

Lubricant materials **AGRINOL** for military vehicles



Lubricant

MATERIALS

AGRINOL 2016



Lubricant materials **AGRINOL** for military vehicles

Approvals and admissions

Motor oils

Motor oils for diesel type engines with exhaust gases recirculation (EGR)

Motor oils for outdated vehicles

Motor oils for auto-tractor engines of CIS countries vehicles

Motor oils for tank engines

Gear oils

Transmission and gearbox

Automatic gearbox

Multipurpose tractor oils UTTO, STOU

Oils for outdated vehicles

Hydraulic oils

Cooling liquids

Lubricating greases

Semi-fluid greases

Special purpose greases



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APPROVALS and ADMISSIONS



UKRAINE

АВТОВАЗ
 Сертифікат на застосування
 моторних оливи
 241213 - 0200-5103
 В.В.Поліщук
 01 Бердянськ, вул. Б-1038-06151-00-600



Since 2010
JSC "AUTOVAZ"



CUMMINS
 November 14, 2013
 Assembly Procedure
 1.5L "498" Engine
 1.5L "498" Engine
 1.5L "498" Engine
 1.5L "498" Engine
 1.5L "498" Engine

Since 2013
CUMMINS

UKRAINE

ЗАЗ
 ПУБЛІЧНЕ АКЦІОНЕРНЕ ТОВАРИСТВО
 «ЗАПОРІЗЬКИЙ АВТОМОБІЛЬНИЙ ЗАВОД»
 ЗАПОРІЖСЬКИЙ РАЙОН, м. ЗАПОРІЖЖЯ

АКЦІОНЕРНЕ ТОВАРИСТВО «АВТОКРАЗ»
 м. Київ, вул. Миколаївська, 10

Since 2002
PJSC "AutoKRAZ"
PJSC "ZAZ"

BFB
 CONCLUSION
 DIN 51524.2 certification
 Hydraulic oil
 BFB Oil Research S.A.

Hydraulic oil
BFB Oil Research S.A. (Belgium)
DIN 51524.2



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MOTOR OILS

Universal motor oils for modern types of engines of passenger, cargo and off-road vehicles running on gasoline or diesel, including engines with catalytic converter and turbo-charged ones which work in harsh environment. Ensures reliable lubrication and engine protection in the long-term loaded modes and extreme types of driving; provides an excellent work in a climate conditions from cold to hot. Protects the engine against the formation of harmful deposits in the cylinders on the surface of the piston and piston rings.

Vehicle engines: Toyota LC200 (4.5dm³ diesel; 4,6-5.7dm³ gasoline)

AGRINOL 5W-40 SL/CF PREMIUM – synthetic oil on the basis of hydrocracking oils.

ACEA **A3/B4**, API **SL/CF**



Performance level:

VW 502.00/505.00, Porsche A40, BMW LL-01, PSA B71 2296, Renault RN0710/RN0700, MB-229.5

AGRINOL 10W-40 SL/CF OPTIMAL – highly effective semi-synthetic oil.

ACEA **A3/B4**, API **SL/CF**

Performance level:

BMW LL-98, MB-229.1, 502.00/505.00, "YaMZ"-4-02 VW

AGRINOL 20W-50 SL/CF PREMIUM – mineral based oil for hot climate.

ACEA **A3/B3-98/B4-99**, API **SL/CF**

Performance level:

MB-229.1, VW 501.01/ 505.00, MIL-L-46152E



FUEL ECONOMY

AGRINOL 10W-30 SM/CF – fuel-efficient semi-synthetic oil for extreme service conditions (idle running, "start-stop" mode all the year round) for modern multivalvate gasoline and diesel engines with hydro-compensators (including turbocharged ones).
Vehicle engines: Toyota LC200 (4.5-5.7 dm³ gasoline)

ACEA **A1/B1/C2**, API **SM/CF**

Performance level:

VW 502.00/505.00, Ford WSS-M2C913-C, MB 229.1

AGRINOL 5W-40 CG-4/SJ PREMIUM-DIESEL – fully synthetic motor oil with the improved quality of engine start during the winter period and stable work in a hot weather conditions for turbo-diesel engines of type Euro-II by European and American manufacturers, for gasoline engines (with the catalyst and a turbo-supercharging) which work in severe conditions of operation.

Are recommended for mixed vehicle fleets:

Vehicle engines: FORD (6,7TD V8), Deutz (BF 6M, 10-11dm³, diesel)

ACEA **E3-96/B3-96/A2-96**, API **CG-4/SJ**



Approved by:

PJSC "ZAZ"

Performance level:

MB-228.1, VW 501.01/ 505.00, "YaMZ"-4-02

! The interval of engine oil replacement depends on fuel quality, service conditions, and engine type and operation conditions.

When determining an inter-service interval, it is always recommended to be verified with the maintenance instruction of equipment.

In Ukraine we recommend to change any engine oils at least once a year or each 10.000 km, irrespective of the parameters specified in the service book (for example if more 10.000km is specified).



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MOTOR OILS

HP-DIESEL

All-weather oils for turbo-diesel engines of modern special equipment, Euro-2 trucks of the European and American producers, gasoline engines (including engines with the catalyst and a turbo-supercharging) let out after 2000, working in severe conditions of operation.

Vehicle engines: FORD (6,7TD V8), Deutz (BF 6M, 10-11DM3, diesel), "YaMZ"

AGRINOL 10W-40 CG-4/SJ HP-DIESEL – highly effective semi-synthetic oil.

ACEA E3-96/B3-96/A2-96, API CG-4/SJ
Performance level:
MB-228.1/228.3, MAN 271, 3275, Volvo VDS/ VDS-2, "YaMZ"-4-02

AGRINOL 15W-40 CG-4/SJ HP-DIESEL – mineral oil of type **HPD – High Performance Diesel (Long Life*** level)

ACEA E2-96/B2-98/A2-96, API CG-4/SJ
Performance level:
MB 228.1, VOLVO VDS, MAN 271, "YaMZ"-4-02

AGRINOL 10W-40 CF-4/SH EXTRA DIESEL – semi-synthetic oil for the powerful diesel four-stroke engines (of trunk type) and high-speed gasoline engine of cars and minibuses, including engines with the catalyst and turbo-supercharged ones.

For domestic (CIS countries) equipment and in mixed vehicle fleets;
Vehicle engines: FORD (6,7TD V8), Deutz (BF 6M, 10-11dm3, diesel)

ACEA E2-96/B3-98/A2-96
Performance level:
MB 228.1, VOLVO VDS, MAN 271, "YaMZ"-4-02

Mineral motor oils of type **HPD – High Performance Diesel (Long Life level)** for diesel engines (turbocharged and non-turbocharged). Are recommended for very heavy vehicles. Vehicle engines: Cummins (ISMe 385 30 EURO 3), Deutz (TCD 2015 V06), "YaMZ-238DE"

AGRINOL 15W-40 CH-4/SJ TRUCK-DIESEL – mineral oil for diesels which operate on a gasoline with sulfur content more than 0,5% mass.

ACEA E2-04, B3/A2-02, API CH-4/SJ
Performance level:
Cummins 20076/71, MAN 271, MTU Type 1, CAT ECF-1-a, Mack E-OM Plus, MB 228.1, Volvo VDS-2, Deutz DQC II-10, Renault RD/RD-2, Allison C-4, "YaMZ"-4-02

AGRINOL 15W-40 CG-4/SL – mineral oil for engines working in severe conditions of operation with the long-term oil replacement intervals.

ACEA A3/B3, API CG-4/SL
Performance level:
MB228.1, MB229.1, "YaMZ"-4-02

*! The interval of engine oil replacement depends on fuel quality, service conditions, and engine type and operation conditions. When determining an inter-service interval it is always recommended to be verified with the maintenance instruction of equipment.
In Ukraine we recommend to change any engine oils at least once a year or each 10.000 km, irrespective of the parameters specified in the service book (for example if more 10.000km is specified).*



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MOTOR OILS for DIESEL ENGINES with EXHAUST GASES RECIRCULATION (EGR)

GRAND DIESEL

Universal motor oils for diesel engines of type **SHPD – Super High Performance Diesel**. Are developed taking into account standards on exhaust gases control (with the system of **exhaust gas recirculation (EGR)**). Exclusive system of dispersive additives prevents gas-distributing mechanism details wear and provides the necessary fluidity of oil by an exception of its solidification because of black adjournment. Meet strict requirements of ecology and toxicity of exhaust gases **Euro-2,-3** and some engines of **Euro-4** type.

Vehicle engines: Cummins (ISMe 385 30 EURO 3), Deutz (TCD 2015 V06), FORD (6,7TD V8), "YaMZ-238DE"

AGRINOL 15W-40 CI-4 GRAND DIESEL – mineral based oil.

AGRINOL 10W-40 CI-4 GRAND DIESEL – high-effective semi-synthetic oil.

ACEA E7/E5/E3/B3/B4 , API CI-4



Approved by:
Cummins CES 20078



Performance level:

MB-228.3, MAN M3275, Mack EO-M Plus, Renault RVI RLD / RVJ RLD-2, Volvo VDS-2/VDS-3, CAT ECF-1-a, Global DHD-1, Cummins CES 20076/ 77, Jaso DH-1, MTU Type 2, "YaMZ"-4-02

AGRINOL 10W-40 CI-4/SL

Universal semi-synthetic oil with the increased service life (30000-40000km)*, the decreased oil consumption on waste. Multi-purpose in its application for diesel, gasoline and LPG type of engines of cars, trucks and special equipment. Compatibly to systems of de-toxicity of the exhaust gases (**SCR, EGR**).

Vehicle engines: FORD (6,7TD V8), Cummins (ISMe 385 30 EURO 3), Deutz (TCD 2015 V06)

ACEA **A3/B3/B4/E7**, API CI-4/SL

Performance level:

MB-228.3, 229.1, Renault RLD-2, Volvo VDS-3, MAN 3275, Deutz DQC III-05, MTU Type2, Cat ECF-2/ECF-1a, Cummins CES 20076/77, Sisu Diesel TIER 3, "YaMZ"-4-02

AGRINOL SAE 10W-40 CI-4 Low SAPS – semi-synthetic motor oil of type **Low SAPS** (with the low content of sulphatic ash, phosphorus and sulfur)

Engine types: FORD (6,7TD V8), Cummins (ISMe 385 30 EURO 3), Deutz (TCD 2015 V06)

ACEA E7/E6, API CI-4

Performance level:

MTU Type-3.1, Volvo VDS-3, Scania LDF-2, Renault RLD-2/ RLD, DAF, Cummins CES 20076/20077, Deutz DQC III-LA, Mack EO-N

MOTOR OILS for OUTDATED VEHICLES

CLASSIC

Motor oils for the high-forced gasoline engines of passenger cars of CIS-countries production and foreign cars up to 1989, and also for diesels (including turbocharged) working in severe conditions of operation.

AGRINOL 10W-40 SG/CD CLASSIC – semi-synthetic motor oil.

ACEA A2/B2/E1-96, API SG/CD

Performance level:

MB 229.1, VW 500.01/505.00, MIL-L-46152B,-2104C, CCMC G5/PD-2

AGRINOL 15W-40 SG/CD CLASSIC – mineral based oil

ACEA A2/B2/E1-96, API SG/CD

Performance level:

MB 229.1, VW 501.01/505.00, MIL-L-46152E, CCMC G5/PD-2/D4

STANDARD

Mineral motor oils for gasoline and high-forced diesel engines (turbocharged and non-turbocharged) working in severe conditions of operation on a high-sulfur and leaded fuel.

AGRINOL 15W-40 SF/CC STANDARD

AGRINOL 20W-40 SF/CC STANDARD

AGRINOL 20W-50 SF/CC STANDARD – adapted specially for engines of heavy-duty equipment and for hot climate operating engines

ACEA A2/B2, API SF/CC

Performance level:

MIL-46152-C; -46152E, CCMC G2/D10

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MOTOR OILS for AUTOTRACTOR ENGINES of DOMESTIC (CIS) EQUIPMENT



M-8V, M-8G₂k, M-8DM

Mineral cold-weather oils for average forced auto-tractor diesel engines; **All-weather oils** for average forced gasoline engines of cars and trucks with frequency of replacement up to 18000 km working on high-sulfur fuel.

M-8V SAE 20W-20, API CB/SD

M-8G₂k SAE 20W-20, API **CC**

M-8DM SAE 20W-20, API CD

M-10G₂k, M-10DM, M-14G₂k

Mineral hot-weather oils for lubricating of auto-tractor diesel engines with the average turbocharging and without it, for heavy duty stationary diesels and diesel generators which work in conditions when high-temperature deposits are formed.

Instead of oils of group B with long-term interval of oil replacement.

M-10G₂k SAE 30, API **CC**

M-10DM SAE 30, API CD

M-14G₂k SAE 40, API **CC**

Vehicle engines: ZIL-130, GAZ-66.51, KaVZ, KAZ, PAZ, LIAZ, SMD-14, A-41, D-50, D-37, "YaMZ"-238

 Recommended by:
KAMAZ, ZIL, IKARUS.

M-10G₂k could be changed by **M-14G₂k** in conditions of hot climate operating.

DM group of oils surpasses twice oils of G2 group on the washing and anti-oxidizing properties.

At application **M-10DM** in diesel engines despite of **M-10G₂k**, the interval of oil replacement is twice longer.

Performance level:

"YaMZ"-3-97, "YaMZ"-3-02

M-16DR

Mineral motor oil for two- and four-cycled diesel engines for operating on a fuel with sulfur content up to 0,5%.

Oil replacement for **M-16G₂** и **M-16G₂TsS**: increase in run of service life of elements of high-treatment filters. Similarly to import oils of the fourth generation.

Vehicle engines: DN 23/30, ChN 26/26, ChN 30/38
SAE 50, API **CD**

M-10G₂TsS, M-14G₂TsS

Mineral motor oils for diesel vessel engines, circulating system of high-forced diesels, mechanisms and units.

M-16G₂TsS – oil for lubricating high forced engine cylinders and for low-speed diesels operating on a fuel with sulfur content up to 1,5%.

Vehicle engines: "ЧН 26/26", stationary diesel generators ("ЧН 40/48"), diesel-gear units ("ЧН40/46").

M-10G₂TsS SAE 30, API **CC**

M-14G₂TsS SAE 40, API **CC**

M-16G₂TsS SAE 50, API **CC**

M-20G₂ – for lubricating high-speed diesel engines.

Vehicle engines: two-stroke diesels of type DN 23/2x30
SAE 50, API **CC**

M-10V₂S

Mineral based oil for non-forced diesel engines operating on low-sulfur fuel.
SAE 30, API **CB**



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MOTOR OILS for TANK ENGINES

AGRINOL MT-16P

Mineral oil for lubricating transport B2-type diesels and non-supercharging diesels, similar on speeding up level: outdated auto-tractor diesels, marine, locomotive, stationary and transport non-supercharging diesels.

SAE 40, API **CB**

M-16 IHP-3 – mineral motor oil for lubricating high-forced transport diesels including supercharging.

SAE 50, API **CB**

Vehicle engines: 3TD-3A, 5TDF (“OLY-456”), 5TDFА, 5TDFM, 5TDFMA -1, 6TD, 6TD-2, 6TD-2E, “14H 8/11”.



Recommended by:
“HKBD” Enterprise



GARANT M-4042 BT

Mineral motor oil for lubricating 2- and 4-strokes high-forced diesel engines of heavy-duty and high-speed transport equipment. Working temperature up to **(+60)°C** and the maximum temperature of oil during the operation of the engine up to **(+135)°C**.

Vehicle engines: 3TD, 5TDF, 5TDFMA, 6TD-2E, “14H 8/11”

SAE 40, API **CD**, GOST **M-16G₂**

In case of lack of M-16IHP-3 oil use of oil MT-16p is allowed. Mixing of oils and application of other brands is forbidden, except GARANT M-4042 BT. Mixing with another oil brand is allowed only for the rest of oil that couldn't be merged.

Oil GARANT M-4042 BT in its characteristics surpasses such motor oils as M-16IHP-3, Galol M-4042 TD. While using GARANT M-4042 BT it also allows to pass from one brand of oil to another without oil system washing.



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TRANSMISSION and GEAR BOX

TRANSMISSION

Series of oils for mechanical transmissions with all types of tooth gear, including hypoid ones. Can be applied in driving axles and gearboxes of passenger cars, trucks and other mobile equipment operating at a high thermal load, where **API GL-5 (TM-5) oils** are recommended.

Platinum – fully synthetic gear oil for cold climate conditions. Is recommended for operating in the extreme range of loads and temperatures.

SAE 75W-90 GL-5

Performance level:

MIL-L 2105 C/D, ZF TE-ML 08

Gold – mineral oil with high extreme pressure and anti-wear properties.

SAE 80W-90 GL-5

Performance level:

MIL-L-2105D, MB 235.6, ZF TE-ML 05A-07A-12A-16C/D-17B, MAN 342ML

Silver – mineral oil for the regions with a hot climate.

SAE 85W-90 GL-5

Approved by:

PJSC "ZAZ"

Performance level:

MIL-L-2105D, MB 235.6, ZF TE-ML 05A-07A-12A-16C/D-17B, MAN 342ML

SAE 85W-140 GL-5 – mineral oil with high extreme pressure and anti-wear properties.

SAE 85W-140 GL-5

Approved by:

PJSC "ZAZ"

Performance level:

MIL-L-2105D, ZF TE-ML 05A-07A-12A-16C/D-17B, MAN 342ML

Classic – mineral gear oil for manual transmission of front wheel drive cars and other mobile equipment including ones with synchronizers, for axles with spiral-and-conic and hypoid gears, where **API GL-4 (TM-4) oils** are recommended.

80W-90 API GL-4

Performance level:

Ford SQM-2C-9008 A, MAN 341 тип E-1/341 тип Z-1, MB 235.1, MIL L-2105D, ZF TE-ML 16A/TE-ML 17A/TE-ML 19A

Agrinol MULTIPLEX GL-5

Mineral gear oil for lubricating of gearboxes and transmissions for the high-loaded equipment and special technique.

SAE 80W, SAE 90, API GL-5

TAD-17i – mineral gear oil for manual transmissions with all types of tooth gears, including hypoid ones; can be applied in driving axles and gearboxes of passenger cars, trucks and other mobile equipment operating at a high thermal load, where **API GL-5 (TM-5) oils** are recommended.

SAE 85W-90 GL-5

Approved by:

PJSC "ZAZ"

Performance level:

MIL-L-2105D, MB 235.6, ZF TE-ML 05A-07A-12A-16C/D-17B, MAN 342ML

AUTOMATIC GEARBOXES

Agrinol ATF IID A-MATIC

Semi-synthetic oil for automatic gearboxes, transmissions, power steering of passenger cars, buses, tractors and special equipment. Optimum frictional properties oils provide smooth shifting and quiet operation during continuous exploitation in harsh conditions.

Approved by:

PJSC "ZAZ"

Performance level:

GM Dexron IID, Mercon, Caterpillar TO-2, Volvo 97335

Agrinol ATF III A-MATIC PLUS

The latest generation synthetic oil for automatic gearboxes, transmissions, power steering. The stable viscosity characteristics at low temperatures facilitate the operation of the automatic transmission in different climatic zones.

Approved by:

PJSC "ZAZ"

Performance level:

GM Dexron III, Mercon V, MAN 339 type V-1, MAN 339 type Z-2, Caterpillar TO-2, Volvo 97340, ZF TE-ML-04D -14B, -16L, -17L.

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GEAR OILS

UNIVERSAL OILS for TRACTORS

Agrinol **UTTO**

Universal transmission-and-hydraulic oils of type **UTTO - (Universal Tractor Transmission Oil)**, for combined gearings (transmission / hydraulic) including hydraulic ("wet") brakes of auto-tractor equipment. Applied in various types of hydraulic mechanisms. Provide minimum noise in the "wet" brakes.

Performance level:

Transmission units:

API GL-4, **SAE J306C 80W** (SAE J300 10W-30)

SAE J306C 85W (SAE J300 20W-40)

ZF TE-ML 03E, 05F, 06K, 17E, 21F, Allison C3/C4, Caterpillar TO-2, John Deere JDM J 20 C; Ford M2C 134 C/D, M2C 86 B/C;

Hydraulic systems and coupling: ISO VG 46 / 68 / 100, DIN 51524.2/3 HLP/HLP-D

Agrinol **STOU**

Series of universal oils of type **STOU (Super Tractor Oil Universal)** for usage in turbocharged and non-turbocharged engines, in transmissions with the "wet" brakes and in hydro systems (hydraulic systems and coupling) of auto-tractor special equipment.

Performance level:

Engines:

API CG-4, ACEA E3, **SAE J300 10W-30 (10W-40)**

MAN 271 *

Transmission boxes:

API GL-4/GL-5 in tractors*,

SAE J306 75W-80 (75W-90)

ALLISON C-4, CAT TO-2, FORD M2C159 B/C; John Deere JDM J 20 C; MF M1135, 1139; ZF TE-ML06A

Hydraulic systems and coupling:

ISO VG 46 / 68 / 100, DIN 51524.2/3 HLP/HVLP-D AFNOR NFE 48603 HV;

* With no HOLMER, only Agrinol **STOU 10W-40**

In comparison with mineral oils of type SAE 15W-40:

- provide up to 20% less waste consumption;
- save up to 2.5% of the fuel due to the more rapid supplying of all points of lubrication and rapid engine warming-up; reduce the "cool wear" of mechanism.

In comparison with mineral oils of type SAE 80W:

- 1.5% less consumption through the reduction of losses in transmission;
- ensure quiet operation throughout all the stipulated period of operation.

GEAR OILS for OUTDATED VEHICLES

NIGROL – mineral oil for lubricating of transmissions, gear boxes and planetary and open gear tooth of lifting equipment, tractors, agriculture and road construction special equipment.

SAE 90 GL-1

For hypoid gears of lorries like GAZ-52, -53, -66 and modifications:

Agrinol **TSp-14hyp**

Mineral transmission oil for hypoid gears of trucks.

All-season oil, which is operable at temperatures up to **minus 30°C**.

SAE 90 GL-5

For driving axles (besides hypoid ones), gear boxes and steering:

Agrinol TAP-15V oil for lubricating of truck transmissions, road construction and other special equipment, and also for reduction gears (tooth, spiral-and-conic, worm gearboxes) of up to 2000 MPa contact pressure, and oil operating temperature abt. **130°C**. In the middle climate zone used in all seasons at temperature up to **minus 25 ° C**.

SAE 90 GL-3

Agrinol TSp-15K — all-season mineral transmission oil for lubricating of heavy duty cylinder, conic and spiral-and-conic gear boxes of heavy vehicles like KamAZ.

The operating temperature range up to **minus 30°C**.

SAE 90 GL-3

TSp-10 oil for lubricating of heavy duty cylinder, conic and spiral-and-conic gear boxes operating at up to 1500–2000 MPa contact pressure and oil temperature up to **100–110°C**.

The operating temperature range is up to **minus 45°C**.

SAE 80 GL-3

TSzp-8 winter oil for lubricating of transmission units with planetary reducers of gear boxes and other systems of hydraulic control of mobile vehicles.

SAE 80W GL-3

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HYDRAULIC OILS



Hydroil **HM**

Mineral based hydraulic oils for hydraulic systems of all types. Can be used in low- and medium-loaded gears, worm gears, variable speed drive boxes and other units operating at high pressures and loads.

Characterized by improved anti-oxidation and anti-wear properties.

HM (32; 46; 68) mineral oils of a type 'CI Free'.

HM Ultra (32; 46; 68) – zinc free mineral hydraulic oils 'CI Free' & 'Zinc Free'.

ISO VG 32; 46; 68; ISO 6743.4: HM



Approved by:

DIN 51524.2: HLP

Agrinol Hydraulic Lift (32; 46; 68)

HVI hydraulic oils with improved anti-wear properties for application in a wide temperature range and considerable temperature fluctuations, high operating pressure, at high requirements for stability protection against wear, as well as in terms of flooding.

ISO VG 32; 46; 68;

DIN 51524.2: HVLP; ISO 6743.4: HM

MGE 46V; 68V

Mineral based hydraulic oils for usage in hydraulic drive, hydraulic transmissions and circulating oil system of various components of agricultural, construction and other special equipment.

ISO VG 46; 68; DIN 51524.2: HLP; ISO 6743.4: HM

AMG-10

Hydraulic oil intended for usage like an operating fluid for hydraulic systems of aviation equipment, sea and land transport, working at ambient temperatures ranging from -60 °C to 55 °C.

AMG-10 can be used for multigrade oil replacement (VMGZ) and a number of another types of low-viscosity hydraulic oil replacement.

At the present moment **AMG-10** is widely used in hydro-systems of aviation equipment with operating injection pressure up to 210 kgf / cm².

ISO VG 15; DIN 51524.2: HLP; ISO 6743.4: HL

OILS for HYDROMECHANICAL TRANSMISSIONS

Special Oil HMT

Multipurpose hydromechanical oil for all-season exploitation in hydraulic torque converters and hydrostatic transmissions, automatic gear boxes and power steering systems at ambient temperature up to **minus 35°C**. Winter oil for hydrostatic drives of self-propelled auto-tractor and other special equipment.

ISO VG 32;

ISO 6743 Fluid for automatic transmission

Agrinol **A**

Oil for all-season operating in hydraulic torque converters, automatic gear boxes at ambient temperature up to **minus 40°C**.

ISO VG 32;

ISO 6743 Fluid for automatic transmission

Agrinol **P**

Oil for power steering systems and hydrostatic transmissions at ambient temperature up to **minus 40°C**.

ISO VG 22;

ISO 6743 Fluid for automatic transmission

COOLING LIQUIDS

Based on monoethylene glycol coolants with the addition of anti-corrosion additives for cooling the internal combustion engines. Contain effective anti-foaming agents.

Agrinol TOSOL A-40 – for operating at high and moderate temperatures and moderate (not lower than minus 38°C).

Agrinol TOSOL TA - for southern areas with an ambient temperature not lower than minus 20°C.

Operation ability for 60000 km or within 2 year period without any substitutions or additives adding.

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GREASES



Ligrease EP 2

Multipurpose lithium grease for lubricating various frictional units of mechanisms of vehicles and industrial equipment which work in the conditions of high loadings, vibration, extreme pressure, where improved anti-scuff properties are requested.

Contains EP additives.

Operating temperature : from **minus 30 °C** up to **+ 120 °C**.

NLGI 2, DIN 51502: K P2 K-30

SLIDING EP-2



Universal grease provides uninterrupted operation of units and mechanisms under heavy loads, vibration and extreme pressure: rolling and sliding bearings, bearings with sealing washers, as a non-removable grease, hinges, gears and other transmission, closed units (Kit Car wheels, water pump bearings and others), electrical machinery, agricultural equipment, mining and road construction equipment.

Operating temperature : from **minus 30 °C** up to **+ 170 °C**.

NLGI 2, DIN 51502 K P2 P-30

LubriLiCa EP 2

Waterproof multipurpose grease for lubricating various frictional units of mechanisms of vehicles, agricultural and other special equipment, industrial equipment (rolling and sliding bearings, gears of industrial equipment etc.) working at high loads, vibration and high humidity
Operating temperature : from **minus 30 °C** up to **+ 120 °C**.



NLGI 2, DIN 51502: K P2 K-30

Litol - 24

Universal grease for lubricating rolling and sliding bearings, bearings with sealing washers, as a non-removable grease, hinges, gears and other transmission, closed units (Kit Car wheels, water pump bearings and others), for the mechanisms of track laying vehicles, excavators, bulldozers, for ship machinery, electrical machinery, mining and road-building equipment.



Operating temperature : from **minus 40 °C** up to **+ 120 °C**.

NLGI 3, DIN 51502: KP3K-30

Approved by:
PJSC "ZAZ"

Agrinol SHRUS-4



Waterproof grease with **MoS2** for lubricating of hinges of equal angular speeds of front-wheel drive and four-wheel drive cars, frictional units of heavy-duty vehicles, needle bearing of cardan hinges of unequal angular speeds. It has the exceptional anti-wear and extreme pressure performance.

Operating temperature : from **minus 40 °C** up to **+ 120 °C**.

NLGI 2, DIN 51502: K PF2 K-40

Ciatim-221



Anti-friction high-temperature grease for lubrication of rolling bearings of electric machines, control systems and devices with **speed up to 1000 min-1**. Is used for friction units and the surfaces "metal-metal" and "metal-rubber". Operating temperature: from **minus 60 °C** up to **+ 150 °C**.

Approved by: **NLGI 1/2, DIN 51502: K F1/2 K-30**
 PJSC "VAZ"

LUBRICANT

MATERIALS

AGRINOL 2016

<http://www.agrinol.ua>

GREASES



Agrinol Solidol G-2



Calcium grease of a general purpose for application in the bearings of different types, hinges, screw and chain gears, low-speed reducers and frictional units of industrial mechanisms, vehicles, agricultural equipment and manual tools.

Operating temperature: from **minus 25 °C** up to **+ 65 °C**.

NLGI 2, DIN 51502: K 2/3 C-25

Graphite



Calcium grease with graphite for lubricating heavy-duty units, open gears, fittings, the lead screws, the jack springs, chassis, conveyors, hinges etc. operating in conditions of high humidity and dust. Multipurpose grease for agricultural equipment and special technique.

Operating temperature: from **minus 20 (30) °C** up to **+ 60 °C**.

NLGI 2, DIN 51502: OGF1/2G-20

AGRINOL №158

Grease is applied for lubricating of rolling bearings of the autotractor equipment, needle bearings of cardan hinges of unequal angular speed, and also for double-row ball bearings, in hub units of passenger cars.

Operating temperature: from **minus 30 °C** up to **+ 110 °C**.

NLGI 1/2, DIN 51502: K F1/2 K-30



SEMI-FLUID LUBRICANTS

Agrinol GL-95

Semi-fluid transmission grease for lubricating and protecting open and closed gears, racks, bearings, couplings, pins, chains, ropes etc. in conditions of extreme temperatures and loads.

It is applied both manually and centrally.

Operating temperature: from **minus 40 °C** up to **+ 120 (150) °C**.

DIN 51502: OG F P-40

SLIDING EP-00

Grease for mobile and/ or stationary central lubrication systems. It has exceptional flow properties at low temperatures, is developed for operating at heavy loads, vibration and extreme pressure.

Operating temperature: from **minus 20** up to **+ 170 °C**.

NLGI 00, DIN 51502: KP00P-20

LUBRICANT

MATERIALS

AGRINOL 2016

<http://www.agrinol.ua>



SPECIAL PURPOSE GREASES

VNII NP-207

Grease is used for rolling bearings in electrical machines and the starter-generators (primarily aircraft) with a speed up to 10,000 min⁻¹, operating at temperature up to 150-180 °C.

It is efficient at residual pressure 666.5 Pa. Grease is similar on structure and properties with **CIATIM-221** and surpasses its lifetime in rolling bearings at **150-180°C**.

Grease remains serviceable for a long time (1-3 thousand hours) at **180°C** and 10000 rp/m. Intermittent overheating is allowed up to **200°C**.

In low-power mechanisms grease **VNII NP-207** is applicable up to **-40°C**, in powerful equipment it could ensure functioning at even lower temperature (up to **-60°C**).

NLGI 3, DIN 51502: KSi 3S-60



Approved by:
10th Center of Chemmotology of the Ministry of Defence of Ukraine

OKB 122-7

Multipurpose instrument lubricant for application in ball-bearings and other friction units of instrumentation as well as in a number of related areas (for electrical and special machinery, precision bearings etc.), for example, for ball- and rolling-bearings of boring machines.

Low evaporability of grease provides its long storage in packaging and a possibility of its use in serially working devices and equipment with no replacements within 10 years.

NLGI 2, DIN 51502: KSi2K-60



Approved by:
10th Center of Chemmotology of the Ministry of Defence of Ukraine

VNII NP-225

Paste is used for protecting threaded joints from sticking at temperature from minus **60°C** up to **250°C** — for the aluminum anodized alloys 'AJ1-9' and up to **350°C** — for stainless steels '1X18H9T', as well as for low-speed heavy-duty friction units at temperature from **minus 40°C** up to **300°C**. It is also used for the lubrication of bearings and rails of hot conveyors, friction units of tunnel kilns and others.

Contains **MoS₂**.

Grease is close on structure and it is interchanged with **Limol** and **VNII NP-232**.

NLGI 00, DIN 51502: KSiF 00 U-60



Approved by:
10th Center of Chemmotology of the Ministry of Defence of Ukraine

VNII NP-232

Paste is used for lubricating splined and running threads at temperature up to **300°C**; for threaded connections which are non-moving at the process of aggregate's operating — up to **400°C**.

It is allowed to use a paste for slow-moving heavy friction units of rolling and sliding for the running of parts of friction units.

Durability in working friction pairs while using this paste is 6 - 10 times higher than in the use of paste **VNII NP-225**.

NLGI 3, DIN 51502: KF 3 U-50



Approved by:
10th Center of Chemmotology of the Ministry of Defence of Ukraine

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