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ENGINE OIL

5W30 SN/CF FULL SYNTHETIC

Full synthetic motor oil and has been formulated with high-quality synthetic base oils and advanced additive technology. In all weather and road conditions, provides unique engine protection with high viscosity index. Satisfies all the requirements of gasoline, diesel and LPG passenger cars and vans. Shows excellent performance in all seasons.
PERFORMANCE LEVELS: API SN/CI-4+ -ACEA A3- 99,B3-98 ISSUE 2- Daimler/Chrysler 229.1- Volkswagen 500.00/505.00 (1/97)

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
9,3 – 12,6	140	200	-33

5W40 SN/CF FULL SYNTHETIC

Full synthetic motor oil developed by formulation of superior quality synthetic additives and base oils. It is produced especially for the requirements of modern cars generating high power. It keeps the engine clean by reducing deposit and ash formation, It prevents the pressure losses and prolongs the engine's lifetime. It provides economization by decreasing the oil and fuel consumption. It can be used in all vehicles with naturally aspirated and turbo-charged motors as well as vehicles with the latest technology catalytic converters.
PERFORMANCE LEVELS: API SN/CI-4+ – ACEA A3/B3, A3/B4- VW 502.00/505.00- BMW Longlife 98 -MB 229.3

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
12,5 - 16,3	150	200	-33

10W40 CI-4 SEMI SYNTHETIC

Low viscosity and high stability semi synthetic motor oil especially formulated to meet the high requirements of modern passenger car motors operating under different running conditions. Due to excellent lubrication feature it protects all equipments of the motor, reduces the for mation of sludge and deposit therefore decreases maitenance costs by extending oil change intervals. In addition, it perfectly meets the needs of high speed and heavy load vehicles, working in extreme conditions such as long road terms and stop and go intense city traffic use.
PERFORMANCE LEVELS: API SL/CF -ACEA A3/B4-VW

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
12,5 – 16,3	150	200	-27

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ENGINE OIL

15W40 CF-4 MINERAL

Produced by high-quality mineral base oils with high-performance additives.It can be used in high-speed motors. Especially suitable for passenger cars and stop-start type of commercial passenger vehicles motor oil.
PERFORMANCE LEVELS: API SL/CF

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
12,5 – 16,3	125	200	-24

20W50 SL/CF MINERAL

It is an all year motor oil for all types of modern and old vehicles operating under different running conditions. It keeps the oil system clean, creates better engine compression with less deposits and decreases fuel consumption. It is suitable for use in all types of motors including turbo chargers and catalytic converters.
PERFORMANCE LEVELS: API SL/CF -ACEA A3/B3-VW 505.00-MB 229

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
16,3 – 21,9	120	200	-21

20W50 CD/SF MINERAL

It is an all year motor oil for all types of modern and old vehicles operating under different running conditions. It keeps the oil system clean, creates better engine compression with less deposits and decreases fuel consumption. It is suitable for use in all types of motors including turbo chargers and catalytic converters.
PERFORMANCE LEVELS: API SL/CF -ACEA A3/B3-VW 505.00-MB 229

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
16,3 – 21,9	120	200	-21

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MOTORCYCLE OIL

2T TC MOTORCYLE

Motocycle oil produced with combination of base oils and special additives developed for the demand of two stroke engines with seperate or oil in gasoline lubrication.
PERFORMANCE LEVELS: API TC

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
8,6	98	200	-19

4T 15W40 MOTORCYLE

It is a mineral-based oil formulated with base oil which is obtained with modern rafinal operations, and high quality additives for four-stroke engines. It shows maximum performance with high viscosity index in wide temperature ranges. It provides comfort during first study.It keeps the engine clean for a long time., It can be used in four seasons in all gasoline vehicles and light diesel engines.
PERFORMANCE LEVELS: API SL/CF-ACEA A3-02-ACEA B3-98 ISSUE 2-Daimler/Chrysler MB 229.1-BMW Long Life 98

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
12,5 - 16,3	125	195	-24

4T 20W40 MOTORCYCLE

It is formulated with selected base oils and ultimate additive technology for four stroke motorcycles engines. It provides high protection against thermal pressure. It contains superior lubricity and detergent additives providing effective protection against, corrosion, rust and oxidation.
PERFORMANCE LEVELS: API SL-JASO MA

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
16,3 – 21,9	125	195	-21

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GEAR AND TRANSMISSION OIL

80W90 GL-5 SEMI SYNTHETIC

Multi-functional gear oil formulated with tle latest technology additives and base oil to meet the lubrication and performance requirements of front-rear differentials, transfer boxes, transaxles, manual transmissions, oil lubricated wheel bearings and steering gear boxes. It is recommended for passenger cars, light or heavy construction equipments and industrial machinery operating under high speed/shock load, low speed/high torque. It is suitable for four season use and also it performs extreme resistance against oxidation. Its sheer stable structure and extreme pressure (EP) feature creates a thick film layer against wear formation, prolongs equipment life.
PERFORMANCE LEVELS: API GL-5- MT-1 - Scania STO:1

SAE NO	Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
80W/90	13,5 – 24	160	200	-20

90W GL-1 MINERAL

It is mineral gear oil that contains extreme pressure additives. It is produced for transmission, differential and gear boxes that are exposed to excessive load while working under average torque, high speed conditions. With its rust, oxidation and corrosion protective properties makes the years remain clean and prolongs the equipment life.
PERFORMANCE LEVELS: API GL-4- MIL-L-2105

SAE NO	Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
90	13,5 – 24	100	200	-10
140	24 – 41	100	200	-5

140W GL-1 MINERAL

It is mineral gear oil that contains extreme pressure additives. It is produced for transmission, differential and gear boxes that are exposed to excessive load while working under average torque, high speed conditions. With its rust, oxidation and corrosion protective properties makes the years remain clean and prolongs the equipment life.
PERFORMANCE LEVELS: API GL-4- MIL-L-2105

SAE NO	Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
90	13,5 – 24	100	200	-10
140	24 – 41	100	200	-5

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GEAR AND TRANSMISSION OIL

ATF DEXRON II

It is combination of excellent base oils with special additives which provide thermal and oxidation stability, rust, corrosion and wear protection. By its thermal stability feature it minimizes the friction caused by operating in different weather conditions, so it ensures smooth and quiet operation at all speeds and also prevents shudder. By forming a protective oil layer, it ensures an excellent lubrication which results in longer transmission life and high performance during all year long.
PERFORMANCE LEVELS: MAN 339 Z1+V1, MB 236.9, Volvo STD 1273.41 (97341)

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
7,4	160	180	-39

ATF DEXRON III

Multipurpose power transmission fluid produced for light & heavy passenger & commercial vehicles' steering wheels, some of the manual transmissions and hydraulic systems. It protects automatic transmissions against the formation of varnish, sludge, foam and harmful deposits. With its high viscosity index, it shows full performance while maintaining its fluidity in low temperatures and its lubrication ability in high temperatures. Due to its contents of rust, corrosion and oxidation inhibiting additives, it extends the equipment life in automatic transmission system.
PERFORMANCE LEVELS: MAN 339 Z1+V1 - MB 236.9. Volvo STD 1273.41 (97341)

Kinematic Viscosity 100°C (cSt)	Viscosity Indeks (min)	Flash Point (min)(°C)	Pour Point (max) (°C)
7,3	160	180	-42

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ENGINE OIL CLASSIFICATIONS (API)

Oils have been classified according to performances by American Petroleum Institute (API) in 1960. Accordingly, motor oils have been divided into two groups as gasoline engines "S" and diesel engines "C". According to developed engine technology, each group has been classified as A, B, C and etc. letters.

Gasoline Engine Oil API Quality Classification

API Service Class	Definition
SA	Pure mineral oil. Recommended for older engnes, which are working with additive-free oil.
SB	Detergent additive-free oil, contains a small amount of oil additive that prevents oxidation and bearing corrosion. When suggest by the car manufacturer, should be used.
SC	Designed for the requirements of 1964-1967 model vehicles. Prevents rust, oxidation, corrosion and abrasion. Provides deposit control.
SD	Designed for the requirements of 1968-1970 model vehicles. More superior than SC, prevents abrasion, oxidation, rust and corrosion. Provides better deposit control and resistants than SC.
SE	Designed fort he requirements of 1971-1979 model vehicles. More superior than SD, prevents abrasion, oxidation, rust and corrosion. Provides better deposit control than SD.
SF	In 1980, passed the American automobile manufacturers warranty tests. More superior than SE, Prevents abrasion, oxidation rust and corrosion. Provides deposit control than SE.
SG	In 1989, passed the American automobile manufacturers warranty tests. More superior than SF. Prevents abrasion, oxidation rust and corrosion. Provides deposit control than SF. Meets the CC diesel engine oil category of API. In this category oils are used, when recommended by API SE, SF, SF/CC and SE/CC category engines.
SH	In 1994, passed the American automobile manufacturers warranty tests. In addition to the SG's performance; test and production is made appropriate according to CMA (Chemical Manufacturers Association) product approval code.
SJ	Designed for the requirements of 1997 model vehicles. In addition to SH's performance; less volatile, more compliant with catalyst, low temperature properties are higher.
SL	Designed fort he requirements of 2001-2002 model vehicles. Also, it can be used in vehicles that manufactured before. At high temperature, provides better deposit control and low oil consumption.

Diesel Engine Oil API Quality Classification

API Service Class	Definition
CA	Published in 1940; designed for older diesel engines that usually working in mild conditions and use good quality fuel.
CB	In 1949, published for diesel engines requirements that are worked in light and medium conditions. Against abrasion and deposit, provides better protection than CA category.
CD	Published in 1955, it is high abrasion and deposit control category. Developed for diesel engines that are working with high sulfur rate fuel; turbo-supercharged and naturally aspirated. At high temperatures, provides protection against deposit formation and bearing corrosion.
CD II	Responds to the needs of two-stroke diesel engines. Also API CD category is suitable. Rrevised in 1985.
CC	Published in 1961 developed for diesel engines that are worked in light and medium conditions; turbo-supercharged and naturally aspirated. Prevents abrasion, rust and corrosion; makes deposit contro. Passes MIL-L-2104 B and 46152 B tests.
CE	Published in 1983; designed for diesel engines that are working under heavy duty, turbocharged and supercharged, low speed heavy load and high speed heavy load conditions. Provides effective protection than the CD level against abrasion, oil reduction and deposit formation.
CF-4	In addition to performance of CE, provides less deposit formation and oil consumption, in 1990. Designed for diesel engines that are working under heavy duty, turbocharged and supercharged, low speed heavy load and high speed heavy load conditions.
CF	Published in 1994, has been developed for diesel engines that are indirect injection, turbocharged, supercharged and using high-sulfur fuel. Better than CD, shows piston deposit control and prevents bearing corrosion.
CF-2	In addition to the performance requirements of CF, published in 1994, prevents deposit formation better with cylinder and piston ring abrasion in two-stroke diesel engines.
CG-4	It is Heavy Duty Motor Service category which is published in 1994. According to CF-4, provides more piston deposit control and less carbon accumulation. Meets the needs of four-stroke, direct injection, turbocharged, high speed, heavy-duty and used in low sulfur rate fuel of diesel engines that are used in both highway and land.
CH-4	Published on 1 December 1998; meets exhaust emission standards and used in 4 stroke engines. Especially has been developed for high speed and 4 stroke diesel engines, that work maximum 0.5% sulfur content. Meets standardizations of CD, CE, CF-4 and CG-4.
CI-4	Published in 2002, very heavy duty diesel engine oil. Engine oil used in high-speed 4-stroke engines, that meet 2004 exhaust emission standards. High and low temperature stability, piston deposit control, soot control, corro sion control and oil consumption property is more.

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Automotive Gear Oils API Quality Classifications

Class	Definition
GL-1	Under light working conditions, special additive oil for spiral, bevel and worm gear type differential and manual transmissions.
GL-2	Under normal working conditions, special additive oil for worm gear type differential.
GL-3	Under normal working conditions, special additive oil for spiral and bevel gear type differential and manual transmission.
GL-4	Under severe working conditions; involves extreme pressure and other special additives for hypoid gear type transmission and passes MIL-L-2105 specifications.
GL-5	Under severe working conditions; involves additives that meet extreme pressure and impact loads for hypoid gear type transmission and appropriate to MIL-L-2105 D specification.

AUTOMOTIVE GEAR OILS SAE VISCOSITY CLASSIFICATIONS

SAE Viscosity Class		Max. Temperature for 60.000 cP Viscosity (°C)	100 °C Viscosity (cSt)	
Winter	Summer		Min.	Max.
75 W	-	-40	4,1	-
80 W	-	-26	7	-
85 W	-	-12	11	-
-	90	-	13,5	<24
-	140	-	24	<41
-	250	-	41	-

SAE ENGINE OIL VISCOSITY CLASSIFICATIONS

SAE Viscosity Class		At °C Temperature Max. Viscosity (cP)		Max. Pumpable Limit Temperature for 60.000 cP (°C)	100 °C Viscosity (cSt)	
Winter	Summer	cP	°C		Min.	Max.
0 W	-	6200	-35	-40	3, 8	-
5 W	-	6600	-30	-35	3, 8	-
10 W	-	7000	-25	-30	4, 1	-
15 W	-	7000	-20	-25	5, 6	-
20 W	-	9500	-15	-20	5, 6	-
25 W	-	13000	-10	-15	9, 3	-
-	20	-	-	-	5, 6	< 9, 3
-	30	-	-	-	9, 3	< 12, 5
-	40	-	-	-	12, 5	< 16, 3
-	50	-	-	-	16, 3	< 21, 9
-	60	-	-	-	21, 9	< 26, 1