2022

Symbol (A) in the standard column - The tests were performed by LOTOS Lab Ltd. accredited in this respect by the PCA, No. AB 474

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract. WT 3/98 wyd. 6

Confirm certificate - name: Schneider Piotr

Publish certificate - name: **Wiatr Kamil DG 03**

CERTIFICATE of QUALITY Copy

Control No: 10025 / 2023 For:
 Tank No.: TG2N4
 Sample No 5358 / 2022
 Delivery doc:
 Packing, Tank

TURDUS SHPD SAE 15W-40

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 100° C	14.8	mm ² /s	ASTM D 445-21e1 (A)
2	Pour point	-42	° C	ASTM D 97-17b
3	Flash Point COC	224	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8841	g/cm ³	ASTM D 4052-22 (A)
5	Viscosity CCS at -20° C	5980	mPa*s	ASTM D 5293-20
6	Kinematic viscosity at 40° C	111.70	mm ² /s	ASTM D 445-21e1 (A)
7	Viscosity Index	137		ASTM D 2270-10(2016)
8	Total Base Number (TBN)	12	mg KOH/g	ASTM D 2896-21
9	Sulfated Ash	1.4	% (m/m)	ASTM D 874-13a(2018)
10	Copper corrosion, 100°C, 3h	1	stop.kor.	ASTM D 130-19 (A)
11	Evaporation loss Noack	10.5	% (m/m)	DIN 51581
12	Foaming			ASTM D 892-18
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	20	ml	
	-tendency at 24°C ex 93,5°C	0	ml	
13	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 04-01-2023

Symbol (A) in the standard column - The tests were performed by LOTOS Lab Ltd. accredited in this respect by the PCA, No.AB 474

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract: WT 12/98 wyd.9

Confirm certificate - name: Pracownia Olejów

Publish certificate - name: Sikora Paweł DC 03

CERTIFICATE of QUALITY Copy

Control No: 5358 / 2022 For:
 Tank No.: 15S038
 Sample No 5358 / 2022
 Delivery doc:
 Packing, Tank

TURDUS SHPD SAE 15W-40

Lp	PROPERTY	RESULTS	UNITS	TEST METHOD
1	Kinematic viscosity at 100° C	14.8	mm2/s	ASTM D 445-21e1 (A)
2	Pour point	-42	° C	ASTM D 97-17b
3	Flash Point COC	224	° C	ASTM D 92-18
4	Density, at 15,0° C	0.8841	g/cm3	ASTM D 4052-22 (A)
5	Viscosity CCS at -20° C	5980	mPa*s	ASTM D 5293-20
6	Kinematic viscosity at 40° C	111.70	mm2/s	ASTM D 445-21e1 (A)
7	Viscosity Index	137		ASTM D 2270-10(2016)
8	Total Base Number (TBN)	12	mg KOH/g	ASTM D 2896-21
9	Sulfated Ash	1.4	% (m/m)	ASTM D 874-13a(2018)
10	Copper corrosion, 100°C, 3h	1	stop.kor.	ASTM D 130-19 (A)
11	Evaporation loss Noack	10.5	% (m/m)	DIN 51581
12	Foaming			ASTM D 892-18
	-tendency at 24 deg C	0	ml	
	-tendency at 93 deg C	20	ml	
	-tendency at 24°C ex 93,5°C	0	ml	
13	Stability			ASTM D 892-18
	-at 24° C	0	ml	
	-at 93,5° C	0	ml	
	-at 24° C ex 93,5° C	0	ml	

Certificate of Quality may be duplicated only as a whole.

Laboratory test LOTOS Lab Sp. z o.o. Draw certificate date: 10-12-2022

Symbol (A) in the standard column - The tests were performed by LOTOS Lab Ltd. accredited in this respect by the PCA, No.AB 474

Manufacturer: LOTOS OIL SP. Z O.O.

Product does meet requirements of the contract. WT 12/98 wyd.9

Confirm certificate - name: Besler Paweł

Publish certificate - name: **Wiatr Kamil DG 03**