

OILTECH® ULEI HIDRAULIC ADITIVAT HLP 46

1. GENERALITATI

1.1. Obiect

Uleiul hidraulic aditivat **OILTECH® HLP 46**, obtinut din uleiuri de baza rafinate de natura parafinica grupa 1 formulat cu aditivi performanti ce confera stabilitate la oxidare, deosebita capacitate de protectie antirugina, excelente proprietati de dezemulsionare si rezistenta la presiuni extreme.

1.2. Domeniu de utilizare

Se foloseste in instalatii hidraulice de transmitere a puterii echipate cu pompe presiuni ridicate (Vickers, cu pistonase axiale sau rotative), care functioneaza in conditii severe de temperatura si presiune, la angrenaje cu turatii ridicate, variatoare de turatie, cuplaje hidraulice etc.

Se recomanda ca durata de utilizare sa fie de circa 3000-4000 ore sau se schimba la modificarea viscozitatii cu +/- 20%, la producerea de spume sau la aparitia de coroziuni.

Periodicitatea verificarii uleiului se face la max. 500 de ore de functionare.

1.3 Nivel de performanta si clasificare

DIN 51524, Partea II HLP

Dupa SR 871:2001 – H-46 EP ; 46 reprezinta clasa de viscozitate

SR ISO 6743-4 nivel HM

2. CONDITII DE CALITATE : ST -LBX -139 (STAS 12023 / 82)

Nr. crt.	PROPIETATI FIZICE SI DE PERFORMANTA	OILTECH® HLP 46	METODA DE ANALIZA
1	Nivel de performanta si clasa de viscozitate ISO VG	HLP46	DIN 51524 partea II SR ISO 3448
2	Densitate relativa la 15 °C max.	0,895	EN ISO 3675
3	Viscozitate cinematica la 40°C, cSt	41,4-50,6	SR EN ISO 3104
4	Indice de viscozitate, min.	95	ISO 2909
5	Punct de inflamabilitate COC, °C min.	205	SR EN ISO 2592
6	Punct de curgere, °C max.	-12	SR ISO 3016
7	Actiune coroziva pe lama de cupru (3h, 100 C), max	1b	SR EN ISO 2160
8	Proprietati de spumare SS, max -la 24 °C, cmc/-la 93,5 °C, cmc/-la 24 °C, cmc	0/0/0	SR EN ISO 6247
9	Timp de dezemulsionare	30	STAS 56 II ISO 6614
10	Rezistenta la presiuni ridicate pe masina cu patru bile -sarcina la care se produce sudura -uzura mecanica : diametru petei de uzura la 20 daN, 100 min, 1500 rot/min, mm, max	1800 0,4	STAS 8618

3. AMBALARE

Produsul este ambalat in bidoane de 1 litru, canistre de plastic de 5, 10 si 20 litri, butoaie metalice de 200 litri.

4. TERMEN DE GARANTIE- 5 ani de la data fabricatiei, cu conditia respectarii cerintelor de depozitare si transport.

PRODUS CU LICENTA SI CERTIFICAT nr. 4874 emis de R.A.R.– O.C.P.

AdBlue GreenChem Olanda

FLUIDE PENTRU AUTOVEHICULE

Descriere si aplicatii

AdBlue este o solutie apoasa de foarte buna calitate, special dezvoltata pentru industria auto, mai exact pentru autovehicule cu convertizor catalitic SCR. Prin injectia de AdBlue in convertizor catalitic SCR, oxizii de azot nocivi (Nox) sunt imediat transformati in azot inofensiv si apa. Numai prin utilizarea de AdBlue aceasta conversie catalitica are efect optim. AdBlue este recomandat de fabricantii de vehicule Diesel suprasolicitate de ultima generatie.

Specificatii

ISO	22241-1
DIN	70070

Caracteristici tipice

Parametri	Unitate de masura	Limite	Metoda de testare
Continut de uree	Weight %	31.8 – 33.2	ISO 22241-2 Annex B/C
Valoarea pH-ului (10% HS-solutie)		max 10	
Alcalinitatea ca NH3	%	max 0.2	ISO 22241-2 Annex D
Carbonati ca CO2	%	max 0.2	
Biuret	%	max 0.3	ISO 22241-2 Annex E
Formaldehide	mg/kg	max 5	ISO 22241-2 Annex F
Substante insolubile	mg/kg	max 20	ISO 22241-2 Annex G
Posfat (PO4)	mg/kg	max 0.5	ISO 22241-2 Annex H
Calciu	mg/kg	max 0.5	ISO 22241-2 Annex I
Fier	mg/kg	max 0.5	ISO 22241-2 Annex I
Cupru	mg/kg	max 0.2	ISO 22241-2 Annex I
Zinc	mg/kg	max 0.2	ISO 22241-2 Annex I
Crom	mg/kg	max 0.2	ISO 22241-2 Annex I
Nichel	mg/kg	max 0.2	ISO 22241-2 Annex I
Aluminiu	mg/kg	max 0.5	ISO 22241-2 Annex I
Magneziu	mg/kg	max 0.5	ISO 22241-2 Annex I
Sodiu	mg/kg	max 0.5	ISO 22241-2 Annex I
Potasiu	mg/kg	max 0.5	ISO 22241-2 Annex I
Densitate la 20 gr.C	g/cm3	1.0870 – 1.0930	ISO 3675/ISO 12185
Temperatura de cristalizare	gr.C	-11	
Indicele de refractivitate la 20 gr.C		1.3817 – 1.3840	ISO 22241 – 2 Annex C

Sanatate, Securitate, Transport si Depozitare

Pe baza informațiilor actuale disponibile, acest ulei nu este de așteptat să producă efecte adverse asupra sănătății atunci când este utilizat în scopul pentru care a fost recomandat. Fișa cu date de securitate este disponibilă la cerere.

CERTIFICATE OF ANALYSIS № 22

Motor oil TEMOL Luxe 10W-40

TU U 23.2-30858281-007:2008 zm. 1,2,3,4



Batch № 22

API SL/CF

Manufacturing date 14.01.21 Batch net weight 4,5 t

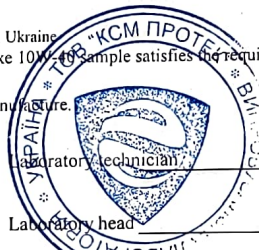
Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100°C, cSt, in range	12,5 - 16,3	15,89	DSTU GOST 33 or ASTM D445
2	Viscosity Index, not lower than	130	158	DSTU GOST 25371 or ASTM D2270
3	Total base number, mg KOH per 1 g, not lower than	7,0	7,63	DSTU 5094 or ISO 3771 or ASTM D2896
4	Sulfated ash, %, not lower than	1,5	1,00	DSTU GOST 12417 or ASTM D874
5	Flash point (COC), °C, not lower than	200	224	DSTU GOST 4333 or ASTM D92
6	Pour point, °C, not more than	-32	-35	GOST 20287 method B or ASTM D97
7	Density at 20 °C, kg/m3, not more than	905	853	GOST 3900 or ASTM D1298
8	Mechanical impurities content, %, not more than	0,015	nil	GOST 6370 or ASTM D2273
9	Water content, %, not more than	0,03	nil	GOST 2477 or ASTM D95
10	Phosphorus weight, %, not more than	0,12	0,10	GOST 2987 or ASTM D4927
11	Colour on colorimeter (15.85), not more than	4,5	1,0	GOST 20284 or ASTM D1500
12	Cold Cranking Simulator at viscosity at -25°C, mP*s, not more than	7000	6680	GOST 1929 or p.6.11 or ASTM D5293
13	Corrosion on plumbum plates (DK-NAMI), g/m2, not more than	Pass	Pass	GOST 20502 method A, V.II
14	Stabilization by inductive period of sedimentation (IPS), 50 hours	Pass	Pass	GOST 11063

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Motor oil TEMOL Luxe 10W-40 sample satisfies the requirement of TU U 23.2-30858281-007:2008 zm. 1,2,3,4 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture



Laboratory technician

Laboratory head

Date of issue: 15.01.21

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CERTIFICATE OF ANALYSIS № 316

Transmission oil TEMOL ATF II

TU U 23.2-30858281-003:2004 zm.1,2,3



Batch № 316

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Manufacturing date: 26.03.21 Batch net weight: 2,6 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Appearance	Transparent red liquid	Transparent red liquid	Visually
2	Kinematic viscosity at 100°C, cSt, in range	7 - 9	7,15	DSTU GOST 33 or ASTM D445
3	Viscosity Index, not lower than	130	178	DSTU GOST 25371 or ASTM D2270
4	Flash point (COC), °C, not lower than	175	220	DSTU GOST 4333 or ASTM D92
5	Pour point, °C, not more than	-40	-43	GOST 20287, method B or ASTM D97
6	Mechanical impurities content, %, not more than	nill	nill	GOST 6370 or ASTM D2273
7	Water content, %, not more than	nill	nill	GOST 2477 or ASTM D95
8	Density at 20 °C, kg/m3, not more than	880	836	GOST 3900 or ASTM D1298
9	Corrosion test during 3 hr at 100°C on steel and copper plates, point, not more than	2c	2a	GOST 2917 and p. 5.3 or ASTM D130
10	Dynamic viscosity (-40 oC), Pa*s, not more than	50	5,8	GOST 1929 method A
11	Sequence I, not more than	150/0	0/0	ASTM D 892 or DSTU 8420
12	Sequence II, not more than	75/0	0/0	ASTM D 892 or DSTU 8420
13	Sequence III, not more than	150/0	0/0	ASTM D 892 or DSTU 8420

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Transmission oil TEMOL ATF II sample satisfies the requirements of TU U 23.2-30858281-003:2004 zm.1,2,3 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture.

Laboratory Technician

Laboratory Head

Date of issue: 29.03.21



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CERTIFICATE OF ANALYSIS № 463

Motor oil TEMOL Luxe 5W-30

TU U 23.2-30858281-007.2008 zm. 1,2,3,4



Batch № 463

Manufacturing date: 29.04.21 Batch net weight: 3,75 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100°C, cSt, in range	9,3-12,5	11,33	DSTU GOST 33 or ASTM D 445
2	Viscosity Index, not lower than	130	155	DSTU GOST 25371 or ASTM D 2270
3	Total base number, mg KOH per 1 g, not lower than	7,5	8,32	DSTU 5094 or ASTM D2896 or ISO 3771
4	Sulfated ash, %, not lower than	1,5	1,0	DSTU GOST 12417 or ASTM D 874
5	Flash point (COC), °C, not lower than	195	229	DSTU GOST 4333 or ASTM D
6	Pour point, °C, not more than	-32	-34	GOST 20287 method B or ASTM D 97
7	Density at 20 °C, kg/m ³ , not more than	890	844	GOST 3900 or ASTM D 1298
8	Mechanical impurities content, %, not more than	nil	nil	GOST 6370 or ASTM D 2273
9	Water content, %, not more than	nil	nil	GOST 2477 or ASTM D 95
10	Phosphorus weight, %, not more than	0,12	0,092	GOST 9827 or ASTM D 4927
11	Colour on colorimeter (15.85), not more than	4,0	1,0	GOST 20284 or ASTM D 1500
12	Cold Cranking Simulatorat viscosity at -30°C, mP*s, not more than	6600	6400	p. 6.11 or GOST 1929 or ASTM D 5293
13	Corrosion on plumbum plates (DK-NAMI), g/m ² , not more than	Pass	Pass	GOST 20502 method A, V. II
14	Stabilization by inductive period of sedimentation (IPS), 50 hours	Pass	Pass	GOST 11063

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Motor oil TEMOL Luxe 5W-30 sample satisfies the requirements of TU U 23.2-30858281-007.2008 zm. 1,2,3,4 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture.

Laboratory technician

Laboratory head

Date of issue: 30.04.21



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CERTIFICATE OF ANALYSIS № 502

Oil PROTEC IG-20

TU U 19.2-37838186-005:2012 zm.1,2



Batch № 502

Manufacturing date: 03.08.22

Batch net weight: 18 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 40°C, cSt, in range	25-35	31,53	DSTU GOST 33 or ASTM D445
2	Total acid number, mg KOH per 1 g, not more than	0,05	0,022	GOST 11362 and P.7.6
3	Flash point, °C, not lower than	180	222	DSTU GOST 4333 or ASTM D92
4	Pour point, °C, not more than	-10	-15	GOST 20287 method B or ASTM D97
5	Mechanical impurities content, %, not more than	0,015	nil	GOST 6370 or ASTM D2273
6	Water content, %, not more than	0,03	nil	GOST 2477 or ASTM D95
7	Density at 20 °C, kg/m ³ , not more than	910	869	GOST 3900 or ASTM D1298
8	Oxidation stability: acid number, mg KOH/r, not more than	0,3	0,23	DSTU GOST 18136 (GOST 18136)
9	Oxidation stability: increase in resins, %, not more than	3	1,75	DSTU GOST 18136 (GOST 18136)
10	Sulfur weight, %, not more than	1,3	0,36	GOST 1437 or ASTM D4927
11	Colour on colorimeter, not more than	4,0	1,0	GOST 20284 or ASTM D1500

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Oil PROTEC IG-20 sample satisfies the requirement of TU U 19.2-37838186-005:2012 zm.1,2 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture.



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CERTIFICATE OF ANALYSIS № 212

Transmission oil TEP-15

GOST 23652-79 zm. 1-8



Batch № 212

SAE 90

GL-2

Manufacturing date 22.02.22

Batch net weight: 1,65 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100°C, cSt, in range	14-16	14,98	DSTU GOST 33
2	Flash point, °C, not lower than	185	240	DSTU GOST 4333
3	Pour point, °C, not more than	-18	-24	GOST 20287 method B
4	Ash content, %, not lower than	0,3	0,35	GOST 1461
5	Mechanical impurities content, %, not more than	0,03	0,01	GOST 6370 and p.5.6
6	Water content, %, not more than	0,03	nil	GOST 2477
7	Density at 20 °C, g/sm3, not more than	0,95	0,876	GOST 3900
8	Thermo-oxidative stability DK-NAMI(T=140°C,20 hr):sediment in petroleum ether,%,not more than	0,7	0,28	GOST 11063 and p.5.4.2
9	Thermo-oxidative stability DK-NAMI(T=140°C,20 hr),%viscosity increase T=100°C,not more than	0,25	0,14	GOST 11063 and p.5.4.2
10	Presence of water-soluble acids and alkalis	nil	nil	GOST 6307
11	Cold Cranking Simulatorat viscosity at -15°C, mP*s, not more than	200(2000)	190(1900)	GOST 1929
12	Corrosion test during 3 hr at 100°C on steel and copper plates	pass	pass	GOST 2917 and p.5.2
13	Phosphorus weight, %, not lower than	0,06	0,068	GOST 9827
14	Rubber compatibility (volume change) for UIM-1, %, in range	4-10	7	GOST 9.030 method A
15	Four ball Wear test machine (20±5°C), 392N, scar mm, not more than	0,55	0,48	GOST 9490
16	Sulfur content, %, not more than	3,0	1,00	GOST 1431 or GOST 1437

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Transmission oil TEP-15 sample satisfies the requirement of GOST 23652-79 zm. 1-8 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture



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CERTIFICATE OF ANALYSIS № 60

Antifreeze TEMOL Tosol A-40

TU U 20.5-30858281-009:2016 zm.1



Batch № 60

Manufacturing date: 12.12.22 Batch net weight: 7,5 т

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Appearance	Uniform transparent liquid without mechanical impurities. Color must refer to sample's color	Uniform transparent liquid without mechanical impurities with blue color	p.8.4
2	Density at 20 °C, kg/m ³ , not lower than	1,065	1,072	DSTU 7261
3	Temperature of crystallization start, °C, not more than	-38	-38	p.8.5
4	Fractional content: temperature of distillation start, °C, not lower than	100	105	p.8.6
5	Fractional content: mass fraction of liquid, that distills before 150 °C, %, not more than	55	46	p.8.6
6	Corrosive affect on metals, g/m ² *day, not more: copper, brass, steel, cast iron, aluminum	0,30	0,092	p.8.7
7	Corrosive affect on metals, g/m ² *day, not more: solder	0,50	0,106	p.8.7
8	Foam formation: foam's volume, cm ³ , not more than	50	40	p.8.8 or ASTM D1881
9	Foam formation: foam's stability, sec, not more than	5	2	p.8.8 or ASTM D1881
10	Rubber's volume increase, %, not more than	5	1,5	p.8.9
11	pH value at 20°C, in range	7,5 - 11	8,86	p.8.10 or ASTM D1287
12	Alkalinity, cm ³ , not lower	2,0	18,00	p.8.11 or ASTM D1121

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Antifreeze TEMOL Tosol A-40 sample satisfies the requirement of TU U 20.5-30858281-009:2016 zm.1 standard based on characteristics analyzed.

Laboratory sign etc

Laboratory head

Date of Issue: 15.12.22



CERTIFICATE OF ANALYSIS № 532

Motor oil TEMOL Turbo Diesel (M-10DM)

TU U 23.2-30858281-007:2008 zm.1,2,3,4

Batch №532

SAE 30

API CD

Manufacturing date: 21.05.22

Batch net weight: 18,5 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100°C, cSt, in range	9,3-12,5	12,18	DSTU GOST 33 or ASTM D445
2	Viscosity Index, not lower than	90	94	DSTU GOST 25371 or ASTM D2270
3	Total base number, mg KOH per 1 g, not lower than	8,2	9,84	DSTU 5094 or ASTM D2896 or ISO 3771
4	Sulfated ash, %, not lower than	1,50	1,26	DSTU GOST 12417 or ASTM D874
5	Flash point (COC), °C, not lower than	220	242	DSTU GOST 4333 or ASTM D92
6	Pour point, °C, not more than	-18	-21	GOST 20287 method B or ASTM D97
7	Density at 20 °C, kg/m3, not more than	905	892	GOST 3900 or ASTM D1298
8	Mechanical impurities content, %, not more than	0,025	0,018	GOST 6370 or ASTM D2273
9	Water content, %, not more than	0,03	0,03	GOST 2477 or ASTM D95
10	Active elements content, Ca+Mg (counted by Ca) %, not lower than	0,12	0,32	GOST 13538 or ASTM D4927
11	Colour on colorimeter (15:85), not more than	3,5	2,0	GOST 20284 or ASTM D1500
12	Corrosion on plumbum plates (DK-NAMI), g/m2, not more than	Pass	Pass	GOST 20502 method A, var. II
13	Stabilization by inductive period of sedimentation (IPS), 60 hours	Pass	Pass	GOST 11063

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Motor oil TEMOL Turbo Diesel (M-10DM) sample satisfies the requirement of TU U 23.2-30858281-007:2008 zm.1,2,3,4

standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture



CERTIFICATE OF ANALYSIS № 534

Motor oil M-10G2K

GOST 8581-78 zm.1-10



Batch № 534

Manufacturing date: 13.07.23 Batch net weight: 15 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100°C, cSt, in range	10,5-11,5	11,18	DSTU GOST 33
2	Viscosity Index, not lower than	85	135	DSTU GOST 25371
3	Total base number, mg KOH per 1 g, not lower than	6	6,65	GOST 11362
4	Sulfated ash, %, not lower than	1,15	0,9	GOST 12417
5	Flash point (COC), °C, not lower than	210	240	DSTU GOST 4333
6	Pour point, °C, not more than	-15	-23	GOST 20287 method B
7	Density at 20 °C, kg/m3, not more than	905	875	GOST 3900
8	Mechanical impurities content, %, not more than	0,015	0,011	GOST 6370
9	Water content, %, not more than	0,03	nil	GOST 2477
10	Calcium weight, %, not lower than	0,19	0,255	GOST 13538
11	Zinc weight, %, not lower than	0,05	0,065	GOST 13538
12	Phosphorus weight, %, not lower than	0,05	0,054	GOST 9827
13	Purity mg per 100 g of oil, not more than	500	380	GOST 12275
14	The power to establish PZV, point, not more than	0,5	0,5	GOST 5726
11	Colour on colorimeter (15:85), not more than	4,0	1,5	GOST 20284
12	Corrosion on plumbum plates (DK-NAMI), g/m2, not more than	nil	nil	GOST 20502
13	Stabilization by inductive period of sedimentation (IPS), 50 hours	Pass	Pass	GOST 11063

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Motor oil M-10G2K sample satisfies the requirements of GOST 8581-78 zm.1-10 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture



Laboratory technician
Date of issue: 17.07.23

MOGUL OIL® Hobby 4T 10W30

API SL/CF

ULEI SEMI-SINTETIC PENTRU MOTOARELE IN 4 TIMPI ALE UTILAJELOR DE GRADINARIT

Descriere:

MOGUL OIL® Hobby 4T 10W30 este formulat din uleiuri de baza semi-sintetice combinate cu aditivi performanti care le ofera proprietati excelente de curgere la temperaturi coborate, pornire usoara la rece, nivel ridicat de protectie impotriva uzurii.

Utilizare:

MOGUL OIL® Hobby 4T 10W30 poate fi utilizat in orice perioada anului pentru lubrifierea motoarelor in patru timpi ale masinilor pentru tuns iarba, sapelor rotative, miniseminatorilor, masinilor de indepartat zapada, generatoarelor de curent, motocultoarelor.

Clasificare, specificații:

API SL/CF, SAE 10W-30 ACEA A3/B4 – 08.

Proprietăți caracteristice:

- protectie impotriva uzurii;
- excelente proprietati de curgere, la temperaturi coborate;
- folosire pe tot parcursul anului;
- asigura un consum redus de ulei si emisii reduse.

Caracteristici:

Parametri	Unitatea de masura	Valori tipice	Metoda de analiza
Densitate la 15 °C	g/m ³	0.900	EN ISO 3675
Viscozitate cinematica la 40°C	mm ² /s	100	SR EN ISO 3104
Viscozitate cinematica la 100°C	mm ² /s	9.5-11	SR EN ISO 3104
Indice de viscozitate		125	ISO 2909
Punct de inflamabilitate COC	°C	214	SR EN ISO 2592
Punct de curgere	°C	-26	ISO3016

Ambalare: 20L si 200L.

Termen de garantie: 5 ani in depozitare.

MOGUL OIL® Hydra HLP 22, 32, 46, 68

DIN 51524 partea 2 (HLP)

ULEIURI PENTRU UNGEREA SISTEMELOR HIDRAULICE SI HIDROSTATICE SOLICITATE

Descriere:

MOGUL OIL® Hydra HLP 22, 32, 46, 68 sunt uleiuri hidraulice de înaltă performanță fabricate din uleiuri de baza Grupa II si III si un pachet de aditivi pentru extrema presiune. Datorită stabilității termice ridicate a uleiurilor de bază, procesul de îmbătrânire este redus semnificativ chiar și la temperaturi ridicate.

Utilizare:

MOGUL OIL® Hydra HLP 22, 32, 46, 68 se folosesc pentru aplicații staționare și mobile în sistemele hidraulice din construcții, utilaje forestiere și agricole, cum ar fi macarale, excavatoare, tractoare, platforme de ridicare și prese. De asemenea, se folosesc în sistemele hidraulice și hidrostatice cu solicitări extreme asupra rezistenței fluidului de lucru (interval de schimbare a uleiului), echipate cu filtre cu capacitate nominală mare de filtrare – chiar și sub 5 microni (de exemplu mașini CNC).

Aplicațiile tipice ale claselor de vâcositate ale acestei grupe sunt:

- **MOGUL OIL® Hydra HLP 22** – pentru sisteme de pompe și instalații care funcționează la intervale de temperatură scăzută;
- **MOGUL OIL® Hydra HLP 32** - pentru sistemele care funcționează la intervale de temperatură scăzută (în special iarna);
- **MOGUL OIL® Hydra HLP 46** - pentru sistemele care funcționează în condițiile climatice obișnuite;
- **MOGUL OIL® Hydra HLP 68** - pentru sistemele care funcționează la temperaturi ridicate și foarte înalte (exploatare pe tot parcursul anului și îndeosebi vara în condiții neprielnice).

Clasificare, specificații:

DIN 51524 partea 2 (HLP); ISO 11158 HM; ASTM D 6158 HM

Proprietăți caracteristice:

- rezistența excelentă la oxidare, ceea ce permite o viață mai lungă a uleiului (intervale de schimb extinse);
- protecție la coroziune bună, chiar și în prezența apei;
- excelentă protecție la uzură, eficientă atât în condiții de încărcare redusă cât și în condiții de încărcare ridicate.

Caracteristici:

Parametri HLP 22	Unitatea de masura	Valori tipice	Metoda de analiza
Densitate la 15 °C	g/m ³	0.850	EN ISO 3675
Viscozitate cinematica la 40°C	cSt	22	SR EN ISO 3104
Viscozitate cinematica la 100°C	cSt	4.4	SR EN ISO 3104
Indice de viscozitate		109	ISO 2909
Punct de inflamabilitate COC	°C	210	SR EN ISO 2592
Punct de curgere	°C	-36	ISO3016

MOGUL OIL®
Hydra HLP 22, 32, 46, 68

INFORMATII TEHNICE

Parametri HLP 32	Unitatea de masura	Valori tipice	Metoda de analiza
Densitate la 15 °C	g/m3	0.895	EN ISO 3675
Viscozitate cinematica la 40°C	cSt	32	SR EN ISO 3104
Indice de viscozitate		95	ISO 2909
Punct de inflamabilitate COC	°C	200	SR EN ISO 2592
Punct de curgere	°C	-18	ISO3016

Parametri HLP 46	Unitatea de masura	Valori tipice	Metoda de analiza
Densitate la 15 °C	g/m3	0.895	EN ISO 3675
Viscozitate cinematica la 40°C	cSt	46	SR EN ISO 3104
Indice de viscozitate		99	ISO 2909
Punct de inflamabilitate COC	°C	205	SR EN ISO 2592
Punct de curgere	°C	-15	ISO3016

Parametri HLP 68	Unitatea de masura	Valori tipice	Metoda de analiza
Densitate la 15 °C	g/m3	0.925	EN ISO 3675
Viscozitate cinematica la 40°C	cSt	68	SR EN ISO 3104
Indice de viscozitate		90	ISO 2909
Punct de inflamabilitate COC	°C	205	SR EN ISO 2592
Punct de curgere	°C	-12	ISO3016

Ambalare: 20L, 200L si 1000L.

Termen de garantie: 5 ani in depozitare.

Rando HDZ

Proven performance multi-viscosity hydraulic fluids

Product description

Rando® HDZ are proven performance multi-viscosity hydraulic fluids formulated with premium Group II base oil technology. As hydraulic pressures increase to over 1000 psi, the need for anti-wear protection increases. Rando HDZ is designed for robust wear protection where surge pressures can increase metal-to-metal contact in vane, piston, and gear-type pumps.

Rando HDZ offers reliable corrosion protection, durable oxidation resistance, foam and aeration suppression as well as dependable shear stable viscosity index improver performance, helping maintain optimum system protection.

In field performance demonstrations, Rando HDZ oils provided up to 3.4% improvement in overall hydraulic pump efficiency when compared to a typical conventional hydraulic oil (a lower VI product with VI<105).

Customer benefits

- Formulated with premium Group II base oils and shear stable viscosity modifier helps minimise viscosity change in temperature window.
- Anti-wear additives offer protection when load causes oil film breakdown helps reduce abrasive wear.
- Effective rust and corrosion inhibitors offer robust protection against steel and copper corrosion.
- Hydrolytic stability and oil oxidation inhibitors reduce oil thickening and deposit formation, improving filterability.

Product highlights

- **Helps minimise viscosity change in temperature window**
- **Formulated to reduce abrasive wear**
- **Offers steel and copper corrosion protection**
- **Promotes deposit resistance, improving filterability**

Selected specification standards include:

ANSI/AGMA	Arburg
ASTM	Bosch Rexroth
DIN	Eaton
Fives Cincinnati	Frank Mohn
ISO	JCMAS
MAN Truck & Bus	Parker Hannifin
SAE	US Steel
Volvo	ZF

Applications

- Industrial hydraulic equipment subject to wide variation in temperatures
- Hydraulics in mobile, construction and agricultural equipment where water separating oil is required
- Hydraulic systems with vane, gear or piston pumps
- Fork-lift trucks in refrigerated areas
- Plastic injection moulding machines
- Marine deck equipment, steering gears, thrusters and automatic controls
- Machine tools
- Enclosed gear systems (dependent on load)

ISO Grade	15	22	32	46	68	100
High performance industrial applications where pressures may exceed 5000 psi			X	X	X	
Lightly loaded reciprocating compressors			X	X	X	
Hydraulic equipment reduction gears where EP is not required						X
Plain and antifriction bearings						X
Circulating oil systems						X
Applications where AGMA rust and oxidation inhibited oils are required						X

Approvals, performance and suitable for use

ISO Grade	15	22	32	46	68	100
Arburg Injection Moulding				A		
Bosch Rexroth RDE 90245			A	A	A	
Bosch Rexroth RA & RE 90220a, 90221a			M	M	M	
Eaton (Vickers) 35VQ25A (Pump Test) I-286-S (Stationary) M-2950-S (Mobile)			M	M	M	
Fives Cincinnati (formerly MAG Cincinnati, Cincinnati Machine, Cincinnati Milacron)			M p-68	M P-70	M p-69	
Frank Mohn, (Framo) hydraulic cargo pumping				A		
MAN Truck & Bus OEM Engine Specifications	A					
Parker Hannifin (Denison) HF-0, HF-1, HF-2			A	A	A	
ZF TE-ML 04R			A	A		
Volvo 98608			M	M	M	
Volvo 98611			A	A	A	
ANSI/AGMA 9005-E02, 9005-F16 R&O			M	M	M	M
ASTM D6158 HM, HV	M	M	M	M	M	M
DIN 51524-2 HLP, 51524-3 HVLP	M	M	M	M	M	M
ISO 11158 L-HM, L-HV	M	M	M	M	M	M
JCMAS HK VG 32, 46			M	M		
SAE MS1004-HM, HV		M	M	M	M	M
US Steel (AIST) 126,127			M	M	M	

a: Obsolete specification

A: Approved

M: Performance

Product maintenance and handling

Avoid any spillage of used and unused product to the environment. Product residue and package/container should be disposed of in dedicated collection points.

Refer to the service manual of the equipment to ensure that the minimum fluid viscosity requirements are met at the highest operating temperature. Please consult with your equipment manufacturer if equipment is operating outside normal operating conditions.

Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Typical test data				
Test	Test methods	Results		
Viscosity Grade		15	22	32
Shelf Life: 60 months from date of filling indicated on the product label.				
Kinematic viscosity at 40°C, mm²/s	ASTM D445	15	22	32
Kinematic viscosity at 100°C, mm²/s	ASTM D445	3.89	5.0	6.45
Viscosity Index	ASTM D2270	159	170	151
Flash Point COC, °C	ASTM D92	160	166	216
Pour Point, °C	ASTM D97	-57	-39	-42
Density at 15°C, kg/l	ASTM D4052	0.855	0.859	0.867
Copper corrosion (3 h, 100 °C)	ASTM D130	1A	1A	1A
Foam Seq. II (after blowing), ml	ASTM D892	10	10	10
Foam Seq. II (after 10' standing), ml	ASTM D892	0	0	0

Typical test data				
Test	Test methods	Results		
Viscosity Grade		46	68	100
Shelf Life: 60 months from date of filling indicated on the product label.				
Kinematic viscosity at 40°C, mm²/s	ASTM D445	46	68	100
Kinematic viscosity at 100°C, mm²/s	ASTM D445	8.16	11.0	14.0
Viscosity Index	ASTM D2270	154	152	150
Flash Point COC, °C	ASTM D92	228	230	246
Pour Point, °C	ASTM D97	-42	-42	-42
Density at 15°C, kg/l	ASTM D4052	0.874	0.880	0.884
Copper corrosion (3 h, 100 °C)	ASTM D130	1A	1A	1A
Foam Seq. II (after blowing), ml	ASTM D892	10	10	10
Foam Seq. II (after 10' standing), ml	ASTM D892	0	0	0

The typical test data set out above does not constitute a specification. It is indicative only and can be affected by allowable production tolerances. Chevron may modify this test data. Modified data will supersede all previous data, so please ensure you refer to the latest version of this Product Data Sheet (PDS).

Disclaimer: Data provided in this Product Data Sheet (PDS) is based on standard tests under laboratory conditions and is indicative only. This product should not be used for any purpose other than those expressly set out in this PDS. The user has sole responsibility for verifying that this product is suitable for the user's intended application. Neither Chevron nor its subsidiaries (i) make any warranty or representation as to the accuracy or completeness of this PDS; and/or (ii) accept liability for any loss or damage suffered as a result of the use of this product other than in accordance with the terms of this PDS.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

When disposing of used product, take care to protect the environment and follow local legislation.

Safety Data Sheets (SDS's) are available for all Chevron products. If you require a SDS or any further information regarding a Chevron product, please contact your local sales office or see www.texacolubricants.com.

A Chevron company product

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EU v1 17 June 2022
Rando® HDZ

ПАСПОРТ ЯКОСТІ № 189

Олива гідравлічна ПРОТЕК ВМГЗ

ТУ У 19.2-37838186-005:2012 зм.1,2



Партія № 189

Дата виготовлення 03.03.23 Маса нетто 2,4 т

Фізико-хімічні показники

№	Найменування показників	Норма за НТД	Фактично	Метод випробування
1	В'язкість кінематична, мм ² /с. при 50оС, не менше	10	13,68	ДСТУ ГОСТ 33 або ASTM D445
2	В'язкість кінематична, мм ² /с. при мінус 20оС, не більше	1 600	1 230	ДСТУ ГОСТ 33 або ASTM D445
3	Індекс в'язкості, не менше	120	122	ДСТУ ГОСТ 25371
4	Температура спалаху у відкритому тиглі, оС, не нижче	135	211	ДСТУ ГОСТ 4333 або ASTM D92
5	Температура застигання, оС, не вище	Мінус 45	Мінус 48	ГОСТ 20287 метод Б або ASTM D97
6	Густина за температури 20 оС, кг/м ³ , не більше	890	843	ГОСТ 3900 або ASTM D1298
7	Масова частка механічних домішок, %, не більше	Відсутність	Відсутність	ГОСТ 6370 або ASTM D2273
8	Масова частка води, %, не більше	Відсутність	Відсутність	ГОСТ 2477 або ASTM D95
9	Вміст водорозчинних кислот та лугів	Відсутність	Відсутність	ГОСТ 6307
10	Корозійність металів у оливі	Витримує	Витримує	ГОСТ 2917 та п. 7.4
11	Стабільність проти окиснення: масова частка осаду після окиснення, %, не більше	0,05	0,043	ГОСТ 981 або ДСТУ ГОСТ 18136 (ГОСТ 18136)
12	Дія на гуму марки УИМ-1 (72 год., 130 С), зміна маси, в межах:	4 - 7,5	5,2	ГОСТ 9.030 метод А
13	Зм'яшувальна здатність на ЦНМТ (Т=20+/-5) оС: показник зношування (Дз) (196 Н, 1 год.), мм, не більше	0,55	0,45	ГОСТ 9490 або ASTM D2783
14	Колір на колориметрі ЦНТ, од. ЦНТ, не більше	1	1,0	ГОСТ 20284 або ASTM D1500

Виробник: ТОВ "КСМ ПРОТЕК", Україна

Висновок: за перевіреними показниками проби Олива гідравлічна ПРОТЕК ВМГЗ відповідає вимогам ТУ У 19.2-37838186-005:2012 зм.1,2

Гарантійний термін зберігання - 5 років від дати виготовлення.



Лаборант

Зав. лабораторії

Дата видачі паспорту 06.03.23р.

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