

CERTIFICATE OF ANALYSIS № 330

Transmission oil TEMOL Luxe Gear 80W-90

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



Партія № 330

API GL-5

Manufacturing date: 30.03.21 Batch net weight: 4,5 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100oC, cSt, in range	13,5 - 24	13,8	DSTU GOST 33 or ASTM D445
2	Viscosity Index, not lower than	90	120	DSTU GOST 25371 or ASTM D2270
3	Flash point (COC), °C, not lower than	185	258	DSTU GOST 4333 or ASTM D 92
4	Pour point, °C, not more than	-25	-28	GOST 20287 method B or ASTM D97
5	Density at 20 °C, kg/m3, not more than	910	898	GOST 3900 or ASTM D1298
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	Colour on colorimeter CNT, not more than	5,0	3,5	GOST 20284 or ASTM D1500
9	Corrosion test during 3 hr at 100°C on copper plates, point, not more than	2c	2c	GOST 2917 or ASTM D130
10	Sequence I, not more than	300/0	10/0	ASTM D 892 or DSTU 8420
11	Sequence II, not more than	150/0	25/0	ASTM D 892 or DSTU 8420
12	Sequence III, not more than	300/0	10/0	ASTM D 892 or DSTU 8420
13	Dynamic viscosity (-26 oC), Pa*s, not more than	150	68,5	GOST 1929
14	Four ball EP test machine (20±5°C): welding load, N, not less than	3 280	3 283	GOST 9490 or ASTM D 2783
15	Four ball EP test machine (20±5°C): scuff index, N, not less than	450	587	GOST 9490 or ASTM D 2783

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Transmission oil TEMOL Luxe Gear 80w-90 sample satisfies the requirement 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: 30.03.21





CERTIFICATE OF ANALYSIS № 377

Compressor oil KS-19

GOST 9243-75

Batch № 377

Manufacturing date 09.04.24 Batch net weight 2,5 t

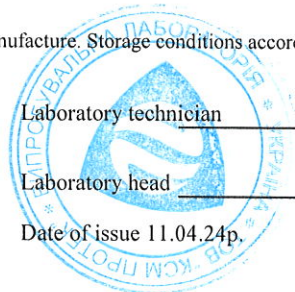
Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100oC, mm ² /s, in range	18 - 22	20,09	DSTU GOST 33
2	Viscosity Index, not lower than	92	99	DSTU GOST 25371
3	Coking, %, not more than	0,5	0,4	GOST 19932
4	Total acid number, mg KOH per 1 g, not more than	0,02	0,006	GOST 5985
5	Ash content, %, not more than	0,005	0,005	GOST 1461
6	Water content, %, not more than	nil	nil	DSTU GOST 2477
7	Colour on colorimeter, not more than	7	3	GOST 20284
8	Flash point (COC), °C, not lower than	260	287	DSTU GOST 4333
9	Pour point, °C, not more than	-15	-18	GOST 20287
10	Mass fraction of sulfur, %, not more than	1	0,62	GOST 1437
11	Mechanical impurities content, %, not more than	nil	nil	DSTU GOST 6370
12	Content of water-soluble acids and alkalis	nil	nil	GOST 6307
13	Presence of selective solvents	nil	nil	GOST 1057
14	The stability against oxidation: acid number after oxidation, mg KOH/g, not more than	0,5	0,32	GOST 981
15	The stability against oxidation: mass fraction of sludge after oxidation, %, not more than	nil	nil	GOST 981
16	Corrosion on plumbum plates of the C1 or C2 brands in accordance with GOST 3778-77, g/m ² , not more than	10	7,5	GOST 20502
17	Tendency to varnish at a temperature of 200 oC for 30 min, %, not more than	3,5	3	GOST 23175
18	Density at 20°C, kg/m ³ , not more than	905	883	GOST 3900

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Compressor oil KS-19 sample satisfies the requirement of GOST 9243-75 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture. Storage conditions according to DSTU 4454.



Laboratory technician

Laboratory head

Date of issue 11.04.24p.



CERTIFICATE OF ANALYSIS № 381

Transmission oil TAD-17i

GOST 23652-79, zm. 1-8

Batch № 381

Manufacturing date: 15.04.24

Batch net weight: 6,55 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 40oC, cSt, not lower than	17,5	17,85	DSTU GOST 33
2	Viscosity Index, not lower than	100	124	DSTU GOST 25371
3	Total acid number, mg KOH per 1 g, not more than	2,0	1,35	GOST 11362 and P.5.9
4	Flash point, °C, not lower than	200	250	DSTU GOST 4333
5	Pour point, °C, not more than	-25	-27	GOST 20287 method B
6	Ash content, %, not more than	0,3	0,24	GOST 1461
7	Mechanical impurities content, %, not more than	nil	nil	GOST 6370
8	Water content, %, not more than	0,03	nil	GOST 2477
9	Density at 20 °C, kg/m3, not more than	907	877	GOST 3900
10	Corrosion test during 3 hr at 100°C on steel and copper plates, point, not more than	2c	2b	GOST 2917
11	Colour on colorimeter, not more than	5,0	4,0	GOST 20284
12	Sequence I, not more than	200/0	0/0	GOST 23652 p.5.5
13	Sequence II, not more than	100/0	10/0	GOST 23652 p.5.5
14	Sequence III, not more than	200/0	0/0	GOST 23652 p.5.5
15	Four ball EP test machine (20±5°C): scuff index, N, not less than	568,4 (58)	588 (60)	GOST 9490
16	Four ball EP test machine (20±5°C): welding load, N, not less than	3687 (376)	3687 (376)	GOST 9490
17	Four ball Wear test machine (20±5°C), 392N, scar mm, not more	0,40	0,39	GOST 9490
18	Sulfur content, %, not more than	2,5	1,02	GOST 1431

Manufactured by KSM PROTEC LLC, Ukraine

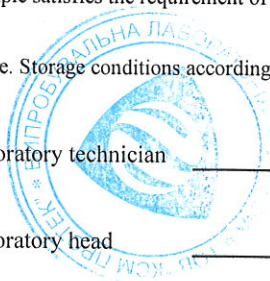
Conclusion: Transmission oil TAD-17i sample satisfies the requirement of GOST 23652, zm. 1-8 standard based on characteristics analyzed.

Shelf life - 5 years from date of manufacture. Storage conditions according to DSTU 4454.

Laboratory technician

Laboratory head

Date of issue: 17.04.24




CERTIFICATE OF ANALYSIS № 382

Hydraulic oil PROTEC HIDRO R

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

Batch № 382

Manufacturing date 15.04.24 Batch net weight 0,9 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 40oC, mm2/s , in range	17 - 22	19,22	DSTU GOST 33 or ASTM D445
2	Kinematic viscosity at 100oC, mm2/s , not more than	5	3,89	DSTU GOST 33 or ASTM D445
3	Kinematic viscosity at - 20oC, mm2/s , not more than	1 800	1 765	DSTU GOST 33 or ASTM D445
4	Flash point (COC), °C, not lower than	165	176	DSTU GOST 4333 or ASTM D92
5	Pour point, °C, not more than	-45	-46	GOST 20287 or ASTM D97
6	Ash content, %, not less than	0,6	0,73	GOST 1461 or ASTM D482
7	Density at 20 °C, kg/m3, not more than	890	881	GOST 3900 or ASTM D1298
8	Mechanical impurities content, %, not more than	nil	nil	DSTU GOST 6370 or ASTM D2273
9	Water content, %, not more than	nil	nil	DSTU GOST 2477 or ASTM D95
10	Content of water-soluble acids and alkalis	Alkaline reaction is allowed	Alkaline reaction	GOST 6307
11	Mass fraction of zinc, % not less than	0,08	0,09	GOST 13538 or ASTM D4927
12	Mass fraction of calcium, %, not less than	0,16	0,174	GOST 13538 or ASTM D4927
13	Corrosion test on steel plates	Pass	Pass	GOST 2917 and p. 7.4
14	The stability against oxidation: mass fraction of sludge after oxidation, %, not more than	0,1	0,067	GOST 981 or DSTU GOST 18136 (GOST 18136)
15	Action on rubber of the UIM-1 brand (72 hours, 130 C), change of weight, not more than	5	3	GOST 9.030
16	Sequence I, not more than	150/0	0/0	DSTU 8420 or ASTM D892
17	Sequence II, not more than	70/0	10/0	DSTU 8420 or ASTM D892
18	Sequence III, not more than	150/0	0/0	DSTU 8420 or ASTM D892
19	Four ball Wear test machine (20±5°C): scar (Dz) (196N), mm, not more than	0,45	0,31	GOST 9490 or ASTM D2783
20	Colour on colorimeter , not more than	3,5	1,5	GOST 20284 or ASTM D1500

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Hydraulic oil PROTEC HIDRO R 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. Storage conditions according to DSTU 4454.

Laboratory technician _____

Laboratory head _____

Date of issue 17.04.24p.



CERTIFICATE OF ANALYSIS № 418

OIL PROTEC IG-20

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



Batch № 418

Manufacturing date 03.08.22

Batch net weight: 18 l

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 40°C, cSt, in range	25-35	29,11	DSTU GOST 33 or ASTM D445
2	Total acid number, mg KOH per 1 g, not more than	0,05	0,011	GOST 11362 and P.7.6
3	Flash point, °C, not lower than	180	204	DSTU GOST 4333 or ASTM D92
4	Pour point, °C, not more than	-10	-10	GOST 20287 method B or ASTM D97
5	Mechanical impurities content, %, not more than	0,015	0,008	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	870	GOST 3900 or ASTM D1298
8	Oxidation stability: acid number, mg KOH/l, 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	1,5	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.



CERTIFICATE OF ANALYSIS № 926

Oil PROTEC IG-40

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



Batch № 926

Manufacturing date: 28.08.21

Batch net weight: 18 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 40°C, cSt, in range	51-75	62,24	DSTU GOST 33 or ASTM D445
2	Total acid number, mg KOH per 1 g, not more than	0,1	0,0	GOST 11362 and P.7.6
3	Flash point, °C, not lower than	200	239	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	0,03	GOST 2477 or ASTM D95
7	Density at 20 °C, kg/m ³ , not more than	910	892	GOST 3900 or ASTM D1298
8	Oxidation stability: acid number, mg KOH/r, not more than	0,4	0,29	DSTU GOST 18136 (GOST 18136)
9	Oxidation stability: increase in resins, %, not more than	3	1	DSTU GOST 18136 (GOST 18136)
10	Sulfur weight, %, not more than	1,3	1,23	GOST 1437 or ASTM D4927
11	Colour on colorimeter, not more than	4,0	2,0	GOST 20284 or ASTM D1500

Manufactured by KSM PROTEC LLC, Ukraine

Conclusion: Oil PROTEC IG-40 sample satisfies the requirement of TU U 19.2-37838186-005:2012 zm.1,2 standard based on characteristics analyzed.

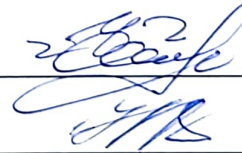
Shelf life - 5 years from date of manufacture



Laboratory technician

Laboratory head

Date of issue: 30.08.21



CERTIFICATE OF ANALYSIS № 41

Motor oil TEMOL Universal (M-8B)

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

Batch №41

SAE 20

API SD/SB

Manufacturing date: 19.01.21

Batch net weight: 6,5 t

Product Characteristics

№	Characteristics and units	Standard limits	Actual	Test method
1	Kinematic viscosity at 100oC, cSt, in range	6-9	8,48	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	4,0	4,43	DSTU 5094 or ASTM D2896 or ISO 3771
4	Sulfated ash, %, not lower than	1,10	0,74	DSTU GOST 12417 or ASTM D874
5	Flash point (COC), °C, not lower than	207	245	DSTU GOST 4333 or ASTM D92
6	Pour point, °C, not more than	-25	-28	GOST 20287 method B or ASTM D97
7	Density at 20 °C, kg/m3, not more than	905	891	GOST 3900 or ASTM D1298
8	Mechanical impurities content, %, not more than	0,015	0,010	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	0,16	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	10	7,2	GOST 20502 method A, var. II
13	Stabilization by inductive period of sedimentation (IPS), 30 hours	Pass	Pass	GOST 11063

Manufactured by KSM PROTEC LLC, Ukraine.

Conclusion: Motor oil TEMOL Universal (M-8B) 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.

