



FREQUENTLY ASKED QUESTIONS ABOUT LUBRICANTS



GAZPROMNEFT
LUBRICANTS

gazpromneft-oil.ru

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GENERAL INFORMATION

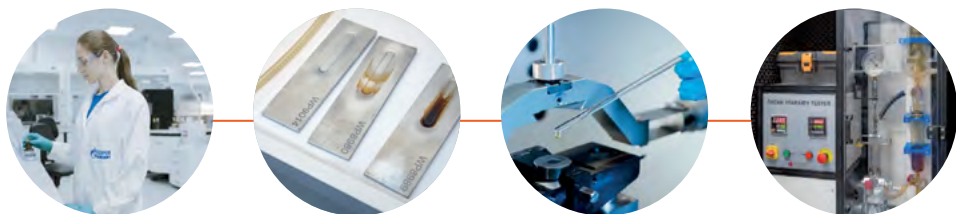


1. COMPOSITION OF FINISHED LUBRICANTS?



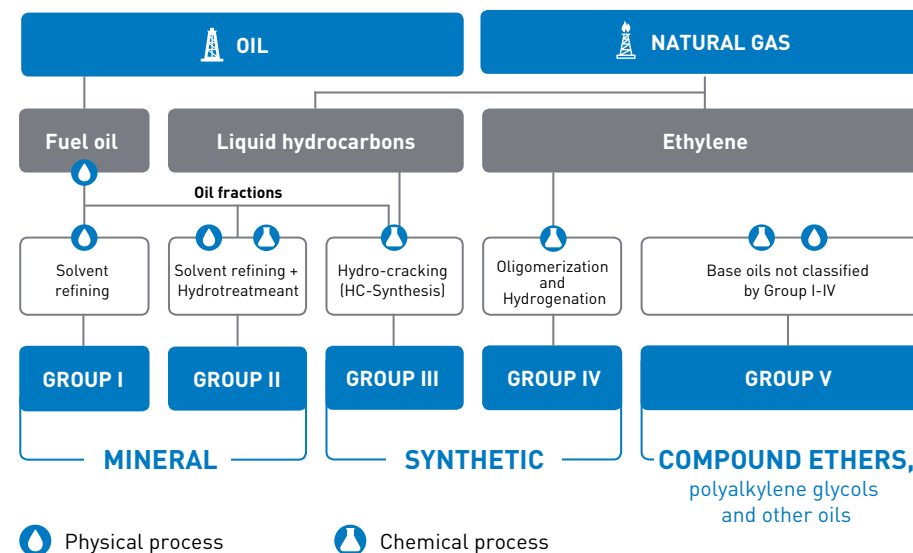
HOW WE CHOOSE THE INGREDIENTS FOR OUR OILS

All components are carefully selected in our own research and development center.



Modern testing methods are used in the research, which allow us to assess the real performance characteristics of the future oil.

2. BASE OIL TYPES AND PRODUCTION TECHNOLOGIES



HOW WE INDICATE BASE OILS IN TDS



Fully synthetic base (PAO + esters):

- PAO (group IV)
- Esters or esters (group V)



Fully synthetic base (contains PAO):

- PAO (group IV)
- VHVI (group III)



Fully synthetic base:

- VHVI (group III)

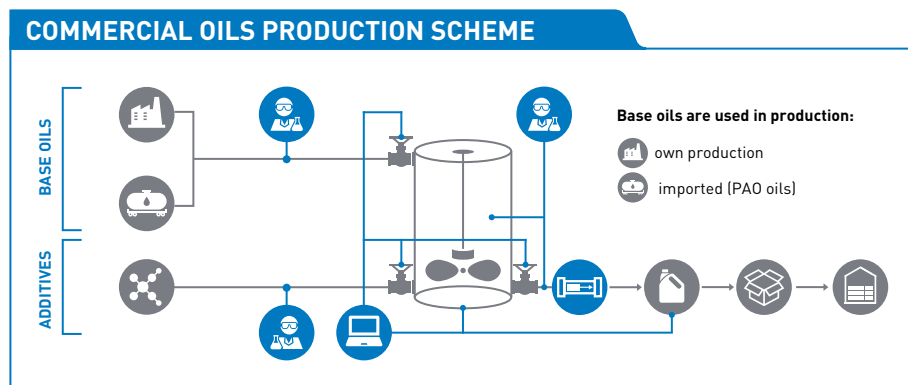


Semi-synthetic base (mixture of mineral and synthetic base oils):

- VHVI (group III)
- Mineral oils (group I)

VHVI (very high viscosity index) - high index synthetic base oils of API group III.
PAO (polyalphaolefins) - API Group IV base oils.
Esters, or esters, are API Group V synthetic base oils.

3. MODERN PRODUCTION TECHNOLOGIES



Product quality control in ISO 17025 certified laboratories



Full automation of the lubricant mixing, filling and packing line



Utilization of a unique self-cleaning piping system



Consistently high quality from batch to batch - reliable machine performance



International ISO certification:
ISO 9001, ISO 45001,
ISO 14001, ISO 50001

4. RUSSIA'S LARGEST PRODUCTION OF SYNTHETIC BASE OILS



Satisfies the growing demand for synthetic oils

Hydroisodeparaffinisation complex at the Omsk Lubricants Plant

The only hydroisodeparaffinisation complex in Russia producing synthetic base oils with high performance properties.



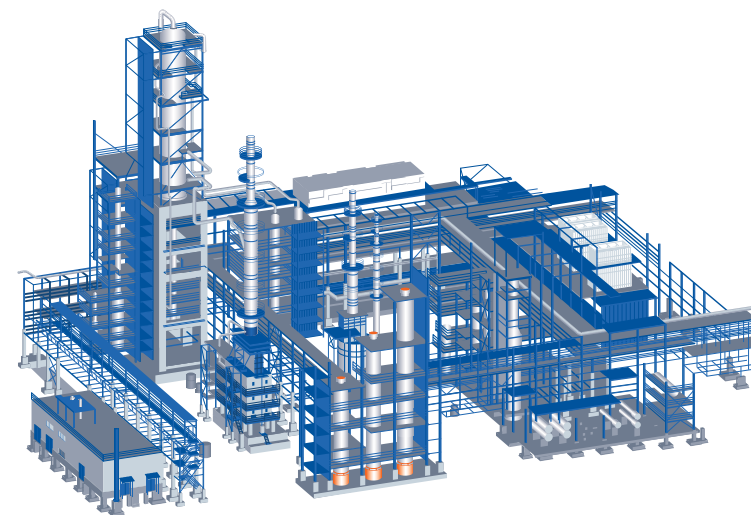
100% of domestic market demand for API groups II and III base oils



Enhanced properties of motor oils



Flexible response to growing market needs by reducing dependence on imports



1 HYDROTREATMENT

PURIFICATION OF RAW MATERIALS FROM IMPURITIES AND AROMATICS

INCREASING
VISCOSITY
INDEX >120

2 ISOMERISATION

CONVERSION OF PARAFFIN INTO SYNTHETIC BASE OIL MOLECULES

IMPROVED LOW-TEMPERATURE PROPERTIES

3 HYDROFINISHING

HYDROGEN SATURATION

HIGH OXIDATION RESISTANCE

5. HOW TO CHOOSE OIL?



6. HOW TO ENSURE THE RIGHT OIL IS SELECTED?

STEP 1

Open the vehicle's owner's manual and locate the lubricant recommendations section.

Operating Manual

Viscosity selection:

Temperature range for recommended SAE viscosity index values.	
Temperature °C	SAE Viscosity Index
-30 -20 -10 0 10 20 30 40 50	5W-40
-10 0 20 40 60 80 100 120	10W-30
	5W-40, 5W-30

Oil for petrol engine

Operating Manual

Requirements for lubricants:	
• Renault RN700	
• Renault RN710	



STEP 2

Compare the information on the canister with the information in the manual.

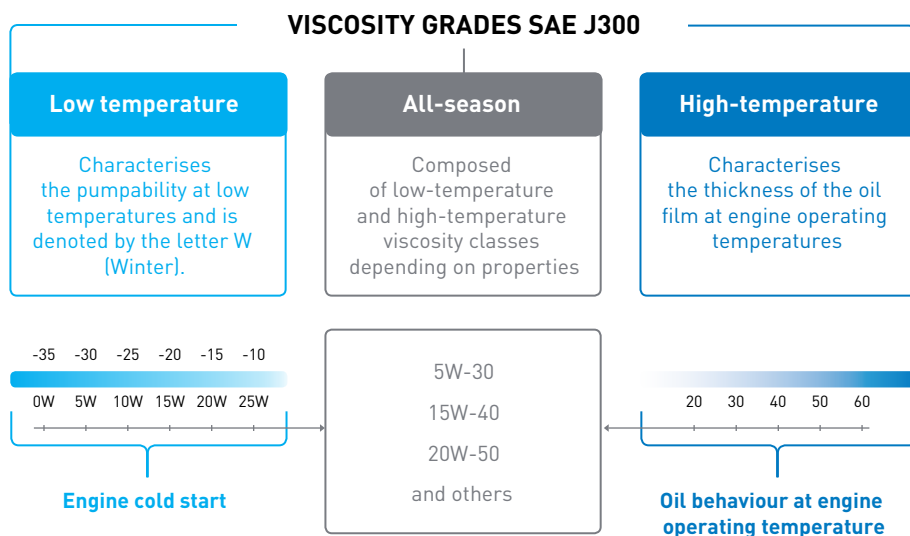


Car manufacturers' specifications have the highest priority, followed by the international classifications ACEA, ILSAC and API.



7. Engine Oil Viscosity Classification (SAE J300)

! Viscosity cannot be used to judge the performance or quality of an oil.



Viscosity grade	Low temperature properties		High temperature properties		
	CCS	MRV	Kinematic viscosity at 100 °C		HTHS, mPa-s, min
	Maximum viscosity, mPa-s, at temperature		min	max	
0W	6 200 at -35 °C	60 000 at -40 °C	3,8	-	-
5W	6 600 at -30 °C	60 000 at -35 °C	3,8	-	-
10W	7 000 at -25 °C	60 000 at -30 °C	4,1	-	-
15W	7 000 at -20 °C	60 000 at -25 °C	5,6	-	-
20W	9 500 at -20 °C	60 000 at -20 °C	5,6	-	-
25W	13 000 at -25 °C	60 000 at -15 °C	9,3	-	-
8	-	-	4,0	6,1	1,7
12	-	-	5,0	7,1	2,0
16	-	-	6,1	8,2	2,3
20	-	-	6,9	9,3	2,6
30	-	-	9,3	12,5	2,9 (A5/B5), 3,5 (A3/B4)
40	-	-	12,5	16,3	3,5 (0W-, 5W-, 10W-)
40	-	-	12,5	16,3	3,7 (15W-, 20W-, 25W-)
50	-	-	16,3	21,9	3,7
60	-	-	21,9	26,1	3,7

CCS - crankshaft rotation simulation; HTHS - high-temperature viscosity, which characterises the thickness of the oil film directly in the friction pairs of engine components; MRV - oil pumpability simulation.



The SAE viscosity grade determines the temperature range of motor oils.



Gazpromneft Premium A5B5 5W-30



Synthetic oil



Start-up and engine protection at low temperatures



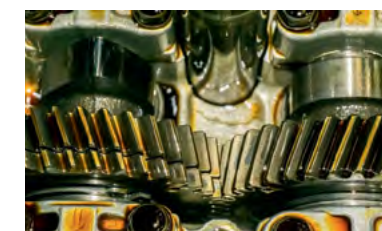
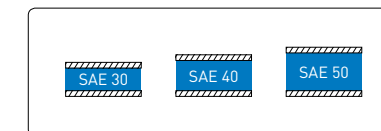
Energy saving and fuel economy due to low viscosity value (HTHS)

WHAT DOES THE VISCOSITY GRADE 5W-30 MEAN

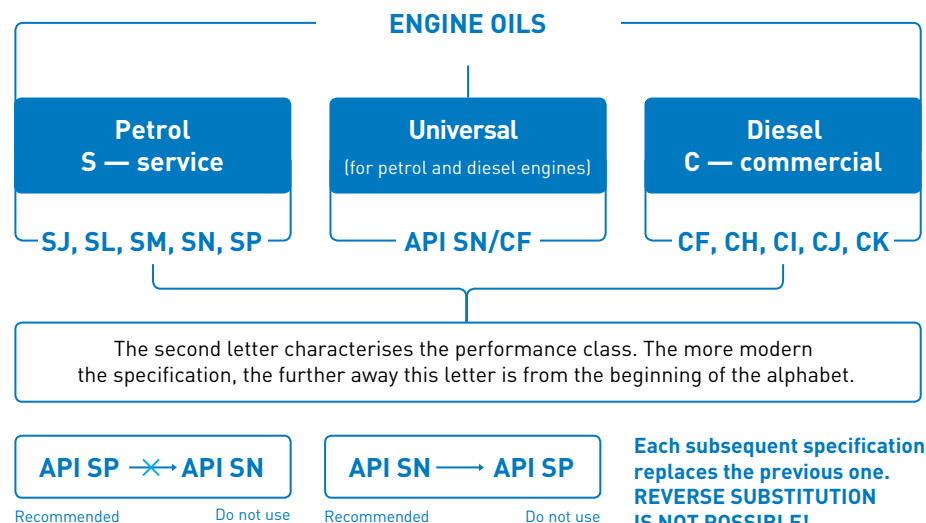
The engine (internal combustion engine crankshaft) will overcome oil resistance at temperatures down to -30 °C.

At engine operating temperatures, the oil provides fuel economy due to a thin oil film in accordance with viscosity class SAE 30.

5W-30



8. API ENGINE OIL CLASSIFICATION (AMERICAN PETROLEUM INSTITUTE)



ADVANTAGES OF API SP OILS COMPARED TO API SN OILS

Benefits	What does it prevent?	What does it affect?
 Prevention of the LSPI effect (self-ignition of the fuel mixture during compression)	Damage or destruction of pistons	• Engine life
 Increased protection against high-temperature deposits	Piston fouling, piston ring fouling	• Preservation of factory engine performance
 Improved viscosity stability	Oil film breakdown	• Engine life • Engine reliability
 Protecting against timing chain wear	Timing chain stretching	• Service mileage • Engine reliability

9. ILSAC Engine Oil Classification

The ILSAC (International Lubricant Standardisation and Approval Committee) classification is based on the API classification of petrol engine oils and is prescribed for use mainly in Japanese and Korean cars where low-viscosity, energy-saving oils are required.



Year of introduction	API Specification	ILSAC Specification
2001	API SL	ILSAC GF-3
2004	API SM	ILSAC GF-4
2011	API SN	ILSAC GF-5
2020	API SP	ILSAC GF-6A/6B



Petrol engines only



Energy saving properties

THE DIFFERENCE BETWEEN API SP AND ILSAC GF "6A"

Parameters	API SP	ILSAC GF-6A
Fuel economy		✓
Compatibility with alternative fuels		✓
Protection against high-temperature deposits	■■■	■■■
Catalytic converter service life	■■■	■■■



10. ACEA Engine Oil Classification

The classification of engine oils proposed by the Association of European Automobile Manufacturers (1996) distinguishes between oils for petrol engines (A, C) and light diesel engines (B, C)

Full ash oils for petrol and diesel engines (without DPF) ACEA Ax/Bx	Reduced ash content oils for petrol and diesel engines (with DPF) ACEA Cx
- A1/B1* (can be changed to A5/B5) - A3/B3* (can be changed to A3/B4) - A3/B4 (standard viscosity oils) - A5/B5 (energy saving oils) - A7/B7 (energy saving oils with LSPI protection) * Irrelevant specifications	- C1* - C2 - C3 - C4 - C5 - C6 - C7 Not interchangeable * Irrelevant specifications



The ACEA classification is the basis for the specifications of European car manufacturers:



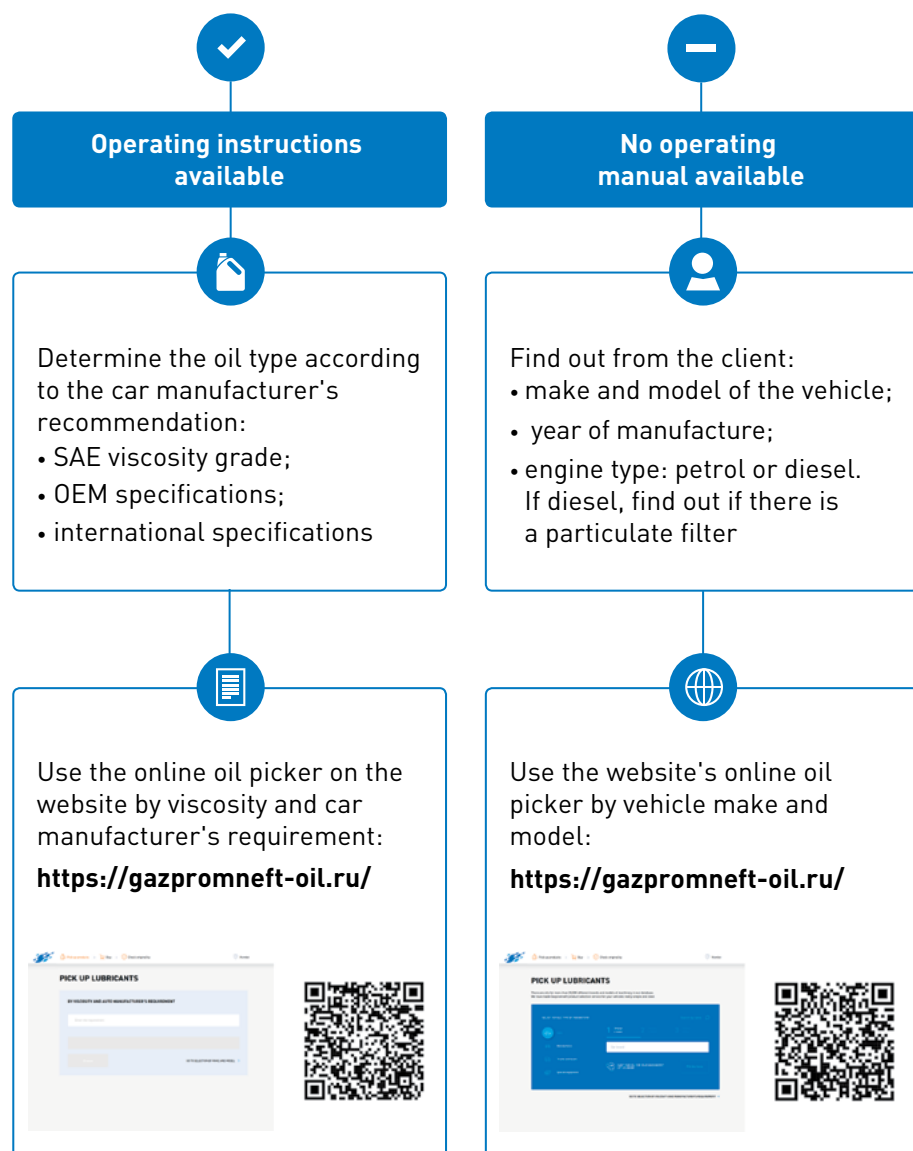
FULL SAPS OILS FOR LIGHTLY LOADED ENGINES

ACEA A7/B7	ACEA A5/B5 (replaces ACEA A1/B1)	ACEA A3/B4 (replaces ACEA A3/B3)
Engines with direct injection and high compression ratio + energy saving: Japanese, Korean and Chinese car engines	Direct injection and non-direct injection engines + energy saving: - Ford WSS-M2C 913-C/D - Mazda, Jaguar, Land Rover, Volvo engines	Direct injection and non-direct injection engines: - VW (VW, Audi, Skoda, Seat) 502 00/505 00 - Mercedes-Benz 229.3, 229.5 - BMW Longlife-01 - Renault RN 0700/0710 - Peugeot/Citroen PSA B71 2296

Mid- and low ash oils (Mid- and Low-SAPS) for lightly loaded petrol and diesel engines equipped with modern emission reduction systems, including particulate filters

ACEA C1	Low-SAPS + Energy Saving: - Ford M2C934-B - Jaguar, Land Rover, Volvo engines
ACEA C2	Mid-SAPS + Energy Saving: - Ford M2C948-B - Ford M2C950-A - BMW Longlife-12 FE - Peugeot/Citroen PSA B71 2290, PSA B71 2312 - Honda, Toyota, Lexus, Suzuki car engines
ACEA C3	Mid-SAPS: - VW (VW, Audi, Skoda, Seat) 504 00/507 00 - Mercedes-Benz-229.31, -229.51, -229.52 - BMW Longlife-04 - GM (Opel) dexos2 - Honda, Suzuki, Mitsubishi, Nissan, Mazda, Hyundai, KIA car engines
ACEA C4	Low-SAPS: - Renault RN 720 - Renault, Nissan, Mitsubishi, Mercedes car engines
ACEA C5	Mid-SAPS + Energy Saving: - MB 229.71 - VW 508 00/509 00 - BMW Longlife-17 FE - Porsche C20 - Volvo VCC RBS0-2AE - Petrol and diesel engines Honda, Mazda, Suzuki, Toyota, Nissan, Opel/GM, Chrysler
ACEA C6	Mid-SAPS, защита от LSPI + Energy Saving: Turbo-DI engines (turbocharged petrol and diesel engines with direct injection)
ACEA C7	Mid-SAPS, LSPI protection + Increased Energy Saving

11. ENGINE OIL SELECTION ALGORITHM FOR A CAR



12. HOW TO CORRECTLY SWITCH OIL BRANDS?

! If you select engine oil by analogue, there is a risk that the previous oil may have been incorrectly selected. It is better to check the operating manual.

HOW TO FIND AN ANALOGUE FOR OIL xxx 5W-40

STEP 1. Determine the SAE J300 viscosity grade, in our case 5W-40.

STEP 2. Select a product of the same viscosity grade, e.g. Gazpromneft Premium P 5W-40.

STEP 3. Compare the specifications of the two products:



Gazpromneft Premium P 5W-40	Oil xxx 5W-40
• API SP/CF • ACEA A3/B4 • MB 229.5, 226.5 • VW 502 00/505 00 • BMW LL-01 • RENAULT RN0700/0710	• API SN/CF • ACEA A3/B3/B4; • MB 229.5 • VW 502 00/505 00 • BMW LL-01 • RENAULT RN0700/0710 • PORSCHE A40 • PSA B71 2296

✓ An analogue is matched if the products are the same/ identical in terms of:

- field of application;
- ACEA/ILSAC/API (the highest priority among these is given to ACEA and ILSAC classifications);
- SAE viscosity grade;
- most of the list of OEM specifications.

FREQUENTLY ASKED QUESTIONS



1. HOW TO VERIFY PRODUCT ORIGINALITY?

GAZPROMNEFT BRAND



Gazpromneft brand oil canisters (4 and 5 litre) have additional anti-counterfeiting protection through a unique code that can be verified by SMS or on the official website:

- purchase Gazpromneft products in a 4- or 5-litre canister;
- erase the protective layer on the label on the back side;
- check the authenticity free of charge by SMS to 3888 or via www.gazpromneft-oil.ru

The membrane under the lid can be of two types

Gold-coloured with logo and tear-off tab (familiar look)



Silver colour, without tear-off tab (updated look)



ORIGINAL PRODUCTION MEANS



Compliance with stated properties



Guarantee of high quality standards for Gazpromneft oils



Confidence in reliable engine operation

2. IS IT POSSIBLE TO EVALUATE PRODUCT QUALITY FROM COLOR OR SMELL?

Modern motor oils are manufactured using synthetic base components that have no odour or colour. The odour and colour of the finished product is due to the addition of an additive package. Oils are created with different additive packages and therefore may have different colours and smells. The quality of the oil can only be determined by a specialised laboratory.

SYNTHETIC BASE OIL



No additives



Additive package 1



Additive package 2



Additive package and colouring agent

3. CAN I USE A DIFFERENT OIL FOR TOP-UP?

In case of emergency it is allowed to mix oils of different manufacturers up to 20-25%. In this case, the oils must comply with the requirements of the equipment manufacturer. Further, at the first opportunity, it is necessary to perform a complete oil change, because in the long term the interaction of additives of different types may lead to deterioration of the characteristics of the resulting mixture.



+



=



4. WHAT DETERMINES THE OIL CHANGE INTERVAL?

Oil should be changed in accordance with the recommendations of the vehicle manufacturer. According to the Operator's Manual, in severe conditions it is recommended to reduce the oil change interval by 2 times. Severe conditions include:



Jam mode



Increased loads



Short distance travelling



Cold starts



Poor quality fuel (high sulphur content)



Operation at extremely high and low air temperatures

For example, for a mileage of 15,000 kilometres, based on average speed, the oil run time would be:

	The track*	City	Traffic jams
Average speed	60 km/h	40 km/h	20 km/h
Oil operating time	250 motor-hours	375 motor-hours	750 motor-hours

5. IS IT NECESSARY TO FLUSH THE ENGINE BEFORE SWITCHING TO ANOTHER OIL?

WHEN AN ENGINE FLUSH IS NEEDED

- Change to an oil of a higher performance class (e.g. from API SL to API SN).
- Poor quality fuel has been used.
- Change intervals have not been observed or are unknown.
- There are doubts about the quality of the previous oil.
- No data on the previous oil.

WHY DO YOU NEED AN ENGINE WASH

- For cleaning the engine from accumulated deposits.
- To remove residues of used oil, wear products and combustion products.

HOW THE ENGINE IS FLUSHED

Using flushing oil:

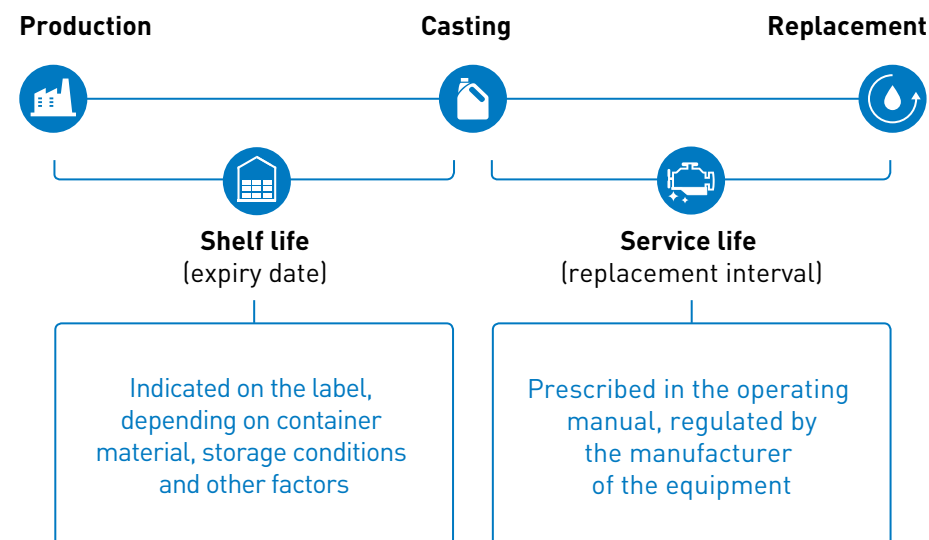
1. Without changing the oil filter, pour in the flushing oil, let the engine idle for 15-20 minutes.
2. After completion, drain the flushing oil 'hot' (with drain time not less than 30 minutes), replace the oil filter, pour in new oil.

With new oil:

1. Pour in new oil with filter change.
2. Reduce the first change interval by 2-3 times, drain the oil.
3. Perform a second oil and oil filter change.

6. IF THE OIL IS EXPIRED, CAN I STILL USE IT?

The expiry date (shelf life) stated on the label and the life of the oil are different. You can fill the engine with oil any day before the expiry date on the label. If the oil has already been filled into the lubrication system, it must be operated in accordance with the operating instructions.



* The operating manual most often specifies the replacement interval for this particular mode.

7. WHAT DETERMINES OIL CONSUMPTION?

Oil loss is normal because some of the oil remaining on the cylinder walls is burned with the fuel. The oil consumption rate is specified in the Owner's Manual. For different car manufacturers the consumption can be up to 1 litre per 1,000 km.

OIL CONSUMPTION DEPENDS ON:

1. Engine displacement.
2. Operating mode.
3. The technical condition of the engine.



Carbon monoxide can be observed either due to oil or technical faults in the engine.



WHAT TECHNICAL FAULTS THERE MAY BE

- Worn oil caps.
- Worn oil sealing caps.
- Wear of the turbine shaft and bearings.
- Malfunctions of the crankcase ventilation system.

WHEN OIL IS THE CAUSE OF HIGH CARBON MONOXIDE



Incorrectly selected property level and/or viscosity grade of oil



Oil quality is poor / counterfeit



Overspill/overfilling without complete replacement

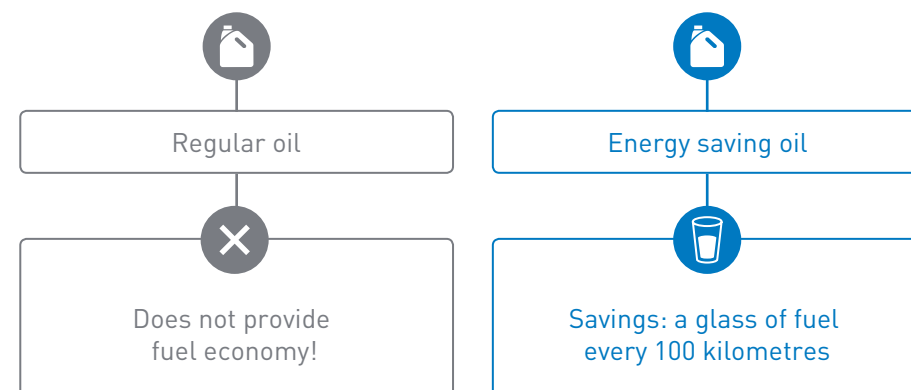
8. ARE OEM LUBRICANTS REPLACEABLE?

The engine of any vehicle requires oil of a certain specification. The specification can be either from the car manufacturer or an international standard (API, ACEA, ILSAC). The required specification can be found in the vehicle's instruction manual. In case the oil you want to put into your car instead of the original oil has a specification that corresponds to the one specified in the car's instruction manual, you can safely use this product instead of the original oil.



9. ARE ENERGY-SAVING LUBRICANTS REALLY SAVING FUEL?

The use of energy saving oils can give fuel savings of up to 3% under standard conditions*. Energy-saving oils can only be used if they are incorporated in the engine design. The gaps and oil channels in such engines are designed for a smaller oil film thickness and, consequently, oil viscosity. In a conventional engine, however, the use of such oils can lead to increased wear.



* For example, when using oils in the ILSAC category.

10. WHAT CAUSES HYDRAULIC LIFTER NOISES?

MAIN CAUSES OF NOISE

- Wear of the hydraulic compensator.
- Air/foam enters the hydraulic compensator.
- Factory defect.
- Clogged/broken oil filter.
- Clogged hydrocompensator or oil passages.
- Incorrect selection of engine oil.
- Engine overheating.
- High mileage/over mileage.

WHAT TO DO TO STOP THE HYDROCOMPENSATORS FROM MAKING NOISE



Change the oil together with the oil filter.

Grades
SAE, API, ACEA

Specifications
OEM

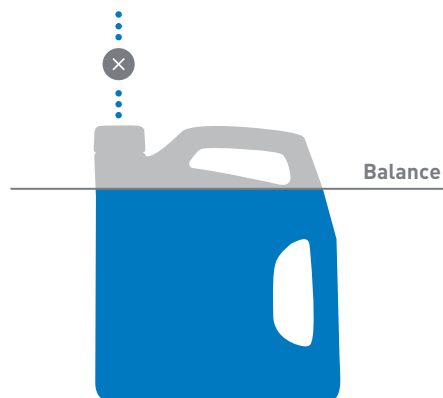
Carefully select engine oil.



Shorten oil change intervals and avoid over-running.

11. WHAT EXTRA ADDITIVES SHOULD BE USED FOR ENHANCED ENGINE PROTECTION?

All additives necessary for the oil to achieve the characteristics specified in the requirements have already been added! The composition is balanced so that the components do not influence each other negatively. **The addition of additional additives may adversely affect the performance of the oil and lead to accelerated engine damage!**



12. SHALL I USE HIGHER VISCOSITY GRADE FOR HIGH MILEAGE ENGINES?

Engine oil viscosity should be selected in accordance with the vehicle's operating manual, where the manufacturer specifies permissible viscosity classes depending on climatic conditions. If the vehicle manufacturer's recommendations allow the use of a higher oil viscosity, the changeover is possible. While switching to a higher oil viscosity without indication in the operating manual may lead to disturbance of normal operation of the internal combustion engine, up to its failure.



The engine manufacturer specifies the oil characteristics according to the engine parameters. **For example, the recommended oil viscosity is also determined by the diameter of the oil passages and the engine design.**



13. DO I NEED A SPECIAL OIL FOR AN ENGINE RUNNING ON GAS?

It is worth noting that the installation of HBO on a petrol car requires a high level of professionalism, and we do not consider non-professional conversion options.

As a result of the installation of an additional gas filling system, the vehicle engine undergoes certain changes, which is reflected in the requirements to the properties of the used engine oil:

- due to an increase in the average operating temperature of the engine, the importance of antioxidant properties increases;
- due to more complete combustion of gas fuel, the importance of detergent properties is slightly reduced.

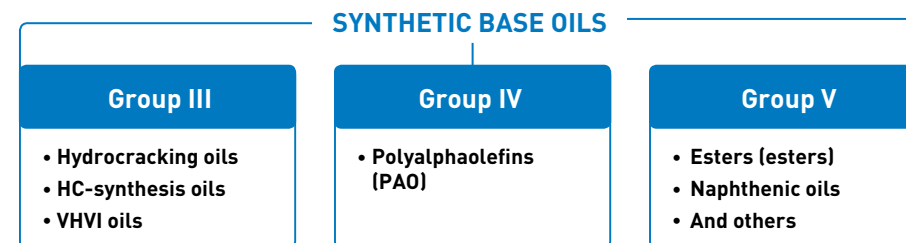
Oil properties	Oil-fuelled internal combustion engines	Gas-fuelled internal combustion engines
Detergents (alkaline number)	+++	++
Viscosity-temperature	+++	+++
Antioxidant	++	+++

! However, since the technical characteristics of the engine (power, contact pressures, speeds of relative movement and clearances between parts, construction materials and so on) remain generally unchanged, it is recommended to continue using the oil prescribed by the manufacturer.



14. ARE SYNTHETIC LUBRICANTS BASED EXCLUSIVELY ON POLYALPHAOLEFINS (PAO) AND ESTERS?

Virtually all countries refer to synthetic base oils as three groups (III, IV, V according to API).



Each of the groups listed above has its own key features.

GROUP III BASE OILS

Pros

- Wide range of oil applications
- Stability to thermal oxidation (degradation)
- Reduced content of sulphur and unsaturated hydrocarbons

Cons

- Not suitable for extremely low and high temperatures

GROUP IV BASE OILS

Pros

- Wider temperature range of application
- Good low temperature properties
- High oxidation resistance

Cons

- Lower adhesion
- Worse solubility of additives
- Higher cost

GROUP V BASE OILS

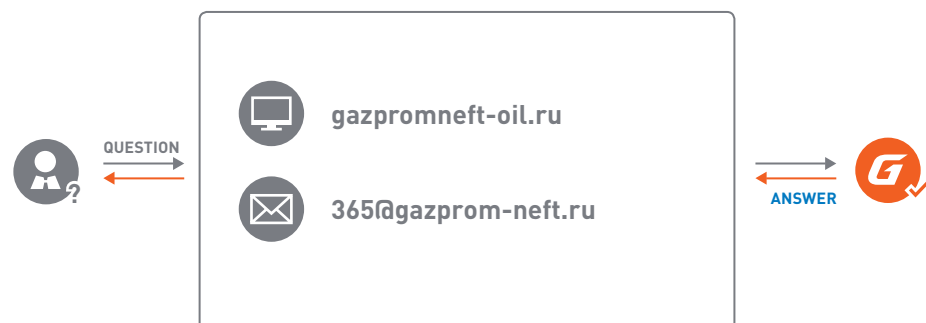
Pros

- High adhesion
- High solubility of additives
- Low carbon monoxide consumption
- High thermal stability

Cons

- Highest price
- Low resistance to water

FOR NOTES



Improving the skills of partner staff through the use of a variety of tools.



FOR NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

FOR NOTES

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