















Lubricants for Agriculture and Farming



LUBRICANTS

www.gazpromneft-sm.com

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Company overview

Gazpromneft – Lubricants is the subsidiary of PJSC Gazprom Neft, specialized in the production and marketing of lubricating oils, greases and service fluids.

22% MARKET SHARE
PACKAGED
LUBRICANTS IN
RUSSIA*

700k TONS PER YEAR
LUBRICATING OILS,
GREASES AND
SERVICE FLUIDS*

6 PRODUCTION SITES

EXPORT TO 78 COUNTRIES WORLDWIDE

OMSK

One of the most technologically advanced blending plants in Eastern Europe.

Most advanced production facilities of hi-tech greases in Russia.

YAROSLAVL

Production of Group III base oils

BARI (GAZPROMNEFT LUBRICANTS ITALIA)

FRYAZINO

NOVI-SAD (NIS PETROL LUBRICANTS)

NIZHNY NOVGOROD ("Rospolychem")



Gazpromneft-Lubricants is the supplier of lubricants, greases and service fluids to major Russian agriculture and farming ventures, such as: the agriculture holding company Miratorg, corporate group RUSAGRO, Cherkizovo Group, Sucden, Kuban Holding and other leading agricultural companies.

Gazpromneft – Lubricants' quality management

system and production facilities are certified according to international standards.

 ISO 9001, ISO 14001, ISO 50001, OHSAS 18001, IATF 16949

* According to estimates 2019



G-PROFI ENGINE OIL

GAZPROMNEFT ENGINE OIL

G-Profi, G-Box, G-Truck, G-Special and G-Energy branded lubricants and service fluids provide enhanced properties and exceed main requirements of original equipment manufacturers. Besides, these products provide high performance machinery operation in harsh environments.

g-energy.org

Oils, greases and service fluids developed by Gazpromneft are supplied to 78 countries worldwide and confirm to all requirements placed on modern and advanced lubricants/fluids. They provide reliable equipment operation and are approved for application by leading global equipment and machinery manufacturers.

gazpromneft-oil.com

Gazpromneft – Lubricants is focused on developing and promoting a customized range of lubricants according to globally recognized quality standards and requirements of the leading manufacturers of industrial equipment and machinery.

This product catalogue contains descriptions of product ranges intended for hydraulic, engine, transmission, compressor and other industrial oil and grease applications met in agriculture and farming.

Agriculture and Farming

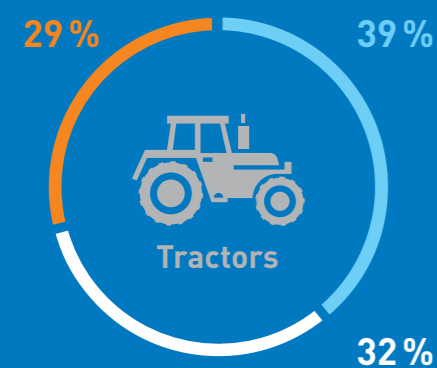
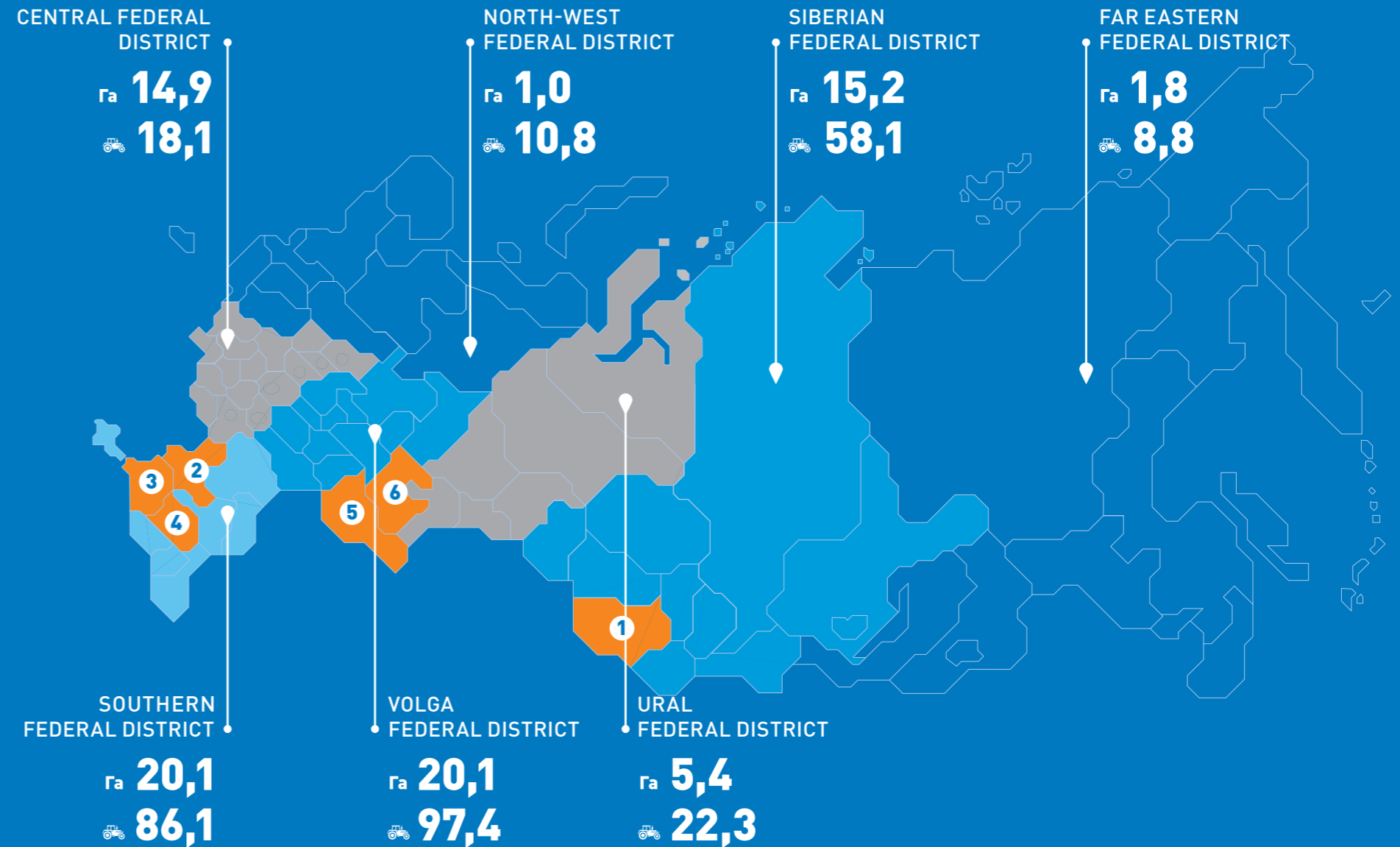
Industry features

1. Predominantly modern imported agricultural high-tech equipment requiring the use of highly technological lubricants

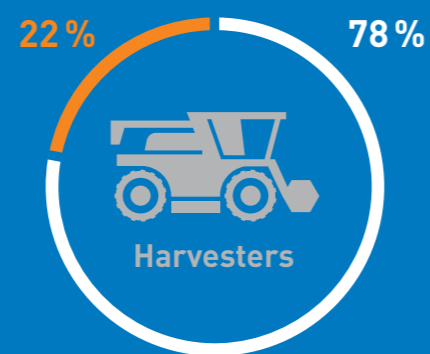
Among Russian market leaders are manufacturers like John Deere, Case New Holland, Claas, Kubota, AGCO and others*. G-Profi, G-Truck, G-Box and G-Special oil brands meet the requirements of the most advanced machinery and are equal or exceed performance levels of OEM's original products.

2. Earlier generations of equipment require special protection

Due to their reliability and durability there is still a large number of machinery and equipment made in the eighties or earlier operating in the agriculture industry. However lubricant formulation technologies are continually developed and Gazpromneft – Lubricants can provide advanced products still compatible with older equipment requirements, where earlier GOST quality standard lubricants were used. More information in the chapter "GOST replacement".



- Imported tractors
- Tractors made in Russia
- Tractors made in Belarus



- Imported harvesters
- Harvesters made in Russia

Main agricultural and farming regions are**:

- ① Altai region
- ② Rostov region
- ③ Karsnodar region
- ④ Stvaropol region
- ⑤ Orenburg region
- ⑥ Bashkortostan Republic


Icon explanation:



- Ha** Arable land (mill. of Ha)
- Number of machinery, (thousands)



** Source: Rosstat, Ministry of Industry and Trade



** Source: Rosstat, Ministry of Industry and Trade



Operating conditions of lubricants for agriculture and farming


- 1  Contamination of the hydraulic system due to mounted equipment exchange

→  Lubricants help keeping your engine and other equipment's parts clean
- 2  Presence of dust, dirt and residues of processed plants

→  Lubricants help keeping your engine and other equipment's parts clean
- 3  Heavy duty operations

→  Prevent wear and micropitting
- 4  Non-stop seasonal operations

→  Oil provides high oxidation stability and protection during the entire drain interval
- 5  Risk of high-sulfur fuel use

→  Surplus alkalinity (TBN) diminishes the risk of premature oil aging induced by excessive sulfur derived acid formation



Specifications of engine oils

Compliance of G-Profi engine oils with international specifications

Specification	G-Profi MSJ			G-Profi GT LA	G-Profi GTS		G-Profi GT	G-Profi MSI		G-Profi MSI Plus	G-Profi MSH		G-Profi CNG LA		G-Profi CNG
	5W-30	10W-30	15W-40	10W-40	5W-30	10W-40	10W-40	5W-40	10W-40	15W-40	10W-40	15W-40	10W-40	15W-40	15W-40
ACEA	E4				✓	✓	✓								
	E6	✓		✓											
	E7	✓		✓	✓	✓	✓	✓	✓	✓		✓			
	E9	✓	✓	✓	✓										
API	CF					✓							✓	✓	
	CG-4														✓
	CH-4											✓	✓		
	CI-4				✓		✓	✓	✓	✓					
	CJ-4	✓	✓	✓											
	SJ														✓
Global	SL							✓	✓	✓	✓	✓			
	DHD-1						✓								
	DH-1								✓	✓					
JASO	DH-2	✓		✓											

Specifications valid through 2019. Check www.g-energy.org for actual specifications/approvals and detailed information.

Compliance of G-Profi engine oils with OEM specifications

Specification		G-Profi MSJ			G-Profi GT LA	G-Profi GTS		G-Profi GT	G-Profi MSI		G-Profi MSI Plus	G-Profi MSH		G-Profi CNG LA		G-Profi CNG
		5W-30	10W-30	15W-40	10W-40	5W-30	10W-40	10W-40	5W-40	10W-40	15W-40	10W-40	15W-40	10W-40	15W-40	15W-40
Caterpillar	ECF-1a	✓	✓	✓	✓				✓		✓					
	ECF-2	✓	✓	✓					✓		✓					
	ECF-3	✓	✓	✓					✓		✓					
Cummins	CES 20074				✓									✓	✓	
	CES 20076/77				✓	✓			✓		✓		✓			
	CES 20078								✓		✓					
	CES 20081	✓	✓	✓												
Deutz	DQC II											✓	✓			
	DQC III						✓				✓					
	DQC III-LA		✓	✓							✓					
	DQC IV					✓					✓					
	DQC IV-LA	✓			✓											
Iveco	18-1804 TFE					✓										
MAN	M 3271-1	✓			✓											✓
	M 3275								✓	✓	✓	✓	✓			✓
	M 3277					✓	✓				✓					
	M 3377										✓					
	M 3477	✓			✓											
	M 3575		✓	✓												
	M 3677	✓														
MB	226.9															✓
	228.3								✓	✓	✓	✓	✓			
	228.31	✓	✓	✓												
	228.5					✓	✓				✓					
	228.51	✓			✓											
MTU	Cat. 2										✓	✓	✓	✓		
	Cat. 2.1		✓	✓												
	Cat. 3					✓	✓				✓					
	Cat. 3.1	✓			✓											
Renault Trucks	RD/RD-2											✓	✓			✓
	RGD	✓			✓											
	RLD/RLD-2	✓			✓	✓	✓		✓		✓					
	RLD-3	✓	✓	✓												
Other	JSC Avtodizel (YAMZ)				✓			✓		✓	✓	✓				
JSC Kamaz								✓		✓	✓	✓	✓			
JSC TMZ				✓				✓		✓	✓	✓				

Specifications valid through 2019. Check www.g-energy.org for actual specifications/approvals and detailed information.

Compliance of Gazpromneft engine oils with OEM requirements and international classifications

Specification		Gazpromneft Diesel Ultra		Gazpromneft Diesel Premium			Gazpromneft Diesel Prioritet				Gazpromneft Diesel Extra			Gazpromneft Turbo Universal		
		5W-30	10W-40	5W-40	10W-30	10W-40	15W-40	10W-30	10W-40	15W-40	20W-50	10W-40	15W-40	20W-50	15W-40	20W-50
ACEA	E7			✓	✓	✓	✓									
	E4	✓	✓													
API	CD														✓	✓
	CF-4/SG												✓	✓	✓	
	CH-4							✓	✓	✓	✓					
	CI-4/SL	✓	✓	✓	✓	✓	✓									
	SJ							✓	✓	✓	✓					
Caterpillar	ECF-1a			✓	✓	✓	✓									
	ECF-2			✓	✓	✓	✓									
Cummins	CES 20076	✓	✓	✓	✓	✓	✓	✓	✓	✓						
	CES 20077	✓	✓	✓	✓	✓	✓									
	CES 20078	✓	✓	✓	✓	✓	✓									
Deutz	DQC III			✓	✓	✓	✓									
	DQC IV-10	✓	✓													
Global	DHD-1			✓	✓	✓	✓									
MAN	M 3275-1			✓	✓	✓	✓	✓	✓	✓						
	M 3277	✓	✓													
MB	228.3			✓	✓	✓	✓									
	228.5	✓	✓													
MTU	Cat. 2			✓	✓	✓	✓	✓	✓	✓						
	Cat. 3	✓	✓													
Renault Trucks	RLD	✓	✓	✓	✓	✓	✓									
	RLD-2	✓	✓	✓	✓	✓	✓									
JSC Avtodizel (YAMZ)			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
JSC Kamaz			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
JSC TMZ			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Specifications valid through 2019. Check www.gazpromneft-oil.com for actual specifications/approvals and detailed information.

Compliance of UTTO, STOU and TO-4 type oils with OEM requirements and international classifications

Specification		G-Special STOU	G-Special STOU	G-Special UTTO Premium	G-Special UTTO	G-Special TO-4
SAE Grade		10W-30	10W-40	10W-30	10W-30	10W, 30, 50
ACEA	E3	✓	✓			
API	CD, CE, CF-4, CG-4, SE, SF	✓	✓			
	GL-4	✓	✓	✓	✓	
MB	227.1	✓	✓			
	228.1		✓			
Allison	C-4	✓	✓	✓	✓	✓
Caterpillar	TO-2	✓	✓			
	TO-4					✓
Fiat	AF87		✓			
Ford	ESN M2C 134-A, 159 B&C, 86 B	✓				
	ESN M2C 134-D, 86 B/C			✓		
	WSS-M2C159B/C, M2C86B		✓			
Ford New Holland	NH 82009201 / 82009202	✓				
	NH 8209203		✓			
John Deere	JDM J20C/D			✓	✓	
	JDM J27	✓	✓			
Kubota	UDT			✓		
MAN	271	✓	✓			
Massey Ferguson	CMS M1127A, M1139	✓				
	CMS M1135	✓		✓		
	CMS M1141			✓		
	CMS M1143			✓	✓	
	CMS M1144	✓	✓	✓	✓	
Case New Holland	CMS M1145	✓	✓	✓	✓	
	CNH MAT 3505, 3506, 3509, 3510, 3526, 3540			✓		
	CNH MAT 3525			✓	✓	
	NH 024C		✓			
	NH 410B	✓				
Volvo	NH 420A	✓				
	97303 (WB 101)			✓	✓	
	TE-ML 03C					✓
ZF	TE-ML 03E, 05F			✓	✓	
	TE-ML 05K, 06B, 06C, 07B, 07D		✓			
	TE-ML 06K			✓		
	ZF TE-ML 07F (SAE 30 and 50 only)					✓
	TE-ML 17E, 21F			✓	✓	
Other	Sperry Vickers/Eaton I-280-S/ M2950S; Sauer-Sundstrand/ Danfoss Hydro Static Trans Fluid	✓	✓			

Specifications valid through 2019. Check www.g-energy.org for actual specifications/approvals and detailed information.

OEM requirements

Gazpromneft – Lubricants invested significant intellectual and financial resources to achieve the best performance for each of its products according to claimed specifications, providing an additional performance margin for enhanced machinery protection. The company's products are global competitors to other advanced and international analog brands.



Compliance of oils and greases with OEM requirements and international specifications

Engine oils

SAE	5W-30	10W-30	xxW-40	5W-30	10W-40	15W-40	10W-30	15W-40	10W-30	15W-40	20W-50	10W	15W-40
Requirements	API CJ-4 ACEA E9, E7, E6 MB 228.51, MAN M 3677, Deutz DQC IV- 10 LA, Caterpillar ECF-3, Cummins CES 20081	API CJ-4 ACEA E9 MB 228.31, Caterpillar ECF-3	API CJ-4 ACEA E7, E9 MB 228.31, Caterpillar ECF-1a, 2, 3	ACEA E4 MB 228.5, MAN M 3277	ACEA E4 MB 228.5, Deutz DQC III, MAN M 3277	API CI-4/CH-4 ACEA E7, E5 MB 228.3, Cummins CES 20078, 77, 76	API CI-4/CH-4 ACEA E7, E5 MB 228.3, Cummins CES 20078, 77, 76	API CH4/SJ	API CF-4/SG	API CF-4/SG	API CF-4/SG	API CE	API CD
Proper OEM product CASE			UNITEK 10W-40			No.1 ENGINE OIL 15W-40	No.1 ENGINE OIL 10W-30		ENGINE OIL 10W-30	ENGINE OIL 15W-40	ENGINE OIL 20W-50	ENGINE OIL 10	PREMIUM 15W-40
Proper OEM product NEW HOLLAND						MASTERGOLD HSP 15W-40	MASTERGOLD HSP 10W-30		SUPER GOLD 10W-30	SUPER GOLD 15W-40	SUPER GOLD 20W-50	SUPER 10	
Proper OEM product CLAAS	AGRIMOT SYNTEC FE 5W-30	AGRIMOT PROTEC FE 10W-30	AGRIMOT PROTEC 10W-40	AGRIMOT ULTRATEC FE 5W-30	AGRIMOT ULTRATEC 10W-40	AGRIMOT SDX 15W-40	AGRIMOT SDX FE 15W-30						
Proper OEM product JOHN DEERE		Plus-50 II 10W-30	Plus-50 II 15W-40 (above: -20 °C)			Plus-50 15W-40		Torq-Gard 15W-40					
Proper Gazpromneft – Lubricants product	Top- grade	G-Profi MSJ 5W-30	G-Profi MSJ 10W-30	G-Profi MSJ 15W-40 (above: -20 °C) G-Profi MSJ 5W-30 (below: -20 °C)	G-Profi GTS 5W-30	G-Profi GTS 10W-40	G-Profi MSI Plus 15W-40		G-Profi MSH 15W-40		G-Profi MSF 15W-40		G-Profi MSF 10W
	Main- stream				Gazpromneft Diesel Ultra 5W-30	Gazpromneft Diesel Ultra 10W-40	Gazpromneft Diesel Premium 15W-40		Gazpromneft Diesel Premium 10W-30	Gazpromneft Diesel Prioritet 15W-40	Gazpromneft Diesel Prioritet 10W-30 <i>(exceeds requirements)</i>	Gazpromneft Diesel Extra 15W-40	Gazpromneft Diesel Extra 20W-50

Transmission oils

SAE	Requirements	Proper OEM product CASE	Proper OEM product NEW HOLLAND	Proper OEM product CLAAS	Proper OEM product JOHN DEERE	Proper Gazpromneft – Lubricants product	
						Top-grade	Mainstream
UTTO							
10W-30	MAT 3505 (MS 1209)	HY-TRAN Ultra	MASTERTRAN				
	MAT 3525	NEXPLORE					G-Special UTTO 10W-30
	MS 1210, ALLISON C4	TCH Fluid (SAE 10W)					
	API GL 4 NH 410 B ZF TE-ML 03E, 05F, 17E, 21F		MULTI G				
	API GL 4 NH 420 A		MULTI F (SAE 20W-30)				G-Special UTTO Premium 10W-30
	API GL-4 Massey Ferguson CMS M1145/M1143 , John Deere JDM J20C, Ford M2C 134D/FHNA 2C 201.00, ZF TE-ML 03E/ 05F/17E/21F			AGRISHIFT GA 12			
	API GL-4 Massey Ferguson CMS M1141 / M1135 , Ford M2C 86B/86C			AGRISHIFT THFI			G-Special UTTO 10W-30
JDM J20C/JDM J20D					Hy-Gard		
STOU							
10W-40	API GL-4 ZF TE-ML 06B, 07B	MULTI Tractor (meets ZF TE- ML 06D, 06F as well)	VT SPECIAL (meets ZF TE- ML 06F as well)				G-Special STOU 10W-40
TO-4							
50	CAT TO-4	TRF SAE 50	TBL				G-Special TO-4 50

SAE	Requirements	Proper OEM product CASE	Proper OEM product NEW HOLLAND	Proper OEM product CLAAS	Proper OEM product JOHN DEERE	Proper Gazpromneft – Lubricants product	
						Top-grade	Mainstream
ATF							
	ATF DEXRON II D	A.T.F.	HYDRODEX				G-Box ATF DX II
	ATF DEXRON III ZF TE-ML 03D, 02F, 14A	TRANS XHD	HYDRODEX 3				G-Box Expert ATF DX III
Gear transmissions							
75W-90	API GL-4 / GL-5			AGRISHIFT SYN FE 75W-90			G-Box GL-4/ GL-5 75W-90
80W-90	API GL-5	GEAR 135 H EP 80W-90	HYPOIDE 90	AGRISHIFT MT 80W-90	Extreme-Gard 80W-90		G-Truck GL-5 80W-90
85W-140		GEAR 135 H EP 85W-140	HYPOIDE 140		Extreme-Gard 85W-140		G-Truck GL-5 85W-140
80W-90	API GL-5 (Limited Slip)	GEAR 135 H EP LS 80W-90, AXLEPOWER	HYPOIDE 90 LS, AXF 80W-90	AGRISHIFT BLS 80W-90	Extreme-Gard LS90		G-Truck LS 80W-90
80W-90	API GL-4	TRAMEC S					G-Truck GL-4 80W-90
Universal lubricants							
SAE	Requirements	Proper OEM product; CASE		Proper OEM product; NEW HOLLAND		Proper Gazpromneft – Lubricants product	
xxW-30	API GL 4, API CE ZF TE-ML 06B, 07B	SUPER Universal 15W-30				G-Special STOU 10W-30	
		SUPER Universal 10W-30		UNIVERSAL 10W-30			



Hydraulic oils

ISO VG	Requirements	Proper OEM product CASE	Proper OEM product NEW HOLLAND	Proper OEM product CLAAS	Proper OEM product JOHN DEERE	Proper Gazpromneft – Lubricants product	
						Top-grade	Mainstream
46	DIN 51524-3 HVLP	HYDRAULIC Excavator Fluid	HYDROSYSTEM 46 HV	AGRIHYD HV 46	Hydrau-Gard 46 Plus	G-Special Power HVLP-46 G-Special Hydraulic HVLP-46	Gazpromneft Hydraulic HVLP-46
68	DIN 51524-3 HVLP	AW Hydraulic Fluid 68 HV	HYDROSYSTEM 68 HV			G-Special Hydraulic HVLP-68	Gazpromneft Hydraulic HVLP-68
46	DIN 51524-3 HVLP-D			AGRIHYD HVLP-D 46		G-Special Hydraulic HVLPD-46	
32	DIN 51524-2 HLP	AW Hydraulic Fluid 32	HYDROSYSTEM 32			G-Special Power HVLP-32	Gazpromneft Hydraulic HLP-32
46	DIN 51524-2 HLP	AW Hydraulic Fluid 46				G-Special Power HVLP-46	Gazpromneft Hydraulic HLP-46
68	DIN 51524-2 HLP		HYDROSYSTEM 68				Gazpromneft Hydraulic HLP-68
46	DIN 51524 HLP, Zn Free		HI-TECH 46 LL				Gazpromneft Hydraulic HZF-46

Greases

NLGI	Thickener	EP/solid additives	Proper OEM product CASE	Proper OEM product NEW HOLLAND	Proper OEM product CLAAS	Proper OEM product JOHN DEERE	Proper Gazpromneft – Lubricants product
2	Lithium-Calcium soap	EP additives	MULTI-PURPOSE Grease 251H EP	GR 9			Gazpromneft Grease LTS 2
		EP additives + Molybdenum disulfide	MOLY Grease				Gazpromneft Grease LTS Moly EP 2
	Lithium Complex soap	EP additives	PREMIUM Grease EP2	HI-TEMP GREASE	AGRIGREASE EP 2	Grease-Gard Premium Plus	Gazpromneft Grease LX EP 2
	Lithium/Lithium-Calcium soap	EP additives + Molybdenum disulfide		GR 75 MD			Grease LTS Moly EP2
	Lithium soap	EP additives				Grease-Gard Premium	Gazpromneft Grease L EP 2



Instructions of product application for agricultural and farming machinery



Tractors

Units	JOHN DEERE		CASE		NEW HOLLAND			CLAAS	
	Series 4000, 6D, 7030, 6M	8R, 9R	Series Puma, Maxxum	Magnum	Series T6000, T7000, TS	T8	T9	XERION	AXION, ARION, AXOS
Engine	G-Profi MSI Plus 15W-40 DPF equipped engines: G-Profi MSJ 15W-40 / G-Profi GT LA 10W-40							G-Profi GT 10W-40 / G-Profi MSI Plus 15W-40 DPF equipped engines: G-Profi MSJ 15W-40 / G-Profi GT LA 10W-40	
Hydraulic system	G-Special UTTO 10W-30				G-Special UTTO Premium 10W-30		G-Special Hydraulic HVLDP-46	G-Special UTTO Premium 10W-30	
Gearbox	G-Special UTTO 10W-30				G-Special UTTO Premium 10W-30		G-Special UTTO Premium 10W-30	G-Special UTTO Premium 10W-30 (excluding variators)	
Differentials	G-Special UTTO 10W-30		G-Special UTTO Premium 10W-30	С самоблоком G-Truck LS 85W-140	G-Special UTTO Premium 10W-30		G-Truck GL-5 85W-140	G-Truck LS 80W-90	
Wheel hub reducers			G-Special UTTO Premium 10W-30	Без самоблока G-Truck GL-5 85W-140					
Greases	Load on each greasing point		up to 3000 N		Gazpromneft Grease LX EP 2. Application: Multipurpose grease for units requiring no solid additives.				
			up to 2800 N		Gazpromneft Grease LTS 2. Application: Multipurpose grease for units requiring no solid additives.				

Information above supplied for reference only. Check the equipment instruction manual to establish lubrication routines customized for specific equipment and conditions.



Harvesters

Units	JOHN DEERE	CASE	NEW HOLLAND	CLAAS*			
	Series S, W	Axial-Flow	Series CR, CX	LEXION series	TUCANO series	JAGUAR series	
Engine (lubricant)	G-Profi MSI Plus 15W-40 DPF equipped engines: G-Profi MSJ 15W-40/G-Profi GT LA 10W-40			G-Profi GT 10W-40 / G-Profi MSI Plus 15W-40 (depending on equipment model and assembly)			
Hydraulic system (lubricant)	G-Special UTTO Premium 10W-30 G-Special Power HVLP-46 G-Special Hydraulic HVLP-46			G-Special Hydraulic HVLPD-46			
Transmission	Units	Hydrostatic drive, main gearbox	Hydrostatic transmission, power take off, feedroll gearbox, feeder gearbox	Hydrostatic drive, main gearbox	Manual transmission, final drive, threshing drum, planetary gears, transferbox, wheel reductions	Manual transmission, final drive Carraro, Siege differentials, feeder unit transfer gearbox, distribution gearbox, feedroll gearbox, final drives, steering axle	
	Lubricant	G-Special UTTO Premium 10W-30			G-Truck GL-5 80W-90		
	Units	Manual transmission, countershaft drive, final reduction, feeder house gearcase, separator drive	Final drives, elbow gearbox, unloading lower gearbox, traction gearbox	Traction gearbox, feedroll gearbox, unloading drive gearbox, final drives	Rotor gearbox, grain tank unloading gear, steering axle	Drum speed reducer, rotor gearbox	Manual gearbox, 4-TRAC differential
	Lubricant	G-Truck GL-5 80W-90 or G-Truck GL-5 85W-140 (depending on model)			G-Truck GL-4 80W-90		
Greases	Load on greasing point	up to 3000 N	Gazpromneft Grease LX EP 2. Application: multi-purpose grease for applications requiring no solid additives.				
		up to 2800 N	Application: multi-purpose grease for applications requiring no solid additives.				

* Depending on the year of production recommended transmission lubricant units may vary.
Before choosing GL-4 or GL-5 check the instruction manual supplied by the original equipment manufacturer.

Information above supplied for reference only. Check the equipment instruction manual to establish lubrication routines customized for specific equipment and conditions.

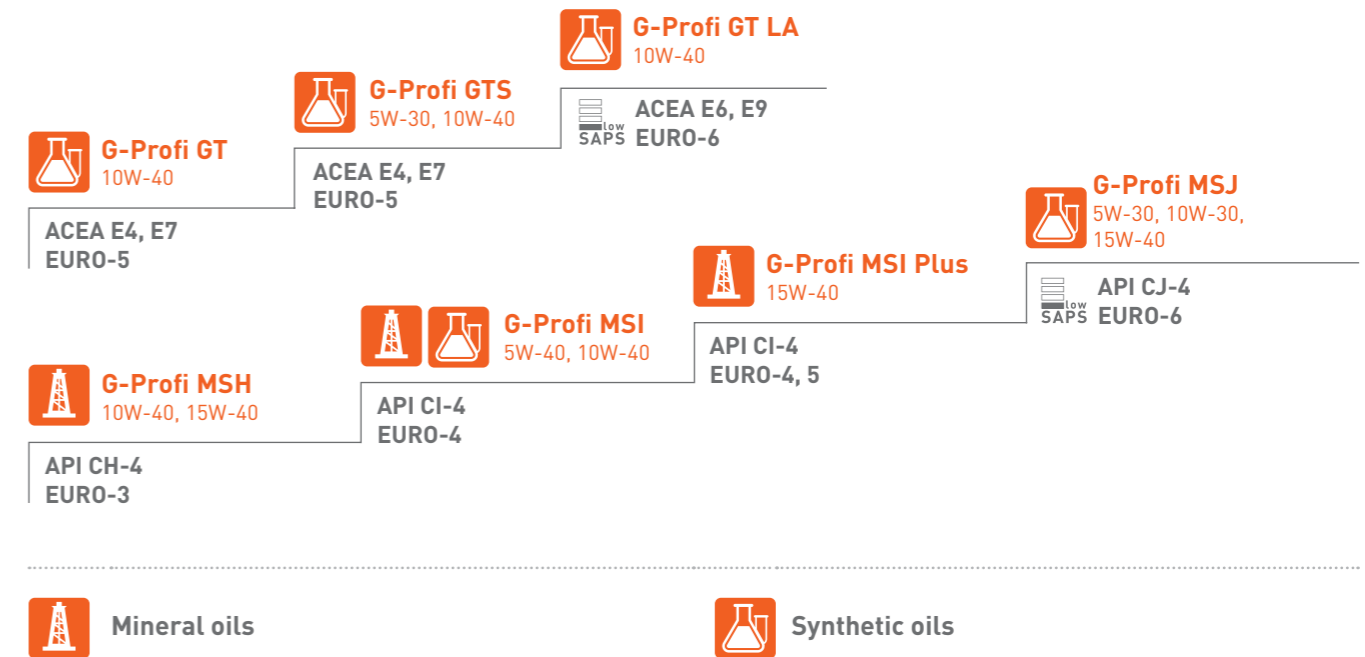
Premium performance lubricants for agricultural and farming machinery

G-Profi, G-Truck, G-Energy and G-Special premium performance lubricants provide reliable protection of agriculture and farming equipment subjected to harsh operating conditions and extreme loads.



- High system cleanliness
- Corrosion prevention
- Anti-wear protection
- Oxidative stability
- Viscosity stability
- Reliable equipment operation

6.1. Engine oils



Engine oils G-Profi

Performance grade	SAE viscosity grade of G-Profi engine oils	Aftertreatment system compatibility		Gas engine compatibility	Antiwear protection	Corrosion inhibition	Sludge control	High-sulfur fuel compatibility	Soot control	Fuel economy*	
		EGR+ SCR	DPF								
ACEA E4 MB 228.5	G-Profi GTS										
	5W-30	✓			■■■	■■■	■■■	■■■■	■■■	✓	
	10W-40	✓			■■■	■■■	■■■	■■■■	■■■		
G-Profi GT											
	10W-40	✓			■■■	■■■	■■■	■■■	■■■		
ACEA E9/E6 MB 228.31/51	G-Profi GT LA										
	10W-40	✓	✓	✓	■■■	■■■	■■■	■■■	■■■		
ACEA E6 (5W-30) ACEA E9 MB 228.51 (5W-30) MB 228.31 Cummins CES 20081 Caterpillar ECF-3	G-Profi MSJ										
	5W-30	✓	✓	✓	■■■	■■■	■■■	■■■	■■■	✓	
	10W-30	✓	✓	✓	■■■	■■■	■■■	■■■	■■■	✓	
	15W-40	✓	✓	✓	■■■	■■■	■■■	■■■	■■■		
ACEA E7 API CI-4 or CH-4	G-Profi MSI Plus										
	15W-40	✓			■■■	■■■	■■■	■■■	■■■		
	G-Profi MSI										
	5W-40, 10W-40	✓			■■■	■■■	■■■	■■■	■■■		
G-Profi MSH											
	10W-40, 15W-40				■■■	■■■	■■■	■■■	■■■		
Gas engine oils	G-Profi CNG LA										
	10W-40, 15W-40	✓		✓	■■■	■■■	■■■	■■■	■■■		
G-Profi CNG											
	15W-40			✓	■■■	■■■	■■■	■■■	■■■		

* Fuel economy compared to xxW-40 viscosity grade products.



G-Profi GT 10W-40

SHPD (Super High Performance Diesel) category oil is meant to be applied on heavy-duty agriculture, general and specialized machinery's diesel engines. Oil provides enhanced anti-wear features, thermal and oxidation stability, prevents deposit formation, promotes corrosion inhibition and excellent soot control properties at any ambient temperature.

APPROVALS:

API CI-4; Deutz DQC IV; MACK EO-N; MAN M 3277; MAN M 3377; MB 228.5; Renault Trucks RLD-2; Volvo VDS-3; JSC TMZ; JSC Avtodizel (YAMZ).

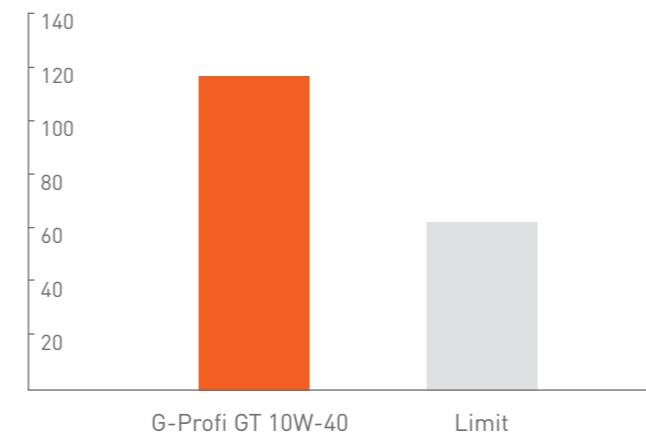
SPECIFICATIONS:

ACEA E4, E7; Cummins CES 20078; Detroit Diesel DDC 93K215; Global DHD-1; Komatsu; MACK EO-M Plus; MTU Cat. 3; Renault Trucks RXD.

High temperature oxidation*

High oxidation stability provides top performance properties during the entire drain cycle even if extended intervals are applied.

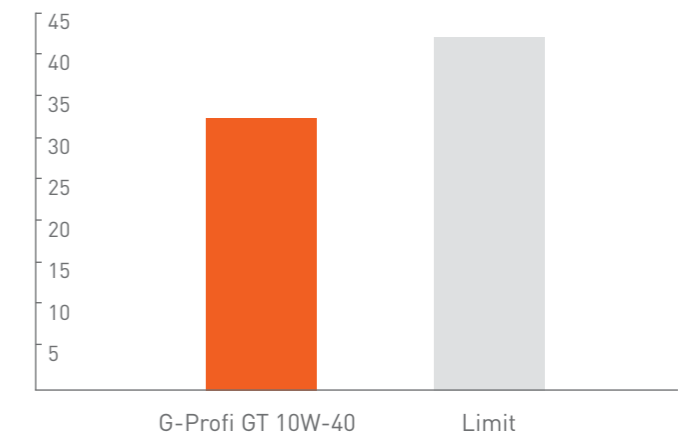
Exposure, minutes



Plain bearing corrosion**






Reliable anti-corrosion protection of plain bearings maximizes service life and cuts spare part costs.

Lead content in oil, ppm



* Oxidation Test CEC L-08-99 (PDSC); ** Corrosion Test ASTM D6594.

Advantages of G-Profi GT 10W-40

	High alkalinity reserve	Neutralizes acids formed in the combustion chamber, lowering maintenance costs.
	Enhanced anti-wear properties	Formation of protective layers on the sliding surfaces, reducing unscheduled downtime.
	High thermal stability	Maintains adequate lubricating properties during elevated temperature operations, maximizing drain intervals.
	Prevents detrimental soot accumulation	Diminishes soot ingress induced oil thickening, maintaining the engine's efficiency.
	Outstanding corrosion inhibition	Plain bearing protection, reducing maintenance costs.



G-Profi MSI Plus 15W-40

SHPD (Super High Performance Diesel) category oil is meant to be applied on heavy-duty agricultural, general purpose and specialized machinery's diesel engines. Robust anti-wear performance. Enhanced detergency/dispersency provides excellent soot control properties at any ambient temperature.

APPROVALS:

API CI-4/SL; JASO DH-1; Cummins CES 20078; Detroit Diesel DDC 93K215; Deutz DQC III; Mack EO-N; MAN M 3275-1; MB-Approval 228.3; MTU Cat. 2; Renault Trucks RLD-2; Volvo VDS-3; JSC TMZ; JSC Avtodizel (YAMZ); JSC Kamaz.

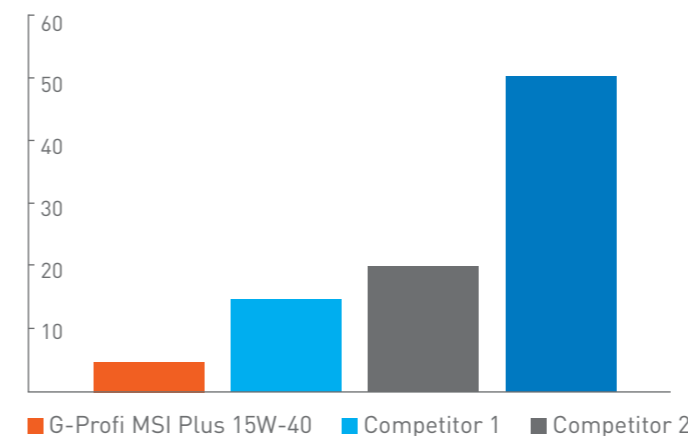
SPECIFICATIONS:

ACEA E7; Cummins CES 20076/77; Caterpillar ECF-1a/ECF-2; Komatsu.

Corrosion*

High corrosion inhibiting properties extend the life cycle of the crankshaft bearings and improve the engine's reliability.

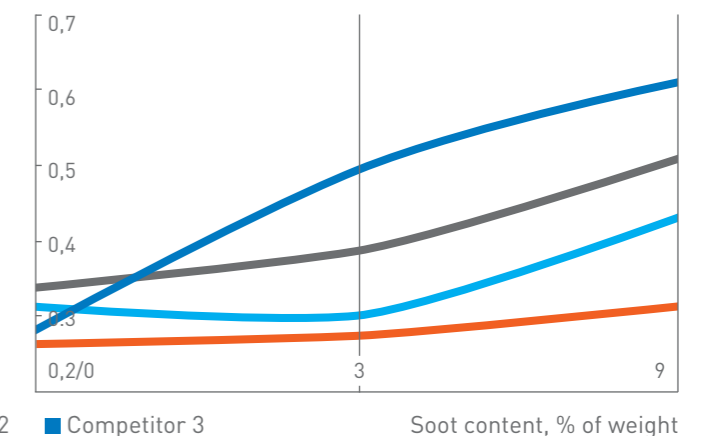
Metallic wear particle count, ppm









Soot control**

Outstanding dispersing properties provide effective soot control in operating conditions of variable fuel quality – soot particles are held in the bulk of the lubricant and are removed to the oil filter, consequently reducing components' wear.

Wear scar diameter, mm



Advantages of G-Profi MSI Plus 15W-40

	High oxidation stability	Maintains optimal lubricating properties over the entire drain, extending drain intervals, and reducing maintenance costs.
	Outstanding dispersing-system cleaning potential	Reduces deposit and sludge formation on the engine's components, reducing maintenance and repair costs
	Alkalinity (TBN) reserve	Neutralization of fuel generated acids formed by the internal combustion process, reducing unscheduled maintenance and downtime costs
	Diminished detrimental effect of the soot	Reduced soot related oil thickening, allowing for an optimal oil pressure all over the lubrication system
	Viscosity stability in high temperature operating conditions	Reliable lubrication in high temperature and extreme load operating conditions, reducing downtime
	Outstanding corrosion inhibiting property	Protection of the engine's components against corrosion, reducing part procurement costs

* Test: Corrosion ASTM D6594; ** Test: High Frequency Reciprocating Rig.

**G-PROFI GTS 5W-30**

Synthetic energy saving oil for diesel engines operated according to Euro-5 exhaust gas treatment requirements in a wide temperature range (no diesel particulate filter (DPF) compatibility).

- ✓ **Enhanced alkalinity (TBN) and reinforced detergency properties.**
- ✓ **Extended drain intervals are permissible.**

G-PROFI GTS 10W-40

Synthetic diesel engine oil according to Euro-5 exhaust gas treatment requirements operated in a wide temperature range (no diesel particulate filter (DPF) compatibility).

APPROVALS:

MACK EO-N; MAN M 3277; MB 228.5; Renault Trucks RLD-2; Volvo VDS-3; confirmed product compliance with Scania LDF-3 requirements.

SPECIFICATIONS:

ACEA E4/E7; Cummins CES 20077; Deutz DQC IV; DAF Extended Drain; Ford WSS-M2C212-A1; Iveco 18-1804 TFE; MACK EO-M Plus; MB 235.28; Renault Trucks RXD; Voith Retarder Oil Class B; MTU Cat. 3.

APPROVALS:

MAN M 3277; MB 228.5; confirmed product compliance with Scania LDF-3 requirements.

SPECIFICATIONS:

ACEA E4/E7; Cummins CES 20072; Volvo VDS-3; DAF Extended Drain; Deutz DQC III-10; Iveco; MACK EO-N/EO-M Plus; MTU Cat. 3; ZF TE-ML 04C; Renault Trucks RLD-2/RXD.

G-PROFI GT LA 10W-40

Synthetic engine oil according to Euro-5, 6 environmental requirements operated in a wide temperature range. Compatible with all exhaust gas aftertreatment systems. Applicable for lubrication of some gas powered engines.

APPROVALS:

API CI-4; MACK EO-N; MAN M 3271-1; MAN M 3477; MB 228.51; Renault Trucks RLD-2; Volvo VDS-3; JSC Avtodizel (YAMZ); JSC TMZ.

SPECIFICATIONS:

ACEA E6, E9, E7; Caterpillar ECF-1a; JASO DH-2; Cummins CES 20076, 77; MTU Cat. 3.1; Deutz DQC IV-LA; MACK EO-M Plus; Renault Trucks RGD/RXD; product formulation complies to Scania Low Ash specification requirements.

G-PROFI MSJ 5W-30

Synthetic low-ash energy saving engine oil according to Euro-5, 6 environmental requirements operated in a wide temperature range. Compatible with all exhaust gas aftertreatment systems. Applicable for lubrication of some gas powered engines.

APPROVALS:

API CJ-4/SN; Cummins CES 20081; MACK EO-0 PP; MAN M 3271-1; MAN M 3477; MAN M 3677; MB 228.51; Renault Trucks RLD-3; Volvo VDS-4.

SPECIFICATIONS:

ACEA E6, E9, E7; Caterpillar ECF-3; JASO DH-2; Detroit Diesel DDC 93K218; Deutz DQC IV-LA; MACK EO-M Plus; MACK EO-N PP; MB 228.31; MB 235.28; MTU Cat. 3.1; Voith Retarder Oil Class B; Renault Trucks RGD/RLD-2/RXD; Volvo VDS-3; product formulation complies to Scania Low Ash specification requirements.

**G-PROFI MSJ 10W-30, 15W-40**

Engine oils for heavy-duty engines according to Euro-5, 6 environmental requirements operated in a wide temperature range. Compatible with all exhaust gas aftertreatment systems.

10W-30 APPROVALS:

API CJ-4/SN; Cummins CES 20081; MACK EO-0 PP; MAN M 3575; Renault Trucks RLD-3; Volvo VDS-4.

SPECIFICATIONS:

ACEA E9; Caterpillar ECF-1a/ ECF-2/ ECF-3; Deutz DQC III-LA; MB 228.31; MTU Cat. 2.1.

15W-40 SPECIFICATIONS:

ACEA E9; API CJ-4/SN; Caterpillar ECF-1a/ ECF-2/ ECF-3; Cummins CES 20081; Detroit Diesel DDC 93K218; Deutz DQC III-LA; MACK EO-0 PP; MAN M 3575; MB 228.31; MTU Cat. 2.1; Renault Trucks RLD-3; Volvo VDS-4.

**G-PROFI MSI 5W-40, 10W-40**

Semi-synthetic oils for engines according to Euro-4 exhaust gas treatment requirements operated in a wide temperature range.

5W-40**SPECIFICATIONS:**

ACEA E7; API CI-4/SL; MB 228.3; MAN M 3275; Volvo VDS-3.

10W-40 APPROVALS:

API CI-4/SL; Cummins CES 20076; Deutz DQC III; MACK EO-N; MAN M 3275-1; MB 228.3; MTU Cat. 2; Renault Trucks RLD/RLD-2; Volvo VDS-3; JSC Avtodizel (YAMZ); JSC TMZ; JSC Kamaz.

SPECIFICATIONS:

ACEA E7; Caterpillar ECF-1a; Cummins CES 20077; Detroit Diesel DDC 93K215; JASO DH-1; Komatsu; MACK EO-M Plus.

**G-PROFI CNG 15W-40**

Low ash (low-SAPS) engine oil for heavy-duty engines powered by compressed natural gas (CNG) or liquid petrol gas (LPG) and operated in a wide temperature range.

Periodic or permanent operation on liquid fuel is permissible.

APPROVALS:

MAN M 3271-1; Renault Trucks RGD.

SPECIFICATIONS:

API CG-4/SJ; MAN M 3275; MB 226.9; MB 228.1.



G-Profi MSH 10W-40, 15W-40

Semi-synthetic (10W-40) and mineral (15W-40) engine oils for highly loaded diesel engines according to Euro-3 exhaust gas requirements operated in a wide temperature range.

10W-40 APPROVALS:
JSC Avtodizel (YAMZ);
JSC Kamaz; JSC TMZ.

SPECIFICATIONS:
API CH-4/SL; Deutz DQC II; Komatsu;
MAN M 3275; MB 228.3; MTU Cat. 2;
Renault Trucks RD/RD-2; Volvo VDS-2.

15W-40 APPROVALS:
Deutz DQC II; MAN M 3275-1; MB 228.3;
MTU Cat. 2; Renault Trucks RD/RD-2;
Volvo VDS-2; JSC Avtodizel (YAMZ);
JSC Kamaz; JSC TMZ.

SPECIFICATIONS:
ACEA E7; API CH-4/SL;
Cummins CES 20076/77; Komatsu; MACK
EO-M Plus.



G-Profi CNG LA 10W-40, 15W-40

Semi-synthetic (10W-40) and mineral (15W-40) low ash (low-SAPS) engine oils for highly loaded engines powered by compressed natural gas (CNG) and operated in a wide temperature range.

10W-40 APPROVALS:
JSC Kamaz.

SPECIFICATIONS:
Cummins CES 20074; API CF;
Detroit Diesel DDC 93K216.

15W-40 APPROVALS:
Cummins CES 20074.

SPECIFICATIONS:
API CF.

6.2. G-Truck and G-Box transmission oils

Classification of manual transmission and drive-axles oils

	API GL-4	API GL-5	API GL-4/GL-5
Application	 Manual gearboxes and other light duty transmission units	 Differentials, manual gearboxes with steel synchromesh or non-synchronized.	 Various transmission units built with copper alloy parts or hypoid gears.
Product range	G-Truck GL-4 80W-90 G-Truck Z 75W-80 G-Box GL-4 75W-90 G-Box Expert GL-4 75W-90, 80W-85	G-Truck GL-5 80W-90 G-Box GL-5 75W-90 G-Box Expert GL-5 75W-90, 80W-90 Special oils for LSD-differentials: G-Truck LS 80W-90, 85W-140	G-Truck GL-4/GL-5 80W-90 G-Box GL-4/GL-5 75W-90

Property icon

	Anti-wear properties		Extreme pressure properties		Extended drain interval
	Friction modified		Copper alloy compatibility		

Product range of G-Truck and G-Box transmission oils

Product name, SAE viscosity grade	Basestock	Wear and micropitting prevention	Extended drain interval	Limited Slip compatibility*	Oil film strength	Copper alloy compatibility	OEM requirements
API GL-4/ GL-5 G-Box GL-4/GL-5 75W-90		■■■	✓		■■■	✓	■■■
G-Truck GL-4/GL-5 80W-90		■■■	✓		■■■	✓	■■■
API GL-5 G-Box GL-5 75W-90		■■■			■■■		
G-Truck GL-5 80W-90, 85W-90		■■■			■■■		■■■
85W-140		■■■			■■■		■■■
G-Truck LS 80W-90, 85W-90 85W-140		■■■		✓ ✓	■■■ ■■■		■■■ ■■■
G-Box Expert GL-5 75W-90		■■■			■■■		
80W-90		■■■			■■■		
API GL-4 G-Box GL-4 75W-90		■■■			■■■	✓	
G-Truck GL-4 80W-90		■■■			■■■	✓	■■■
G-Truck Z 75W-80		■■■			■■■	✓	■■■
G-Box Expert GL-4 75W-90		■■■			■■■	✓	
80W-85		■■■			■■■	✓	■■■

Synthetic oils

Semy-synthetic oils

Mineral oils

* Limited Slip differential

G-Truck GL-5 80W-90

APPROVALS:
MB 235.0; MAN 342 Type M1;
ZF TE-ML 16B, 17B, 19B, 21A.

SPECIFICATIONS:
API GL-5; DAF MAT 74002; Volvo 97310;
Renault Trucks; ZF TE-ML 05A, 07A, 08.

G-Truck GL-5 85W-140

APPROVALS:
ZF TE-ML 16D, 21A.

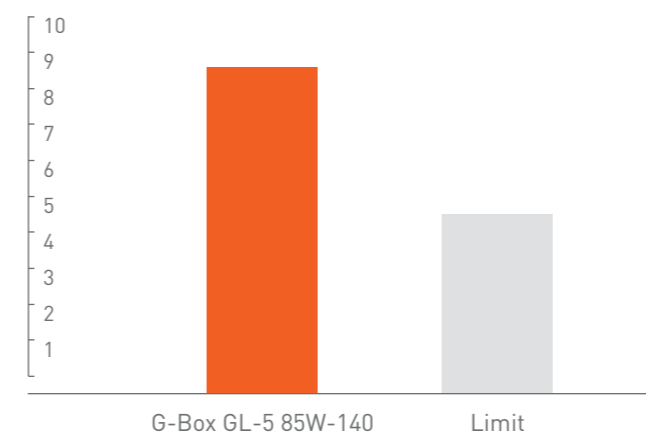
SPECIFICATIONS:
API GL-5; DAF MAT 74002; Volvo 97310; Renault Trucks; Iveco; ZF TE-ML 05A, 07A, 08.

Advantages of G-Truck GL-5 80W-90 and G-Truck GL-5 85W-140 transmission oils

EP	High anti-wear properties	Effective and reliable lubrication of the gear's teeth even at most extreme loads, lengthening the differentials' service life.
OIL	Long-lasting viscosity stability	Maintains adequate lubricating properties over the entire oil drain interval, allowing for a reliable protection of transmission gears.
G	Robust resistance against thermal degradation	Prevents deposit and sludge buildup thus preventing hindered heat removal from friction surfaces, reducing axle gear overheating risk.
S	Sealant elastomer compatibility	Reduced leakage and unscheduled downtimes.

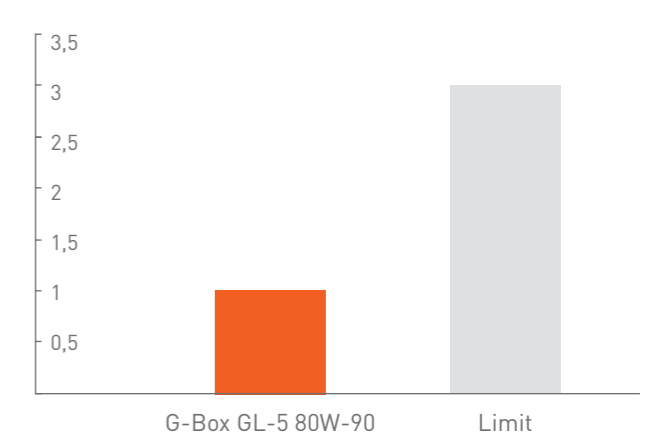
Protection of hypoid gearings in high torque operating conditions*

Anti-wear protection, rating



Protection of the heat exposed transmission parts**

Insoluble deposits, %



* Test ASTM D6121 (L-37); ** Test ASTM D5704 (L-60).

Specifications valid through 2019. Check www.g-energy.org for actual specifications/approvals and detailed information.

**API GL-4/GL-5**

Universal API GL-4/GL-5 oils are designed for application on transmission units requiring API GL-4 (non-hypoid axles, synchronized manual gearboxes, transfer boxes, power take off transmissions etc.) as well as on transmissions according to API GL-5 (hypoid transmissions, non-synchronized manual gearboxes, transfer boxes, power take off units etc.). not recommended for use on LSD.

**G-Box GL-4/GL-5 75W-90**

Universal synthetic transmission oil for a wide ambient temperature range application formulated on the basis of exclusive Group IV (PAO) base stock. Compared to mineral products, it provides extended drain intervals.

APPROVALS:

MAN 341 Type E3;
MAN 341 Type Z2;
MAN 342 Type S1;
MB 235.8; Volvo 97312;
ZF TE-ML 02B, 05A, 12L,
12N, 16F, 17B, 19C, 21A.

SPECIFICATIONS:

API GL-4, GL-5, MT-1;
ArvinMeritor 076-N; Eaton
Europe Extended Drain;
MACK GO-J; MIL-L-2104D;
MAN M 3343 Type S;
MIL-PRF-2105E;
product formulation
complies to Scania STO 1:0
requirements.

G-Truck GL-4/GL-5 80W-90

Universal mineral transmission oil for a wide ambient temperature range application.

APPROVALS:

MAN 341 Type Z2;
MAN 342 Type M2;
MB 235.0; ZF TE-ML 02B,
05A, 12L, 12M, 16B, 17H,
19B, 21A.

SPECIFICATIONS:

API GL-4, GL-5, MT-1;
MIL-L-2104D; MACK GO-J;
ArvinMeritor 076-A/D;
MAN 341 Type E2;
MIL-PRF-2105E;
MAN M 3343 Type M;
product formulation
complies to Scania STO 1:0
requirements.

**API GL-5**

Designed for highly loaded transmission units equipped with hypoid gearing (axles). Applicable on non-synchronized manual gearboxes, some transfer boxes, power take off transmissions etc. For axles equipped with limited slip differentials (LSD) choose special G-Truck LS product only.

**G-Box GL-5 75W-90**

Semi-synthetic transmission oil for a wide ambient temperature range application. Compared to mineral products, it provides extended drain intervals.

SPECIFICATIONS:

API GL-5.

**G-Box Expert GL-5
75W-90, 80W-90**

Transmission oils for a wide ambient temperature range application.

APPROVALS:

JSC AVTOVAZ.

SPECIFICATIONS:

API GL-5.

G-Truck GL-5 85W-90

Transmission oil for a wide ambient temperature range application. Provides enhanced molecular stability to withstand extreme load stress.

SPECIFICATIONS:

API GL-5; DAF MAT 74002;
Iveco; MAN 342 Type M1;
MB 235.0; ZF TE-ML 05A, 16C,
17B, 19B, 21A.

**G-Truck LS 80W-90, 85W-90,
85W-140**

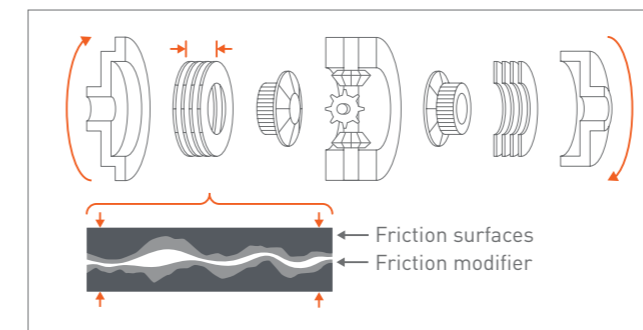
Series of transmission oils for a wide ambient temperature range applications. Designed for axles equipped with limited slip differential (LSD). Applicable on other transmission units requiring oil according to API GL-5 specification.

APPROVALS:

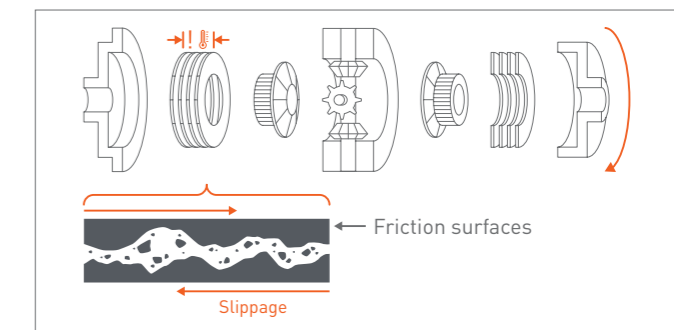
ZF TE-ML 05C, 12C, 16E
(SAE 85W-90 and 85W-140
only), 21C.

SPECIFICATIONS:

API GL-5.

Operation of limited slip differentials (LSD)**G-Truck LS**

G-Truck LS contains special friction modifiers to provide adequate operation of clutch friction elements in limited slip differentials (LSD).

**Conventional GL-5 oil**

Conventional GL-5 oil (containing no special friction modifiers) can not provide sufficient friction coefficient. However, misapplication of such product leads to slippage of friction surfaces and consequent overheating and wear.

**API GL-4**

Designed for lubricating transmissions requiring extreme pressure performance according to API GL-4 classification (non-hypoid axle gearings, synchronized manual gearboxes, transfer cases, power take off units etc.)

**G-Box GL-4 75W-90**

Semi-synthetic transmission oil for a wide temperature range application. Compared to mineral based fluids, it provides extended drain intervals.

SPECIFICATIONS:
API GL-4.

**G-Box Expert GL-4
75W-90, 80W-85**

Transmission oils for a wide temperature range application.

APPROVALS:
JSC AVTOVAZ;
ZF TE-ML 17A
(SAE 80W-85 only).

SPECIFICATIONS:
API GL-4; MB 235.1
(SAE 80W-85 only).

**G-Truck GL-4 80W-90**

Transmission oils for a wide temperature range application.

APPROVALS:
ZF TE-ML 16A, 17A, 19A.

SPECIFICATIONS:
API GL-4;
MAN 341 Type E1/Z2;
ZF TE-ML 02B.

**G-Truck Z 75W-80**

Semi-synthetic energy saving transmission oil for a wide temperature range application designed on the basis of exclusive Group IV (PAO) synthetic components. Compared to mineral oils, it provides extended drain intervals. Applicable on ZF transmissions of commercial vehicles manufactured before 2014.



SPECIFICATIONS:
API GL-4; DAF MAT 74002;
Eaton Europe Extended Drain;
Iveco; MAN 341 Type Z3;
Renault Trucks; Volvo 97305;
ZF TE-ML 02D.

6.3. G-Special hydraulic oils

Product name, ISO viscosity grade	Base stock	Oxidation stability	Viscosity stability*	Anti-wear properties	Water separation	Emulsifying property	Foam suppression	Zinc-Free technology	Low temperature properties
G-Special Hydraulic Nord-32		■■■■	■■■	■■■	✓		■■■		■■■■
G-Special Power HVLP ISO VG: 32, 46		■■■■	■■■	■■■	✓		■■■		■■■
G-Special Hydraulic HVLP ISO VG: 22, 32, 46, 68		■■■	■■■	■■■	✓		■■■		■■■
G-Special Hydraulic HVLPD-46		■■■	■■■	■■■		✓	■■■	✓	■■■

Synthetic oils Mineral oils

Product range of G-Special hydraulic oils

**G-Special Hydraulic Nord-32**

Hydraulic oil providing superior properties at low ambient temperatures. Formulation designed using top performance exclusive Group IV (PAO) and Group V synthetic base stocks according to API classification. Intended for application on hydraulic systems operated in harsh climatic conditions.



SPECIFICATIONS:
DIN 51524 Part 3 (HVLP).

* Property of the oil to stay in initial viscosity grade and withstand shearing forces of hydraulic pump.



G-Special Power HVLP-32, 46

Fully synthetic oil, which base stock ensures outstanding oxidative stability and protection against deposit formation. Effectively protects elements of the hydraulic system against corrosion and cavitation at high loads in various climatic conditions. Latest generation of the viscosity modifier provides exceptional viscosity stability in high mechanical stress conditions and various operating temperatures of the hydraulic system over the entire drain interval.



APPROVALS:

Denison Hydraulics HF-0, 1, 2.

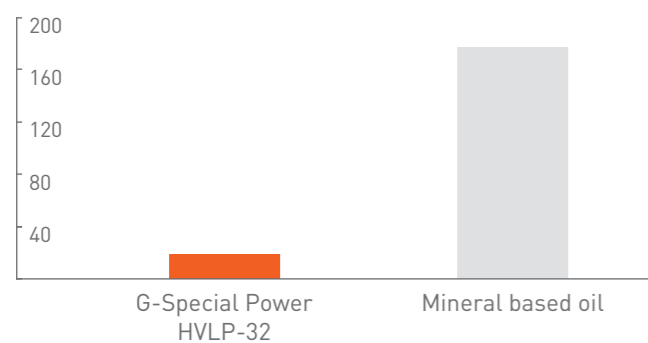
SPECIFICATIONS:

DIN 51524 Part 3; Eaton Vickers 35VQ25; MAG P-68; Bosch Rexroth RDE 90245.

High temperature oxidation stability*

Exceptional oxidative stability of G-Special Power HVLP-32 provides adequate lubricating properties and protection against varnish particle formation/sedimentation over the entire drain interval.

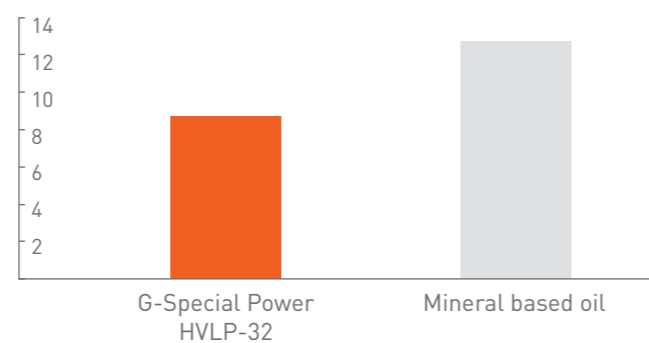
Oxidation byproduct accumulation measured by IR-spectroscopy, cm^{-1}/mm



Viscosity stability**

High viscosity stability of G-Special Power HVLP-32 maintains optimal operating viscosity and hydraulic pump output even at the most extreme mechanical loads on the hydraulic system over the entire drain interval.

Kinematic viscosity increase at +100 °C after KRL test, %



* Test: ASTM D7214; ** Test: DIN 51350-6.

Specifications valid through 2019. Check www.g-energy.org for actual specifications/approvals and detailed information.



G-Special Hydraulic HVLPD-46

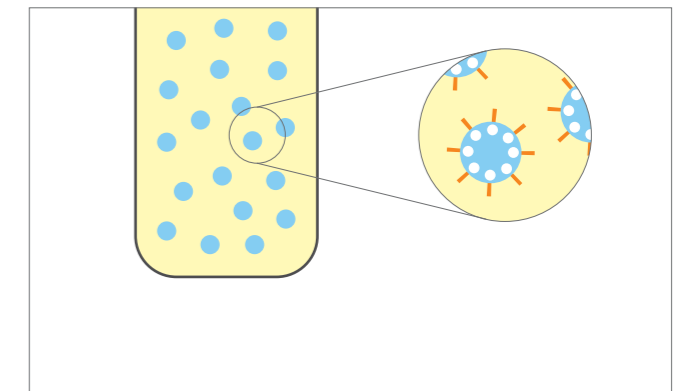
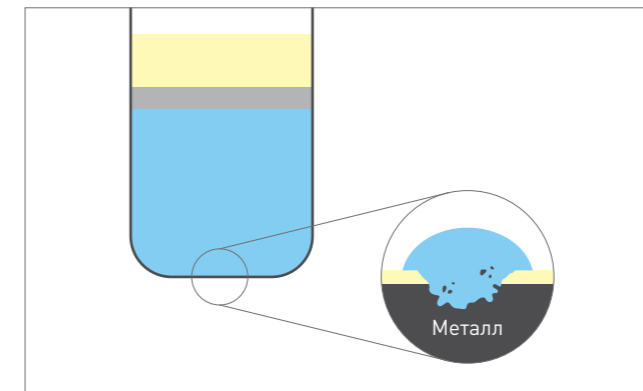
Oil for a round the year application in agricultural and general purpose machinery operating in extremely dirty and wet conditions if the sump of the hydraulic system has no water draining faucet. Oil keeps water and dirt suspended so that contamination is driven to the oil filter instead of settling out on the surfaces of the hydraulic system's components.



SPECIFICATIONS:

DIN 51524 Part 3 (HVLP) (excluding de-emulsification properties) ASTM D1401 (not applicable to HVLPD category oils).

If the machinery's hydraulic system is not equipped with a water draining faucet, application of HVLPD grade oil is vitally important. Dispersing additives of this type of hydraulic lubricant keeps water and dirt in a suspended state, accordingly neutralizing the detrimental effect of the contamination.



G-Special Hydraulic HVLP-22, 32, 46

Series of hydraulic oils designed for application on hydraulic systems operating at high and low ambient temperatures. Oils provide adequate functioning of mobile hydraulic systems in different weather conditions, protect the hydraulic system's components against wear, contribute to quick air and water separation, inhibit oxidation and suppress foam formation.



SPECIFICATIONS:

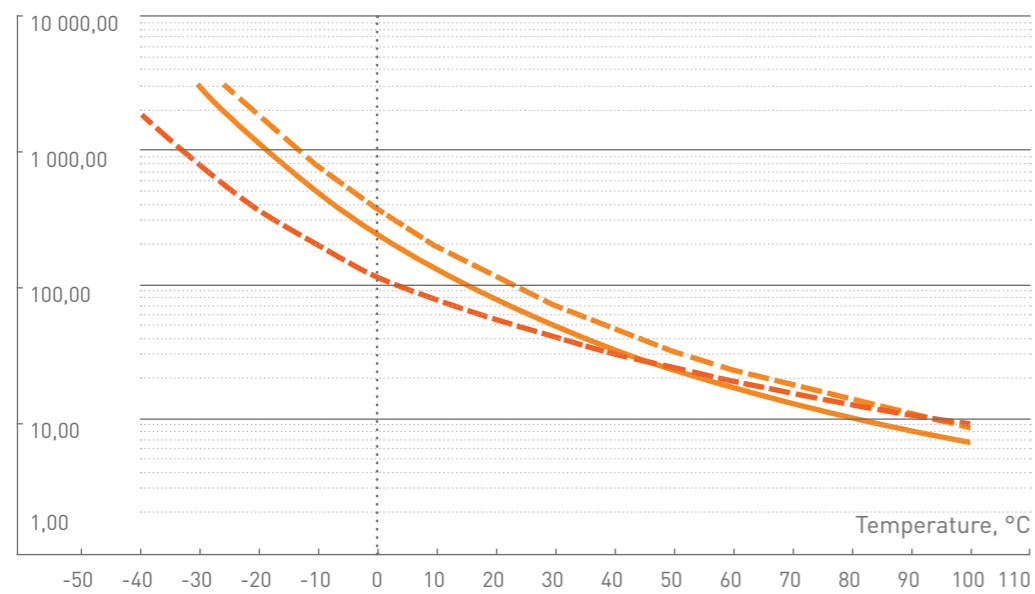
DIN 51524 Part 3 (HVLP); Denison Hydraulics HF-0,1,2 (ISO VG 32, 46); MAG P-68/70 (ISO VG 32, 46); Eaton Vickers 35VQ25; Bosch Rexroth RDE 90235.

Specifications valid through 2019. Check www.g-energy.org for actual specifications/approvals and detailed information.

Diagrams: dependence of kinematic viscosity on the hydraulic oil's temperature

G-Special Hydraulic Nord-32, G-Special Hydraulic Power HVLP-32, 46

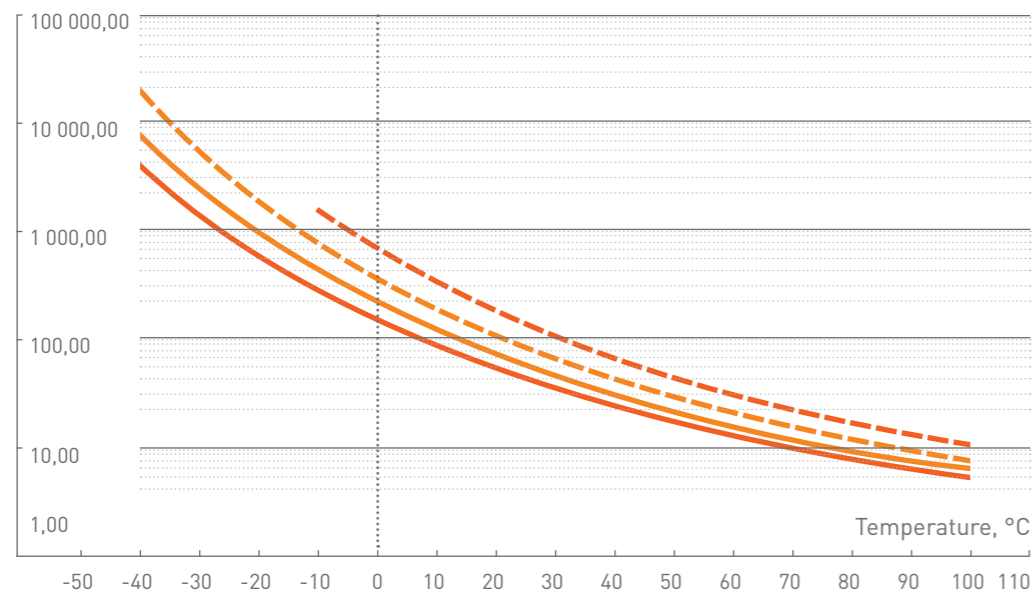
Kinematic viscosity, cSt



- G-Special Hydraulic Nord-32
- - - G-Special Hydraulic Power HVLP-32
- · · G-Special Hydraulic Power HVLP-46

G-Special Hydraulic HVLP

Kinematic viscosity, cSt



- G-Special Hydraulic HVLP-22
- - - G-Special Hydraulic HVLP-32
- · · G-Special Hydraulic HVLP-46
- · - G-Special Hydraulic HVLP-68

6.4. Power train and transmission/hydraulic fluids



G-Special universal oils

Product name, SAE viscosity grade	Sludge control	Viscosity stability	Heavy duty agricultural equipment applications	Engine application	Low temperature properties
G-Special STOU 10W-30, 10W-40	■■■	■■■		✓	■■■
G-Special UTTO Premium 10W-30	■■■	■■■			■■■
G-Special UTTO 10W-30	■■■	■■■			■■■
G-Special T0-4					
10W	■■■	■■■	✓		■■■
30, 50	■■■	■■■	✓		■■■

! T0-4 and UTTO/STOU oils are not interchangeable.



G-Special UTTO 10W-30

- Transmission units
- Hydraulic systems
- Clutch systems of moderately loaded equipment

Hydraulic-transmission fluid for hydraulic systems and transmissions of specialized and off-road machinery operating in a wide range of ambient temperatures. Optimal friction properties provide smooth operation of wet brakes and power transmissions.

APPROVALS:
ZF TE-ML 03E, 05F, 17E, 21F; Volvo 97303 (WB 101); Massey Ferguson CMS M1145.

SPECIFICATIONS:
Allison C-4; API GL-4; Massey Ferguson CMS M1143; New Holland CNH MAT 3525; John Deere JDM J20C/D.



G-Special UTTO Premium 10W-30

- Transmission units
- Hydraulic systems
- Clutch systems of heavy duty equipment

Semi-synthetic hydraulic-transmission fluid for hydraulic systems and transmissions of specialized and off-road machinery operating in a wide range of ambient temperatures. Optimal friction properties provide smooth operation of wet brakes and power transmissions. Contrary to mineral oils, extended drain intervals can be applied.

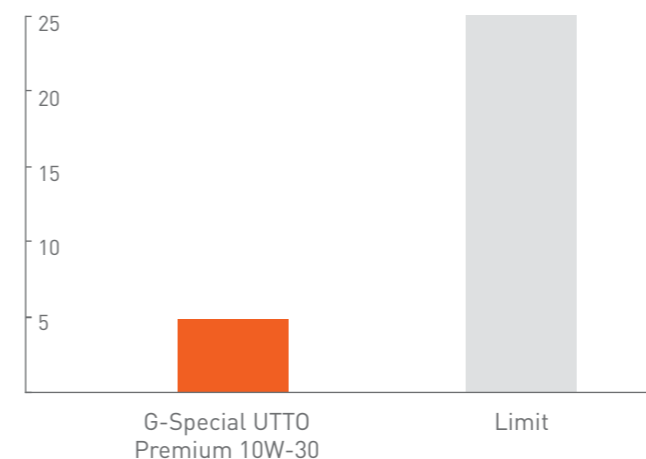
APPROVALS:
Massey Ferguson CMS M1145, ZF TE-ML 03E, 05F, 06K, 17E, 21F; Volvo 97303 (WB 101).

SPECIFICATIONS:
Massey Ferguson CMS M1143, M1141, M1135; John Deere JDM J20C, JDM J20D; Allison C-4; New Holland CNH MAT 3525, 3540, 3526 (FNHA-201.00 = M2C 134D), 3510 (MS1317 = GL-4), 3509, 3506, 3505; Ford ESN M2C 86 B/C, M2C 134-D; Fendt (Non Vario); Komatsu; API GL-4; Deutz-Fahr; Kubota UDT; Claas.

Oxidation related oil thickening*

High thermal stability of G-Special UTTO Premium 10W-30 provides extended drain intervals and consequently reduced operating costs.

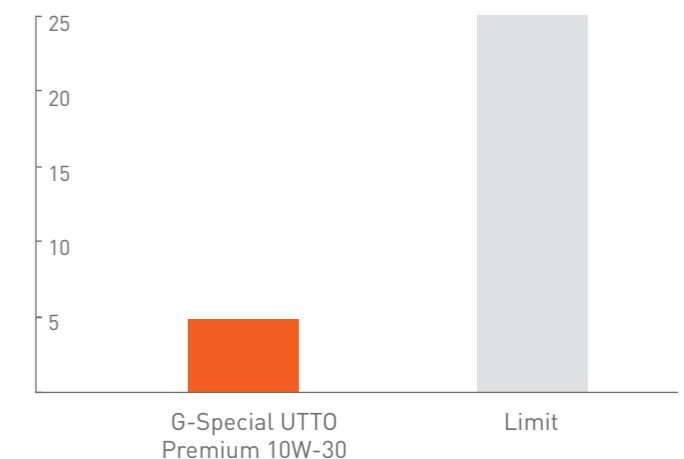
Aging induced kinematic viscosity increase, 100 °C, %



Cam ring wear of hydraulic pump**

Excellent anti-wear properties of G-Special UTTO Premium 10W-30 extend the hydraulic pumps' life.





Iron Fe, mg



** Test according to CEC L-48-00 (B); ** Test Eaton Vickers 35VQ25.



G-Special STOU 10W-30, 10W-40

-  Transmission units
-  Hydraulic systems
-  Clutch systems of moderately loaded equipment
-  Agricultural machinery engines (follow OEM recommendations)

Semi-synthetic universal tractor oil for a wide range of ambient temperature application. Can be applied as an engine, hydraulic, various transmission oil in agriculture and specialized machinery. Provides optimal operation of wet brakes and transmissions.

SAE viscosity grades: 10W-30, 10W-40.

APPROVALS:

Massey Ferguson CMS M1145*.

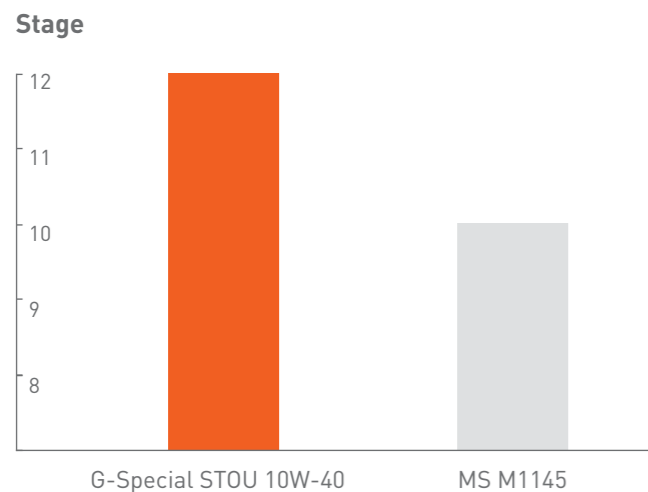
SPECIFICATIONS:

Ford WSS-M2C159B/C, M2C86B, M2C134A**, ESN M2C 86 B**, 159 B&C**, John Deere JDM J27; New Holland NH 024C*, NH410B**, NH420A**, FNH 82009201**, 82009202**, 82009203*; Sperry Vickers, Eaton I-280-S, M2950S; Sauer-Sundstrand, Danfoss Hydro Static Trans Fluid; Fiat AF87*; Massey Ferguson CMS M1144, M1145*, 1139**, 1135**, 1127A**, ZF TE-ML* 05K, 06B, 06C, 07B, 07D; API CG-4, CF-4, CE/SF, CD/SE, GL-4, CF, CD/SF; ACEA E3; MAN 271; Caterpillar TO-2; Allison C-4.

* G-Special STOU 10W-40 only; ** G-Special STOU 10W-30 only

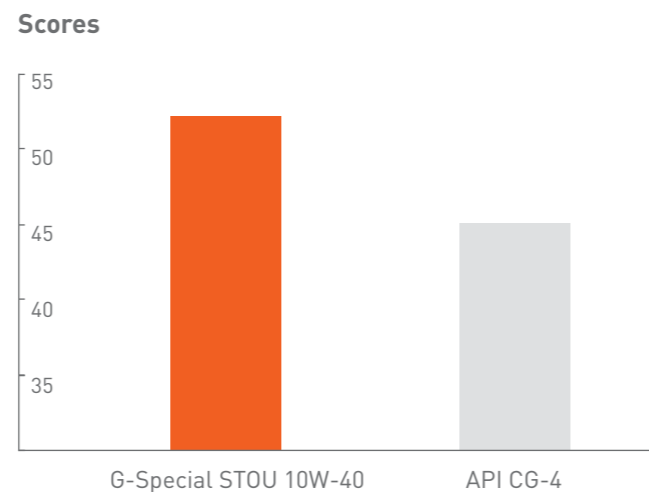
Wear scar load stage*

G-Special STOU 10W-40 provides enhanced anti-wear and scuffing prevention properties, lengthening the equipment's service life.



Piston cleanliness**




High thermal and oxidative stability of G-Special STOU 10W-40 maintains perfect cleanliness of the equipment's internal surfaces.



* Test: FZG (A/8.3/90); ** Test: OM346LA.



G-Special TO-4 10W, 30, 50

-  Transmission units
-  Hydraulic systems
-  Clutch systems of heavy duty equipment

Series of hydraulic-transmission fluids designed for hydraulic systems and transmissions of heavy duty machinery where oils according to Caterpillar TO-4 are required.

VISCOSITY GRADES:

10W, 30, 50.

APPROVALS:

ZF TE-ML 03C (SAE 10W, 30); ZF TE-ML 07F (SAE 30).

SPECIFICATIONS:

Caterpillar TO-4; Allison C-4; API CF, CF-2; ZF TE-ML 03C, 07F; Komatsu KES 07.868.1.



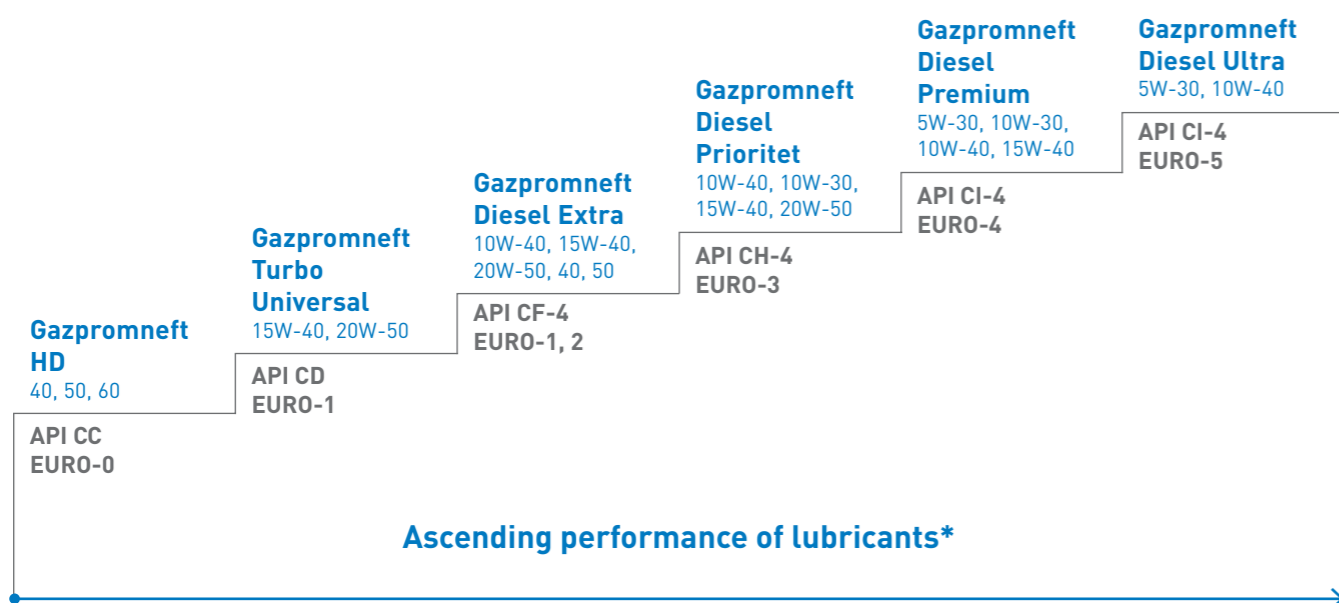
Gazpromneft oils and GOST replacement

Due to their reliability and durability there is still a large number of machinery and equipment made in the eighties or earlier operating in the agriculture industry. Machinery of this age requires specific, yet high quality lubricants. For such purpose GOST products or improved replacements made of enhanced components are available.

Accurate maintenance and use of quality lubricants often prolong the life cycle of these old machines for many more years.

7.1. Engine oils

Series of Gazpromneft oils for heavy duty engines



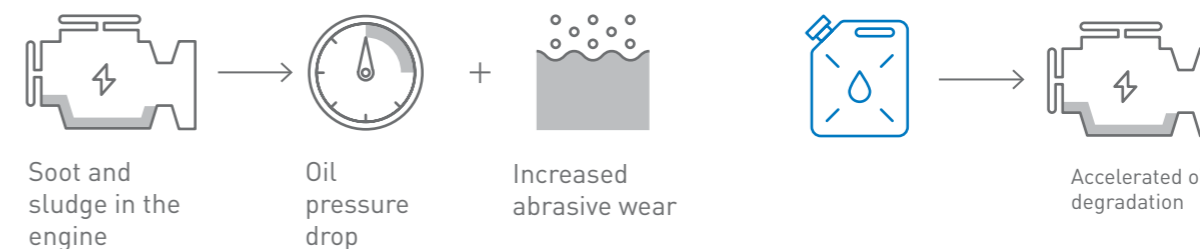
* Higher grade supersedes previous one.

GOST quality standard oil replacement instructions

Product name; Property	Engine output/ displacement ratio	Drain intervals	Ambient temperature range	System cleanliness	Soot control	All season applicability
Gazpromneft Turbo Universal	■■■	■■■	■■■	■■■	■■■	✓
M-8DM, M-10DM	■■■	■■■	■■■	■■■	■■■	
Gazpromneft HD 40, 50, 60	■■■	■■■	■■■	■■■	■■■	
M-8G2k, M-10G2k	■■■	■■■	■■■	■■■	■■■	
M-8G2, M-10G2	■■■	■■■	■■■	■■■	■■■	
M-6z/10V	■■■	■■■	■■■	■■■	■■■	✓
M-8V, M-10V2	■■■	■■■	■■■	■■■	■■■	

Reasons to flush the engine's lubrication system before applying a higher category of oil.

- Higher category oil provides improved properties like deposit and sludge control. Better surface washing capacity washes off a part of the sludge left by previous lower quality lubricants. That may lead to pressure loss or even blockage of lubrication channels.
- Degraded leftovers, wear particles and combustion products of previous low grade lubricant deteriorate the fresh oil's properties and potential.



Methods of engine flushing before applying a higher grade product

- 1 Completely drain used product and fill the new one. Change the filter too.
- 2 Operate equipment but cut the next OEM recommended drain interval to half.
- 1 Completely drain previously used oil and fill the new one.
- 2 Flush the system by idling engine up to half an hour, drain the oil and fill the new product again. Filter change is mandatory. If the engine is severely dirty the oil pickup strainer screen should be manually cleaned as well.



Gazpromneft Diesel Ultra

Series of synthetic engine oils providing enhanced neutralizing properties for the most advanced highly rated, turbo aspirated diesel engines made in Europe or North America according to Euro-5 (no DPF installed) requirements.

SAE viscosity grades: 5W-30, 10W-40.

SPECIFICATIONS:

ACEA E4; API CI-4; Cummins CES 20078; Deutz DQC IV-10; MACK EO-N; MAN M 3277; MB 228.5; MTU Cat. 3; Renault Trucks RLD-2; Volvo VDS-3.



Gazpromneft Diesel Premium

Series of universal semi-synthetic (5W-40, 10W-30, 10W-40) and mineral (15W-40) engine oils for a wide range of temperature application. Designed for heavy-duty diesel engines according to Euro-4 environmental requirements. This lubricant provides enhanced alkalinity and detergent/dispersant properties.

SAE viscosity grades: 5W-40, 10W-40, 10W-30, 15W-40.

5W-40

APPROVALS:

JSC Avtodizel (YAMZ); JSC Kamaz; JSC TMZ.

SPECIFICATIONS:

ACEA E7; API CI-4/SL; Caterpillar ECF-1a/ECF-2; Cummins CES 20076/77/78; Deutz DQC III; Global DHD-1; MACK EO-M Plus; MACK EO-N; MAN M 3275-1; MTU Cat. 2; Renault Trucks RLD/RLD-2; Volvo VDS-3.

10W-30

APPROVALS:

JSC Avtodizel (YAMZ); JSC TMZ.

SPECIFICATIONS:

ACEA E7; API CI-4/SL; Caterpillar ECF-2; Cummins CES 20076/77/78; Deutz DQC III-10; Global DHD-1; MACK EO-M Plus; MACK EO-N; MAN M 3275-1; MTU Cat. 2; Renault Trucks RLD-2; Volvo VDS-3; JSC Kamaz.

10W-40

APPROVALS:

API CI-4/SL; Cummins CES 20078; Deutz DQC III; MACK EO-N; MAN M 3275-1; MB 228.3; Renault Trucks RLD-2; Volvo VDS-3; JSC Avtodizel (YAMZ); JSC Kamaz; JSC TMZ.

SPECIFICATIONS:

ACEA E7; Caterpillar ECF-1a/ECF-2; Global DHD-1; MACK EO-M Plus; MTU Cat. 2.

15W-40

APPROVALS:

API CI-4/SL; Cummins CES 20078; MACK EO-N; MAN M 3275-1; MTU Cat. 2; Renault Trucks RLD-2; Volvo VDS-3; JSC Avtodizel (YAMZ); JSC Kamaz; JSC TMZ.

SPECIFICATIONS:

ACEA E7; Caterpillar ECF-1a/ECF-2; Cummins CES 20076/77; Deutz DQC III; Global DHD-1; MACK EO-M Plus.



Gazpromneft Diesel Prioritet

Series of semi-synthetic (10W-30, 10W-40) and mineral (15W-40, 20W-50) diesel engine oils according to Euro-3 exhaust gas limits for a wide range of temperature application.

SAE viscosity grades:

10W-30, 10W-40, 15W-40, 20W-50.

10W-30

APPROVALS:

JSC Avtodizel (YAMZ); JSC Kamaz; JSC TMZ.

10W-40

SPECIFICATIONS:

API CH-4/SJ; Cummins CES 20076; MAN M 3275-1; MTU Cat. 2.

15W-40

APPROVALS:

API CH-4/SJ; Cummins CES 20076; MAN M 3275-1; JSC TMZ; JSC Avtodizel (YAMZ); JSC Kamaz.

SPECIFICATIONS:

MTU Cat. 2.

20W-50

APPROVALS:

JSC Avtodizel (YAMZ); JSC Kamaz; JSC TMZ.

SPECIFICATIONS:

API CH-4/SJ; Cummins CES 20076; MAN M 3275-1; MTU Cat. 2.





Gazpromneft Diesel Extra

Series of semi-synthetic (10W-40) and mineral (15W-40, 20W-50; 40; 50) diesel engine oils for various output/displacement ratio diesel engines according to Euro-2 exhaust gas limits for a wide range of temperature application.

SAE viscosity grades:
10W-40, 15W-40, 20W-50, 40, 50.

- ✓ **Unified engine oil for vehicle fleets consisting of various diesel engines:** light and moderate duty diesel engines equipped with or without a turbo compressor and without a diesel particulate filter according to Euro-2 exhaust gas treatment limits.

API CF-4 → API CF → API CD → API CC

- ✓ **TBN 11** – maximized protection against effect of high sulfur fuels.
- ✓ **Various viscosity grade options according to specific climatic operating conditions.**
- ✓ **Use of synthetic components** (10W-40 viscosity grade)

Gazpromneft Turbo Universal

Series of wide range ambient temperature diesel engine oils replacing products providing narrow single season applicability: M-10DM, M-10G2k, M-10G2, M-8G2k, M-8G2.

SAE viscosity grades: 15W-40, 20W-50.

Gazpromneft HD

Series of single-grade viscosity diesel engine oils for stationary engines or applications above freezing temperatures.

SAE viscosity grades: 40, 50, 60.

10W-40 APPROVALS:
JSC Avtodizel (YAMZ); JSC TMZ.

SPECIFICATIONS:
API CF-4/SG; JSC Kamaz.

15W-40 APPROVALS:
JSC TMZ; JSC Avtodizel (YAMZ).

SPECIFICATIONS:
API CF-4/SG; JSC Kamaz.

20W-50 APPROVALS:
JSC Avtodizel (YAMZ); JSC TMZ.

SPECIFICATIONS:
API CF-4/SG; JSC Kamaz.








40 50 SPECIFICATIONS:
API CF, CF-4; MAN 270; MB 228.0.

APPROVALS:
JSC TMZ.

SPECIFICATIONS:
API CD; JSC Avtodizel (YAMZ).

SPECIFICATIONS:
API CC.

7.2. Transmission oils

Product name, SAE viscosity grade	Base stock	Prevention of micropitting	Extended drain interval	Oil film strength	Copper alloy compatibility	OEM requirements
Gazpromneft GL-4/GL-5 75W-90		■■■	✓	■■■	✓	■■■
Gazpromneft GL-5						
75W-90		■■■		■■■		
80W-90		■■■		■■■		■■■
85W-140		■■■		■■■		
90		■■■		■■■		
140		■■■		■■■		
Gazpromneft Super T-3 85W-90		■■■		■■■		■■■
Gazpromneft GL-4						
75W-90		■■■		■■■	✓	
80W-90		■■■		■■■	✓	■■■
85W-140		■■■		■■■	✓	
90		■■■		■■■	✓	
140		■■■		■■■	✓	
GOST standard products						
TSP-15K (TM-3-18)		■■■		■■■	✓	



Synthetic oils



Semi-synthetic oils



Mineral oils

**API GL-4/GL-5**

Universal transmission oils according to GL-4 and GL-5 requirements.

**Gazpromneft GL-4/GL-5 75W-90**

Synthetic transmission oil for wide ambient temperature range applications according to API GL-4/GL-5. Compared to mineral oils, it provides an extended drain interval capability.

APPROVALS:

MAN 342 Type M3;
MAN 341 Type Z2;
ZF TE-ML 02B, 05A,
12L/N, 16B, 17B, 19C, 21A;
product formulation
compliance to Scania STO 1:0
requirements confirmed.

SPECIFICATIONS:

API GL-4/GL-5/MT-1;
MAN 341 Type E2;
MIL-PRF-2105E; SAE J2360;
ZF TE-ML 05B, 12M.

**API GL-5**

Oil according to API GL-5 requirements. Complies to the to TM-5 grade specification [according to GOST 17479.2-85 classification]. Not recommended for applications demanding limited slip differential (LSD) friction properties.

**Gazpromneft GL-5 75W-90**

Semi-synthetic transmission oil for a wide temperature range of application.

SPECIFICATIONS:

API GL-5.

Gazpromneft GL-5 80W-90

Mineral transmission oil for a wide temperature range of application.

APPROVALS:

ZF TE-ML 05A, 12E,
16B, 17B, 19B, 21A;
JSC AVTOVAZ.

SPECIFICATIONS:

API GL-5; MAN 342 Type M2;
ZF TE-ML 07A, 08, 16C, 16D;
product formulation complies
to Scania STO 1:0 specification
requirements.

Gazpromneft Super T-3 85W-90

Mineral transmission oil for a wide temperature range of application.

SPECIFICATIONS:

API GL-5; MAN 342 Type M1;
MB 235.0; GAZ Ltd.

**Gazpromneft GL-5 85W-140**

Mineral transmission oil for a wide temperature range of application. Provides enhanced mechanical stability to withstand molecular degradation in extreme operating load conditions. Maintains sufficient oil film in a hot and moderate climates.

SPECIFICATIONS:

API GL-5.

Gazpromneft GL-5 90, 140

Transmission oil providing limited cold climate applicability. Excellent load bearing capacity over the entire drain interval.

SPECIFICATIONS:

API GL-5.

**API GL-4**

Oils according to API GL-4 grade specification requirements. Meet TM-4 (according to GOST 17479.2-85 classification). Supersedes TM-3 and earlier oil grades.

**Gazpromneft GL-4 75W-90**

Semi-synthetic transmission oil for a wide range of ambient temperature conditions.

SPECIFICATIONS:

API GL-4.

Gazpromneft GL-4 80W-85, 80W-90

Mineral transmission oils.

APPROVALS:

JSC AVTOVAZ.

SPECIFICATIONS:

API GL-4; ZF TE-ML 08.

Gazpromneft GL-4 90, 140

Transmission oil for moderate and hot climate applications requiring enhanced oil film strength.

SPECIFICATIONS:

API GL-4.



7.3. Oils for hydraulic systems and hydraulic transmissions

Product name, Property	Application	Base stock	Drain intervals	Sludge control	Protection of friction elements	Viscosity stability	Low temperature properties
Gazpromneft ATF DX III							
Gazpromneft ATF DX II							
Gazpromneft Mark "A"							
Gazpromneft Mark "R"							

Semi-synthetic oils

Mineral oils

Automatic transmissions

Power steering

Gazpromneft ATF DX III
Semi-synthetic oil for automatic transmissions, hydraulic and power steering systems according to Dexron IIIIG and earlier requirements.

SPECIFICATIONS:
Allison C-4; BMW LA 2634; BMW LT 71141; Caterpillar TO-2; Ford MERCON; General Motors DEXRON IIIIG; General Motors TASA; MAN 339 Type V1/Z1; MB 236.1; MB 236.11; MB 236.2; MB 236.3; MB 236.5; MB 236.6; MB 236.7; Voith H55.6335; Volvo 97341; Volvo CE 97340; ZF TE-ML 02F, 03D, 04D, 05L, 09, 11B, 14A, 17C, 21L.

Gazpromneft ATF DX II
Semi-synthetic oil for automatic transmissions, hydraulic and power steering systems according to Dexron IID and earlier requirements.

SPECIFICATIONS:
General Motors DEXRON IID.

Gazpromneft Mark "A"
Hydraulic transmission oil for hydraulic transformers, automatic transmissions, hydrostatic transmissions of heavy/light duty and specialized machinery.

Gazpromneft Mark "R"
Specialized product for power steering systems and hydrostatic transmissions of heavy/light duty and specialized machinery.

Specifications valid through 2019. Check www.gazpromneft-oil.com for actual specifications/approvals and detailed information.

Gazpromneft oils for hydraulic systems

Product name, ISO viscosity grade	Oxidation stability	Viscosity stability*	Anti-wear properties	Water separation	Emulsification	Foam suppression/Air release	Zinc-Free technology	All season applicability
Gazpromneft Hydraulic HVL ISO VG: 10, 15, 22, 32, 46, 68								
Gazpromneft Hydraulic HLP ISO VG: 32, 46, 68, 100								

MGE-46V
Hydraulic oil for a wide ambient temperature range of application on hydraulic and hydrostatic transmission systems of specialized machinery.

Replacement → **Gazpromneft Hydraulic HVL-46**
Gazpromneft Hydraulic HLP-46
Gazpromneft Hydraulic-46

Gazpromneft MG-68V
Oil for hydraulic systems, tractor transmissions and other agricultural equipment operating at a pressure not exceeding 25 MPa.

Replacement → **Gazpromneft Hydraulic HVL-68**
Gazpromneft Hydraulic HLP-68
Gazpromneft Hydraulic-46



* Property: the oil stays in initial viscosity grade and withstands the shearing forces of the hydraulic pump.



Gazpromneft Hydraulic HVL

Series of hydraulic oils designed for application on hydraulic systems of agriculture and specialized machinery operating at high and low ambient temperatures. These oils allow mobile hydraulic systems to operate in various weather conditions, while protecting the hydraulic system's components against wear, deposit formation and corrosion.

Approved by leading hydraulic equipment manufacturers.



VISCOSITY GRADES
ISO VG: 10, 15, 22, 32, 46, 68.

Specifications

Approvals/ specifications	ISO viscosity grade					
	10	15	22	32	46	68
DIN 51524 Part 3 (HVL)	✓	✓	✓	✓	✓	✓
Denison HF-0,1,2				✓✓	✓✓	✓✓
Eaton Vickers 35VQ25		✓	✓	✓✓	✓✓	✓✓
Bosch Rexroth 90220-01						✓✓
Bosch Rexroth RDE 90235						
Bosch Rexroth Fluid Rating List RDE 90245				✓✓	✓✓	
MAG P-68 (ISO 32)						
MAG P-69 (ISO 68)				✓✓	✓✓	✓✓
MAG P-70 (ISO 46)						

✓✓ — approvals; ✓ — specifications.

Specifications valid through 2019. Check www.gazpromneft-oil.com for actual specifications/approvals and detailed information.

Bosch Rexroth RDE 90235

(Bosch Rexroth RDE 90245 list)

Rexroth
Bosch Group

Pump test characteristics:

- Control over 90 physical/chemical parameters
- Oil condition monitored before, during and after testing routines
- Latest axial piston pump test

During the pump test evaluated:

- Protection of of the pistons' nitride layer
- Anti-wear properties of the oil
- Ability to maintain the hydraulic system's reliability

Duration, h

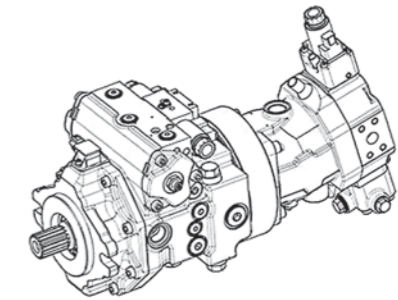
500

P, atm

500

V, rpm

4 000





Gazpromneft Hydraulic HLP

Series of hydraulic oils containing no viscosity modifiers (VI improvers) intended for heavily loaded agriculture and specialized machinery's hydraulic systems. Particularly recommended for hydraulic systems requiring the maintaining of high viscosity stability during the entire drain interval.

Application for low temperature operations is admissible only in accordance with the equipment manufacturer's recommendations.



VISCOSITY GRADES
ISO VG: 32, 46, 68, 100.

Specifications

Approvals/specifications	ISO viscosity grade			
	32	46	68	100
DIN 51524 Part 2 (HLP)	✓	✓	✓	✓
ISO 11158 (HM)	✓	✓	✓	✓
Denison Hydraulics HF-0,1,2	✓✓	✓✓	✓✓	✓
Eaton Vickers 35VQ25	✓✓	✓✓	✓✓	✓
Bosch Rexroth 90220-01				✓
Bosch Rexroth Fluid Rating List RDE 90245	✓✓	✓✓	✓✓	
MAG P-68 (ISO 32)				
MAG P-69 (ISO 68)	✓✓	✓✓	✓✓	
MAG P-70 (ISO 46)				
Engel		✓✓		
Battenfeld	✓	✓✓	✓	✓
Beltramelli	✓✓	✓✓	✓✓	✓
Bekum		✓		
Demag			✓	
Danieli		✓	✓	

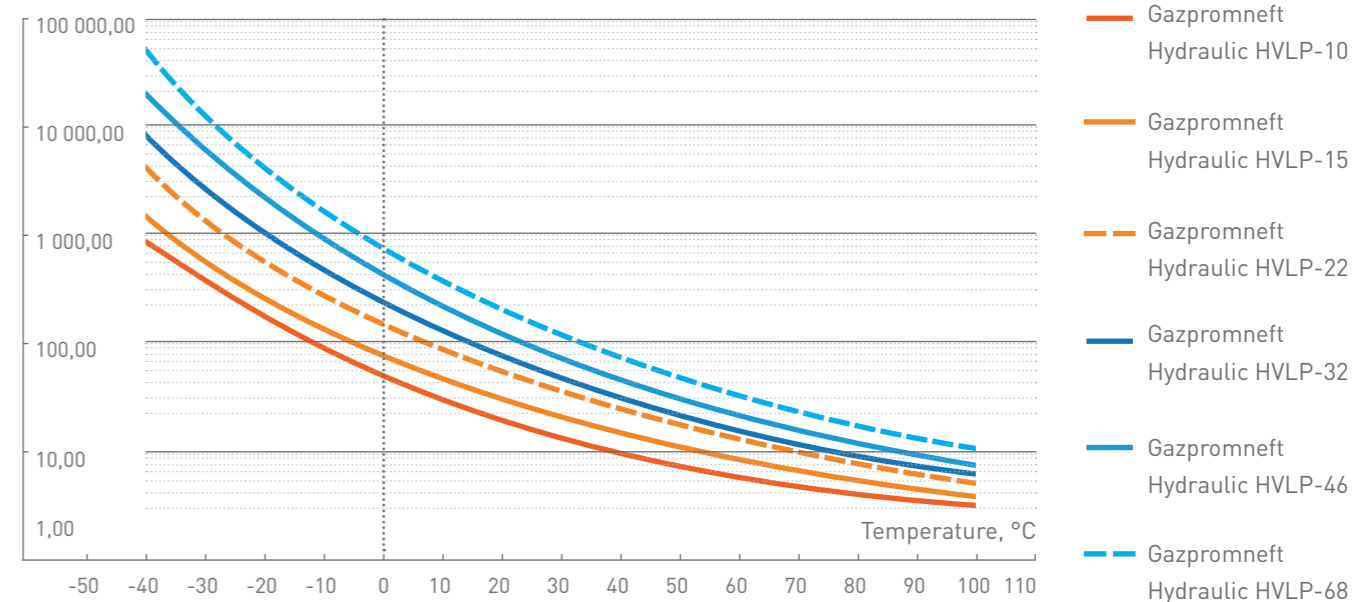
✓✓ — approvals; ✓ — specifications.

Specifications valid through 2019. Check www.gazpromneft-oil.com for actual specifications/approvals and detailed information.

Gazpromneft Hydraulic HVLP

Dependence of kinematic viscosity on temperature. Gazpromneft Hydraulic HVLP viscosity grades.

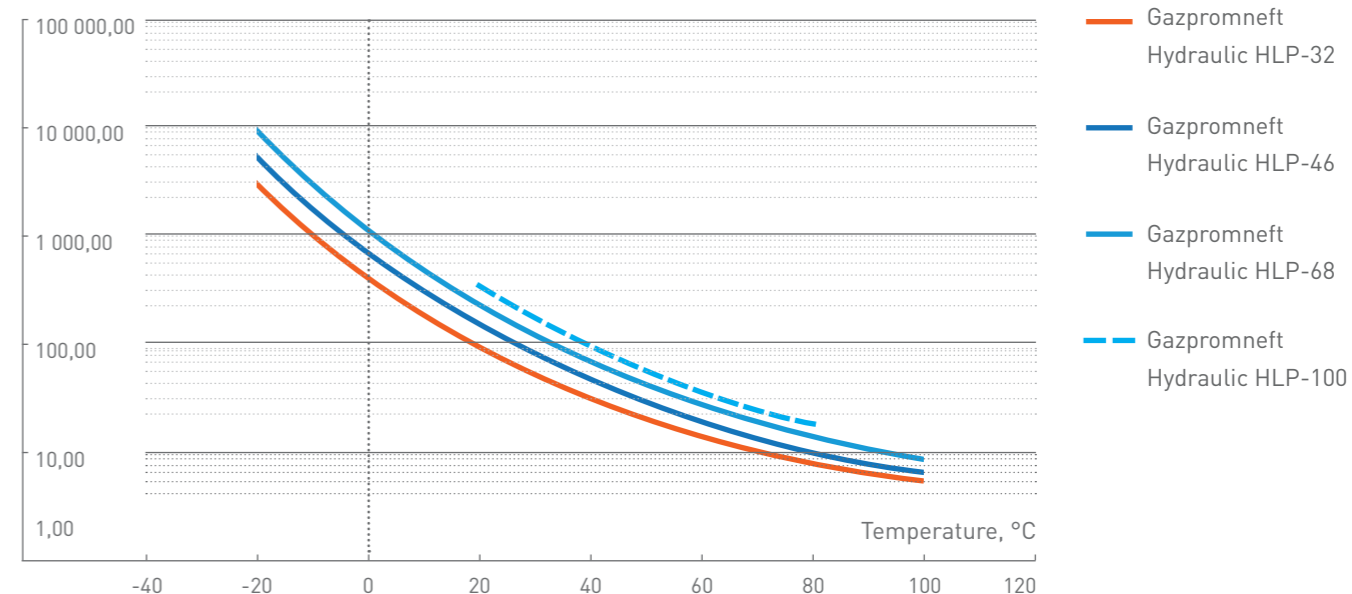
Kinematic viscosity, cSt








Gazpromneft Hydraulic HLP


Dependence of kinematic viscosity on temperature. Gazpromneft Hydraulic HLP viscosity grades.

Kinematic viscosity, cSt



7.4. Industrial gear oils

Product name, ISO viscosity grade	Base stock	Performance characteristics					
		Oxidation stability	Anticorrosion protection	Anti-wear properties	Low temperature properties	Extreme Pressure properties	Elastomer compatibility
Gazpromneft Reductor F Synth 150, 220, 320, 460		■■■	■■■	■■■	■■■	■■■	■■■
Gazpromneft Reductor CLP 68, 100, 150, 220, 320, 460, 680		■■■	■■■	■■■	■■■	■■■	■■■
Gazpromneft Reductor WS 100, 150, 220		■■■	■■■	■■■	■■■	■■■	■■■
Gazpromneft Reductor ITD 68, 100, 150, 220, 320, 460, 680		■■■	■■■	■■■	■■■	■■■	■■■
GOST standard products							
Conventional oils ITD, ISP, ISPi, ITP series		■■■	■■■	■■■	■■■	■■■	■■■

 Synthetic oils

 Mineral oils

Gazpromneft Reductor F Synth

Series of synthetic industrial transmission oils. Their synthetic base stock provides an extended operating temperature range both at high and low ambient and operating temperatures. Besides, when compared to mineral products, synthetic oils are capable to withstand much longer drain intervals.

ISO VISCOSITY GRADES:

150, 220, 320, 460.

APPROVALS:

Flender rev. 16.

SPECIFICATIONS:

DIN 51517 Part 3; AGMA 9005-E02.

Gazpromneft Reductor CLP

Series of oils for the latest industrial transmissions. They provide a high thermal and oxidative stability as well as a resistance to water emulsion formation.

ISO VISCOSITY GRADES:

68, 100, 150, 220, 320, 460, 680.

APPROVALS:

MAG P-77 (ISO 150 viscosity grade);
MAG P-74 (ISO 220 viscosity grade).

SPECIFICATIONS:

DIN 51517 Part 3; AGMA 9005-E02; AIST 224;
David Brown S1.53.101(E); Danieli (except ISO 68 and 100 viscosity grades).

Gazpromneft Reductor WS

Series of oils designed for a wide range of ambient temperature application on industrial transmissions. They provide enhanced low temperature properties.

ISO VISCOSITY GRADES:

100, 150, 220.

SPECIFICATIONS:

DIN 51517 Part 3.

Gazpromneft Reductor ITD

Series of industrial transmission oils meant to replace GOST quality standard products.

ISO VISCOSITY GRADES:

68, 100, 150, 220, 320, 460, 680.

7.5. Compressor oils

Product name, ISO viscosity grade	Deposit formation control	High temperature stability	Rotary compressor application	Piston compressor application	Low temperature applications
Gazpromneft Compressor F Synth 46, 68	■■■	■■■	✓		■■■
Gazpromneft Compressor S Synth 46, 68 100, 150	■■■	■■■	✓	✓	■■■
Gazpromneft Compressor Oil 46, 68 100, 150, 220	■■■	■■■	✓	✓	■■■
GOST standard products					
Kp-8S providing enhanced stability	■■■	■■■	✓		■■■
KS-19P A	■■■	■■■		✓	■■■

Gazpromneft Compressor F Synth

Series of synthetic compressor oils for modern screw and vane compressors operating in harsh conditions (discharge temperature up to 220 °C). The synthetic base stock provides excellent protection against sludge and deposit formation. Compared to mineral and semi-synthetic oils, they have an improved oxidation stability that supports application for extended drain intervals.

ISO VISCOSITY GRADES:

46, 68.

SPECIFICATIONS:

DIN 51506 VDL; ISO 6743 DAJ;
ROTORCOMP VERDICHTER GmbH.

Gazpromneft Compressor S Synth

Series of semi-synthetic compressor oils for modern positive displacement and dynamic type air compressors (piston, screw, vane) operating in harsh conditions (discharge temperature up to 220 °C). The synthetic base stock provides excellent protection against sludge and deposit formation. Compared to mineral based oils, they have an improved oxidation stability that supports application for extended drain intervals.

ISO VISCOSITY GRADES:

46, 68, 100, 150.

SPECIFICATIONS:

DIN 51506 VDL; JSC Compressor Plant "Borets"
(ISO VG 100 and 150 only); ROTORCOMP
VERDICHTER GmbH.

Gazpromneft Compressor Oil

Series of compressor oils for modern positive displacement and dynamic type air compressors (piston, screw, vane) operating in harsh conditions (discharge temperature in mobile systems up to 220 °C, in stationary systems up to 160 °C).

ISO VISCOSITY GRADES:

46, 68, 100, 150, 220.

SPECIFICATIONS:

JSC UKZ; JSC Sumy NPO; DIN 51506 VCL;
ROTORCOMP VERDICHTER GmbH.

Kp-8S providing enhanced stability

Compressor oil containing additives for lubrication of centrifugal and turbo compressors, including "turbine – gearbox" systems. Applicable on some ammonia pump-out compressors.

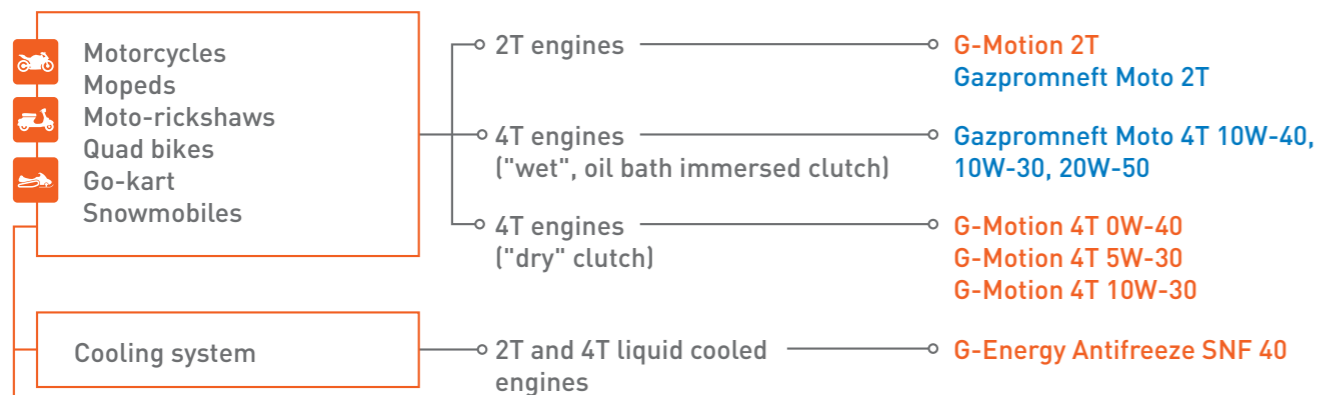
KS-19p A

Compressor oils containing additives for application on piston compressors operated under moderate and high pressure. Applicable on rotary compressors if the product fits the equipment manufacturer's viscosity grade requirements. Suitable for single or multistage compressors operating in various industries, compressing air or other insoluble gases.

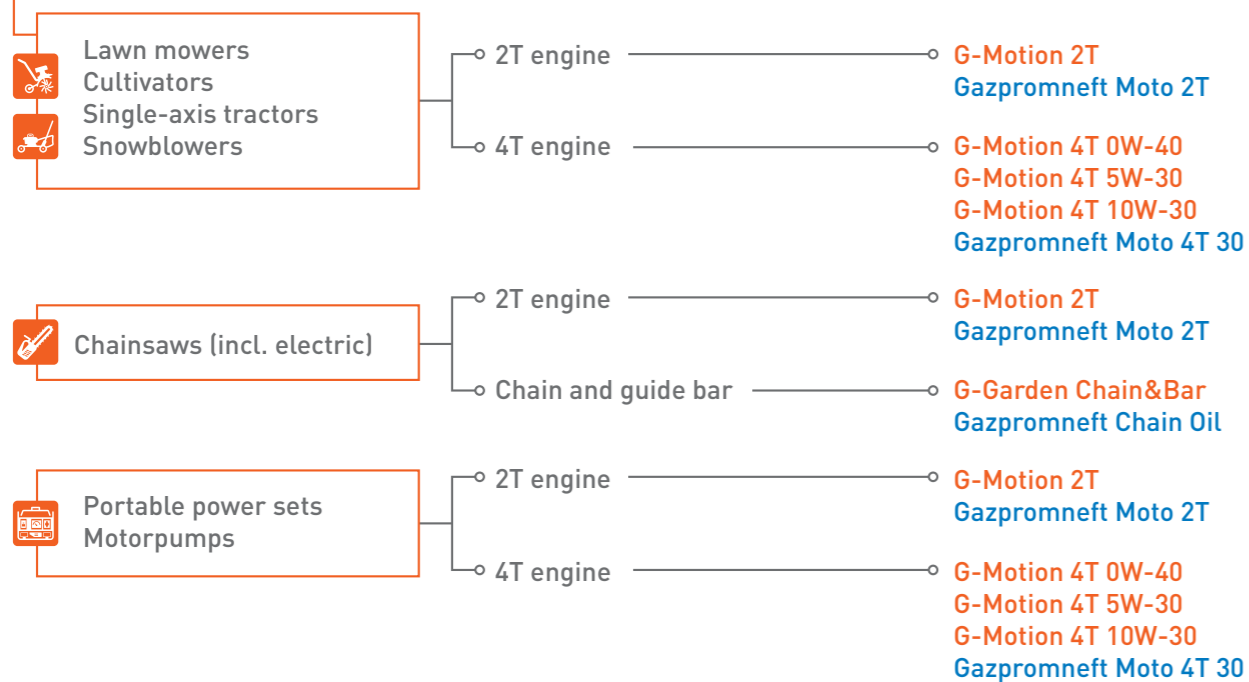
Small equipment lubricants

Gazpromneft – Lubricants product range for agriculture and farming purposes contains lubricants for small displacement vehicles and gardening equipment.

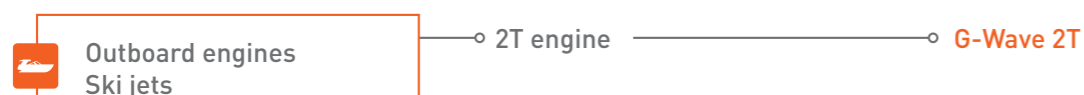
Small vehicles



Gardening equipment



Motorboats



8.1. Two stroke engine oils

To establish optimal fuel/oil ratio check the equipment's user manual.



G-Motion 2T

Semi-synthetic engine oil.

- ✓ Low smoke exhaust gases
- ✓ Sludge and deposit formation control

SPECIFICATIONS:

API TC; ISO-L-EGD; JASO FD.

APPLICATION:

High output small vehicles and portable equipment/tools.



G-Wave 2T

Semi-synthetic engine oil.

- ✓ Sludge and deposit formation control
- ✓ Non-compromised lubrication in presence of water
- ✓ Dedicated product for seawater cooled outboard engines

SPECIFICATIONS:

NMMA TC-W3.

APPLICATION:

Two-stroke personal watercraft and outboard engines (Evinrude, Johnson, Kawasaki, Mercury, Nissan, Parsun, Sea-Doo, Selva, Suzuki, Tohatsu, Yamaha).



Gazpromneft Moto 2T

Mineral engine oil.

SPECIFICATIONS:

ISO-L-EGB; JASO FB.

APPLICATION:

Small displacement light duty equipment: motor saws, trimmers, lawn mowers, cultivators, snow blowers, motorcycles, single-axis tractors.



8.2. Four stroke engine oils



G-Motion 4T 0W-40

Synthetic engine oil with a wide temperature range of operation. Applicable on various equipments operating in ambient temperatures down to -35 °C.

SPECIFICATIONS:
API SN.

APPLICATION:
Snow mobiles, snow blowers, portable gasoline power generators and other small engines (Yamaha, Ski-Doo, Polaris; Arctic Cat etc.).



G-Motion 4T 5W-30

Semi-synthetic engine oil with a wide operating temperature range of application. Designed for various equipments operating in ambient temperatures down to -30 °C.

SPECIFICATIONS:
API SL/CF.

APPLICATION:
Lawn mowers, portable power generators, cultivators, single-axis tractors, snow blowers, mini-tractors and other gardening equipment (Honda, Husqvarna, Stihl etc.).



G-Motion 4T 10W-30

Mineral engine oil with wide temperature range of operation. Applicable on various equipments operating in ambient temperatures down to -25 °C.

SPECIFICATIONS:
API SG/CD.

APPLICATION:
Lawn mowers, portable power generators, cultivators, single-axis tractors, snow blowers, mini-tractors and other gardening equipment (Honda, Husqvarna, Stihl etc.).



Gazpromneft Moto 4T 30

Engine oil for summer seasonal applications.

SPECIFICATIONS:
API SG/CD.

APPLICATION:
Lawn mowers, portable power generators, cultivators, single-axis tractors, mini-tractors and other gardening equipment (Honda, Husqvarna, Stihl etc.).



Gazpromneft Moto 4T 10W-40, 10W-30, 20W-50

Semi-synthetic (SAE 10W-40, 10W-30) and mineral (SAE 20W-50) engine oils. Designed for gasoline engines equipped with a wet clutch system.

SPECIFICATIONS:
SAE 20W-50: API SF; JASO MA2.
SAE 10W-40, 10W-30: API SL; JASO MA2.

APPLICATION:
Motorcycles, scooters and motor-rickshaws with/without a wet clutch system (Honda, Yamaha, Suzuki, Kawasaki etc.).

8.3. Chain and guide bar oils



G-Garden Chain&Bar

Advantages:

- ✓ Enhanced penetration properties, which lubricate internal surfaces of chain rollers/pins
- ✓ Robust oil film and anti-wear protection
- ✓ Excellent adhesion on chain surfaces, prevents dry friction



Gazpromneft Chain Oil

Advantages:

- ✓ Optimized viscosity – minimized operating oil losses
- ✓ Efficient removal of wear particles, saw dust, debris and dirt from sliding surfaces.
- ✓ Water repelling properties, which protect the sliding surfaces against rust and corrosion



Greases

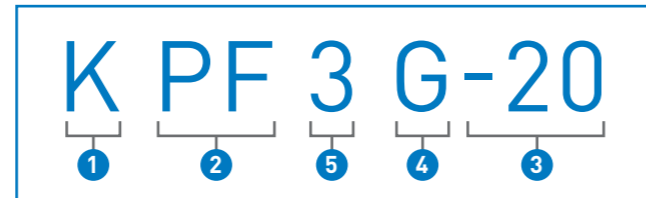
Agriculture and farming machinery operates under severe load conditions and in a contaminating environment. All lubrication systems are periodically subjected to water, moisture, dust, plant debris, continuous loads and elevated temperatures. To protect the equipment's components in such conditions, advanced performance greases are mandatory.

Gazpromneft – Lubricants developed a wide range of products suiting the agricultural equipment's needs. High-tech additives and solid lubricants used for grease production provide an adequate performance of all grease lubricated units.

9.1. Primary Classifications of Greases

Classification of greases according to DIN 51 502

This classification divides greases into groups according to their properties – composition, temperature range of application, consistency etc. A specific code is assigned to each level of performance, making the grease choice far easier.



1 General application groups of greases

K	Grease lubricants for anti-friction bearings, plain bearings and sliding faces according to DIN 51825
G	Grease lubricants for enclosed drives according to DIN 51826
OG	Grease lubricants for open transmissions
M	Lubricants for plain bearings and seals

2 Components (base oils, additives etc.)

P	EP additive
F	Solid additive
E	Ester, organic
FK	Perfluor liquids
HC	Synthetic hydrocarbons
PH	Ester of phosphoric acid
PG	Polyglycols
SI	Silicon oils
X	Others

3 Code number for lower service temperatures

Lower operating temperatures lowers the grease's properties reliability.

4 Code letter (reaction to water)

Code letter	Limit of maximum operating temperatures	Resistance to water washout, °C according to DIN 51807 (*)
C	60	0 at 40 °C or 1 at 40 °C
D		2 at 40 °C or 3 at 40 °C
E	80	0 at 40 °C or 1 at 40 °C
F		2 at 40 °C or 3 at 40 °C
G	100	0 at 90 °C or 1 at 90 °C
H		2 at 90 °C or 3 at 90 °C
K	120	0 at 90 °C or 1 at 90 °C
M		2 at 90 °C or 3 at 90 °C
N	140	
P	160	
R	180	By agreement
S	200	
T	220	
U	>220	

5 NLGI Grade

NLGI Grade	Penetration at 25 °C	Consistency	Application
000	445-475	Very soft (like viscous oil)	Closed gear systems / central lubrication systems
00	400-430		
0	355-385	Soft – semifluid	
1	310-340	Soft	Closed gear systems / central lubrication systems / rolling and sliding bearings
2	265-295	Soft	Sliding bearings / rolling bearings / sliding surfaces / central lubrications systems
3	220-250	Firm	Sliding bearings / rolling bearings
4	175-205	Hard	Rolling bearings / water pump sealing
5	130-160	Very Hard	Open gear systems / water pump sealing
6	85-115		

* 0 – no change; 1 – slight change; 2 – moderate change; 3 – major change.

9.2. Product range of Gazpromneft Greases

Physical and chemical properties	Method																	GOST	
		Gazpromneft Grease L EP 00	Gazpromneft Grease L EP 0	Gazpromneft Grease L EP 1	Gazpromneft Grease L EP 2	Gazpromneft Grease L EP 3	Gazpromneft Grease L Moly EP 2	Gazpromneft Metalgrease AC	Gazpromneft Grease LTS 1	Gazpromneft Grease LTS 2	Gazpromneft Grease LTS Moly EP 2	Gazpromneft Grease LX EP 1	Gazpromneft Grease LX EP 2	Gazpromneft Steelgrease CS 1	Gazpromneft Steelgrease CS 2	Gazpromneft Grease Synth LX EP 2	Gazpromneft Grease Nord Moly	LITOL-24	Homocyclic joint grease or grease for application in to homocyclic joint
Code according to DIN 51502	DIN 51502	KP 00 K-30	KP 0 K-30	KP 1 K-30	KP 2 K-30	KP 3 K-30	KPF 2 K-30	KPF 2S-30	KP 1 K-30	KP 2 K-30	KPF 2 K-30	KP 1 P-30	KP 2 P-30	KP 1 S-30	KP 2 S-30	KPHC 2 N-50	KPF 0 K-50	K 3 K-40	KPF 2 K-40
NLGI grade	ASTM D217	00	0	1	2	3	2	2	1	2	2	1	2	1	2	2	0	3	–
Operating temperature range, °C		-30 up to +120*	-30 up to +120*	-30 up to +120*	-30 up to +120*	-30 up to +120*	-30 up to +120*	-30 up to +200	-30 up to +120*	-30 up to +120*	-30 up to +120*	-30 up to +160	-30 up to +160	-30 up to +200	-30 up to +200	-50 up to +150	-50 up to +120*	-40 up to +120*	–
Color	Visually	Amber	Amber	Amber	Amber	Amber	Dark Grey	Copper Gloss	Dark Brown	Dark Brown	Dark Grey	Blue	Blue	Amber	Amber	Light Beige	Dark Grey	Lite Brown	Dark Grey
Thickener		Lithium soap	Lithium soap	Lithium soap	Lithium soap	Lithium soap	Lithium Soap	Bentone	Lithium-Calcium Soap	Lithium-Calcium Soap	Lithium-Calcium Soap	Lithium-Complex Soap	Lithium-Complex Soap	Calcium Sulfonate	Calcium Sulfonate	Lithium-Complex Soap	Lithium-Complex Soap	Lithium soap	Lithium soap
Solid additives		–	–	–	–	–	Molybdenum Disulfide	–	–	–	Molybdenum Disulfide	–	–	–	–	–	Molybdenum Disulfide	–	Molybdenum Disulfide
Drop Point, °C	ASTM D566 GOST 6793	>170	>170	>180	>190	>190	>190	non-melting >190	>190	>190	>190	>250	>250	>300	>300	>250	>250	190	190
Base oil		mineral	mineral	mineral	mineral	mineral	mineral	mineral	mineral	mineral	mineral	mineral	mineral	mineral	mineral	synthetic	VHVI	mineral	mineral
Kinematic viscosity of Base Oil at 40 °C, mm²/s	ASTM D445	150	150	150	150	150	150	110	220	220	220	220	220	420	420	100	20	–	–
4-ball welding load, (not less than), N	ASTM D2596 DIN 51350 4 GOST 9490	2 400	2 400	2 400	2 400	2 400	2 800	3 200	2 800	2 800	4 136	3 000	3 000	4 500	4 500	2 600	4 000	1 410	4 900
4-ball wear scar diameter, mm	ASTM D2266 DIN 51350 5 GOST 9490	0,5	0,5	0,5	0,5	0,5	0,5	0,4	0,5	0,5	0,4	0,4	0,4	0,5	0,5	–	0,6	–	–

* Short peaks – up to +150 °C.



Gazpromneft Grease LTS 2

Multi-purpose lithium-calcium thickened grease containing an extreme pressure (EP) additive package. Applicable for lubricating equipment units operated under particularly severe loads.



Advantages



Outstanding performance characteristics in temperature ranges between -30 °C up to +120 °C, short peaks up to +150 °C are permissible.



Excellent oxidation stability provides extended re-lubrication intervals in high temperature operating conditions.



MAINTAINS HIGH WATER WASHOUT RESISTANCE

UNIVERSAL

The grease's multi-purpose functionality promotes its application on various types of equipment units, consequently reducing the number of different products in stock and hence the cost.



Gazpromneft Grease LX EP 2

Multi-purpose grease containing lithium-complex soap and an extreme pressure (EP) additive package for lubricating equipment units operating at high temperatures and particularly high load conditions.



Advantages



High performance properties within a -30 °C up to +160 °C temperature range.



Extended re-lubrication intervals, high oxidation stability.



Provides outstanding sealing properties, accordingly prevents water, dirt and dust ingress in equipment units.



Maintains highly effective corrosion inhibition even in extremely harsh operating conditions such as permanent moisture, cold or hot water washouts.



Provides an especially high mechanical stability thereby suitable to be applied on strongly vibrating equipment.

Service Fluids

10.1. Antifreezes

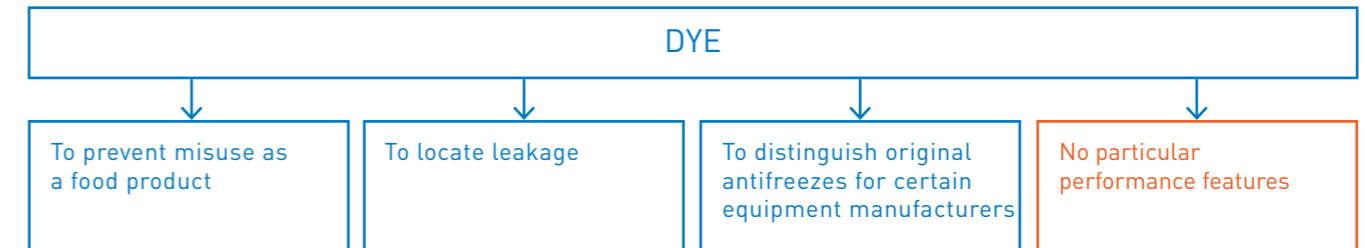
Agricultural and farming machinery is often operated in high ambient temperatures and extreme load conditions, putting a strain on the engine and the cooling system. To maintain optimal engine temperature and prevent the system from overheating adequate coolants must be applied.

G-Energy and Gazpromneft antifreeze product range covers the original equipment manufacturers' specific needs. Besides, these products are adapted to suit as many OEM requirements as possible. Antifreezes are divided into four major corrosion inhibitor addition technology groups: Carboxylates (OAT), Lobrid (X-OAT), Hybrid (HOAT) and conventional (IAT).

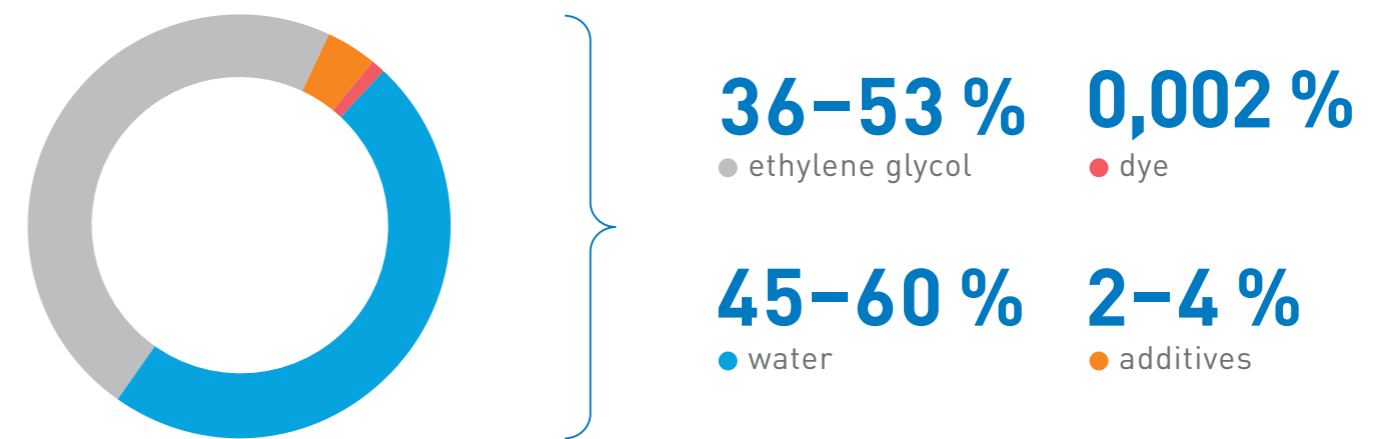


Antifreeze knowledge base

1 **Color.** Specific coolant color is obtained by adding dye.



2 **High quality antifreeze**



ETHYLENE GLYCOL

Provides:

- Increased boiling temperature;
- Decreased freezing temperature;
- Cooling system protection against frozen coolant expansion

! According to OEM specifications no fatty alcohols (methanol, ethanol etc.) are allowed to be used in the formula – these substances provoke corrosion, pose a fire hazard and impair the heat transfer. Methanol is aggressive to many sealant elastomers used by the automotive industry.

ADDITIVE PACKAGE

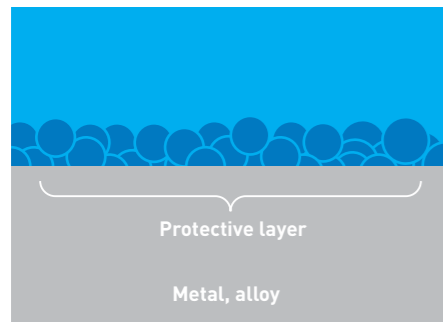
Protection against:

- Corrosion and cavitation;
- Water pump and cooler leakage;
- Thermostat failures.

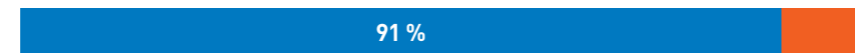
! Due to the combination of different metals, alloys and polymers in the cooling system of various equipment manufacturers, different additive technology packages are applied, therefore formulating a unified coolant is technically impossible.

3 Main additive types (technologies)

Conventional technology (IAT)

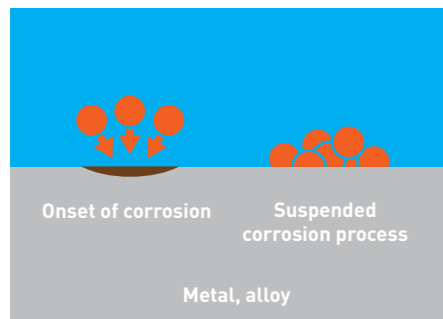


Coating the entire cooling system's surface with a thick (few microns) protective layer preventing bore sleeve cavitation.



- + Coating the entire cooling system's surface with a thick (few microns) protective layer preventing bore sleeve corrosion.
- Rapid depletion of additives, impaired heat removal, poor stability of the protective coat in modern engines due to the system's high fluid circulation velocity.

Carboxilate technology (OAT)

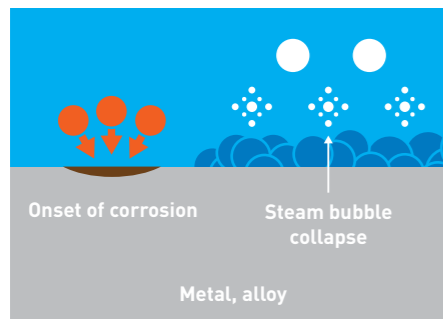


Building a protective layer solely over the corroded area. Slow additive depletion and extended fluid service life.



- + Building a protective layer solely over the corroded area. Slow additive depletion and extended fluid service life.
- High cost. Incompatibility with some earlier technology polymers.

Hybrid and Lobrid technologies



Inorganic additives prevent cavitation on metallic surfaces and build a protective layer, while organic additives are active over corroded areas. Accordingly, a rational use of corrosion inhibiting additive is achieved.



- + Combines the advantages of conventional and carboxilate technologies.
- The service of life of such antifreeze is a bit shorter than the one with a fully carboxilate technology.

4 Main classifications of Coolants

Common industrial ASTM standards

ASTM D3306	Basic properties. Light duty operating conditions. Production technology of coolants complying to ASTM D3306 may be whichever of these – OAT, IAT, Hybrid, Lobrid.
ASTM D4985	ASTM D3306 + additional tests. Heavy duty operating conditions. Production technology of coolants complying to ASTM D4985 may be whichever. Complementary to ASTM D3306 requirements. Provides enhanced corrosion inhibition.
ASTM D6210	ASTM D4985 + additional anti-cavitation protection of many engine bore sleeves. Heavy duty operating conditions. Complementary to ASTM D4985 requirements.

Classification basis



Approval / OEM specification = **ASTM Dxxxx** + additional OEM requirements.

Example of requirements issued by original equipment manufacturers (OEM) such as Caterpillar ELC (EC-1)

ASTM D3306	Additional requirements and tests
-------------------	-----------------------------------

The manufacturer of internal combustion engines knows their cooling system's specificities (for instance tendency to cavitation of bore sleeves), and therefore often sets additional requirements to antifreeze fluids. Industrial standards like ASTM express the minimum requirements placed on coolant properties.

The coolant's top quality is confirmed by internationally recognized OEMs.

10.1.1. Product range of G-Energy antifreezes

Product name	Additive technology	Conformity to ASTM's industry standards	Approvals	Color	Application
G-Energy Antifreeze SNF	OAT	ASTM D4985	MAN 324-SNF MB 325.3 MWM	Red	For light and heavy operating conditions. Lightly and heavily loaded engines. Comply with DAF, MTU, Volvo Trucks requirements.
G-Energy Antifreeze					
G-Energy Antifreeze NF	Hybrid	ASTM D4985	MAN 324-NF MB 325.0 DEUTZ DQC CA-14 JENBACHER TI 1000-0201	Blue-Green	For light and heavy operating conditions. Comply with Liebherr, MWM, Volvo Trucks requirements.
G-Energy Antifreeze Si-OAT					
G-Energy Antifreeze HD	ASTM D4985 ASTM D6210	Purple	For light and heavy operating conditions. Comply with Caterpillar CAT EC-1, Cummins and Detroit Diesel requirements.		



G-Energy Antifreeze SNF

Concentrated and premix coolant based on ethylene glycol and designed according to OAT technology (organic acid salt based corrosion inhibitors). OAT technology antifreezes are widely used for engines of European and Japanese origin, such as: John Deere, Case, New Holland, Claas, Challenger, Deutz Fahr (according to OEM requirements the instruction manual must be checked before application).

PRODUCT OPTIONS:

- **G-Energy Antifreeze SNF** — concentrated coolant for dilution.
- **G-Energy Antifreeze SNF 40** — premixed coolant with anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water.

FORMAL APPROVALS:

MAN 324 TYP SNF; MB 325.3; MWM.

SPECIFICATIONS:

Caterpillar; DAF MAT 74002; Deutz DQC CB-14; MTU MTL 5048; VW TL-774-F (G12+); Ford; Porsche; JSC AVTOVAZ; ASTM D3306, D4985; Afnor NF R15-601; ÖNORM V 5123; CUNA NC 956-16; SANS 1251:2005; BS 6580-2010; GOST 33591-2015.



G-Energy Antifreeze NF

Concentrated and premix coolant based on ethylene glycol and designed according to hybrid technology (organic acid salt and silicate based corrosion inhibitors).

Hybrid technology antifreezes are widely used for engines of European origin, such as: Mercedes-Benz, Deutz Fahr (according to OEM requirements the instruction manual must be checked before application).

PRODUCT OPTIONS:

- **G-Energy Antifreeze NF** — concentrated coolant for dilution.
- **G-Energy Antifreeze NF 40** — premixed coolant with anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water mixture.

FORMAL APPROVALS:

MB 325.0; DEUTZ DQC CA-14; MAN 324 NF; JENBACHER TI 1000-0201.

SPECIFICATIONS:

Jenbacher TA-Nr. 1000-0201; Liebherr Machines Bulle TLV 035; Liebherr Machines Bulle TLV 23009 A; Porsche 924, 928, 944, 968; Saab 6901599; General Motors B 040 0240; BMW N 600 69.0; Mercedes-Benz Daimler; Ford; General Motors; Iveco; VW TL 774-C (G-11); ASTM D3306, D4985; AS 2108-2004; ÖNORM V 5123; CUNA NC 956-16; SANS 1251:2005; BS 6580-2010; GOST 33591-2015.



G-Energy Antifreeze HD

Concentrated and premix coolant based on ethylene glycol and designed according to Lobrid technology (organic acid salts, nitrites and molybdates based corrosion inhibitors).

Lobrid technology antifreezes are widely used for heavy duty engines such as: John Deere, Claas, Case, New Holland, Challenger (according to OEM requirements the instruction manual must be checked before application).

PRODUCT OPTIONS:

- **G-Energy Antifreeze HD** — concentrated coolant for dilution.
- **G-Energy Antifreeze HD 40** — premixed coolant with anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water mixture.

SPECIFICATIONS:

Caterpillar ELC (EC-1); Cummins 90T8-4; Detroit Diesel 7SE298; Freightliner 48-22880; General Motors 1825, 1899M, 6277M; ASTM D6210, D3306, D4985; SAE J1034; J1038; TMC RP329; GOST 33591-2015.



G-Energy Antifreeze

Concentrated and premix coolant based on ethylene glycol and designed according to carboxylate technology. Doesn't contain silicates, nitrites, amines, phosphates and borates.

PRODUCT OPTIONS:

- **G-Energy Antifreeze** — concentrated coolant for dilution.
- **G-Energy Antifreeze 40** — premixed coolant providing anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water mixture.
- **G-Energy Antifreeze 65** — premixed coolant providing anti-freezing protection at -65 °C. 65:35 ratio concentrated coolant and water mixture.

SPECIFICATIONS:

JSC AVTOVAZ;
GAZ Ltd.;
JSC Kamaz;
JSC Avtodizel (YAMZ);
ASTM D3306; BS 6580:2010;
GOST 33591-2015.

G-Energy Antifreeze Si-OAT

Concentrated and premix coolant based on ethylene glycol and designed according to Lobrid technology. Doesn't contain nitrites, amines, phosphates and borates.

PRODUCT OPTIONS:

- **G-Energy Antifreeze Si-OAT** — concentrated coolant for dilution.
- **G-Energy Antifreeze Si-OAT 40** — premixed coolant with anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water mixture.

FORMAL APPROVALS:

MAN 324 SI-OAT, MB 325.5.

SPECIFICATIONS:

Cummins CES 14603;
MTU MTL 5048; VW TL 774-G
(G12++); ASTM D3306, D4985;
GOST 33591-2015.



10.1.2. Product range of Gazpromneft coolants

Product name	Additive technology	Conformity to ASTM's industry standards	Approvals	Color	Application
Gazpromneft ANTIFREEZE SF 12+	OAT	ASTM D4985	MAN 324-SNF	Red	Light and heavy duty operating conditions. Comply to Mercedes-Benz and MTU requirements.
Gazpromneft ANTIFREEZE BS		ASTM D3306		Green	Light duty operating conditions. Designed for vehicles made in Russia and abroad. Applicable for post-warranty maintenance.
Gazpromneft ANTIFREEZE	Conventional	ASTM D4985 ASTM D6210	JSC Avtodizel (YAMZ) JSC Kamaz JSC UKH MMZ	Red	Light and heavy duty operating conditions. Enhanced protection against cavitation. Complies to Caterpillar, Cummins, Detroit Diesel, Freightliner, John Deere requirements.
Gazpromneft TOSOL				Blue	Used for various equipments at post-warranty period.



Gazpromneft ANTIFREEZE SF12+

Concentrated and premix coolant based on ethylene glycol and designed according to OAT technology (organic acid salt based corrosion inhibitors).

PRODUCT OPTIONS:

- **Gazpromneft ANTIFREEZE SF12+** — concentrated coolant for dilution.
- **Gazpromneft ANTIFREEZE SF12+ 40** — premixed coolant with anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water mixture.
- **Gazpromneft ANTIFREEZE SF12+ 60** — premixed coolant with anti-freezing protection at -50 °C. 60:40 ratio concentrated coolant and water mixture.

FORMAL APPROVALS:

MAN 324 TYP SNF.

SPECIFICATIONS:

MB 325.3; VW TL 774-F (G12+);
ASTM D3306, D4985;
Afnor NF R15-601; BS 6580-2010;
SAE J1034; GOST 33591-2015.



Gazpromneft ANTIFREEZE

Concentrated and premix coolant based on ethylene glycol and designed according to traditional inorganic acid salt technology (low content of silicate additives and nitrites).

Antifreezes of this series are widely used for engines such as: John Deere, New Holland, Case (according to OEM requirements the instruction manual must be checked before application).

PRODUCT OPTIONS:

- **Gazpromneft ANTIFREEZE** — concentrated coolant for dilution.
- **Gazpromneft ANTIFREEZE 40** — premixed coolant with anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water mixture.
- **Gazpromneft ANTIFREEZE ARCTIC** — premixed coolant providing enhanced anti-freezing protection at -55 °C. 60:40 ratio concentrated coolant and water mixture.

FORMAL APPROVALS:

JSC Avtodizel (YAMZ);
JSC Kamaz;
JSC UKH MMZ.

SPECIFICATIONS:

Cummins CES 14603; Caterpillar;
Detroit Diesel 7SE298;
General Motors 6038M;
John Deere 8650-5;
Case Corp. MS1710;
New Holland 9-86; Navistar;
Freightliner 48-22880; PACCAR;
MACK; Waukesha 4-1974D;
GAZ Ltd.;
JSC AVTOVAZ;
ASTM D3306, D4985, D6210;
TMC RP329; SAE 1941;
BS 6580-1992; GOST 33591-2015.

Gazpromneft ANTIFREEZE (BS)

Concentrated and premix coolant based on ethylene glycol and designed according to traditional inorganic acid salt technology (additives containing nitrites).

PRODUCT OPTIONS:

- **Gazpromneft ANTIFREEZE (BS)** — concentrated coolant for dilution.
- **Gazpromneft ANTIFREEZE (BS) 40** — premixed coolant with anti-freezing protection at -40 °C. 50:50 ratio concentrated coolant and water mixture.

SPECIFICATIONS:

ASTM D3306, D4985;
GOST 33591-2015.



10.1.3. Antifreeze according to GOST quality standard

Gazpromneft TOSOL

Concentrated and premix coolant based on ethylene glycol, while the additive package on conventional corrosion inhibitor technology. Properties comply with GOST 28084-89, GOST 33591-2015.

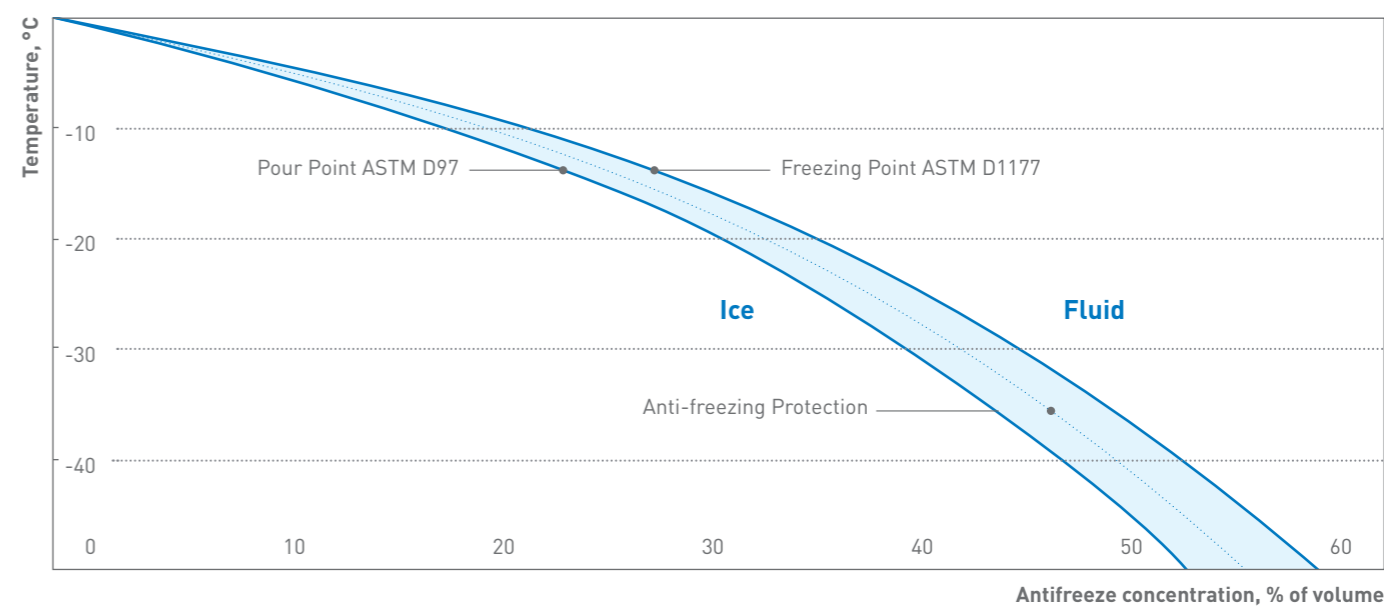
SPECIFICATIONS:

GOST 33591-2015.

PRODUCT OPTIONS:

- **Gazpromneft TOSOL** — concentrated coolant for dilution (GOST 33591-2015).
- **Gazpromneft TOSOL 40** — premixed coolant with anti-freezing protection at -40 °C (GOST 33591-2015).
- **Gazpromneft TOSOL 65** — premixed coolant with anti-freezing protection at -65 °C.

10.1.4. Diagram: dependency of anti-freezing protection temperatures* on concentration



* Anti-freezing protection temperature – average value between Freezing Point (first ice crystals) and Pour Point (loss of fluidity).

10.2. Brake fluids

Brake Fluid transfers braking power from the vehicle's control levers toward its brake pads. The fluid's quality is crucial for an effective and safe agricultural equipment's operating conditions. During service, the brake fluid accumulates particles of wear and corrosion, while exposed to moisture contamination by air. Therefore, for a long and safe high quality

operation, the product must be chosen carefully and maintenance done accordingly to the OEM's instruction manual.



G-Energy Expert DOT-4

High quality brake fluid for vehicles according to DOT 4 requirements. Operating temperature conditions in the range of -50 °C up to +50 °C degrees. Application according to the original equipment manufacturer's instructions.

SPECIFICATIONS:

FMVSS 116; ISO 4925; SAE J1703;
SAE J1704; JSC AVTOVAZ;
JSC GAZ; JSC Kamaz;
JSC PAZ; JSC UAZ.



Gazpromneft DOT 4

High quality brake fluid for vehicles according to DOT 4 requirements. Operating temperature conditions in the range of -50 °C up to +50 °C degrees. Application according to the original equipment manufacturer's instructions.

SPECIFICATIONS:

ISO 4925; SAE J1704; FMVSS 116.

Technical Support and Services

11.1. G-Energy Academy

ALEXANDR TRUHAN

Managing director of Gazpromneft – Lubricants:

"Technological development of educational tools and worker qualification improvements are the latest trend that we managed to effectively implement into G-Energy Academy. Nowadays, the use of advanced technologies is a mandatory step toward the development of the product's R&D. In a similar way advanced technologies should be used for sales promotion and training of the sales team".

G-Energy Academy is a strategic project developed by Gazpromneft – Lubricants. Its main objective is to increase the expertise of our customer support teams in the world of lubrication.

G-Energy Academy offers various platforms: face to face seminars, on-line conferences, webinars as well as studies in virtual reality. The virtual reality headset allows to employ digitalization technologies such as dialogue simulations that particularly help in avoiding costly mistakes in the real life conditions.

Educational programs include virtual tours around the lubricant blending plant in the city of Omsk, vehicle service dialogue simulations and other interactive courses.



Main activity focus of G-Energy Academy

Qualification boost of customer's personnel by training them to apply various tools



Experts from G-Energy Academy offer expertise to solve lubricant application issues



11.2. Technical Services

Gazpromneft – Lubricants Technical Services is a system providing the equipment's reliability. These services help customers to establish optimal lubrication schedules and procurement routines as well as optimize equipment maintenance according to the Condition Based Maintenance rules.

The aim of these services is to reveal the advantages of Gazpromneft – Lubricants products in combination with our engineers' knowledge and available tools. Practical Technical Services carried out by our experts contain a set of unique mobile diagnostic appliances providing instant real-time lubricant's evaluation and the equipment's condition. IR-Spectrometer, XRF-Spectrometer and Mini-Viscometer can be operated right at a customer's production site.

IR-Spectrometer



XRF-Spectrometer



Portable viscometer



OTS — OIL TESTING SERVICE

Express-audit of lubricants.



PURPOSE OF SERVICE

Control and confirmation of specific Gazpromneft – Lubricants product properties in field trial conditions. Extensive oil testing program in laboratory conditions.

COMPANY TECHNICIANS PERFORM

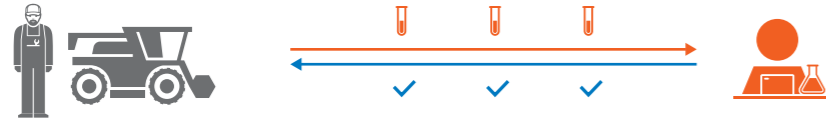
short-term application monitoring of Gazpromneft – Lubricants (1-3 drains). 4 to 6 samples of used oil are taken from a limited number of operating equipment. Tests and evaluation of results are performed by independent laboratory experts.

THE SERVICE ALLOWS

an optimized product choice and adjusted drain intervals according to specific operating conditions and environments.

OTS-MONITORING

Performance monitoring of the products made by Gazpromneft – Lubricants.



PURPOSE OF SERVICE

Additional means of equipment condition control. Express-analysis of used lubricant.

COMPANY TECHNICIANS PERFORM

long-term monitoring of Gazpromneft – Lubricants product applications. Samples of used oil are taken from a selection of many units at each fluid draining. Sample study done by a mobile laboratory. Research data and analysis results of each unit are uploaded onto the website and are accessible through an individual login.

THE SERVICE ALLOWS

a constant control of lubricants and the equipment’s condition, drain interval corrections, recognition of hidden problems and elimination of failures in the early stage of development.

OTS-SCREEN

Survey and analysis of operational conditions.



PURPOSE OF SERVICE

Evaluation of lubricant application effectiveness at the customers’ site by means of mobile diagnostic equipment.

COMPANY TECHNICIANS PERFORM

an evaluation of storage conditions, distribution and application of lubricants, as well as an evaluation of the actual equipment’s condition operating with a specific lubricant. Samples of used oil are taken during a working day from units of different ages. Samples are analyzed in portable diagnostic tools during the maintenance service at a production site.

THE SERVICE ALLOWS

an evaluation of lubricating routines, actual equipment condition and adequacy of the stated drain intervals to their operating conditions.

OIL EXPERT SERVICE

Survey and analysis of operational conditions.



PURPOSE OF SERVICE

Resolving of controversial situations related to the Gazpromneft - Lubricants products’ application.

COMPANY TECHNICIANS PERFORM

an evaluation of the operating lubricant and the one in the original containers. Survey of samples are performed by an independent laboratory. According to the analysis’ report the customer is introduced to conclusions in regard of to the problem’s roots and is offered the necessary recommendations in order to solve them.

THE SERVICE ALLOWS

to identify the problem’s cause and its coherence to the lubricant’s condition.

Field Trials in Agriculture and Farming enterprises

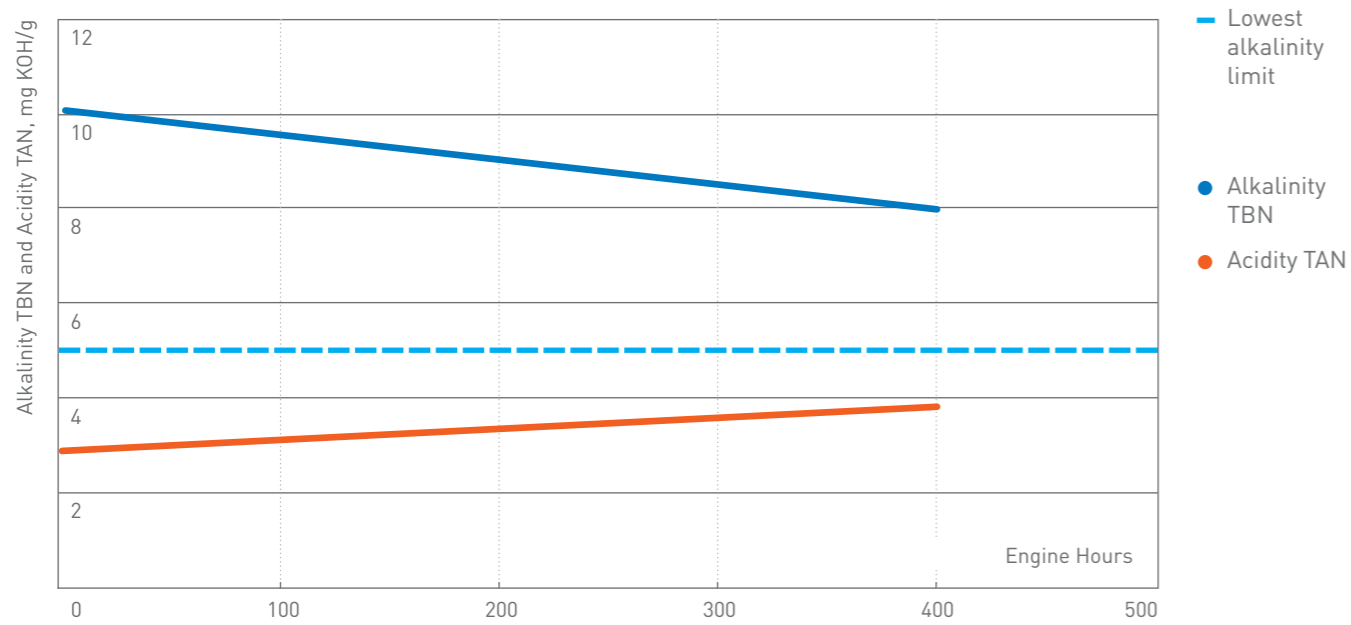
12.1. Engine oil G-Profi MSI Plus 15W-40

G-Profi MSI Plus 15W-40 successfully passed test trials and observation programs in many companies of the agricultural industry. Typical machinery:

Original Equipment Manufacturer	Equipment model number	Engine model number	Drain interval
Challenger	MT 685D	Caterpillar	more than 300 hours
	MT 685C		
JCB	JCB 535	JCB 444	more than 250 hours
	8430		
JOHN DEERE	9520	John Deere	more than 350 hours
CLAAS	Axion 8508		
NEW HOLLAND	CS6090	IVECO	more than 300 hours

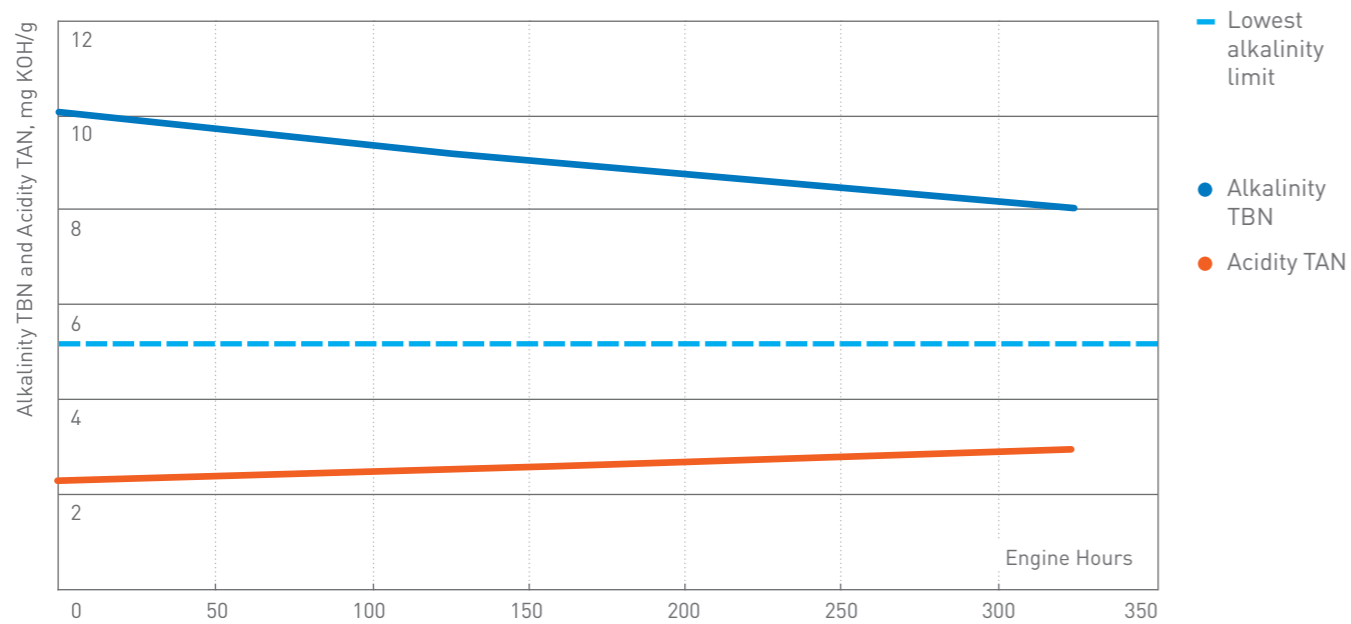
1. Challenger tractors, Caterpillar engines

Dependence of alkalinity TBN (ASTM D4739) on engine hours. G-Profi MSI Plus 15W-40



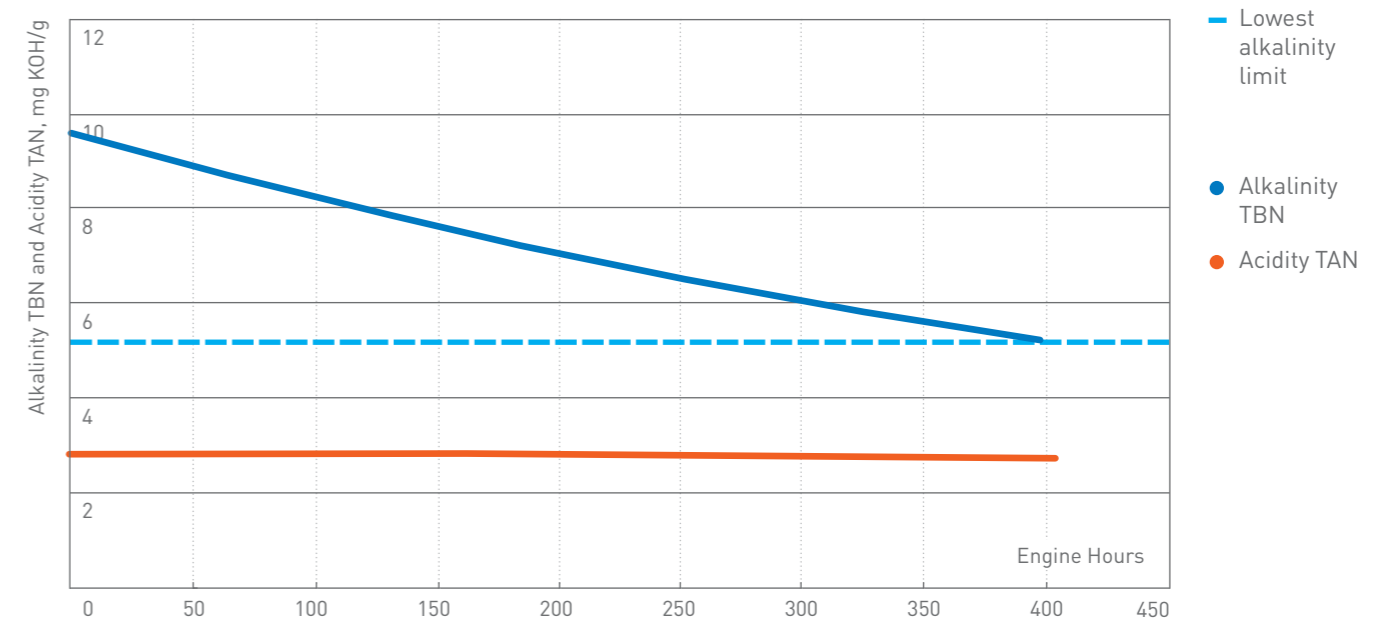
2. JCB 535 telescopic handlers, JCB 444 engines

Dependence of alkalinity TBN (ASTM D4739) on engine hours. G-Profi MSI Plus 15W-40



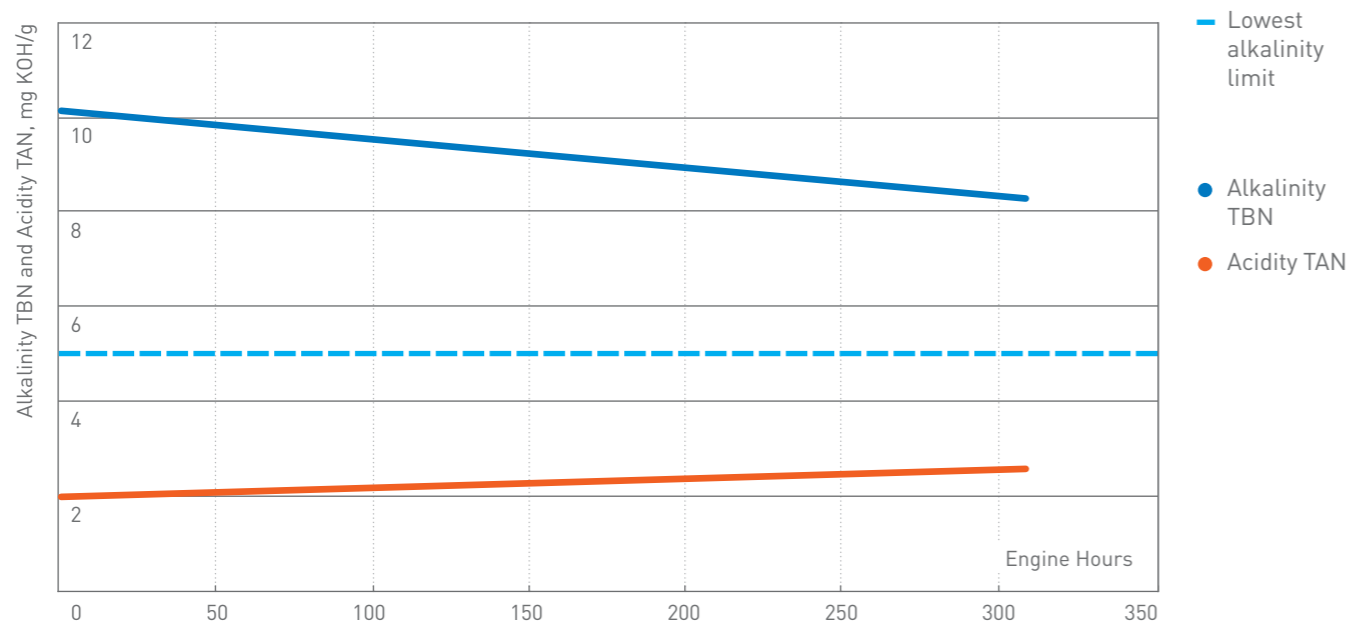
3. JOHN DEERE and CLAAS tractors, JOHN DEERE engines

Dependence of alkalinity TBN (ASTM D4739) on engine hours. G-Profi MSI Plus 15W-40



4. NEW HOLLAND CS6090 harvesters, IVECO engines

Dependence of alkalinity TBN (ASTM D4739) on engine hours. G-Profi MSI Plus 15W-40



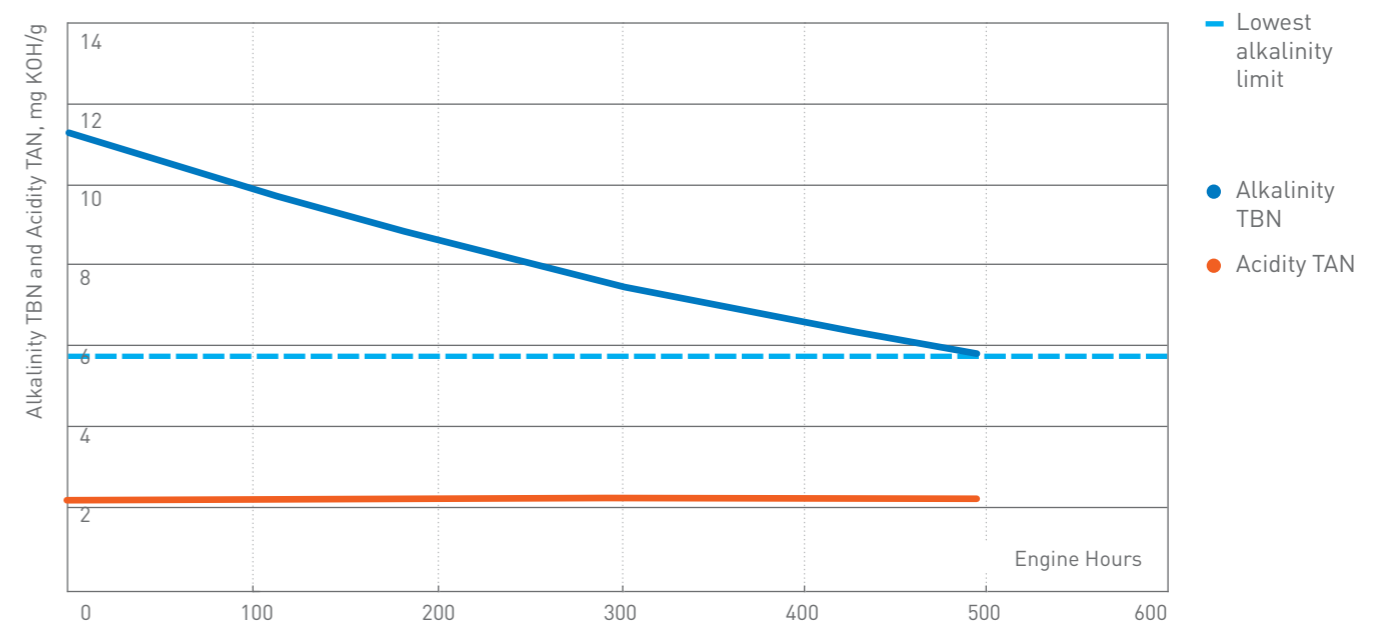
12.2. Engine oil G-Profi GT 10W-40

G-Profi GT 10W-40 successfully passed test trials and observation programs in many companies of the agricultural industry. Typical machinery:

Original Equipment Manufacturer	Equipment model number	Engine model number	Drain interval
Fendt	Vario 933	Deutz	more than 450 hours
ROPA	Euro-Tiger 9	OM502LA	more than 400 hours

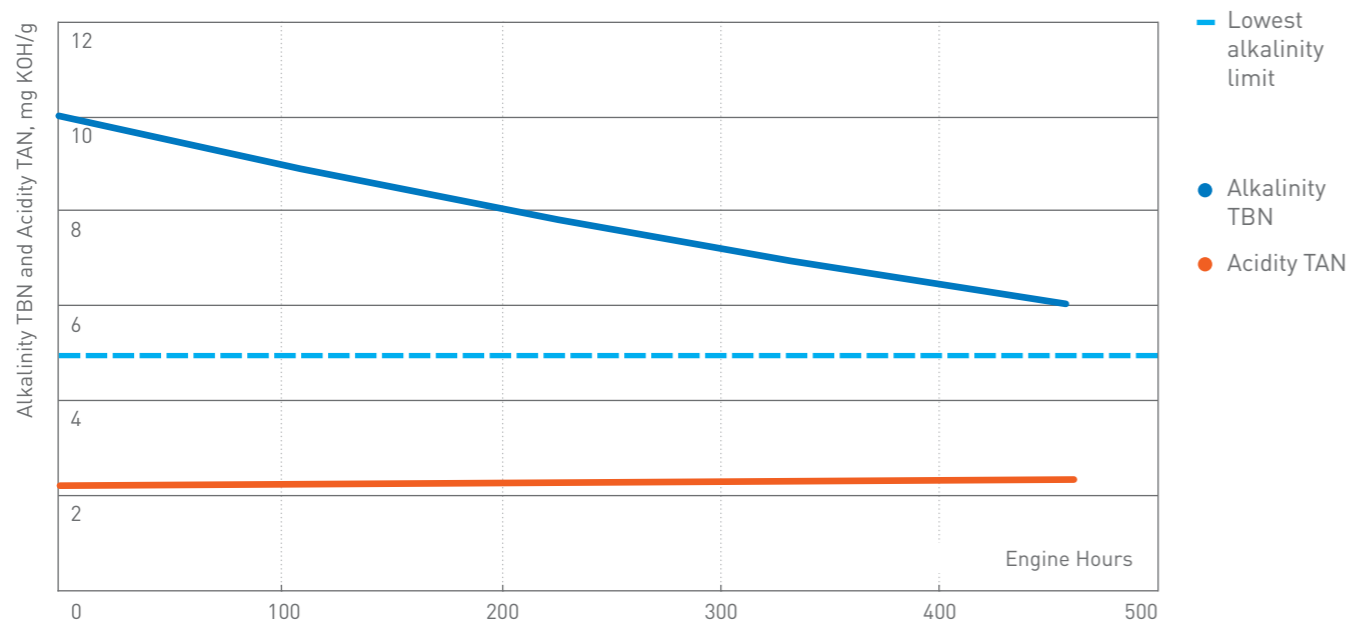
1. Fendt 933 tractors, Deutz engines

Dependence of alkalinity TBN (ASTM D4739) on engine hours. G-Profi GT 10W-40



2. ROPA Euro-Tiger 9 beet harvester, Daimler-Benz engines

Dependence of alkalinity TBN (ASTM D4739) on engine hours. G-Profi GT 10W-40



Specifications of Lubricating Fluids

13.1. Classification of Engine Oils

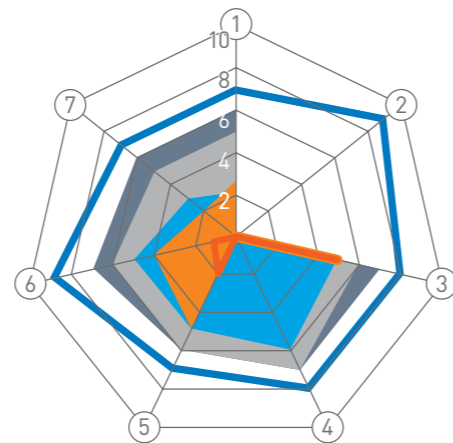
API classification of heavy-duty diesel engine oils

- CJ-4** Introduced in 2006. These oils are formulated for use on all applications with a diesel fuel sulfur content up to 500 ppm (0.05% by weight). Particularly effective for sustaining the system's emission control durability where particulate filters (DPF) and other advanced aftertreatment systems are used. Designed to provide enhanced protection against oil oxidation, shearing induced viscosity loss and oil aeration as well as protection against catalyst poisoning, particulate filter clogging, engine wear, piston deposits, deterioration of low- and high-temperature properties and soot-related viscosity increase.
- CI-4** Introduced in 2002. For modern heavy-duty diesel engines designed to meet 2004 exhaust emission standards. CI-4 oils are formulated to sustain the engine's durability where exhaust gas recirculation (EGR) is installed and are intended for use with diesel fuels ranging in sulfur content up to 0.5% of weight. High oxidation stability, dispersency and antiwear properties provide a good soot control.
- CH-4** Introduced in 1998. For high-speed diesel engines designed to meet 1998 exhaust emission standards. Provides high protection against corrosion and engine wear, as well as a good oil oxidation stability. CH-4 oils are specifically formulated for use with diesel fuels ranging in sulfur content up to 0.5% of weight.
- CG-4** Introduced in 1994. Developed for heavy-duty on-highway and off-road diesel engines. Formulated to meet exhaust gas control requirements according to USA legislation.
- CF-4** Introduced in 1990. Developed for high-speed diesel engines. Designed to provide enhanced control over piston deposits and minimize volatility related oil losses.
- CD** Introduced in 1955. This oil category is obsolete. Developed for older naturally aspirated and turbo charged diesel engines. Comparatively to earlier categories of this classification it sets a higher piston deposit formation and antiwear requirements. Not suitable for engines manufactured after 1994.
- CC** Introduced in 1951. This oil category is obsolete. Developed for older naturally aspirated and moderate pressure turbocharged engines. Not suitable for engines designed after 1990.

Specification comparison

● CJ-4 ● CI-4 ● CH-4 ● CG-4 ● CF-4 ● CD

- | | |
|-------------------------------------|---|
| ① Protection against Bore Polishing | ④ Oxidation stability and thickening inhibition |
| ② DPF compatibility | ⑤ Prevention of high-temperature deposits |
| ③ Anti-corrosion protection | ⑥ Soot control |
| | ⑦ Anti-wear properties |



ACEA classification of heavy-duty diesel engine oils

ACEA E6 Oil providing excellent piston cleanliness control, wear and soot handling as well as lubricant stability. It is recommended for highly rated diesel engines that meet Euro VI emission requirements and running under very severe conditions, e.g. significantly extended oil drain intervals. Suitable for EGR engines with or without particulate filters and for engines fitted with SCR NOx reduction systems. E6 quality is strongly recommended for engines fitted with particulate filters and is designed for use in combination with low sulfur diesel fuels.

ACEA E9 Oil providing effective control over piston cleanliness and bore polishing. It further provides excellent wear control, soot handling and lubricant stability. It is recommended for highly rated diesel engines that meet Euro VI emission requirements and running under severe conditions, e.g. extended oil drain intervals. It is suitable for engines with or without particulate filters, and for most EGR engines and for most engines fitted with SCR NOx reduction systems. E9 is strongly recommended for engines fitted with particulate filters and is designed for use in combination with low sulfur diesel fuels.

ACEA E4 Oil providing excellent control of piston cleanliness, wear, soot handling and lubricant stability. It is recommended for highly rated diesel engines that meet Euro V emission requirements and running under very severe conditions, e.g. significantly extended oil drain intervals according to the manufacturer's recommendations. It is suitable for engines without particulate filters, and for some EGR engines and some engines fitted with SCR NOx reduction systems.

ACEA E7 Oil providing effective control over piston cleanliness and bore polishing. It further provides excellent wear control, soot handling and lubricant stability. It is recommended for highly rated diesel engines that meet Euro V emission requirements and running under severe conditions. It is suitable for engines without particulate filters, and for most EGR engines and most engines fitted with SCR NOx reduction systems. Not suitable for extended drains. Replaces obsolete categories like ACEA E2, E3 and E5.

JASO classification of heavy-duty diesel engine oils

JASO DH-1 Heavy duty equipment diesel engine oil category for pump protection, anticorrosion protection, oxidation inhibition and soot control. These oils are recommended for engines without diesel particulate filters (DPF). High Sulfur fuels above 0,05% are admissible for engines lubricated by motor oils according to DH-1.

JASO DH-2 Heavy duty diesel oils for engines equipped with aftertreatment systems like diesel particulate filters (DPF) and catalysts. Requirements to anti-wear, sludge, anti-corrosion and soot control properties similar as set for JASO DH-1 oils.

Engine oil specifications for Mercedes-Benz engines

MB-228.51 Engine oil specification for heavy-duty Mercedes-Benz engines with exhaust gas aftertreatment systems (including DPF). Extended drain intervals depending on operating conditions. Based on ACEA E6 requirements complemented by MB field trials.

MB-228.31 Engine oil specification for heavy-duty Mercedes-Benz engines with exhaust gas aftertreatment systems (including DPF). Standard drain intervals. Based on ACEA E9 and API CJ-4 requirements complemented by MB field trials.

MB-228.5 Engine oil specification for heavy-duty Mercedes-Benz engines according to UHPD. Extended drain intervals depending on operating conditions. Based on ACEA E4 requirements complemented by MB field trials.

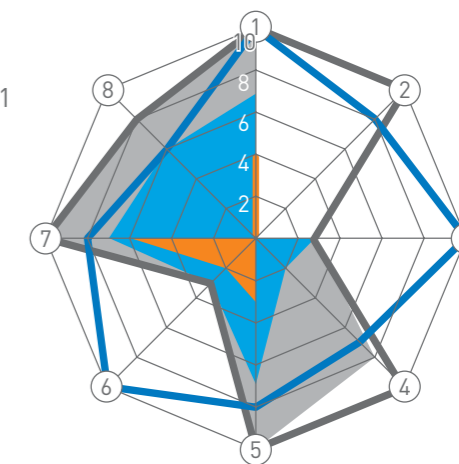
MB-228.3 Engine oil specification for heavy-duty Mercedes-Benz engines according to SHPD. Standard drain intervals. Based on ACEA E7 requirements complemented by MB field trials.

MB-228.1 Engine oil specification for heavy-duty Mercedes-Benz engines. Based on ACEA E2 requirements complemented by MB field trials.

Specification comparison

● MB-228.31 ● MB-228.51 ● MB-228.5 ● MB-228.3 ● MB-228.1

- | | |
|-------------------------------------|---|
| ① Protection against Bore Polishing | ④ Oxidation stability and thickening inhibition |
| ② DPF compatibility | ⑤ Prevention of high-temperature deposits |
| ③ Anti-corrosion protection | ⑥ Soot control |
| | ⑦ Anti-wear properties |
| | ⑧ Fuel economy |



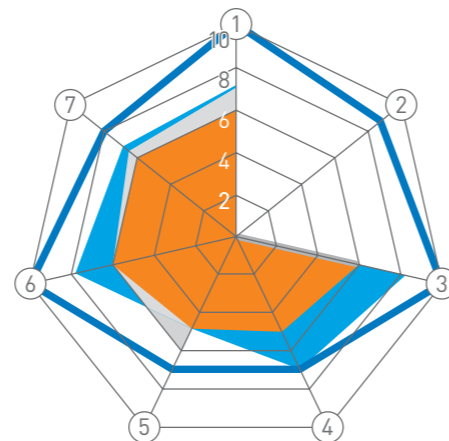
Engine oil specifications: Cummins engines

- CES 20081** Category developed for highly rated diesel engines equipped with an exhaust gas recirculation system (EGR). Compatible with diesel particulate filters (DPF). Developed on the basis of API CJ-4 with addition of Cummins specific tests.
- CES 20078** Category developed for highly rated diesel engines equipped with an exhaust gas recirculation system (EGR). Compatible with diesel particulate filters (DPF). Developed on the basis of API CI-4 with addition of Cummins specific tests.
- CES 20077** Category developed for highly rated diesel engines without an exhaust gas recirculation system (EGR), operating in extreme conditions outside North America. Developed on the basis of ACEA E7 with addition of Cummins specific tests.
- CES 20076** Category developed for highly rated diesel engines without an exhaust gas recirculation system (EGR). Developed on the basis of API CH-4 with addition of Cummins specific tests.
- CES 20074** Low ash oil specification intended for engines powered by gas.

Specification comparison

- CES 20081 ● CES 20078 ● CES 20077 ● CES 20076

- ① Protection against Bore Polishing
② DPF compatibility
③ Anti-corrosion protection
④ Oxidation stability and thickening inhibition
⑤ Prevention of high-temperature deposits
⑥ Soot control
⑦ Anti-wear properties



Engine oil specifications: Caterpillar engines

- ECF-3** Low Ash technology oils for the latest Caterpillar engines. Compatible with diesel particulate filters (DPF). Developed on the basis of API CJ-4 requirements with additional Caterpillar tests. Comply with engine requirements according to Tier 4.
- ECF-2** Engine oil category for Caterpillar engines, including engines equipped with ECERT and HEUI systems. Developed on the basis of API CI-4 requirements with additional Caterpillar tests.
- ECF-1a** Engine oil category for Caterpillar engines, including engines equipped with ECERT and HEUI systems. Developed on the basis of API CH-4 requirements with additional Caterpillar tests.

According to The Lubrizol Corporation.

Engine oil specifications: Deutz engines

- DQC IV LA** Low ash diesel engine oils according to UHPD requirements. In some instances more stringent requirements to closed crankcase ventilation system engines compared to ACEA.
- DQC IV** Oil for diesel engines with a closed crankcase system and high thermal stress according to UHPD specifications.
- DQC III** Oil for high performance engines with a closed crankcase ventilation system and/or high thermal stress.
- DQC II** General purpose engine oils for engines with an open crankcase ventilation system and standard drain intervals. Developed according to ACEA E7 and API CH-4 norms.
- DQC I** Oils for standard applications if the equipment manufacturer does not require the latest oil specifications. Developed on the basis of ACEA E2 and API CF specifications.

13.2. Classification of transmission oils

API classification for manual transmission oils, manual transaxles, and axles

- GL-5** Transmission oils containing highly effective Extreme Pressure additives. Capable to withstand harsh shock-load operating conditions, e.g. hypoid transmissions at high speed. Recommended for differentials on modern vehicles. Not recommended for manual transmissions with copper alloy synchronesh.
- GL-4** Transmission oils containing highly effective Extreme Pressure additives. Recommended for manual gearboxes, including transmissions with copper alloy synchronesh. Not effective on hypoid transmissions under shock-loads.
- GL-3** Transmission oils containing moderate Extreme Pressure additives. Recommended for light-duty manual transmissions and differentials.
- GL-2** Mineral oils containing anti-wear additives. Application similar to API GL-1 but capable to withstand higher loads.
- GL-1** Straight mineral oil without additives. Applicable for light-duty non-synchronized transmissions, spiral bevel and worm gears. Specification is obsolete.

ZF transmission oil specifications and corresponding applications

TE-ML 01	Manual ZF transmissions for trucks
TE-ML 02	Manual and automated ZF transmissions for trucks, buses, light commercial vehicles and specialized machinery
TE-ML 03	Transmissions for off-road equipment
TE-ML 04	Marine transmissions
TE-ML 05	Driven axles for off-road vehicles
TE-ML 06	Tractor transmissions and hydraulic lifts
TE-ML 07	Hydrostatic-mechanical and electric drive systems
TE-ML 08	Steering systems (non-power-assisted) for cars, commercial vehicles and off-road vehicles
TE-ML 09	Steering systems and oil pumps for cars, commercial vehicles and off-road vehicles
TE-ML 11	Manual transmissions, double-clutch transmissions and automatic transmissions for cars
TE-ML 12	Axles and wheel heads for buses and trucks
TE-ML 14	Powershift transmissions, type Ecomat, for buses, trucks, and specialized vehicles
TE-ML 15	Brake systems for specialized vehicles
TE-ML 16	Transmissions for rail vehicles
TE-ML 17	Transmissions and axles for lift-trucks
TE-ML 19	Transfer and offset transmissions for commercial vehicles
TE-ML 20	Powershift transmissions, type EcoLife, for buses, trucks, specialized machinery and stationary applications
TE-ML 21	Tractor axles, transmissions for harvesters and final dispensers

13.3. Classification of hydraulic oils

DIN 51524	ISO 6743/4	GOST 17479.3	Type of oil	Application
H	HH	A	Mineral oils containing no additives	Outdated hydraulic systems of earlier generations equipped with gear or piston pumps under low system pressure.
HL	HL	B	Mineral oils containing antioxidants and corrosion inhibitors	Outdated hydraulic systems of earlier generations equipped with any type of pump under low system pressure. Extended drain intervals compared to the previous category.
HLP	HM	B	HL + anti-wear additives	Modern hydraulic systems equipped with any type of pump and operating under low or high pressure. Category sets additional requirements on anti-wear properties. Applicable at ambient temperatures above 0°C (indoors or outdoors at moderate climate conditions).
HVLP	HV		HM + viscosity modifiers	Modern hydraulic systems equipped with any type of pump and operating under low or high system pressure. Category sets additional requirements on anti-wear properties. Applicable at a wide range of ambient temperatures including winter outdoor conditions below 0 °C.
HVLPD			HV + dispersants	Modern hydraulic systems equipped with any type of pump, operating under low or high pressure. Recommended for specific conditions when potential water, dirt or other contamination is highly probable and accumulated water can not be drained from the sump. Applicable at a wide range of ambient temperatures.

13.4. Other OEM specifications

OEM	Specification	Type of lubricant
CASE	MS 1209	UTTO, supersede MS 1207, MS 1206
	MS 1207	UTTO, specification is obsolete
	MS 1206	UTTO, specification is obsolete
	MS 1316	Transmission oil (SAE 85W-140, API GL-4, GL-5)
	MS 1230	Hydraulic oil (ISO VG 46, DIN 51524 Part 3 HVLP)
	MS 1216	UTTO (SAE 10W-30, Allison C-3)
	MS 1210	UTTO (Allison C-3)
NEW HOLLAND	NH-324 H	Engine oil (SAE 10W-30, API CH-4, ACEA E7)
	NH-330 H	Engine oil (SAE 15W-40, API CH-4, ACEA E7)
	NH-324 G	Engine oil (SAE 10W-30, API CF-4/SG)
	NH-330 G	Engine oil (SAE 15W-40, API CF-4/SG)
	NH-410 B	UTTO (SAE 10W-30)
	NH-420 A	UTTO (SAE 20W-30)
	NH-434 B	UTTO (SAE 20W-40, meets ZF TE-ML 06K, 21F as well)
	NH-520 A	Transmission oil (SAE 90, API GL-5)
	NH-520 B	Transmission oil (SAE 85W-90, API GL-5, automatic differential)
	NH-520 C	Transmission oil (SAE 80W-90, automatic differential)
	NH-524 A	Transmission oil (SAE 140, API GL-5, ZF-TE-ML 05A, 07A, 21A)
	NH-530 A	ATF (Dexron IID)
	NH-530 B	ATF (Dexron IIE, Allison C4, Ford Mercon)
	NH-550 C	CAT TO-4
	NH-646H	Hydraulic oil (ISO VG 46, DIN 51524 Part 2 HLP)

OEM	Specification	Type of lubricant
NEW HOLLAND	NH-668H	Hydraulic oil (DIN 51524 Part 3 HVLP)
	NH-710A	Lithium grease (NLGI 2)
	NH-720A	Lithium grease containing molybdenum disulfide (NLGI 2)
	NH-800A	Brake fluid (DOT 4)
CNH	NH-900C	Antifreeze (OAT technology)
	MAT 3540	UTTO
	MAT 3505	UTTO, meets MS 1209
	MAT 3510	Meets MS 1317
	MAT 3509	Meets MS 1230
	MAT 3508	Meets MS 1216
	MAT 3506	Meets MS 1210
	MAT 3525	UTTO
	MAT 3526	Meets MAT 3525 + enhanced low temperature properties
	MAT 3521	Engine oil (API CJ-4, ACEA E7/E9)
JOHN DEERE	MAT 3522	Engine oil (API CJ-4, ACEA E9)
	MAT 3550	Lithium-Calcium grease (NLGI 2, 251H EP)
	MAT 3624	Meets NH-900C
	JDM 20C	UTTO
Massey Ferguson	JDM 20D	UTTO (improved low temperature properties)
	CMS M1145	UTTO, STOU. Supersedes CMS M1143 (UTTO) and CMS M1143 (STOU)

Typical product properties and technical data

G-Profi engine oils

Properties	Method	G-Profi GTS 5W-30	G-Profi GTS 10W-40	G-Profi GT 10W-40	G-Profi GT LA 10W-40	G-Profi MSJ 5W-30	G-Profi MSJ 10W-30	G-Profi MSJ 15W-40	G-Profi MSI Plus 15W-40	G-Profi MSI 5W-40	G-Profi MSI 10W-40	G-Profi MSH 10W-40	G-Profi MSH 15W-40	G-Profi CNG LA 10W-40	G-Profi CNG LA 15W-40	G-Profi CNG 15W-40
Kin. viscosity at 100 °C, mm ² /s	ASTM D445	12,1	13,7	15,2	14,2	11,5	11,8	14,9	15,06	14,7	15,0	14,6	15,0	14,6	14,6	14,4
Viscosity index	ASTM D2270	166	152	152	158	165	143	140	134	168	149	150	132	162	134	133
Flash Point Open Cup, °C	ASTM D92	231	233	235	230	226	230	235	232	233	228	234	232	253	247	236
Pour Point, °C	ASTM D97 GOST 20287	-42	-37	-36	-37	-42	-39	-35	-32	-41	-38	-36	-33	-36	-35	-32
TBN Alkalinity, mg KOH/g	ASTM D2896	15	16	12,3	9,7	9,7	8,5	8,5	11,3	11	11	9,7	9,7	6,4	6,4	8,3

Data stated above are typical averages for the listed products but may vary insignificantly depending on the product's batch.
Data valid through 2019.

Gazpromneft engine oils

Properties	Method	Gazpromneft Diesel Ultra 5W-30	Gazpromneft Diesel Ultra 10W-40	Gazpromneft Diesel Premium 5W-40	Gazpromneft Diesel Premium 10W-30	Gazpromneft Diesel Premium 10W-40	Gazpromneft Diesel Premium 15W-40	Gazpromneft Diesel Prioritet 10W-30	Gazpromneft Diesel Prioritet 10W-40	Gazpromneft Diesel Prioritet 15W-40	Gazpromneft Diesel Prioritet 20W-50	Gazpromneft Diesel Extra 10W-40	Gazpromneft Diesel Extra 15W-40	Gazpromneft Diesel Extra 20W-50	Gazpromneft Diesel Extra 40	Gazpromneft Diesel Extra 50	Gazpromneft Turbo Universal 15W-40	Gazpromneft Turbo Universal 20W-50	Gazpromneft HD 40	Gazpromneft HD 50	Gazpromneft HD 60
Kinematic vis- cosity at 100 °C, mm ² /s	ASTM D445	12,3	14,9	14,5	11,5	14,8	14,8	11,5	15,0	15,0	18,9	15,1	14,9	18,5	15,5	21,2	14,9	18,9	15	20,9	24,5
Viscosity index	ASTM D2270	162	155	172	146	153	133	143	151	132	125	150	130	120	94	94	134	119	-	-	-
Flash Point Open Cup, °C	ASTM D92	232	233	230	227	230	228	224	221	227	233	230	234	240	257	262	230	240	249	256	263
Pour Point, °C	GOST 20287	-40	-35	-44	-39	-36	-34	-36	-35	-33	-27	-34	-32	-27	-16	-13	-31	-24	-17	-15	-13
TBN Alkalinity, mg KOH/g	GOST 11362	15,5	15,5	10	10	10	10	9	9	9	9	11	11	11	11	11	9	9	7,4	7,4	7,4

GOST quality standard engine oils

Properties	Method	M-8V	M-63/10V	M-8G2	M-8G2K	Diesel Turbo SAE 20 (type M-8DM)	M-10V2	M-10G2	M-10G2K	M-10DM
Kinematic viscosity at 100 °C, mm ² /s	GOST 33	8,2	10,1	8,1	8,2	8,4	11	11	11,1	15,4
Viscosity index	GOST 25371	94	121	95	96	98	93	92	94	92
Flash Point Open Cup, °C	GOST 4333	234	238	238	234	234	239	240	242	251
Pour Point, °C	GOST 20287	-27	-36	-31	-33	-33	-17	-17	-16	-16
TBN Alkalinity, mg KOH/g	GOST 11362	5,6	8,2	7,3	7,1	9,2	7,3	7,3	7,1	9,2

Data stated above are typical averages for the listed products but may vary insignificantly depending on the product's batch.
Data valid through 2019.

G-Box and G-Truck Transmission Oils

Properties	Method	G-Box GL-4/GL-5 75W-90	G-Truck GL-4/GL-5 80W-90	G-Truck GL-4 80W-90	G-Truck Z 75W-80	G-Box Expert GL-4 75W-90	G-Box Expert GL-4 80W-85	G-Box GL-4 75W-90	G-Box GL-5 75W-90	G-Truck GL-5 80W-90	G-Truck GL-5 85W-90	G-Truck GL-5 85W-140	G-Box Expert GL-5 75W-90	G-Box Expert GL-5 80W-90	G-Truck LS 80W-90	G-Truck LS 85W-140	G-Truck LS 85W-90
Kinematic viscosity at 100 °C, mm ² /s	ASTM D445	15,0	14,6	15,0	9,0	15,8	13,1	15,8	15,6	14,4	16,4	25,4	15,4	14,9	14,5	24,6	15,8
Flash Point Open Cup, °C	ASTM D92	185	215	218	240	221	228	202	199	208	210	212	205	216	220	208	216
Pour Point, °C	ASTM D97	-45	-30	-27	-42	-42	-29	-44	-44	-30	-27	-24	-42	-29	-27	-24	-25
Dynamic viscosity at -40 °C, mPa*s	ASTM D2983	72 thous.	100 thous.	110 thous.	70 thous.	125 thous.	-	123 thous.	110 thous.	-	-	-	115 thous.	-	-	-	-
Dynamic viscosity at -26 °C, mPa*s	ASTM D2983	-	-	-	-	-	106 thous.	-	-	-	-	-	-	117 thous.	-	-	-

Data stated above are typical averages for the listed products but may vary insignificantly depending on the product's batch.
Data valid through 2019.

Gazpromneft Transmission oils

Properties	Method	Gazpromneft GL-4/GL-5 75W-90	Gazpromneft GL-4 75W-90	Gazpromneft GL-4 80W-85	Gazpromneft GL-4 80W-90	Gazpromneft GL-4 90	Gazpromneft GL-4 140	Gazpromneft GL-5 75W-90	Gazpromneft GL-5 80W-90	Gazpromneft GL-5 85W-140	Gazpromneft GL-5 90	Gazpromneft GL-5 140	Gazpromneft Super T-3 85W-90	TSp-15K
Kinematic viscosity at 100 °C, mm ² /s	ASTM D445	15,74	15,36	12,50	14,50	16,70	25,70	15,80	14,30	25,50	17,00	25,80	17,30	15,30
Flash Point Open Cup, °C	ASTM D92	173	218	224	232	238	254	200	220	236	234	258	218	237
Pour Point, °C	GOST 20287	-42	-42	-30	-30	-15	-15	-42	-32	-19	-17	-15	-25	-28
Brookfield dynamic viscosity at -40 °C, mPa*s	ASTM D2983	130 thous.	145 thous.	-	-	-	-	130 thous.	-	-	-	-	-	-
Brookfield dynamic viscosity at -26 °C, mPa*s	ASTM D2983	-	-	147 thous.	147 thous.	-	-	-	150 thous.	-	-	-	-	-
Brookfield dynamic viscosity at -12 °C, mPa*s	ASTM D2983	-	-	-	-	-	-	-	-	42,5 thous.	-	-	23 thous.	-
4-ball scar Tribologic properties at 20 °C, index, N	GOST 9490	750	575	560	575	570	585	584	656	690	572	670	568	539
4-ball scar Tribologic properties at 20 °C, load, N	GOST 9490	5 500	3 920	3 479	3 920	3 950	4 350	3 743	4 381	4 880	4 250	5 500	4 136	3 960

Data stated above are typical averages for the listed products but may vary insignificantly depending on the product's batch.
Data valid through 2019.

G-Special hydraulic oils

Properties	Method	G-Special Hydraulic Nord-32	G-Special Hydraulic Power HVL P-32	G-Special Hydraulic Power HVL P-32	G-Special Hydraulic HVL PD-46	G-Special Hydraulic HVL P-22	G-Special Hydraulic HVL P-32	G-Special Hydraulic HVL P-46	G-Special Hydraulic HVL P-68
Kinematic viscosity at 40 °C, mm ² /s	ASTM D445	31,1	32,0	46,0	46,0	22,0	32,0	46,0	68,0
Kinematic viscosity at -30 °C/-20 °C/-10 °C, mm ² /s	ASTM D445	450 at -30 °C	1 210 at -20 °C	800 at -10 °C	-	700 at -20 °C	1 200 at -20 °C	1 000 at -10 °C	-
Viscosity index	ASTM D2270	308	182	178	155	160	175	143	144
Flash Point Open Cup, °C	ASTM D92	139	228	246	220	196	218	232	234
Pour Point, °C	ASTM D97	-56	-50	-48	-45	-52	-48	-42	-40
Primary cleanliness code (*on demand)	GOST 17216	-	12	11	12 (*10)	12	12	12	12

Gazpromneft hydraulic oils

Properties	Method	Gazpromneft Hydraulic HVL P-10	Gazpromneft Hydraulic HVL P-15	Gazpromneft Hydraulic HVL P-22	Gazpromneft Hydraulic HVL P-32	Gazpromneft Hydraulic HVL P-46	Gazpromneft Hydraulic HVL P-68	Gazpromneft Hydraulic HLP-32	Gazpromneft Hydraulic HLP-46	Gazpromneft Hydraulic HLP-68	Gazpromneft Hydraulic HLP-100	Gazpromneft Mark "A"	Gazpromneft Mark "R"	MBE-46V	Gazpromneft MG-68V
Kinematic viscosity at 40 °C, mm ² /s	ASTM D445	10	15	22	32	46	68	32	46	68	100	40	20	46	68
Kinematic viscosity at subzero temperatures °C, mm ² /s	ASTM D445	1 000 at -40 °C	600 at -30 °C	700 at -20 °C	2 000 at -20 °C	1 100 at -10 °C	-	-	-	-	-	1 897 at -20 °C	950 at -20 °C	-	-
Viscosity index	ASTM D2270	170	170	155	160	142	141	101	98	96	94	-	-	95	93
Flash Point Open Cup, °C	ASTM D92	175	160	196	218	226	230	221	230	236	242	200	195	227	234
Pour Point, °C	GOST 20287	-60	-58	-50	-46	-40	-38	-34	-32	-32	-30	-42	-46	-33	-31
Cleanliness code not above	GOST 17216	12	12	12	12	12	12	10	10	10	10	-	-	-	-

Data stated above are typical averages for the listed products but may vary insignificantly depending on the product's batch.
Data valid through 2019.

G-Special universal oils

Properties	Method	G-Special TO-4 10W	G-Special TO-4 30	G-Special TO-4 50	G-Special UTTO 10W-30	G-Special UTTO Premium 10W-30	G-Special STOU 10W-30	G-Special STOU 10W-40
Kinematic viscosity at 40 °C, mm ² /s	ASTM D445	37,4	105,0	-	57,8	61,1	80,0	100,5
Kinematic viscosity at 100 °C, mm ² /s	ASTM D445	6,2	11,3	18,9	9,7	10,2	11,9	14,5
Viscosity index	ASTM D2270	111	92	-	152	155	143	150
Flash Point Open Cup, °C	ASTM D92	226	244	252	228	259	228	228
Pour Point, °C	ASTM D97	-36	-30	-20	-37	-40	-37	-37
Brookfield dynamic viscosity at -35 °C, mPa*s	ASTM D2983	-	-	-	50 000	30 000	-	-

Gazpromneft compressor oils

Properties	Method	Gazpromneft Compressor F Synth-46	Gazpromneft Compressor F Synth-68	Gazpromneft Compressor S Synth-46	Gazpromneft Compressor S Synth-68	Gazpromneft Compressor S Synth-100	Gazpromneft Compressor S Synth-150	Gazpromneft Compressor Oil-46	Gazpromneft Compressor Oil-68	Gazpromneft Compressor Oil-100	Gazpromneft Compressor Oil-150	Gazpromneft Compressor Oil-220	Kp-8S – enhanced stability	KS-19p A
Kinematic viscosity at 40 °C, mm ² /s	ASTM D445	46	68	46	68	100	150	46	68	100	150	220	46	-
Viscosity index	ASTM D2270	130	146	105	104	103	102	97	93	93	93	91	95	88
Flash Point Open Cup, °C	ASTM D92	230	246	241	252	253	258	235	246	251	257	263	226	272
Pour Point, °C	GOST 20287	-39	-40	-32	-31	-31	-29	-32	-30	-28	-23	-20	-15	-16

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Data valid through 2019.

Gazpromneft industrial gear oils

Properties	Method	Gazpromneft Reductor F-Synth-150	Gazpromneft Reductor F-Synth-220	Gazpromneft Reductor F-Synth-320	Gazpromneft Reductor F-Synth-460	Gazpromneft Reductor CLP-68	Gazpromneft Reductor CLP-100	Gazpromneft Reductor CLP-150	Gazpromneft Reductor CLP-220	Gazpromneft Reductor CLP-320	Gazpromneft Reductor CLP-460	Gazpromneft Reductor CLP-680	Gazpromneft Reductor WS-100	Gazpromneft Reductor WS-150	Gazpromneft Reductor WS-220	Gazpromneft Reductor ITD-68	Gazpromneft Reductor ITD-100	Gazpromneft Reductor ITD-150	Gazpromneft Reductor ITD-220	Gazpromneft Reductor ITD-320	Gazpromneft Reductor ITD-460	Gazpromneft Reductor ITD-680
Kinematic viscosity at 40 °C, mm²/s	ASTM D445	150	220	320	460	68	100	150	220	320	460	680	100	150	220	68	100	150	220	320	460	680
Viscosity index	ASTM D2270	159	163	166	168	94	92	92	92	92	90	90	101	98	97	92	92	92	90	90	90	88
Flash point open cup, °C	ASTM D92	228	235	238	240	238	240	242	252	254	276	292	238	244	256	236	238	240	242	250	270	272
Pour Point, °C	GOST 20287	-38	-37	-35	-34	-20	-20	-19	-18	-17	-15	-15	-35	-30	-27	-20	-20	-19	-15	-15	-15	-15
FZG A/8.3/90, load stage	DIN ISO 14635-1	>14	>14	>14	>14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loadwear Index, N	GOST 9490	-	-	-	-	454	464	470	480	509	530	550	-	-	-	450	458	464	470	486	505	522
Scar diameter, mm	GOST 9490	-	-	-	-	0,25	0,26	0,27	0,27	0,28	0,28	0,29	-	-	-	0,28	0,29	0,29	0,29	0,30	0,31	0,31

Saw chain and guide bar oils

Properties	Method	G-Garden Chain&Bar	Gazpromneft Chain Oil
Kinematic viscosity at 100 °C, mm²/s	ASTM D445	11,2	11,0
Flash Point Open Cup, °C	ASTM D92	233	230
Pour Point, °C	GOST 20287	-30	-27

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Data valid through 2019.



Arguments to choose **Gazpromneft – Lubricants**



OEM approvals, product application advice strong references of major agriculture and farming industry players



Optimized drain intervals



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