ТОВ "КСМ ПРОТЕК", вул. Ворошилова, буд. 1, смт. Клавдієво-Тарасове, 07850, Київська обл., Україна; тел./ф.: 044 537 03 48 www.ksmprotec.com

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: 21.05.21 Batch net weight:18,5 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100oC, cSt, in range	9,3-12,5	12,17	DSTU GOST 33 or ASTM D445
2	Viscosity Index, not lower than	90	95	DSTU GOST 25371 or ASTM D2270
3	Total base number, mg KOH per 1 g, not lower than	8,2	8,92	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	244	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	1,5	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.

Laboratory technician _____

Laboratory head _____

Date of issue: 21.05.21

Digitally signed by Nofit Sergiu
Date: 2023.03.03 08:57:00 EET
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Location: Moldova

ТОВ "КСМ ПРОТЕК", вул. Ворошилова, буд. 1, смт. Клавдієво-Тарасове, 07850, Київська обл., Україна; тел. /ф.: 044 537 03 48 www.ksmprotec.com

CERTIFICATE OF ANALYSIS № 1186

Motor oil PROTEC MD+ 15W-40

TU U 19.2-37838186-002:2012 zm.1,2

Batch № 1186

Manufacturing date: 12.10.20

Batch net weight: 2,625 t

SAE 15w-40,API CI-4/SL

ACEA E7

Caterpillar ECF-1a

MB 228.3, Cummins CES 2007

MAN M3275, Volvo VDS-3

Renault RLD-2, Mack EO-N

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100oC, cSt, in range	12,5-16,3	15,93	DSTU GOST 33 or ASTM D445
2	Viscosity Index, not lower than	125	140	DSTU GOST 25371 or ASTM D2270
3	Total base number, mg KOH per 1 g, not lower than	9,0	10,83	DSTU 5094 or p.7.4 or ISO 3771
4	Sulfated ash, %, not lower than	1,45	1,32	DSTU GOST 12417 or ASTM D874
5	Flash point (COC), °C, not lower than	205	228	DSTU GOST 4333 or ASTM D92
6	Pour point, °C, not more than	-28	-33	GOST 20287 method B or ASTM D97
7	Density at 20 °C, kg/m3, not more than	910	867	GOST 3900 or ASTM D1298
8	Mechanical impurities content, %, not more than	nill	nill	GOST 6370 or ASTM D2273
9	Water content, %, not more than	0,03	nill	GOST 2477 or ASTM D95
10	Active elements content, Ca+Mg (counted by Ca) %, not lower than	0,3	0,32	GOST 13538 or ASTM D6443
11	Zinc weight, %, not lower than	0,09	0,14	GOST 13538 or ASTM D6443
12	Colour on colorimeter (15:85), not more than	4,0	1,5	GOST 20284 or ASTM D1500
13	Dynamic viscosity at -20oC, mP*s, not more than	7 000	6 500	GOST 1929 or p.7.5 or ASTM D5293
14	Corrosion on plumbum plates (DK-NAMI), g/m2, not more than	Pass	Pass	GOST 20502 method A ,v.II
15	Stabilization by inductive period of sedimentation (IPS), 50 hours	Pass	Pass	GOST 11063

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Motor oil PROTEC MD+ 15W-40 sample satisfies the requirement of TU U 19.2-37838186-002:2012 zm.1,2 standard based on characteristics analyzed.

Laboratory technician: _____

Laboratory head: _____

Date of issue: 13.10.2020