SERVICE CHAMPION

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DISQTRUST

ROLF Lubricants GmbH

www.rolfoil.de

ROLF MOTOR OIL

B2C PRODUCT CATALOG

ROLF MOTOR OIL: HISTORY IN DETAILS ABOUT ROLF LUBRICANTS GMBH

ROLF Lubricants GmbH is an international company founded in 1992 by a group of petrochemical industry experts. The headquarters of the company is located in Leverkusen, Germany.

In the beginning, the company specialized in the development of advanced lubricant technologies and formulations, and provided expert advice on their implementation worldwide.

In 2014, ROLF Lubricants GmbH decided to expand its activities and to start producing lubricants under its own ROLF brand.

Due to the stagnation and saturation of the European market, the company chose the strategy of development in the promising markets of Russia, the Middle East and Asia, where the demand for quality lubricants had been actively growing.

In 2015, ROLF Lubricants GmbH launched contract manufacturing in Europe at the facilities of one of the industry leaders. The first sales of ROLF lubricants for passenger and commercial vehicles were launched in Russia, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Belarus.

To protect consumers from the problem of counterfeit products common in these markets, ROLF motor oils from the first day began to be produced in a metal canister.

In 2017, sales of ROLF lubricants started in Mongolia, Iraq, Syria, Libya and China.

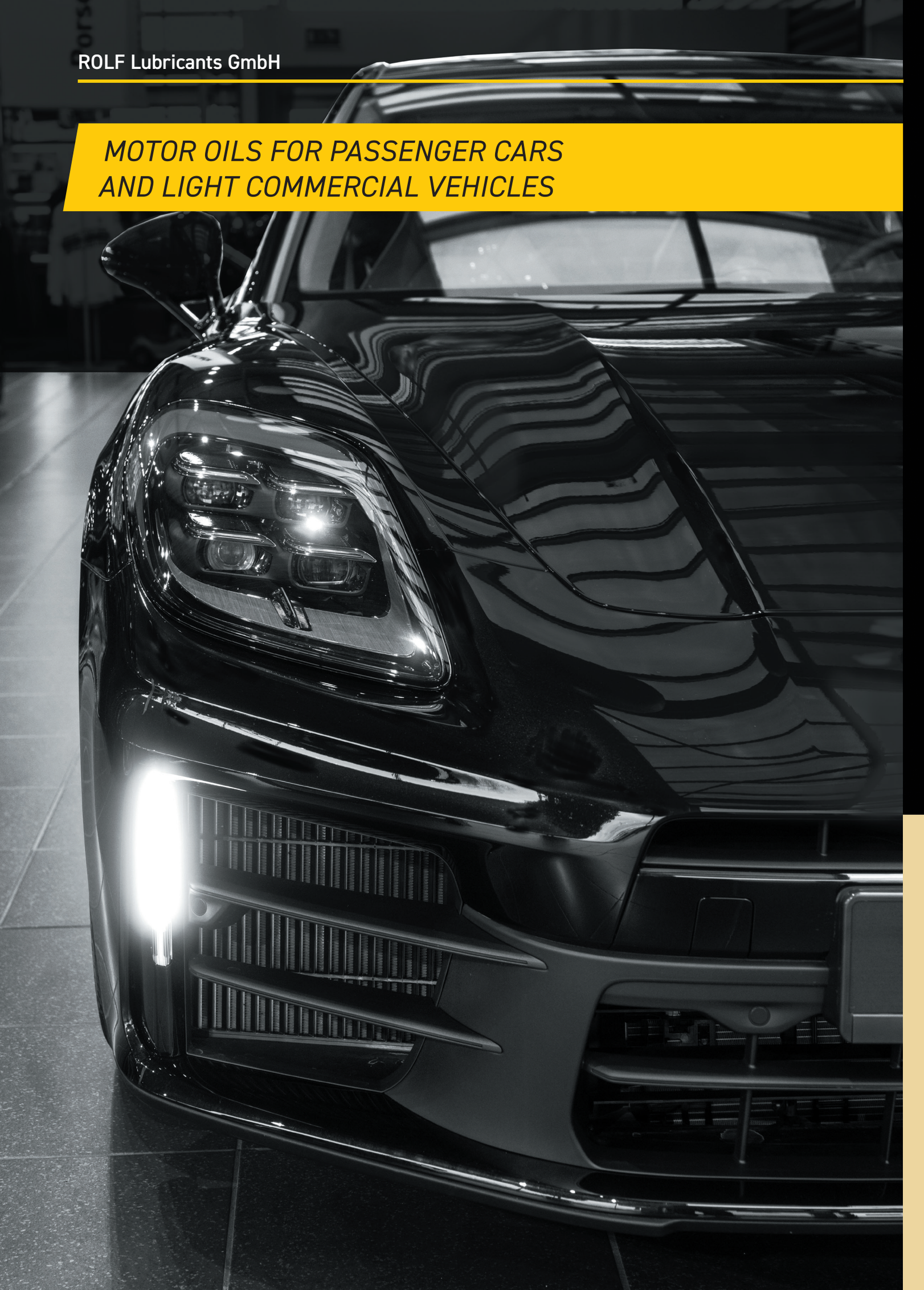
ROLF Lubricants GmbH, for its part, systematically monitors the quality of finished products and guarantees their compliance with the original formulations and property levels.

Since 2020, ROLF Lubricants GmbH has been actively expanding its product range, providing partners and customers with high-quality lubricants of world-class quality.

The company's portfolio includes a wide range of lubricants: ROLF ULTRA, ROLF GT and ROLF Energy motor oils for passenger and light commercial vehicles, ROLF Krafton industrial oils (including compressor, hydraulic, gear oils, oils for power generation, machine tools and pneumatic equipment), professional lines for service stations ROLF Professional. The nearest plans include launching a new line with maximum properties for passenger vehicles.

ROLF Lubricants GmbH

MOTOR OILS FOR PASSENGER CARS AND LIGHT COMMERCIAL VEHICLES



ROLF ULTRA — INNOVATIVE LINE OF FULLY SYNTHETIC OILS AND THE FLAGSHIP OF THE ROLF RANGE

Currently, motor oil manufacturers, for various reasons, follow the practice of using either pure GTL as base oils or PAO as a modifier to other base oils.

GTL TECHNOLOGY
is a technology for creating base oil from natural gas

PAO (POLYALPHALPHALEFINES)
is a technology for creating base oil from associated petroleum gas

ROLF is the first manufacturer to use in its products a unique base oil, which is produced by combining GTL and PAO oils, synthesised from gas, with Infineum advanced multifunctional additive package.

Gas is the purest raw material, containing no ‘harmful’ impurities, so Rolf Ultra engine oils have a number of advantages: the highest oxidation stability, very low carbon monoxide consumption and exceptional low-temperature properties, including pour point down to -61 °C.

ROLF ULTRA 0W-20 C5 SN PLUS

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 0W-20 ACEA C5 API SN plus meets the increased requirements for protection of the timing chain from wear and counteracting the formation of deposits in the turbine, provides improved protection against low speed pre ignition of the fuel mixture in the cylinder (LSPI), high fuel efficiency and full compatibility with modern systems to reduce toxicity of exhaust gases.

Designed for use in passenger cars with gasoline and diesel engines, for which the manufacturer recommends low-viscosity low ash oils with HTHS not less than 2.6 and not more than 2.9 mPa*s of property level ACEA C5 or API SN Plus and viscosity grade SAE 0W-20. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains engine power and performance while effectively protecting the engine from wear and deposits
- Has extremely low consumption during operation
- Provides easy engine starting at extremely low temperatures and guarantees lubrication from the first second of start-up
- Contributes to improved fuel economy and resource conservation
- Features reduced levels of sulfate ash, phosphorus, sulfur, protecting exhaust gas treatment systems (DPF, GPF, TWC)
- Has a high viscosity index, providing optimal operation of the oil in different temperature conditions

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SN PLUS; ACEA C5; VW 508 00/509 00; PORSCHE C20

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	0W-20
Density at 15°C, g/cm^3	ASTM D4052	0.832
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	8.9
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	48.4
Viscosity index	ASTM D2270	167
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 490
Alkaline base number, mg KOH/g	ASTM D2896	8.5
NOACK evaporability, %	ASTM D5800	8.6
Flash point in open crucible, °C	ASTM D92	235
Solidification temperature, °C	ASTM D97	–61

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 0W-30 A3/B4 SL/CF

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 0W-30 ACEA A3/B4 API SL/CF guarantees fast and easy engine start-up at low temperatures, excellent engine wear protection, extended service interval.

Designed for use in passenger cars, SUVs and vans with gasoline and diesel engines, including turbocharged and direct injection, where the manufacturer recommends the level of properties ACEA A3/B4 and API SL/CF or previous categories. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains engine power and performance, effectively protecting it from wear and deposits
- Has extremely low consumption during operation
- Provides easy engine starting at extremely low temperatures and guarantees lubrication from the first second of start-up
- Maintains the maximum level of properties in different operating modes
- Has a high viscosity index, ensuring optimal performance of the oil in different temperature conditions

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SL/CF; ACEA A3/B4; BMW LL-01; MB 229.3/229.5; VW 502 00/505 00; RN0700/0710; Volvo VCC95200356

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	0W-30
Density at 15°C, g/cm^3	ASTM D4052	0.832
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	12.25
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	67.2
Viscosity index	ASTM D2270	183
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 420
Alkaline base number, mg KOH/g	ASTM D2896	11.2
NOACK evaporability, %	ASTM D5800	8.2
Flash point in open crucible, °C	ASTM D92	238
Solidification temperature, °C	ASTM D97	–61

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 0W-30 A7/B7 SP

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 0W-30 ACEA A7/B7 API SP provides improved protection against low speed pre ignition of the fuel mixture in the cylinder (LSPI), meets increased requirements for fuel economy, protection of the timing chain from wear and counteracting the formation of deposits in the turbine.

Designed for use in modern passenger cars, SUVs and vans with gasoline and diesel engines, including turbocharged and direct injection, where the manufacturer recommends the level of properties ACEA A7/B7 or API SP and previous categories. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains maximum engine performance while protecting against wear and deposits
- Has extremely low consumption during operation
- Provides easy engine starting at extremely low temperatures and guarantees lubrication from the first second of start-up
- Contributes to improved fuel efficiency and resource conservation
- Has a high viscosity index, ensuring optimal oil performance at different temperatures
- Prevents low speed pre ignition of the fuel mixture in the cylinder (LSPI)

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SP; ACEA A7/B7, A5/B5; BMW LL-01 FE; MB 229.6; RN0700

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	0W-30
Density at 15°C, g/cm^3	ASTM D4052	0.841
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	10.5
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	57.95
Viscosity index	ASTM D2270	174
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 240
Alkaline base number, mg KOH/g	ASTM D2896	12.57
NOACK evaporability, %	ASTM D5800	9.5
Flash point in open crucible, °C	ASTM D92	240
Solidification temperature, °C	ASTM D97	–61

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 0W-30 C3 SP

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 0W-30 ACEA C3 API SP provides reliable protection against low speed pre ignition of the fuel mixture in the cylinder (LSPI), protection of the timing chain from wear and counteracting the formation of deposits in the turbine, helps to extend the life of modern systems to reduce toxicity of exhaust gases.

Designed for use in passenger cars, SUVs and vans with gasoline and diesel engines, including turbocharged, direct injection and exhaust gas aftertreatment systems, where the level of properties ACEA C3 or API SP in viscosity 0W-30 is required. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains engine power and performance by effectively protecting the engine from wear and deposits
- Has extremely low in-use carbon monoxide consumption
- Provides easy engine starting at extremely low temperatures and guarantees lubrication from the first second of start-up
- Is low in sulfate ash, phosphorus, sulfur, protecting exhaust gas cleaning systems (DPF, GPF, TWC)
- Has a high viscosity index, ensuring optimal operation of the oil in different temperature conditions

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SP; ACEA C3; MB 229.52/229.51; OPEL OV0401547; RN0700/0710

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	0W-30
Density at 15°C, g/cm^3	ASTM D4052	0.833
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	12.3
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	66.96
Viscosity index	ASTM D2270	185
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 500
Alkaline base number, mg KOH/g	ASTM D2896	9.5
NOACK evaporability, %	ASTM D5800	9.3
Flash point in open crucible, °C	ASTM D92	240
Solidification temperature, °C	ASTM D97	–61

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 0W-40 A3/B4 SP

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 0W-40 ACEA A3/B4 API SP provides improved protection against low speed pre ignition of the fuel mixture in the cylinder (LSPI), meets the increased requirements for the protection of the timing chain from wear and counteracting the formation of deposits in the turbine, ensures quick and easy engine start-up at low temperatures, excellent protection of the engine from wear, extended service interval.

Designed for use in modern passenger cars, SUVs and vans with gasoline and diesel engines, including turbocharged and direct injection, where the manufacturer recommends the level of properties ACEA A3/B4 and API SP or lower in viscosity SAE 0W-40. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains engine power and performance, effectively protecting it from wear and deposits
- Has a high viscosity index, ensuring optimal oil performance in different temperature conditions
- Provides easy engine starting at extremely low temperatures and guarantees lubrication from the first second of starting
- Maintains the maximum level of properties in different modes and operating conditions, ensuring the most efficient engine performance
- Prevents low speed pre ignition of the fuel mixture in the cylinder (LSPI)
- Demonstrates up to 40% less evaporation loss compared to ACEA A3/B4 standard oil*

* Based on ASTM D5800 NOACK volatility test data

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SP; ACEA A3/B4; MB 229.3/229.5; BMW LL-01; PORSCHE A40;
VW 502 00/505 00; RN0700/0710; Ford WSS-M2C937-A

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	0W-40
Density at 15°C, g/cm^3	ASTM D4052	0.835
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	13.78
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	76.83
Viscosity index	ASTM D2270	186
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 500
Alkaline base number, mg KOH/g	ASTM D2896	13.0
NOACK evaporability, %	ASTM D5800	9.6
Flash point in open crucible, °C	ASTM D92	240
Solidification temperature, °C	ASTM D97	–60

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 5W-30 A3/B4 SP

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 5W-30 ACEA A3/B4 API SP meets the increased requirements for protection of the timing chain from wear and counteracting the formation of deposits in the turbine, provides improved protection against low speed pre ignition of the fuel mixture in the cylinder (LSPI), quick and easy starting of the engine at low temperatures, excellent protection of the engine from wear, extended service interval.

Designed for use in modern gasoline and diesel engines of passenger cars, SUVs and vans, including turbocharged with direct injection, where the manufacturer recommends the use of oils classification ACEA A3/B4, API SP or lower. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains maximum engine performance while protecting against wear and deposits
- Provides easy engine starting at extremely low temperatures and lubrication from the first second of start-up
- Has a high viscosity index, ensuring optimal oil performance in different temperature conditions
- Maintains the maximum level of properties in different modes and operating conditions, ensuring the most efficient engine performance
- Prevents low speed pre ignition of the fuel mixture in the cylinder (LSPI)
- Demonstrates up to 40% less evaporation loss compared to ACEA A3/B4 standard oil

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SP; ACEA A3/B4; MB 229.3/229.5; RN0700/0710; BMW LL-01

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	5W-30
Density at 15°C, g/cm^3	ASTM D4052	0.837
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	12.3
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	70.3
Viscosity index	ASTM D2270	175
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 350
Alkaline base number, mg KOH/g	ASTM D2896	12.0
NOACK evaporability, %	ASTM D5800	5.4
Flash point in open crucible, °C	ASTM D92	250
Solidification temperature, °C	ASTM D97	–58

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 5W-30 A5/B5 SP

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 5W-30 ACEA A5/B5 API SP provides improved protection against low speed pre ignition of the fuel mixture in the cylinder (LSPI), meets increased requirements for fuel economy, protection of the timing chain from wear and counteracting the formation of deposits in the turbine.

Designed for use in modern passenger cars, SUVs and vans with gasoline and diesel engines, including turbocharged and direct injection, where the manufacturer recommends energy-saving oils with a level of properties ACEA A5/B5 and API SP, as well as can be used where recommended oils ACEA A7/B7 and viscosity SAE 5W-30. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains maximum engine performance while protecting against wear and deposits
- Has extremely low consumption during operation
- Provides easy engine start-up at low temperatures and lubrication from the first second of start-up
- Contributes to improved fuel efficiency and resource conservation
- Has a high viscosity index, ensuring optimal oil performance in different temperature conditions
- Prevents low speed pre ignition of the fuel mixture in the cylinder (LSPI)

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SP; ACEA A5/B5, A7/B7; RN0700; Ford WSS-M2C913-C/D

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	5W-30
Density at 15°C, g/cm^3	ASTM D4052	0.8404
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	10.9
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	64.6
Viscosity index	ASTM D2270	163
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 350
Alkaline base number, mg KOH/g	ASTM D2896	12.2
NOACK evaporability, %	ASTM D5800	6.1
Flash point in open crucible, °C	ASTM D92	247
Solidification temperature, °C	ASTM D97	–58

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 5W-30 C3 SN/CF

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 5W-30 ACEA C3 API SN/CF provides excellent wear protection, effectively counteracts the formation of all types of deposits, helps to extend the life of modern systems to reduce toxicity of exhaust gases.

Designed for maximum protection of modern high-force gasoline and diesel engines of passenger cars, SUVs and vans, including those equipped with turbocharging, direct fuel injection, emission reduction systems (DPF, TWC, EGR, SCR). The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains engine power and performance by effectively protecting the engine from wear and deposits
- Has extremely low in-use carbon monoxide consumption
- Provides easy engine starting at extremely low temperatures and guarantees lubrication from the first second of start-up
- Is low in sulfate ash, phosphorus, sulfur, protecting exhaust gas cleaning systems (DPF, GPF, TWC)
- Has a high viscosity index, ensuring optimal operation of the oil in different temperature conditions

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SN/CF; ACEA C3; MB 229.51; VW 504 00/507 00;
BMW LL-04; PORSCHE C30

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	5W-30
Density at 15°C, g/cm^3	ASTM D4052	0.836
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	12.2
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	71.75
Viscosity index	ASTM D2270	169
CCS dynamic viscosity at -30 °C, mPa*s	ASTM D5293	5 500
Alkaline base number, mg KOH/g	ASTM D2896	8.2
NOACK evaporability, %	ASTM D5800	6.1
Flash point in open crucible, °C	ASTM D92	242
Solidification temperature, °C	ASTM D97	–55

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ULTRA 5W-40 A3/B4 SP

DESCRIPTION AND APPLICATION

Rolf Ultra SAE 5W-40 ACEA A3/B4 API SP meets the increased requirements for protection of the timing chain from wear and counteracting the formation of deposits in the turbine, provides improved protection against low speed pre ignition of the fuel mixture in the cylinder (LSPI), quick and easy starting of the engine at low temperatures, excellent protection of the engine from wear, extended service interval.

Designed for use in modern gasoline and diesel engines of passenger cars, SUVs and vans, including turbocharged with direct injection, where the manufacturer recommends the use of oils of quality level ACEA A3/B4, API SP or lower. The use of only original additive packages from one of the world's largest companies ensures full compliance with the specifications of automobile producers.

KEY FEATURES

- Maintains maximum engine performance while protecting against wear and deposits
- Provides easy engine starting at extremely low temperatures and lubrication from the first second of start-up
- Has a high viscosity index, ensuring optimal oil performance in different temperature conditions
- Maintains the maximum level of properties in different modes and operating conditions, ensuring the most efficient engine performance
- Prevents low speed pre ignition of the fuel mixture in the cylinder (LSPI)
- Demonstrates up to 40% less evaporation loss compared to ACEA A3/B4 standard oil

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

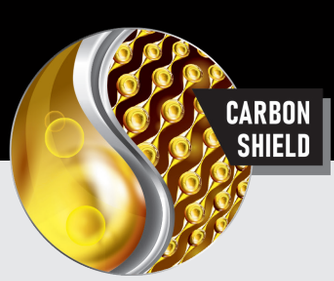
API SP; ACEA A3/B4; MB 229.3/229.5/226.5; GM-LL-A/B-025; PORSCHE A40; RN0700/0710; VW 502 00/505 00; PSA B71 2296; BMW LL-01

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	5W-40
Density at 15°C, g/cm^3	ASTM D4052	0.838
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	14.08
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	84.93
Viscosity index	ASTM D2270	172
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 830
Alkaline base number, mg KOH/g	ASTM D2896	13.0
NOACK evaporability, %	ASTM D5800	5.5
Flash point in open crucible, °C	ASTM D92	241
Solidification temperature, °C	ASTM D97	–57

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF GT: A LINE OF QUALITY SYNTHETIC OILS WITH CARBON SHIELD TECHNOLOGY

Improvement of the detergent properties of the oil can be achieved by increasing the alkaline number, but this also leads to an increase in sulphur. A complex of carefully selected detergents is the basis of Carbon Shield technology and increases the cleaning properties without affecting the sulphur content.



CarbonShield technology is a properly selected combination of ashless detergent additives of succinimides which can significantly increase the detergent properties of the oil without deteriorating other parameters.

ROLF GT 5W-30 A3/B4 SL/CF

DESCRIPTION AND APPLICATION

Synthetic engine oil Rolf GT SAE 5W-30 ACEA A3/B4 with Carbon Shield technology contains a unique complex of detergents that increases the ability of the oil to prevent the formation of deposits, has increased resistance to oxidation when using fuel of variable quality (with sulfur content up to 500 ppm), thereby providing excellent protection of the engine from wear and increase oil change intervals, helps to quickly and easily start the engine at low temperatures.

ROLF GT 5W-30 ACEA A3/B4 is recommended for gasoline and diesel engines with high performance passenger cars, SUVs and vans, including turbocharged. For all-season use in both new and high-mileage engines.

KEY FEATURES

- Extends engine and component life with improved wear protection
- Has excellent low-temperature performance
- Provides consistent performance at extended drain intervals
- Has excellent thermal and antioxidant stability, minimizing the formation of all types of deposits and keeping the engine clean throughout its service life

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SL/CF; ACEA A3/B4; MB 229.5;
VW 502 00/505 00; RN0710/0700

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	5W-30
Density at 15°C, g/cm^3	ASTM D4052	0.856
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	12.1
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	72.8
Viscosity index	ASTM D2270	174
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5 720
Alkaline base number, mg KOH/g	ASTM D2896	11.0
NOACK evaporability, %	ASTM D5800	8.8
Flash point in open crucible, °C	ASTM D92	239
Solidification temperature, °C	ASTM D97	–38

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF GT 5W-30 C3 SN/CF

DESCRIPTION AND APPLICATION

Synthetic engine oil Rolf GT SAE 5W-30 ACEA C3 API SN/CF with Carbon Shield technology contains a unique complex of detergents that increases the ability of the oil to prevent the formation of deposits, has increased resistance to oxidation, thereby providing excellent protection of the engine from wear and increase oil drain intervals, promotes quick and easy starting of the engine at low temperatures. Compatible with modern systems of exhaust gas toxicity reduction: DPF, TWC, EGR, SCR.

ROLF GT 5W-30 ACEA C3 API SN/CF is recommended for use in passenger cars, SUVs and vans equipped with gasoline and diesel engines with high performance, including turbocharged, direct injection, as well as equipped with emission reduction systems: DPF, TWC, EGR, SCR. Suitable for all-season use in both new and used engines.

KEY FEATURES

- Extends engine and component life with improved wear protection
- Has excellent low-temperature performance
- Provides consistent performance at extended drain intervals
- Has excellent thermal and antioxidant stability, minimizing the formation of all types of deposits and keeping the engine clean throughout its service life
- Effectively protects lowering systems

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SN/CF; ACEA C3; MB 229.31

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	5W-30
Density at 15°C, g/cm^3	ASTM D4052	0.8481
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	12.04
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	72.44
Viscosity index	ASTM D2270	163
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5920
Alkaline base number, mg KOH/g	ASTM D2896	8.8
NOACK evaporability, %	ASTM D5800	7.5
Flash point in open crucible, °C	ASTM D92	244
Solidification temperature, °C	ASTM D97	–43

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF GT 5W-30 A5/B5 SL/CF

DESCRIPTION AND APPLICATION

Synthetic engine oil Rolf GT SAE 5W-30 ACEA A5/B5 API SL/CF with Carbon Shield technology contains a unique complex of detergents that increases the ability of the oil to prevent the formation of deposits, has increased resistance to oxidation when using fuel of variable quality (with sulfur content up to 500 ppm), thereby providing excellent protection of the engine from wear and increase drain intervals, promotes quick and easy starting of the engine at low temperatures.

ROLF GT SAE 5W-30 ACEA A5/B5 API SL/CF is designed for use in modern passenger cars, SUVs and vans with gasoline and diesel engines, including those equipped with turbocharging and direct fuel injection, requiring oils of ACEA A5/B5 properties.

KEY FEATURES

- Extends the life of the engine and its components through improved wear protection
- Provides stable performance with extended oil change intervals
- Has excellent thermal and antioxidant stability, minimizing the formation of all types of deposits and keeping the engine clean throughout its life
- Has excellent low-temperature properties
- Improves engine fuel economy and fuel efficiency

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SL/CF; ACEA A5/B5, A7/B7; Ford WSS-M2C913-C/D

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	5W-30
Density at 15°C, g/cm^3	ASTM D4052	0.8447
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	10.6
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	59.36
Viscosity index	ASTM D2270	170
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	4050
Alkaline base number, mg KOH/g	ASTM D2896	11.0
NOACK evaporability, %	ASTM D5800	9.1
Flash point in open crucible, °C	ASTM D92	235
Solidification temperature, °C	ASTM D97	–44

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF GT 5W-40 A3/B4 SN/CF

DESCRIPTION AND APPLICATION

Synthetic engine oil Rolf GT SAE 5W-40 ACEA A3/B4 API SN/CF with Carbon Shield technology contains a unique complex of detergents that increases the ability of the oil to prevent the formation of deposits, has increased resistance to oxidation when using fuel of variable quality (with sulfur content up to 500 ppm), thereby providing excellent protection of the engine from wear and increase oil drain intervals, provides quick and easy starting of the engine at low temperatures.

ROLF GT SAE 5W-40 ACEA A3/B4 API SN/CF is recommended for gasoline and diesel engines with high performance passenger cars, SUVs and vans, including those with turbocharging and catalytic exhaust gas neutralization systems. For all-season use in both new and high-mileage engines.

KEY FEATURES

- Extends the life of the engine and its components through improved wear protection
- Has excellent low-temperature performance
- Provides stable performance with extended oil change intervals
- Has excellent thermal and antioxidant stability, minimizing the formation of all types of deposits and keeping the engine clean throughout its life
- Meets the requirements of the world's leading automobile manufacturers

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SN/CF; ACEA A3/B4; MB 229.5; VW 502 00/505 00;
RN0700/0710; PORSCHE A40; GM-LL-A/B-025

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	5W-40
Density at 15°C, g/cm^3	ASTM D4052	0.857
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	14.8
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	85.5
Viscosity index	ASTM D2270	182
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5810
Alkaline base number, mg KOH/g	ASTM D2896	10.4
NOACK evaporability, %	ASTM D5800	9.3
Flash point in open crucible, °C	ASTM D92	235
Solidification temperature, °C	ASTM D97	–38

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ENERGY IS A LINE OF QUALITY SEMI-SYNTHETIC OILS WITH 3-TECH FORMULA TECHNOLOGY.

Over time in engines, cylinder honing wears out and the surface begins to hold the oil film less well, parts are subject to corrosion and wear, which increases the release of metal ions into the oil, fatigue defects appear, which can later become the centre of pitting or cracking of surfaces.

The essence of ROLF ENERGY TECHNOLOGY lies in a combination of 3 innovative solutions:

- Increased content and special combination of friction modifiers significantly reduce further wear
- Enhanced combination of anti-corrosion additives prevents further spreading of corrosion sources
- Special complex of metal ion deactivators in the oil prevents oxidation

ROLF ENERGY 10W-40 A3/B4 SL/CF

DESCRIPTION AND APPLICATION

Rolf Energy SAE 10W-40 ACEA A3/B4 API SL/CF semi-synthetic engine oil is produced from high-quality base oils using synthetic technologies and modern balanced additive complex. Thanks to 3-Tech Formula technology, which consists in a special combination of friction modifiers, anti-corrosion additives and metal ion deactivator complex, the oil provides reliable engine protection from wear, prevents sludge formation, has high resistance to oxidation and low evaporation, forms a stable lubricating film at cold start, as well as at high operating temperatures.

Intended for use in gasoline and diesel engines, including turbocharged, where the manufacturer recommends engine oils of viscosity class SAE 10W-40 of specifications ACEA A3/B3/B4, API SL/CF or earlier.

KEY FEATURES

- Excellent thermal and antioxidant stability minimize the formation of deposits and sludge
- Effective anti-wear properties extend the life of the engine and its components
- High resistance to shear stresses ensures stability of viscosity-temperature characteristics throughout the oil drain interval
- Enhanced combination of anti-corrosion additives prevents the appearance of corrosion pockets
- Reduced carbon monoxide consumption

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SL/CF; ACEA A3/B4; MB 229.1/229.3

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	10W-40
Density at 15°C, g/cm^3	ASTM D4052	0.869
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	14.77
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	98.16
Viscosity index	ASTM D2270	157
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	6040
Alkaline base number, mg KOH/g	ASTM D2896	11.24
NOACK evaporability, %	ASTM D5800	9.3
Flash point in open crucible, °C	ASTM D92	233
Solidification temperature, °C	ASTM D97	–39

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ENERGY 5W-30 A3/B4 SL/CF

DESCRIPTION AND APPLICATION

Rolf Energy SAE 5W-30 ACEA A3/B4 API SL/CF semi-synthetic engine oil is produced from high-quality base oils using synthetic technologies and modern balanced additive complex. Thanks to 3-Tech Formula technology, which consists in a special combination of friction modifiers, anti-corrosion additives and metal ion deactivator complex, the oil provides reliable engine protection from wear, prevents sludge formation, has high resistance to oxidation and low evaporation, forms a stable lubricating film at cold start, as well as at high operating temperatures.

Intended for use in gasoline and diesel engines, including turbocharged, where the manufacturer recommends engine oils of viscosity class SAE 5W-30 of specifications ACEA A3/B3/B4, API SL/CF or earlier.

KEY FEATURES

- Excellent thermal and antioxidant stability minimize the formation of deposits and sludge
- Effective anti-wear properties extend the life of the engine and its components
- High resistance to shear stresses ensures stability of viscosity-temperature characteristics throughout the oil drain interval
- Enhanced combination of anti-corrosion additives prevents the appearance of spots of corrosion
- Improved low-temperature properties and reduced consumption of carbon monoxide.

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API SL/CF; ACEA A3/B4; MB 229.3; VW 502 00/505 00

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	5W-30
Density at 15°C, g/cm^3	ASTM D4052	0.8543
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	12.1
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	71.6
Viscosity index	ASTM D2270	167
CCS dynamic viscosity at -35 °C, mPa*s	ASTM D5293	5790
Alkaline base number, mg KOH/g	ASTM D2896	11.33
NOACK evaporability, %	ASTM D5800	9.7
Flash point in open crucible, °C	ASTM D92	234
Solidification temperature, °C	ASTM D97	–45

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ENERGY 5W-40 A3/B4 SN/CF

DESCRIPTION AND APPLICATION

Rolf Energy SAE 5W-40 ACEA A3/B4 API SN/CF semi-synthetic engine oil is produced from high-quality base oils using synthetic technologies and modern balanced additive complex. Thanks to 3-Tech Formula technology, which consists in a special combination of friction modifiers, anti-corrosion additives and metal ion deactivator complex, the oil provides reliable engine protection from wear, prevents sludge formation, has high resistance to oxidation and low evaporation, forms a stable lubricating film at cold start, as well as at high operating temperatures.

Intended for use in gasoline and diesel engines, including turbocharged, where the manufacturer recommends engine oils of viscosity class SAE 5W-40 of specifications ACEA A3/B3/B4, API SN/CF or earlier.

KEY FEATURES

- Excellent thermal and antioxidant stability minimize the formation of deposits and sludge
- Effective anti-wear properties extend the life of the engine and its components
- High resistance to shear stress ensures stability of viscosity-temperature characteristics throughout the oil drain interval

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

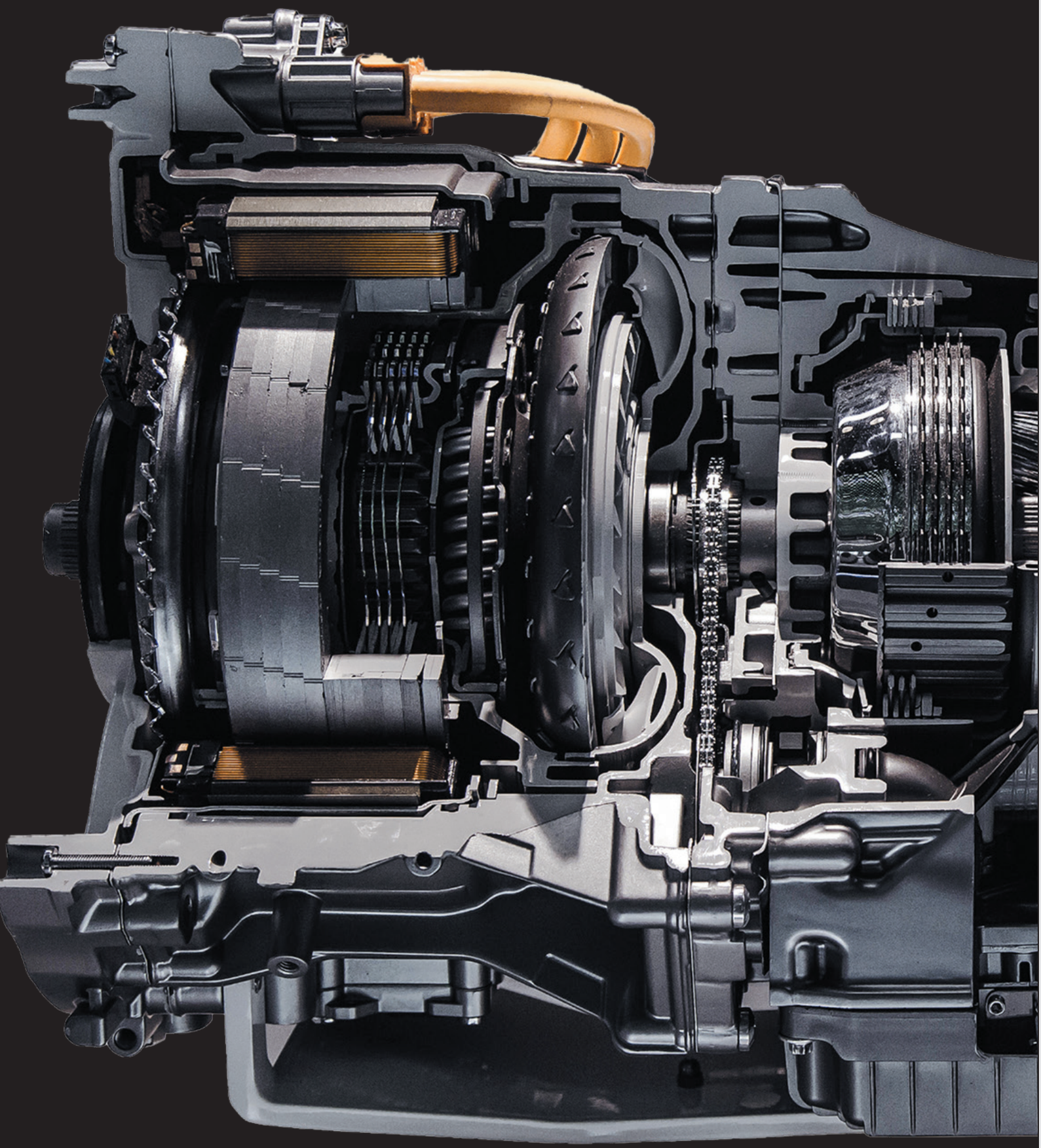
API SN/CF; ACEA A3/B4; MB 229.3; VW 502 00/505 00; RN0700/0710; GM-LL-A/B-025; FIAT 9.55535-N2/M2

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	5W-40
Density at 15°C, g/cm^3	ASTM D4052	0.8539
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	13.4
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	79.4
Viscosity index	ASTM D2270	172
CCS dynamic viscosity at -30 °C, mPa*s	ASTM D5293	5630
Alkaline base number, mg KOH/g	ASTM D2896	11.05
NOACK evaporability, %	ASTM D5800	10.4
Flash point in open crucible, °C	ASTM D92	230
Solidification temperature, °C	ASTM D97	–47

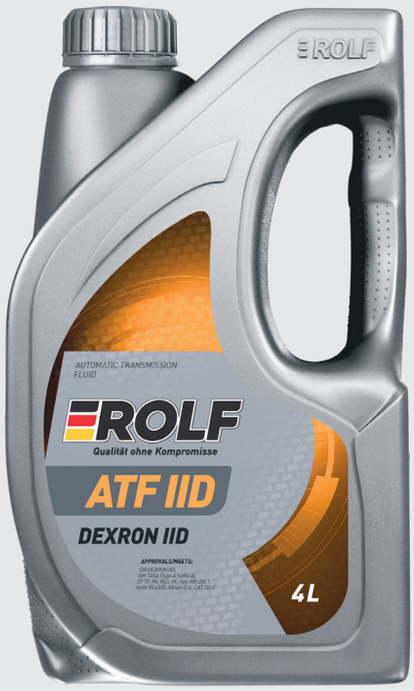
The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF Lubricants GmbH

TRANSMISSION OILS FOR AUTOMATIC TRANSMISSION



ROLF ATF IID



DESCRIPTION AND APPLICATION

Modern multifunctional fluid for automatic transmissions and power steering. Ir is produced on the basis of high quality deep cleaning mineral base oils with a high viscosity index. It contains highly effective antioxidant, anti-wear, detergent and antifoam additives and special friction modifiers. This oil is allowed for use in power steering where the use of fluids of specification GM ATFDEXRON IID is recommended.

ROLF ATF IID fluid is designed for use in automatic transmissions with step shifting and torque converter of cars and trucks of various years of production, city and intercity buses, road construction and municipal machinery, where it is recommended to use fluids of GM ATF DEXRON IID specification in automatic transmissions of ZF, Voith and other manufacturers in accordance with the list of conformities.

KEY FEATURES

- Improves operation of automatic transmission frictions and ensures smooth gear shifting
- Guarantees complete stability of properties for the entire period of operation
- High heat capacity and stable viscosity at large temperature differences
- Provides extended drain intervals
- Excellent low-temperature properties of the oil provide protection of transmission components during cold start of the engine

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

GM DEXRON IID; ZF TE-ML 04D, 09, 14A; Voith 55.6335; Allison C-4; CAT TO-2

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Density at 15 °C, g/cm^3	ASTM D4052	0.865
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	7.18
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	34.5
Viscosity index	ASTM D2270	163
CCS dynamic viscosity at -40 °C, mPa*s	ASTM D2983	27000
Flash point in open crucible, °C	ASTM D92	222
Solidification temperature, °C	ASTM D97	-46

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ATF III

DESCRIPTION AND APPLICATION

A modern high-performance multifunctional liquid for automatic transmissions. It has improved characteristics and is ideal for modern automatic transmissions. It is produced on the basis of high-tech base oils with high viscosity index and contains highly effective antioxidant, anti-wear, detergent-dispersing, anti-foaming additives and special friction modifiers.

ROLF ATF III product is designed for most automatic transmissions of modern cars and trucks, for power steering, where it is recommended to use liquids of GM Dexron III specification in automatic transmissions of Allison, ZF, Voith, MAN and other manufacturers according to the list of specifications and approvals. It is allowed for use in power steering where GM ATF DEXRON III specification liquids are recommended.

KEY FEATURES

- Improves the operation of friction automatic transmissions and provides smooth gear shifting Guarantees complete stability of properties for the entire period of operation
- Features high heat capacity and stable viscosity at large temperature differences
- Provides extended drain intervals
- Excellent low-temperature properties of the oil provide protection of transmission components during cold start

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

GM DEXRON IIIG; ZF TE-ML: 05L, 09, 21L; Allison C-4; CAT TO-2; Volvo CE 97340; Voith H55.6335; ZF TE-ML: 04D, 14A; MAN 339 Z1/V1;MAN 339 Type Z-1 & V-1; MB 236.1; Ford Mercon; Ford ESD-M2C138-CJ; Ford ESP-M2C166-H

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Density at 15 °C, g/cm^3	ASTM D4052	0.857
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	7.22
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	34.43
Viscosity index	ASTM D2270	185
CCS dynamic viscosity at -40 °C, mPa*s	ASTM D2983	12990
Flash point in open crucible, °C	ASTM D92	205
Solidification temperature, °C	ASTM D97	-50

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ATF MULTIVEHICLE

DESCRIPTION AND APPLICATION

It is high-performance transmission fluid for automatic transmissions. It is produced on the basis of synthetic base oils and multifunctional additive package of the latest generation, which provides a given coefficient of friction for the transmission of high torque, significantly reduces wear and prevents scuffing. It provides an optimum coefficient of friction for smooth gear shifting. Due to the use of synthetic base components, the fluid has a high viscosity index, which achieves excellent low-temperature properties.

Product ROLF ATF MULTIVEHICLE is designed for use in automatic transmissions of most modern Japanese, European and American passenger cars, where the specifications listed above are recommended for use. Use in power steering systems is permitted where fluids of these specifications are required.

KEY FEATURES

- Excellent friction stability for smooth, jerk-free shifting
- Excellent low-temperature fluidity required for shifting gears in cold climates
- Specifications of leading transmission manufacturers
- Excellent antioxidant properties guarantee high functionality of the oil for its entire service life

PACKAGING TYPES

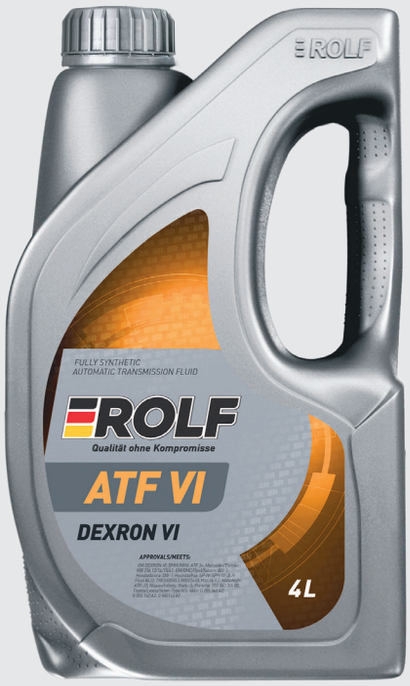
SPECIFICATIONS AND APPROVALS

Allison: C-4; BMW/Mini: 81 22 9 400 272/275, 81 22 9 407 858/859, 83 22 0 024 249/359, 83 22 0 026 922, 83 22 0 402 413/3248, 83 22 7 542 290, 83 22 9 407 765/807; Chrysler/Dodge/Jeep: +4, AS68RC ATF; Mercedes/Daimler: MB 236.3/5/6/7/8/9/10/11/91; Ford: WSS-M2C922-A1; GM: II/IID/IIE/IIIG/IIIH; Honda: Z1; Hyundai/Kia: SP-II/III, ATF Red-1K, Genuine ATF; Isuzu: ATF II/III, Genuine ATF; Jaguar: WSS-M2C922-A1, K17, JLM 20238/92, JLM 21044; Land Rover: Type LT 71141, ETL-7045E; Mazda: F-1, JWS3317, M-III, Type T-IV; Mitsubishi: SP II/III, ATF-J2; Nissan/Infinity: 402; Matic-D/J/K/W; PORSCHE: 000 043 204 41, 000 043 205 09/28, 999 917 547 00; PSA: Z 000169756; Renault: Matic D2; Saab: 3309 - T-IV; SsangYong: DSIH 5M-66; Subaru: HP; K0140Y0700; Suzuki: 3314/3317; Toyota/Lexus: Type D-II/T/T-III/T-IV; VAG (VW, Audi, Seat, Skoda): G 052 025, G 052 162, G 052 990, G 052 055, G 055 025, G US 000 162; VOLVO: 1161521, 1161540/640

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Density at 15 °C, g/cm^3	ASTM D4052	0.845
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	7.87
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	35.1
Viscosity index	ASTM D2270	172
CCS dynamic viscosity at -40 °C, mPa*s	ASTM D2983	10900
Flash point in open crucible, °C	ASTM D92	263
Solidification temperature, °C	ASTM D97	–47

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.



ROLF ATF DEXRON VI

DESCRIPTION AND APPLICATION

ROLF ATF DEXRON VI is a high-tech low-viscosity synthetic transmission fluid with excellent frictional stability and resistance to mechanical wear, which allows for smooth gear shifting. Thanks to low-viscosity base oil provides excellent fuel efficiency compared to traditional automatic transmission fluids with higher viscosity.

For automatic transmissions in European, American and Asian vehicles where ATF Dexron VI specification fluid is recommended. Specially designed for modern automatic transmissions with 6 or more gears

KEY FEATURES

- Excellent frictional stability for smooth, jerk-free shifting
- Minimal deposit formation due to high thermal stability and high dispersing properties
- Improved fuel efficiency
- Reliable wear and corrosion protection extends transmission life
- Low-temperature properties protect transmission components during cold starts

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

Aisin: TF60SN (09G); TR-80SD (0C8); TF80SC (AF40-6); TG81SC (U881E); Bentley: PY112995PA; GM DEXRON VI; Jatco: JR710; Shell 3353; 134; M-1375.4; BMW/Mini: 83 22 0 142 516; 83 22 0 397 114; 83 22 2 163 514; 83 22 2 152 426; Chrysler/Dodge/Jeep: 05127382AA; 68043742AA; 68157995AA; Mercedes/Daimler: MB 236.12/14/15/41; 722.6; 722.7; 722.9 (7g-tronic v2/v1); Ford/Lincoln/Mercury: XT-10-QLV [LV]; XT-6-QSP or -DSP [SP]; GM (GMC/Opel/Saturn): AW1; 88863400; 88863401; 5L40; 6F3; 6L80; Honda/Acura: DW-1; Hyundai/Kia: NWS-9638 T-5; 040000C90SG; SP-IV/SPH-IV; A6LF; Jaguar: Fluid 8432; Land Rover: TYK500050; LR0022460; Maserati: 231603; Mazda: FZ; Mitsubishi: ATF-J3; Nissan/Infinity: Matic-S; Porsche: 000 043 304 00; Saab: 93 165 147 - AW-1; Shell 3353; 134; M-1375.4; Toyota/Lexus/Scion: Type WS; VAG (VW/Audi/Seat/Skoda): G 052 533; G 055 005; G 055 540; G 055 162; G 060 162; AQ300 (09S); ZF: 6HP19; 6HP26 (09E); 8HP (0CM)

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Density at 15 °C, g/cm^3	ASTM D4052	0.845
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	6.0
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	28.45
Viscosity index	ASTM D2270	164
CCS dynamic viscosity at -40 °C, mPa*s	ASTM D2983	9640
Flash point in open crucible, °C	ASTM D92	220
Solidification temperature, °C	ASTM D97	–50

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF CVTF MULTI

DESCRIPTION AND APPLICATION

ROLF CVTF MULTI is a fully synthetic transmission fluid for continuously variable transmissions (CVT) which provides integrated protection against premature wear of parts of the hydraulic control unit and the V-belt or V-chain drive mechanism.

It has high resistance to oxidation, providing stable oil viscosity under conditions of high contact loads and temperatures. For continuously variable automatic transmissions (CVT) of European, American and Asian automobiles.

KEY FEATURES

- Excellent frictional stability for smooth, jerk-free shifting
- Minimal deposit formation due to high thermal stability and high dispersing properties
- Improved fuel efficiency
- Reliable wear and corrosion protection extends transmission life
- Low-temperature properties protect transmission components during cold starts

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

Aisin: k111; BMW/Mini EZL 799; 83 22 0 136 376; 83 22 0 429 154; 83 22 0 429 154; Dodge/Chrysler/Jeep/Mopar NS-2; CVT+4; GM: Dex-CVT (VT40; VT20E; VT25E); VT20E; VT25E; Honda HMMF (without starting clutch); HCF2; Z-1 (CVT model, without starting clutch, not SFU for 2001-2007 Honda Fit & Jazz); Hyundai/Kia CVT-J1; SP III (CVT model); Jatco: JF011E (RE0F10A); JF016E (RE0F10F); JF015E (RE0F11A); Mazda JWS 3320; MB: 722.8; Mitsubishi CVTF-J1 (MMC DiaQueen CVT Fluid J1); CVTF-J4 and -J4+ (MMC DiaQueen CVT Fluid J4 and J4+); (DiaQueen) SP-III (CVT model only); Nissan NS-2, 3; Subaru iCVT; iCVT FG; ECVT; Lineartronic chain CVT and CVT II Fluid; Suzuki CVTF TC; CVTF 3320; NS-2; CVT Green 1 & 2; Toyota CVTF TC; CVTF FE; VAG (VW, Audi, Seat, Skoda) G 052 516; G 052 180; Audi Multitronic (01J)

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Density at 15 °C, g/cm^3	ASTM D4052	0.845
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	7.0
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	32.16
Viscosity index	ASTM D2270	188
CCS dynamic viscosity at -40 °C, mPa*s	ASTM D2983	8300
Flash point in open crucible, °C	ASTM D92	217
Solidification temperature, °C	ASTM D97	–49

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF DSG/DCT

DESCRIPTION AND APPLICATION

ROLF DSG/DCT is a high quality synthetic gear oil for service maintenance of pre-selective gearboxes with double “dry” and “wet” clutch, for which the manufacturer recommends viscosity grade SAE 75W. It contains a special package of additives that provide excellent compatibility with specific materials of synchronizers and “wet” clutches, guarantees fast and clear gear shifting.

The oil was das designed for use in pre-selective gearboxes with double “dry” and “wet” clutch (DCT/DSG) in accordance with the recommendations of the car manufacturer.

KEY FEATURES

- Excellent thermal and oxidative stability
- Reliable wear protection under various operating conditions
- Improved fuel efficiency
- Excellent resistance to high contact pressures
- High shear stability for consistent viscosity over the entire service life

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

Aisin: k111; BMW Drivelogic 7-speed (Getrag)/ DCTF-1, DCTF-1+, DCTF-2, 6-speed DCT; 83 22 2 167 666/MTF-LT-5; BORG WARNER; BUGATTI VEYRON; BYD DCTs, Q/BYD-A1909.0058-2013 Castrol BOT 341, BOT 351 C4, BOT 450; Changan DCTF; Chrysler 68044345 EA & GA; Powershift 6-speed (Getrag); Eaton PS-278; Ferrari 7-speed (Getrag)/TF DCT-3; FIAT 9.55550-HE2, 9.55550-MZ6; Ford/Nissan Powershift 6-speed (GFT)/ WSS-M2C936-A, 1490763/1490761; WSS-M2C200-D2/XT-11-QDC, WSS-M2C218-A1; Ford F-DC, KU7J M2C218AA; Geely 7-speed; Great Wall DCT; Mitsubishi TC-SST 6-speed (GFT)/ MZ320065 Dia Queen SSTF-1; Peugeot/Citroen DCS 6-speed (GFT)/9734.S2; Porsche DCT Transmission Oil for ZF (PDK); 999.917.080.00; 999.917.080.01; Renault EDC 6-speed (Getrag), EDC-7, DC4, DW5, DW6; Shell TF DCT-F3; Volvo Powershift 6-speed (GFT)/1161838/1161839; VAG (VW, Audi, Seat, Skoda) G 052 182, G 052 536, G 055 536, G 052 512, G 052 529, G 055 529; DSG 6-speed, 7-speed, S-Tronic, DQ200 (DSG7, 0AM/0CW); DQ250 (02E); DQ381 (DSG7,0GC); DQ500 (0BH, 0BT); DL501 (0B5); DQ400 (DSG6, 0DD)

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Density at 15 °C, g/cm^3	ASTM D4052	0.844
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	6.89
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	33.50
Viscosity index	ASTM D2270	172
CCS dynamic viscosity at -40 °C, mPa*s	ASTM D2983	11300
Flash point in open crucible, °C	ASTM D92	212
Solidification temperature, °C	ASTM D97	–49

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF Lubricants GmbH

TRANSMISSION OILS FOR MANUAL TRANSMISSION

ROLF TRANSMISSION 75W-90 GL-4

DESCRIPTION AND APPLICATION

High-quality semi-synthetic multigrade transmission oil ROLF TRANSMISSION 75 W 90 GL 4 is produced on the basis of a high quality base composition of synthetic and mineral oils with the use of a highly effective additive package that provides a high viscosity index, due to which the excellent low-temperature properties of the oil ensure smooth gear shifting at the lowest temperatures.

The use of synthetic components also gives the oil excellent thermal-oxidative stability, ROLF Transmission 75 W 90 GL 4 semi-synthetic gear oil is designed for manual gearboxes, differentials and transfer cases of passenger cars and trucks, where gear oils of API GL 4 level are required.

KEY FEATURES

- Possesses excellent anti-seize properties, provides protection of friction pairs in heavily loaded units
- Provides smooth gear shifting
- Guarantees stability of properties over the entire application time interval
- Features high heat capacity and stable viscosity at large temperature differences
- Excellent low-temperature properties of the oil provide protection of transmission units at the moment of cold engine start

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API GL-4

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	75W-90
Density at 15 °C, g/cm^3	ASTM D4052	0.871
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	17.15
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	102.4
Viscosity index	ASTM D2270	213
Brookfield viscosity at -40 °C, mPa*c	ASTM D2983	64200
Flash point in open crucible, °C	ASTM D92	218
Solidification temperature, °C	ASTM D97	–45

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF TRANSMISSION 80W-90 GL-5

DESCRIPTION AND APPLICATION

ROLF TRANSMISSION 80W-90 GL-5 is a mineral gear oil with high performance characteristics. Thanks to the use of modern high-performance additive package it has unsurpassed anti-seize and anti-wear properties, excellent thermal stability and resistance to oxidation, excellent antifoaming and anti-corrosion characteristics, good low-temperature fluidity, as well as excellent lubricity, providing a stable oil film on the transmission parts and preventing wear of rubbing surfaces.

ROLF TRANSMISSION 80W-90 GL-5 is designed for heavily loaded hypoid gears of passenger and commercial vehicles and is intended for modern mechanical transmissions: main gears of driving axles, hub gears, wheel reducers, transfer boxes, as well as other units and assemblies that require the use of gear oil of API GL-5 performance class. Oils of API GL-5 level are not intended for manual transmissions with synchronizers made of non-ferrous metal alloys.

KEY FEATURES

- Highly resistant to extrusion, excellent antifoam and anti-corrosion properties
- Provides extended replacement intervals and reliable operation of transmission units due to excellent antioxidant and anti-wear properties
- Improves the operation of steel gearbox synchronizers and increases the clarity of gear engagement
- Provides reliable wear protection in low temperature conditions

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

API GL-5; MAN 342 M-2; Scania STO 1:0;
ZF TE-ML 05A, 07A, 08, 12E, 16B/C/D, 17B, 19B, 21A, 24A

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Viscosity class	SAE	80W-90
Density at 15 °C, g/cm^3	ASTM D4052	0.893
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	14.7
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	148
Viscosity index	ASTM D2270	101
Brookfield viscosity at -40 °C, mPa*c	ASTM D2983	101100
Flash point in open crucible, °C	ASTM D92	232
Solidification temperature, °C	ASTM D97	–30

The presented properties are typical for manufactured products at the time of preparation of the material.
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ROLF TRANSMISSION 75W-90 GL-4/GL-5

DESCRIPTION AND APPLICATION

ROLF TRANSMISSION 75W-90 GL-4/GL-5 is a universal gear oil with outstanding performance characteristics. Thanks to the use of synthetic base oils it has a high viscosity index, excellent thermal and antioxidant stability, excellent low-temperature characteristics. Advanced additive package, containing effective antioxidant, anti-wear, detergent and anti-foam additives, provides stable operation and increased life of components and units of the transmission.

ROLF TRANSMISSION 75W-90 GL-4/GL-5 is used for synchronized and non-synchronized gearboxes, differentials, final drives, power take-off gearboxes, planetary gears, operating in conditions of high temperatures, high speeds and shock loads, as well as low speeds and extremely high torques, including hypoid gears with large axle displacement.

KEY FEATURES

- Fully compatible with non-ferrous alloy parts
- Uninterrupted transmission operation under heavy loads
- Efficient lubrication at low temperatures
- Optimal choice for mixed fleets due to the possibility of using the same oil in different transmission units
- Fully compatible with the seals used

PACKAGING TYPES

ДОПУСКИ И СООТВЕТСТВИЯ

API GL-4/GL-5; MAN 342 M2; Scania STO 1:0;
ZF TE-ML 04G, 07A, 08, 24A; DAF & IVECO

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Viscosity class	SAE	75W-90
Density at 15 °C, g/cm^3	ASTM D4052	0.846
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	14.95
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	90.68
Viscosity index	ASTM D2270	174
Brookfield viscosity at -40 °C, mPa*c	ASTM D2983	92 600
Flash point in open crucible, °C	ASTM D92	227
Solidification temperature, °C	ASTM D97	–43

The presented properties are typical for manufactured products at the time of preparation of the material.
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ROLF Lubricants GmbH

COOLING LIQUIDS

ROLF ANTIFREEZE G11 GREEN

DESCRIPTION AND APPLICATION

High-quality antifreeze ROLF ANTIFREEZE G11 GREEN is based on monoethylene glycol and a highly effective additive package, which provides maximum protection against freezing and boiling in a wide temperature range. The additives form a silicate layer on the surface of structural metal, which allows effective protection of the cooling system from corrosion and rusting.

ROLF ANTIFREEZE G11 GREEN is used for cooling systems of internal combustion engines and as a working fluid in other heat exchangers operating at low and moderate temperatures, where the use of antifreeze class G11 is required.

KEY FEATURES

- Prevents scale and deposit formation
- Meets the requirements of Volkswagen performance class G11 (TL 774-C)
- Can be used as a working fluid in heat exchangers where coolants of the appropriate property level are recommended
- Suitable for high-speed and thermally stressed engines

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

AS 2108-2004; ASTM D 3306; ASTM D 4985; BS6580:2010; CUNA NC 956-16; AFNOR NFR 15-601; JIS K 2234:2206; PN-C 40007:2000; SAE J1034; ÖNORM V 5123; SANS; 1251:2005 and China GB 29743-2013; Alfa Romeo (< 2005); Bentley (<2005); BMW (BMW LC-87); Briliance (Zhonghua); Ferrari (< 2009); Fiat (< 2005); Ford (<1997); Jaguar (<1999); Jinbei (Briliance); Lada; Lancia (<2005); Land Rover (< 2005); Lotus (<1999); Mini (BMW LC-87); Mitsubishi Carisma (<2004); Mitsubishi Colt; (< 2007); Opel (B 040 0240); Porsche (< 1995); Qoros; Rolls-Royce (BMW LC-87); Saab (690 1599); Smart (MB 325.0); Tesla (> 2013); Volkswagen/Audi/Seat/Skoda VW G11 (TL 774-C); UzDaewoo; MB 325.0/DTFR 29C100; Chrysler MS-7170; BMW GS 94000; BMW N 600 69.0; GM L1301; MTU MTL 5048; MAN 324 TYP NF; Deutz DQC CA-14; DFS 93K217 ELC; Volvo Trucks (TR 1286083); MWM (TR 2091)

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

PERFORMANCE	TEST METHODS	ACTUAL PERFORMANCE
Color	Visually	Green
Density at 20 °C, g/cm^3	ASTM D1122	1.070
Boiling point, °C	ASTM D1120	110
Hydrogen rating, (pH)	ASTM D1287	7.91
Alkalinity, cm^3	ASTM 1121	13.39
Crystallization onset temperature, °C	ASTM D1177	-40

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF ANTIFREEZE G12+ RED

DESCRIPTION AND APPLICATION

ROLF ANTIFREEZE G12+ red carboxylate antifreeze is formulated with the latest organic additive technology to effectively inhibit corrosion. It does not contain nitrites, nitrates, amines, phosphates, borates and silicates. Antifreeze ROLF ANTIFREEZE G12+ red perfectly protects against the formation of deposits in cooling channels, in the engine compartment, in the radiator and pump. It has no adverse effect on rubber and plastic parts of the cooling system.

ROLF ANTIFREEZE G12+ red is used in cars, trucks and other vehicles of domestic and foreign production, operating in severe conditions, which require coolants according to the list of specifications and approvals.

KEY FEATURES

- Prevents formation of scale and deposits
- Meets the requirements of Volkswagen performance class G12+ (TL 774-F)
- Can be used as a working fluid in heat exchangers, where the use of coolants of the appropriate level of properties is recommended

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

AS 2108-2004; ASTM D 3306; ASTM D 4985; BS6580:2010; CUNA NC 956-16; AFNOR NFR 15-601; JIS K 2234:2206; PN-C 40007:2000; SAE J1034; ÖNORM V 5123; SANS 1251:2005 and China GB 29743-2013; Alfa Romeo (> 2006); Bentley (TL 774-D/F); Besturn (FAW); Changan; Chevrolet (> 2001); Chrysler (> 2011); Citroen (> 1993); Dacia (> 2005); Daihatsu (> 1979); Dodge (> 2011); FAW; Fengshen (DongFeng); Ferrari (> 2010); Fiat (> 2005); Ford (> 1998); Honda (> 1983); Hyundai (> 1982); Jaguar (> 1999); Jeep (> 2011); KIA (> 1991); Lamborghini (TL 774-D/F); Lancia (> 2005); Land Rover (> 1998); Lexus (> 1994); Lotus (> 2000); Mazda (> 1977); MAN Truck and Bus (MAN 324 SNF); Mercedes-Benz (MB 325.3); Mercedes-Benz (MB 326.3 (Ready Mix)); Mini (BMW LC-07); Mitsubishi (> 1982); Nissan (> 1982); Peugeot (> 1993); Porsche (TL 774-D/F); Renault (>1995); Rover (> 1982); Saab (> 2001); Smart (> 11/2014); Subaru (> 1977); Suzuki (> 1981); Tianjin (FAW); Toyota (> 1978); Vauxhall (> 2001); Volkswagen/Audi/Seat/Skoda VW G12/G12+ (TL 774-D/F); MB 325.3/DTFR 29C110; MAN 324 SNF; MAT 74002; DFS 93K217 ELC; MTL 5048

ACTUAL PERFORMANCE		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Color	Visually	Red
Density at 20 °C, g/cm^3	ASTM D1122	1.074
Boiling point, °C	ASTM D1120	110
Hydrogen rating, (pH)	ASTM 1121	7.81
Alkalinity, cm^3	ASTM D1287	5.89
Crystallization onset temperature, °C	ASTM D1177	-40

The presented properties are typical for manufactured products at the time of preparation of the material.
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ROLF ANTIFREEZE G12++ VIOLET

DESCRIPTION AND APPLICATION

ROLF ANTIFREEZE G12++ violet is a new generation premium quality ready-to-use coolant. It is produced on the basis of ethylene glycol and additive package containing silicates and organic corrosion inhibitors (Si-OAT). It combines the advantages of organic and silicate technology: excellent corrosion protection and long service life. It contains no nitrites, amines, phosphates or borates.

The liquid effectively protects the engine from corrosion, overheating and freezing damage. It does not form deposits in cooling system components: channels in the block and cylinder head, radiator, water pump and heater core. It does not adversely affect rubber and plastic parts of the cooling system.

ROLF ANTIFREEZE G12++ violet is designed for use in cooling systems of modern heavy-duty diesel engines of commercial vehicles, buses, off-road vehicles, operated all-season. Perfectly protects engines with both cast iron and aluminum blocks.

KEY FEATURES

KEY FEATURES

- Most fully realizes its advantages in engines with aluminum blocks
- Provides a high level of corrosion protection for engine parts such as the cooling system radiator, cylinder block and head and water pump
- Prevents the formation of scale and deposits
- Meets the requirements of Volkswagen performance class G12++ (TL 774-G)
- Can be used as a working fluid in heat exchangers where coolants are recommended

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

AS 2108-2004; ASTM D 3306; ASTM D 4985; BS6580:2010; CUNA NC 956-16; AFNOR NFR 15-601; JIS K 2234:2206; PN-C 40007:2000; SAE J1034; ÖNORM V 5123; SANS 1251:2005 and China GB 29743-2013; Bentley (TL 774-G); Bugatti (TL 774-G); Deutz (DQC CC-14); FIAT (GAC); Huansu (BAIC); Infiniti; Lamborghini (TL 774-G); MTU (MTL 5048); Porsche (TL 774-G); Weiwang (BAIC); BMW LC-18; Deutz (DQC CC-14); Volkswagen/Audi/Seat/Skoda VW G12++ (TL 774-G); MTL 5048; MAN 324 Type Si-OAT; MB 325.5/DTFR 29C120; LH-01-COL3A

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Color	Visually	Violet
Density at 20 °C, g/cm^3	ASTM D1122	1.074
Boiling point, °C	ASTM D1120	110
Hydrogen rating, (pH)	ASTM D1287	8.2
Alkalinity, cm^3	ASTM 1121	7.5
Crystallization onset temperature, °C	ASTM D1177	-40

The presented properties are typical for manufactured products at the time of preparation of the material.
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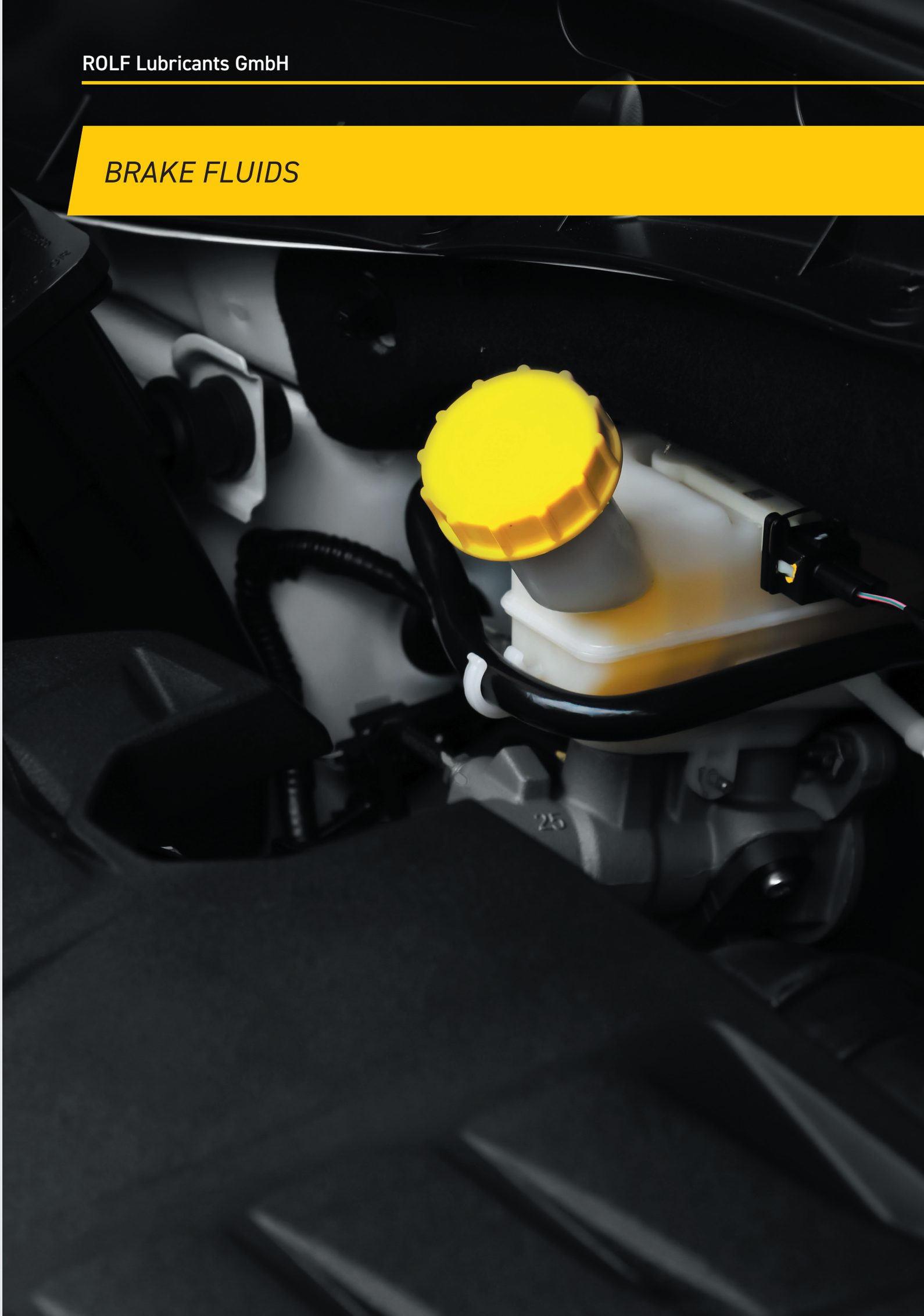
ROLF Lubricants GmbH

BRAKE FLUIDS



ROLF BRAKE & CLUTCH FLUID DOT-4

DESCRIPTION AND APPLICATION

Rolf Brake & Clutch Fluid DOT-4 is a synthetic brake fluid based on polyglycol ethers containing corrosion and oxidation inhibitors. High boiling point and improved low-temperature characteristics ensure correct operation of the braking system and maintain the performance of the ABS system during the life of the fluid. It does not adversely affect brake system parts. And it does not mix with silicone (DOT 5.0) and mineral (LHM type) fluids. The liquid remains neutral to rubber and polymeric materials.

It is used in hydraulic drives of brake systems and clutches of domestic and imported cars, where fluids complying with DOT 4/ DOT 3 standards are recommended. The liquid must be used in accordance with car manufacturers' instructions.

KEY FEATURES

- Excellent protection against vapor lock
- Excellent flowability at low temperatures
- Excellent compatibility with elastomers
- Promotes very good lubrication of all moving parts of the brake circuit
- Mixable and compatible with all high quality brake fluids DOT 4, DOT 3 classes

PACKAGING TYPES

SPECIFICATIONS AND APPROVALS

FMVSS 116 DOT 4; ISO 4925; SAE J1704

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	1.9
Kinematic viscosity at 40 °C, mm^2/s	ASTM D445	569
Dry fluid boiling point, °C	п.11.3	267
Wetted fluid boiling point, °C	п.11.4	185
Hydrogen rating, (pH)	п.11.6	7.6

The presented properties are typical for manufactured products at the time of preparation of the material.
Due to ongoing research and development, the information contained in the document is subject to change.

ROLF BRAKE & CLUTCH FLUID DOT-4 CLASS 6

DESCRIPTION AND APPLICATION

Rolf Brake & Clutch Fluid DOT-4 CLASS 6 is a low-viscosity synthetic brake fluid based on polyglycols and esters containing corrosion and oxidation inhibitors with improved performance properties. High boiling point and improved low-temperature characteristics ensure correct operation of the braking system and maintain the performance of the ABS system during the life of the fluid. The liquid does not adversely affect brake system parts. It remains neutral to rubber and polymer materials.

It can be used in various vehicles where high efficiency and reliability of the hydraulic brake system is required in vehicles equipped with anti-lock braking system (ABS), electronic stability programs (ESP), traction control system (TCS), automatic stability control systems (ASC). The liquid must be used in accordance with car manufacturers' instructions.

KEY FEATURES

- High temperature stability
- Maintaining its working properties even at high temperatures, which prevents vaporization and boiling of the fluid in the brake system
- Excellent fluidity at low temperatures
- Excellent compatibility with elastomers
- Very good lubrication of all moving parts of the brake actuator circuit
- Low compressibility, which allows effective pressure transmission to the brake elements without loss of energy

SPECIFICATIONS AND APPROVALS

FMVSS 116 DOT 4; ISO 4925 CLASS 6; SAE J1704

PACKAGING TYPES

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS		
PERFORMANCE	**TEST METHODS**	**ACTUAL PERFORMANCE**
Kinematic viscosity at 100 °C, mm^2/s	ASTM D445	1.9
Kinematic viscosity at 40 °C, mm^2 /s	ASTM D445	569
Dry fluid boiling point, °C	п.11.3	267
Wetted fluid boiling point, °C	п.11.4	185
Hydrogen rating, (pH)	п.11.6	7.6

The presented properties are typical for manufactured products at the time of preparation of the material.
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