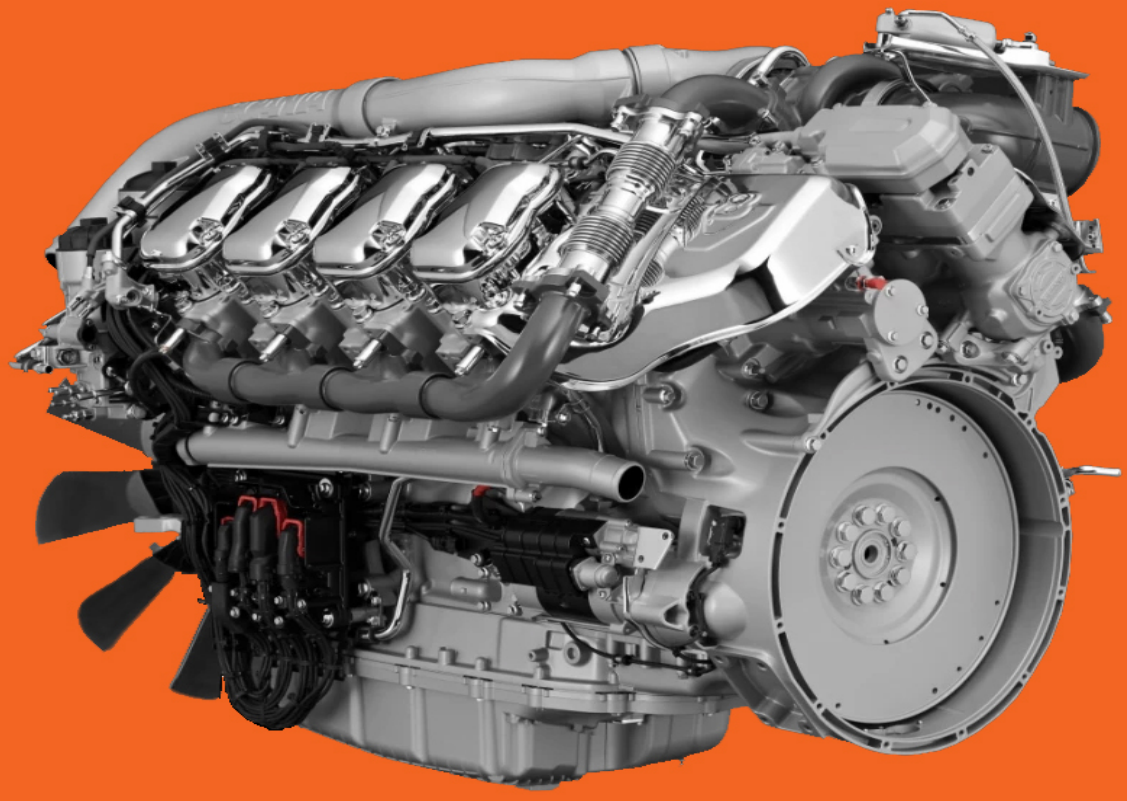
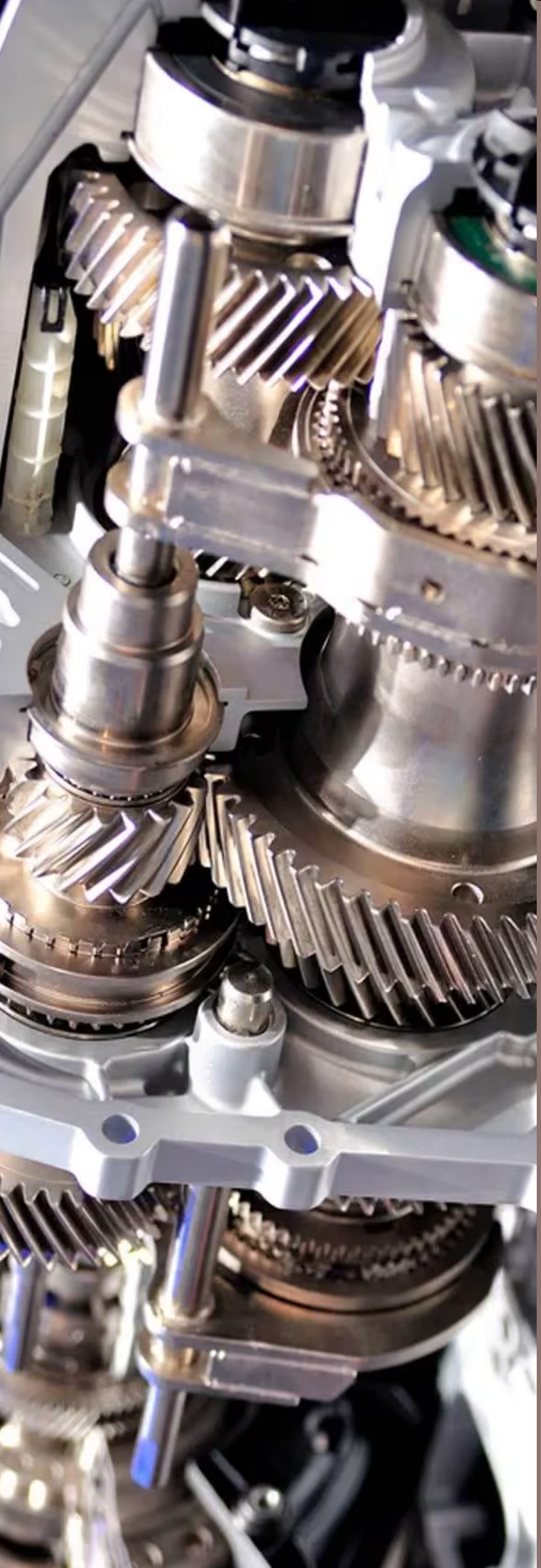
Barsava

پترو پالایش بارثاوا



PRODUCT MANUAL





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Petro Palayesh Barsava at a glance

Barsava lubricants are a premium product and are manufactured in accordance with the global quality standards and formulations for gasoline engines up to API SN quality level and for diesel engines up to CK-4PLUS level in the factory.

Our products are produced and supplied with different quality levels based on consumer demand.

Company goals

Barsava Company started its activities with the aim of achieving domestic self-sufficiency as well as selling and exporting various types of base oils, gasoline and diesel engine oils, industrial oils, gear oils, derivatives and additives, antifreeze and automotive fluids.

Providing products with national and international standards as well as supporting customers with excellent product quality and reasonable prices are among the company's permanent goals.



The most important functions of a quality engine oil

1- Lubrication and friction reduction: The main and most important function of any oil is lubrication and friction reduction, which will improve engine efficiency. The formation of an oil film with the appropriate thickness will reduce the wear of various parts to the minimum possible.

2- Heat transfer: Assisting the cooling system and removing part of the heat generated by engine operation.

3- Preventing rust and corrosion: Protecting the surfaces of metal parts against rust and corrosion due to chemical reactions.

4- Cleaning and suspending: Suspending particles resulting from possible wear of parts and compounds resulting from fuel combustion and oil decomposition and cleaning surfaces in contact.

5- System sealing: Assisting in the engine sealing process by being located in the space between the piston ring and the cylinder, which will increase engine efficiency.

6- Shock absorption: Reducing the negative effects of impacts from moving parts during operation.

7- Reducing fuel consumption: If oil of the appropriate grade is used at the moment of starting, the time it takes for the lubricant to reach the engine parts is reduced, which has a significant effect on reducing fuel consumption.

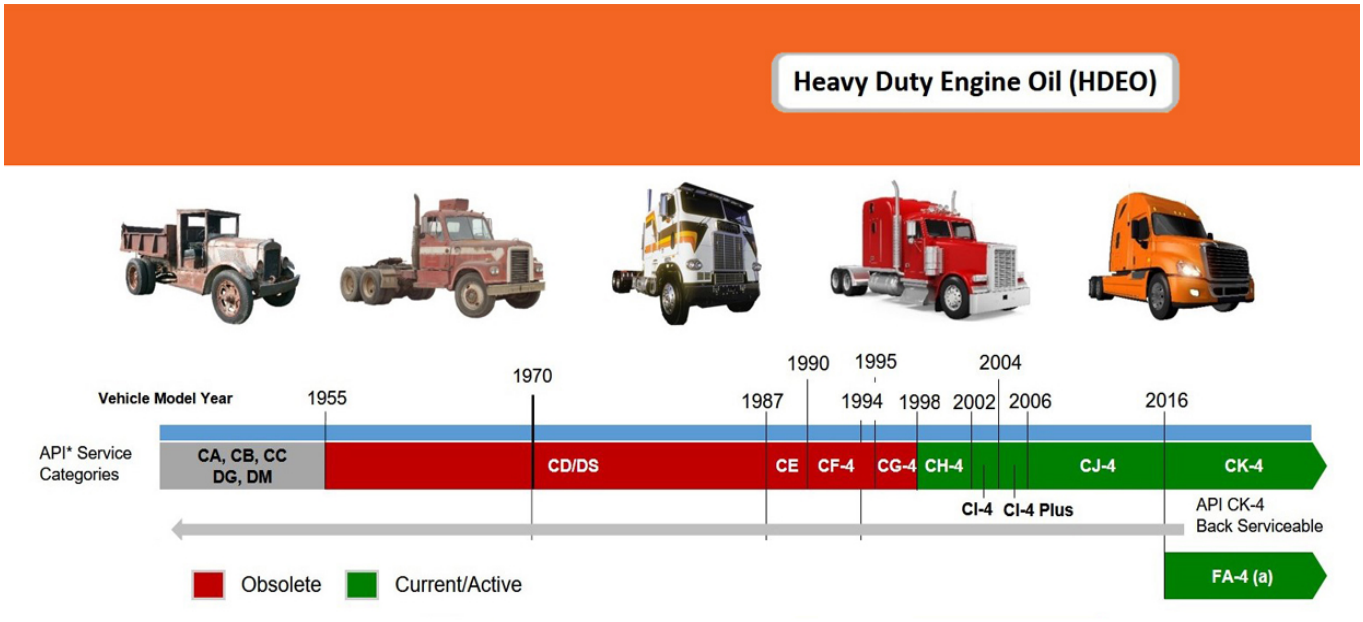
Classification of engine oils

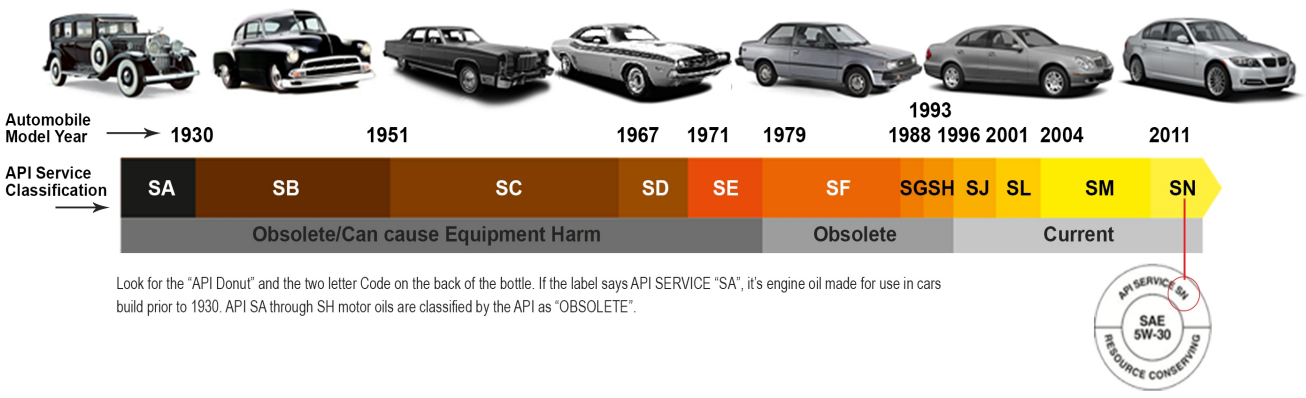
Classification based on SAE viscosity (Society of Automotive Engineers)

The importance of viscosity is so great that the American Society of Automotive Engineers, with the abbreviation SAE, has established a special classification based on the viscosity of engine oils and considers one of the two criteria for selecting engine oils to be the SAE grade, and this method is accepted by all manufacturers and consumers of engine oils worldwide. In terms of viscosity, oils are divided into two general groups: single-grade monograde oils (Mono grade such as Barsava CC.SE oil and multi-grade or four-season Barsava SM.CF4 10W40. Barsava CH4 15W40. Barsava 16000 such as multi-grade automatic oils or 20W50. Multi-grade oils are identified by the letter Winter W, meaning winter, and two numbers located to the left and right of it. Multi-grade oils are suitable for use in all seasons of the year in terms of their functionality. The number on the left, W, is a measure of the oil's viscosity at low temperatures and the number on the right is the viscosity at high temperatures. It has been proven that the most important and significant property of oil is its continuous presence from the moment of starting the engine until it is turned off, in contact with all moving and fixed parts, and in order to achieve this goal, low viscosity of the oil at the moment of starting is of great importance. For this reason, the use of multi-grade oils that have low viscosity in the cold and prevent wear to a large extent by timely lubrication of parts is the first recommendation of oil manufacturers.

Classification based on performance levels

The American Petroleum Institute (API) has classified engine oils based on their quality levels into two groups: gasoline (S) and diesel (C). Gasoline engine oils start with the lowest quality level, SA. Higher quality levels are determined by changing the second letter in the order of the Latin alphabet. Today, the last and highest quality level in this group is SN. Diesel engine oils start with the lowest quality level; CA. Higher quality levels are determined by changing the second letter from A in the order of the Latin alphabet. Today, the last and highest quality level is 4-CK.





In addition to API, other institutions, including the US military with the abbreviation (MIL-L) and car manufacturers in the European Common Market countries with the abbreviation CCMC, which has become ACEA, have introduced different quality levels for the quality classification of engine oils.
To choose a suitable engine oil, refer to the car manual, which specifies the level of performance and viscosity of the engine oil. It is enough for the consumer to visit oil change locations and select engine oil with a similar quality level and viscosity, which is in standard containers and packaging and is produced by a reputable company, to achieve maximum assurance of the optimal functioning of the oil in the engine. In this regard, the car manual is the best guide.

Gasoline engine oils specification table in different levels according to API classification

CATEGORY	STATUS	QUALITY SPECIFICATIONS
SA	Obsolete	For older engines; no performance requirement. It is just base oil, does not have additives or including a little pour point dispersant and anti-foam.
SB	Obsolete, is introduced in	For older engines. Use only when specifically recommended by the manufacturer. Including a little anti-oxidation and anti-wear.
SC	For model year 1964-1967 and older gasoline engines	Including anti-wear and anti-corrosion additives and some detergent to control deposits due to engine working in high and low temperatures
SD	For model year 1968-1970 and older gasoline engines	Is like SC oil, including a bit more additives and anti-rust
SE	For model year 1971-1979 and older gasoline engines	Is like SC and SD, with more detergency and more stability against oxidation, corrosion and rust. Can be used instead of SC and SD.
SF	For model year 1980-1988 and older gasoline engines	Is like SE oil, with more oxidation stability and better anti-wear property than SE.
SG	For model year 1989-1993 and older gasoline engines	Compared with former oils has better anti-oxidation and anti-wear, and has SF additives too, so can be used instead of it.
SH	For model year 1994-1996 and older gasoline engines	Including the SG additives, and has anti-oxidation anti-corrosion and anti-rust properties. This oil is tested by Chemical Association Manufacturers (CMA) about environmental issues.
SJ	According to car manufacturer is suitable for using in model year 1997-2001, and is currently in use.	Is including all the suitable additives for engine oil, this oil is tested by American Chemistry Council (ACC) and has high quality level.
SL	According to car manufacturer is suitable for using in model year 2002 - 2004, and is currently in use	Is including all the suitable additives for engine oil like SJ, has higher quality level than SJ and can be used wherever SJ and lower levels are recommended. This oil environmentally has good condition.
SM	Is recommended for the newest gasoline engines model year 2005 and over	Is including all the suitable additives for engine oil like SL. As this oil has all the additives of SL and SJ levels, so can be used wherever using of SL and SJ are recommended.
SN	Is the newest quality level introduced by API, is recommended for use in the newest gasoline engines	Includes the most complete additive package. It is the newest quality level introduced by API which has not applied publicly yet in many countries. As this oil has all the additives of SM, so can be used wherever using of SM are recommended.



Diesel engine oils specification table in different levels according to API classification

Quality Level	Time Range	Quality Specification
CA	Currently obsolete (1940-1950 AD)	It is used in light non-supercharged diesel engines under normal operating conditions. The fuel for these engines contains low levels of sulfur and is considered a relatively high-quality fuel. Oil with this level of quality prevents bearing corrosion and the formation of deposits in the body. Currently, this oil is not used unless recommended by the manufacturer.
CB	Recommended for use in diesel engines built in the 1950s and 1960s and is now obsolete.	It is used in diesel engines with moderate operating conditions where the fuel is not of good quality. Oil with this level of quality protects the engine from wear and deposit formation. The fuel of engines using this oil contains more sulfur than engines using CA oil.
CC	Suitable for use in diesel engines manufactured in 1961 and is now obsolete.	This oil can be used in conventional turbocharged and supercharged diesel engines operating under normal to moderate to severe conditions. Oil with this quality level prevents the formation of deposits in diesel engines at high temperatures and also protects bearings against rust and corrosion. CC oils are also used in some gasoline engines operating under severe operating conditions. Currently, these oils are not used unless recommended by the engine manufacturer.
CD	Suitable for use in diesel engines manufactured in 1955 and is now obsolete.	Contains anti-corrosion, anti-wear and detergent additives. Used in conventional turbocharged and supercharged diesel engines operating under severe conditions and containing fuels with a high sulfur content. This level of oil quality protects bearings from corrosion at high temperatures and also prevents the formation of deposits.
CD-II	Recommended for use in two-stroke diesel engines designed in 1987 and is now obsolete.	Recommended for use in two-stroke diesel engines designed in 1987 and is now obsolete.

CE	Recommended for use in supercharged and turbocharged diesel engines in 1987.	This quality level is used in turbocharged and supercharged diesel engines operating under high load conditions at low or high speeds. In terms of controlling oil consumption, controlling oxidation and deposits on the piston, as well as cylinder wear, the use of these oils is very suitable in modern, high-efficiency engines. All engine tests related to the CD quality level, as well as the Cummins (NTC400) and Mack EO-K 2. engine tests have been performed on this oil.
CF	It was introduced for use in diesel engines built in 1974 and is still in use today.	Single grade engine oil is suitable for heavy duty supercharged, turbocharged or conventional diesel engines. It is used in diesel engines that use fuels of different quality, for example, more than 0.5% sulfur. This quality level of oil effectively controls piston deposits, wear and corrosion of copper bearings. This quality level can also be used instead of CD and CE oils.
CF-2	It was introduced for use in two-stroke diesel engines in 1994 and can replace the CD-II quality level.	This quality level is used to control the number of deposits and scratches in the cylinder. This oil can also be used instead of oil with quality level -2-CD, but if it is necessary to use this oil instead of levels CF and 4-CF, the relevant engine tests must be passed.
CF-4	It was introduced in 1990 for use in high-performance turbocharged four-stroke diesel engines and is still in use today.	A multi-grade oil suitable for four-stroke turbocharged diesel engines operating under severe operating conditions. It is similar to CE oil but has better oil consumption and piston cleanliness. In addition to passing the tests mentioned for CE quality level, this oil also passes Caterpillar 1K test. These oils are less polluting from an environmental perspective and can be used instead of CC, CD and CE oils.
CG-4	It was introduced for use in four-stroke diesel engines from 1995 onwards and is still in use today.	This quality level oil is suitable for use in four-stroke diesel engines with high speed and severe conditions. The fuel of these diesels has less than 0.5% sulfur. This quality level has a very effective control of piston deposit formation at high temperatures, wear, corrosion, foaming, oxidation resistance and carbon particle accumulation in the engine. Engines that are required by the (1994) EPA standards use this oil. This oil can be used instead of oils with quality levels CF-4, CE, CD.
CH-4	Introduced for use in heavy-duty, four-stroke diesel engines from 1998 onwards.	This quality level is suitable for heavy-duty, supercharged and turbocharged diesel engines with high rpm that have severe operating conditions. The use of these oils is especially suitable for engines that must pass the 1999 pollution standard. Diesel fuel that uses this oil usually has more than 0.5% sulfur. CH-4 can be used instead of oils with quality levels of CE, CD, CG-4 and CF-4.
CI-4	It has been introduced for use in high-speed, four-stroke diesel engines manufactured since 2002 that operate at high speeds.	This oil is designed for light, medium and heavy duty diesel engines that use cooled exhaust gases instead of oxygen (Exhaust Gas Recirculation) and EGR, thus reducing nitrogen oxides by about 50%. This oil also meets the current exhaust smoke standards that were developed in 2004. Oils with this quality level have a higher alkalinity to combat acids from NOx and are suitable for use with diesels with a maximum sulfur content of 0.05%. CI-4 can be used instead of the CD, CE, CF-4, CG-4, CH-4 quality level.
CJ-4	The performance level of four-stroke diesel oil produced since 2007, designed with advanced EGR exhaust gas emission control systems and special filters for diesel engines.	
CK-4	Oil quality level for all types of high-speed, four-stroke diesel engines designed from 2017 onwards, equipped with advanced emission control systems and consuming diesel fuel with a maximum sulfur concentration of 500 ppm.	This oil has been improved in all properties, including improved oxidation, catalyst protection, prevention of viscosity loss and deposit formation, to previous quality levels.

Additive	Aim of Using	Operation
Detergents	Cleaning and prevention of acidic sludge deposits formation on the engine inner parts	Neutralization of acids in oil which are formed due to oil oxidation and fuel consumption
Dispersants	Dispersing of contamination particles inside the oil	Disperse the carbon particles and acidic sludge as suspension and therefore prevent oil from deposit forming
Antioxidant	Prevention of oil oxidation and therefore acidic sludge formation	Converts peroxides and hydro peroxides due to oil molecules break to the inactive molecule
VI-Improvers	Reduction of viscosity changes versus temperature changes	The solubility of polymer in oil is increased due to temperature increase, and this fact decreases the speed of oil viscosity reduction due to temperature increase
Anti-Corrosion, Anti-Rust	Decrease of metal parts' corrosion and rust	Prevent metal surfaces and corrosive organic acids and water from reacting by creating protective layer on the metal surface
Anti-Foam	Prevent oil from foaming, reduce the oil surface tension	With reducing oil layer surface tension, the surface of foam bubbles becomes unstable and torn quickly
Friction Modifiers	Reduction of friction between machinery moving surfaces in boundary lubricating condition	This modifier is absorbed to metal surface via polar end and therefore two surfaces contact and friction is reduced
Pour Point Depressants	Prevention of oil freezing in low temperatures	Prevention of regular crystalline lattices formation which can lock up oil molecules within itself
Anti-Wear Agents	Prevention of machinery parts abrasion	Like the friction-modifiers, but the difference is that the additive forms chemical compound and therefore mechanism of surfaces contact prevention is possible in harder condition
EP Agent	Prevention of metal surfaces abrasion in boundary lubricating condition and very high pressures	Like the anti-frictions with forming stronger compounds



Barsava

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Gasoline Engine Oils

Barsava SN

- API SN
- ILSAC GF-5
- GM-DEXOS 1
- ISIRI 22261



BARSAVA SN fully synthetic engine oil is produced using high-quality Group 3 base oil with a high viscosity index and the most suitable high-quality additives based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

This product, which is produced in accordance with one of the highest API performance levels, is suitable for use in gasoline vehicles. The performance of this oil is determined by the vehicle manufacturers according to the operating conditions. Suitable for Nissan Pickup, Maxima, Qashqai, Teana, Volex C30, Hyundai Avante, ix35, ix55, i30, Genesis, Sonata, Veracruz, Renault Latitude, Brilliance V5, Mazda, Musso, BMW, Peugeot 407 Toyota Corolla, Prado, Land Cruiser, Matrix, Avalon, FJ Cruise, SsangYong Kyron, Actyon Subaru Legacy, Kia Epirus, Cerato, Carnival, Sportage, Optima, Mohave, Mitsubishi Outlander, I-MIEV, Renault Koleos and all vehicles for which the above standards are recommended by the vehicle manufacturer.

ASTM	SAE			Specification
	5W40	5W30	10W40	
D 445	15.3	12	15	Kinematic viscosity @ 100°C, cSt
D 2270	≥ 165	≥ 175	≥ 165	Viscosity Index (VI)
D 92	≥ 210	≥ 210	≥ 215	Flash Point, °C
D 97	≤ -36	≤ -39	≤ -33	Pour Point, °C
D 1298	850	850	860	Density @ 15°C, kg/m³
D 5293	≤ 6600	≤6600	≤7000 @-25°C	Viscosity in Winter @ -30°C, CCS,cp
Min 6, or as used Additives Specifications				Alkaline (TBN), mg KOH/g oil

Characteristics

- Using high-quality Group 3 base oil with a high viscosity index to increase thermal stability and oxidation resistance
- Excellent anti-oxidation and thermal stability properties
- Detergent properties to reduce deposits caused by combustion and oxidation.
- Anti-wear properties to control wear of engine parts
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions.
- Increase engine life and power to the highest level, control oil consumption and reduce costs
- Easy engine starting and rapid oil delivery to parts for excellent lubrication at low temperatures
- The product's excellent shear stability results in maintaining viscosity throughout the entire period of use.
- Excellent ability to remove excess heat from the engine to maintain the metallurgical structure of the parts.



Barsava SM

- API SM/CF-4
- ILSAC GF-4
- GM-DEXOS 1
- ISIRI 22261

Barsava SM semi-synthetic engine oil is produced using high-quality Group 3 base oil with a high viscosity index and the most suitable additives based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

This product, which is produced in accordance with one of the highest API performance levels, is suitable for use in supercharged gasoline and diesel vehicles. The performance of this oil is determined by the vehicle manufacturers according to the operating conditions. Suitable for Nissan Roniz, Pickup, Changan CS35, Ario S300, Toyota Yaris, Matrix, Camry, Avalon, FJ Cruiser, Kia Rio, Cerato, Lancer, Hyundai Accent and all vehicles for which the above standards are recommended by the vehicle manufacturer.

ASTM	SAE				Specification
	5W30	5W40	10W40	15W40	
D 445	12	15.3	15.3	15.3	Kinematic viscosity @ 100°C, cSt
D 2270	≥ 175	≥ 165	≥ 150	≥ 140	Viscosity Index (VI)
D 92	≥ 210	≥ 210	≥ 210	≥ 210	Flash Point, °C
D 97	≤ -39	≤ -36	≤ -33	≤ -30	Pour Point, °C
D 1298	850	850	870	885	Density @ 15°C, kg/m³
D 5293	≤ 6600 @-30°C	≤ 6600 @-30°C	≤ 7000 @-25°C	≤ 7000 @-20°C	Viscosity in Winter @ -30°C, CCS,cp
Min 6, or as used Additives Specifications					Alkaline (TBN), mg KOH/g oil

Characteristics

- Using high-quality Group 3 base oil with a high viscosity index to increase thermal stability and oxidation resistance
- Excellent anti-oxidation and thermal stability properties
- Cleaning properties to reduce deposits caused by combustion and oxidation
- Anti-wear properties to control wear of engine parts
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions
- Increase engine life and power to an excellent level
- Easy engine starting and rapid oil delivery to parts for excellent lubrication at low temperatures
- Excellent shear stability of the product, which results in maintaining viscosity throughout the entire period of use
- Excellent ability to remove waste heat from the engine to maintain the metallurgical structure of the parts
- Excellent control of oil consumption and cost reduction.

Barsava SL

- API SL/CF-4
- JASO MA/MB
- ISIRI 22261



Barsava SL semi-synthetic engine oil is produced using high-quality Group 3 base oil with a high viscosity index and the best quality additives, based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

This product is manufactured in accordance with one of the highest API performance levels. The performance of this oil is determined by the car manufacturers according to the working conditions. It is suitable for Citroen, Xantia, Thunder 90, Megan, Suzuki Grand Vitara, Mazda 3, Fiat Siena, Hyundai Verna, Samand Soren, Sarber, LX, Chairman, Dena, Peugeot 405 and Pars 53015 MVM X33 cars, and all gasoline cars designed up to 2004 and supercharged diesel cars when the above standards with SAE 10W40 grade are recommended by the car manufacturer.

ASTM	SAE 10W40	SAE 20W50	Specification
D 445	15.3		Kinematic viscosity @ 100°C, cSt
D 2270	≥ 150		Viscosity Index (VI)
D 92	≥ 210		Flash Point, °C
D 97	≤ -33		Pour Point, °C
D 5800	≤ 15		Volatility percentage W%
D 1298	870		Density @ 15°C, kg/m³
D 5293	≤ 7000 @ -25°C		Viscosity in Winter @ -30°C, CCS,cp
Min 6, or as used Additives Specifications			Alkaline (TBN), mg KOH/g oil

Characteristics

- Using high-quality Group 3 base oil with a high viscosity index to increase thermal stability and oxidation resistance
- Excellent anti-oxidation and thermal stability
- Detergent properties to reduce deposits caused by combustion and oxidation.
- Anti-wear properties to control wear of engine parts
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions.
- Increase engine life and power to an excellent level.
- Easy engine start and rapid oil delivery to parts for excellent lubrication at low temperatures
- Excellent shear stability of the product, which results in maintaining viscosity throughout the entire period of use.
- Excellent ability to remove waste heat from the engine to maintain the metallurgical structure of the parts
- Excellent control of oil consumption and cost reduction.



Barsava 16000

- API SL/CF-4
- JASO MA/MB
- ISIRI 22261

Barsava 16000 engine oil is produced using paraffinic base oil obtained from shear refining of crude oil called Lube Cut with a high viscosity index by performing a hydrogenation process (Hydro-Finishing) and high-quality additives based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Application:

This product, which is manufactured in accordance with one of the highest API performance levels, is designed for use in supercharged gasoline and diesel vehicles until 2004, when the above standards are recommended by the vehicle manufacturer. The performance of this oil is determined by the vehicle manufacturers according to the operating conditions. Suitable for vehicles such as Mazda 323, Toyota Prado, Land Cruiser before (2009), Volkswagen Gol, Pars ELX, Hyundai Avante, Geely, JAC J5.

ASTM	SAE		Specification
	15W40	20W50	
D 445	15.5	19	Kinematic viscosity @ 100°C, cSt
D 2270	≥ 135	≥ 120	Viscosity Index (VI)
D 92	≥ 210	≥ 220	Flash Point, °C
D 97	≤ -27	≤ -24	Pour Point, °C
D 1298	885	890	Density @ 15°C, kg/m³
D 5293	≤ 7000 @ -20°C	≤ 9500 @ -15°C	Viscosity in Winter , CCS,cp
Min 6, or as used Additives Specifications			Alkaline (TBN), mg KOH/g oil

Characteristics

· Use of hydrogenated base oil to increase thermal stability and oxidation resistance.

· Excellent anti-oxidation and thermal stability properties.

· Cleaning properties to reduce deposits caused by combustion and oxidation.

· Anti-wear properties to control wear of engine parts.

· Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.

· Excellent engine protection under all weather operating conditions.

· Increase engine life and power to an excellent level.

· Easy engine start and rapid oil delivery to parts for excellent lubrication at low temperatures.

· The product's excellent shear stability results in maintaining viscosity throughout the entire period of use.

· Excellent ability to remove waste heat from the engine to maintain the metallurgical structure of the parts.

· Excellent control of oil consumption and cost reduction.

Barsava 12000

- API SJ/ CF-4
- JASO MA/MB
- ISIRI 22261



Barsava 12000 engine oil is produced using paraffinic base oil obtained from shear refining of crude oil called Lube Cut with a high viscosity index through a hydrogenation process (Hydro-Finishing) and high-quality additives, based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

Suitable for Samand (Suren, Serir), Seranza, Pickup, Proton Gen2, Impian, Capra Van (Mazda) and all supercharged gasoline and diesel vehicles designed up to 2001, the above standards are recommended by the vehicle manufacturer. It is produced in SAE 20W50, 15W40, 10W40 grades.

ASTM	SAE			Specification
	10W40	15W40	20W50	
D 445	15.3	15.3	19	Kinematic viscosity @ 100°C, cSt
D 2270	≥ 150	≥ 135	≥ 120	Viscosity Index (VI)
D 92	≥ 210	≥ 210	≥ 220	Flash Point, °C
D 97	≤ -33	≤ -27	≤ -24	Pour Point, °C
D 1298	870	885	890	Density @ 15°C, kg/m³
D 5293	≤ 7000 @ -25°C	≤ 7000 @ -20°C	≤ 9500 @ -15°C	Viscosity in Winter , CCS,cp
Min 6, or as used Additives Specifications				Alkaline (TBN), mg KOH/g oil

Characteristics

- Use of hydrogenated base oil to increase thermal stability and oxidation resistance
- Excellent anti-oxidation and thermal stability properties
- Cleaning properties to reduce deposits caused by combustion and oxidation
- Anti-wear properties to control wear of engine parts
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions
- Increases engine life and power to the maximum
- Easy engine start and rapid oil delivery to parts for excellent lubrication at low temperatures
- Excellent shear stability of the product to maintain viscosity throughout use
- Excellent ability to remove waste heat from the engine to maintain the metallurgical structure of the parts
- Excellent control of oil consumption and cost reduction.



Barsava 8000

- API SG/CD
- JASO MA
- ISIRI 22261

Barsava 8000 engine oil is produced using paraffinic base oil obtained from a shear refining process of crude oil called Lube Cut and a hydrogenation process (Hydro-Finishing) and high-quality additives based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

Suitable for use in gasoline vehicles designed up to 1993 and supercharged diesels when the above standards are recommended by the vehicle manufacturer.

ASTM	SAE			Specification
	20W50	15W40	10W40	
D 445	19	15.3	15.3	Kinematic viscosity @ 100°C, cSt
D 2270	≥ 120	≥ 135	≥ 150	Viscosity Index (VI)
D 92	≥ 220	≥ 210	≥ 210	Flash Point, °C
D 97	≤ -24	≤ -27	≤ -33	Pour Point, °C
D 1298	890	885	870	Density @ 15°C, kg/m³
D 5293	≤ 9500 @ -15°C	≤ 7000 @ -20°C	≤ 7000 @ -25°C	Viscosity in Winter , CCS,cp
Min 4, or as used Additives Specifications				Alkaline (TBN), mg KOH/g oil

Characteristics

- High anti-oxidation and thermal stability properties.
- Detergent properties to reduce deposits caused by combustion and oxidation.
- Anti-wear properties to control wear of engine parts.
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions.
- Increase engine life and power to the maximum.
- Easy engine start and quick oil delivery to parts for proper lubrication at low temperatures.
- High shear stability of the product, which leads to maintaining viscosity throughout the entire period of use.
- High ability to remove waste heat from the engine to maintain the metallurgical structure of the parts.
- Control oil consumption and reduce costs.

Barsava SF

- API SF/CC
- ISIRI 22261



Barsava SF engine oil is produced using paraffinic base oil obtained from shear refining of crude oil called Lube cut and suitable and high-quality additives based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

Suitable for use in non-supercharged light gasoline and diesel engines where the above quality levels are recommended. This oil is specifically designed for gasoline engines designed up to 1988 and diesel engines designed up to 1961.

ASTM	SAE				Specification
	20W50	50	40	30	
D-445	19	20	15.5	12	Kinematic viscosity @ 100°C, cSt
D-2270	≥ 120	≥ 90	≥ 90	≥ 90	Viscosity Index (VI)
D-92	≥ 220	≥ 235	≥ 235	≥ 225	Flash Point, °C
D-97	≤ -24	≤ -9	≤ -12	≤ -18	Pour Point, °C
D-1298	890	900	895	890	Density @ 15°C, kg/m³
D-5293	≤ 9500 @ -15°C	-	-	-	Viscosity in Winter , CCS,cp
Min 4, or as used Additives Specifications					Alkaline (TBN), mg KOH/g oil

Characteristics

- Good anti-oxidation and thermal stability properties
- Cleaning properties to reduce deposits caused by combustion and oxidation
- Anti-wear properties to control wear of engine parts
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions
- Increase engine life and power to a good extent
- Easy engine start and quick oil delivery to parts for proper lubrication at low temperatures
- Good controllability in removing waste heat from the engine to maintain the metallurgical structure of the parts
- Excellent control of oil consumption and cost reduction





Barsava SC

- API SC/CC
- ISIRI 22261

Barsava SC four-stroke motorcycle oil is produced using paraffinic base oil obtained from shear refining of crude oil and a high viscosity index by performing a hydrogenation process (Hydro-Finishing) and using high-quality additives based on the formulation of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

Suitable for use in non-supercharged light gasoline and diesel engines when the above quality levels are recommended, and multi-grade engine oil suitable for four-stroke motorcycles with a displacement of 150 cc and above.

ASTM	SAE 20W50	SAE 50	SAE 40	Specification
D-445	19	20	15.5	Kinematic viscosity @ 100°C, cSt
D-2270	≥120	≥85	≥85	Viscosity Index (VI)
D-92	≥220	≥235	≥235	Flash Point, °C
D-97	≤-24	≤-9	≤-12	Pour Point, °C
D-2896	Min 4, or as used Additives Specifications			Alkaline (TBN), mg KOH/g oil
D-1298	890	900	895	Density @ 15°C, kg/m³

Characteristics

- High anti-oxidation and thermal stability properties.
- Cleaning properties to reduce deposits caused by combustion and oxidation.
- Anti-wear properties to control wear of engine parts.
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions.
- Increase engine life and power to the maximum extent.
- Easy engine start and quick oil delivery to parts for proper lubrication at low temperatures.
- The product has excellent shear stability, which results in maintaining viscosity throughout the entire period of use.
- Excellent ability to remove waste heat from the engine to maintain the metallurgical structure of the parts.
- Excellent control of oil consumption and cost reduction.



Barsava

Diesel Engine Oils



Barsava CI-4

- API CI-4
- ACEA E5/E7
- ISIRI 22260

Barsava CI-4 engine oil is produced using high-quality paraffinic base oil obtained from the hydrogenation process (Hydro-Finishing) and the most suitable additives in the world, based on the formula of Vulcan Petrochem Ltd, England, for use in supercharged and turbocharged diesel engines designed before 2007 and in all seasons and weather conditions in Iran.

Applications:

Suitable for Scania Benz and Volvo buses and trucks, road construction equipment, mining and agricultural drilling, heavy machinery, and all vehicles that meet the above standards with SAE 20W50, 15W40, 10W40 grades recommended by the vehicle manufacturer.

ASTM	SAE			Specification
	20W50	15W40	10W40	
D 445	19	15.5	15	Kinematic viscosity @ 100°C, cSt
D 2270	≥125	≥140	≥150	Viscosity Index (VI)
D 92	≥220	≥210	≥210	Flash Point, °C
D 97	≤-27	≤-27	≤-30	Pour Point, °C
	Min 10, or as used Additives Specifications			Alkaline (TBN), mg KOH/g oil
D 1298	885	875	870	Density @ 15°C, kg/m³
D 5293	≤ 9500 @ -15°C	≤ 7000 @ -20°C	≤ 7000 @ -25°C	Viscosity in Winter , CCS,cp

Characteristics

- Excellent anti-oxidation and thermal stability properties
- Excellent anti-wear properties and prevents corrosion of engine parts.
- High alkalinity to prevent adverse effects caused by acids produced by fuel combustion and thus increase oil life
- High bearing lubrication at low temperatures for easy starting and reduced deposit formation at low temperatures, especially when used over short distances.
- Excellent product shear stability and viscosity retention at high operating temperatures
- Long lifespan under high operating conditions

Barsava CH-4

- API CH-4
- ACEA B4 - 04/E7 - 04
- ISIRI 22260



Barsava CH-4 engine oil is produced using high-quality paraffinic base oil obtained from the hydrogenation process (Hydro-Finishing) and the most suitable additives in the world, based on the formula of Vulcan Petrochem Ltd, England, for use in supercharged and turbocharged diesel engines in all seasons and weather conditions in Iran.

Applications:

Suitable for buses and trucks, Benz, Volvo, Scania, Akiya, Hyundai, construction machinery, mining, agriculture, diesel engines, marine boats, and all four-stroke, supercharged and turbocharged diesel engines for which the above standard with grades SAE 15W40 and 20W50 is recommended by the vehicle manufacturer.

ASTM	SAE		Specification
	15W40	20W50	
D 445	15.5	18.5	Kinematic viscosity @ 100°C, cSt
D 2270	≥ 140	≥ 125	Viscosity Index (VI)
D 92	≥ 210	≥ 220	Flash Point, °C
D 97	≤ -27	≤ -24	Pour Point, °C
D 2896	Min 10, or as used Additives Specifications		Alkaline (TBN), mg KOH/g oil
D 1298	885	890	Density @ 15°C, kg/m³
D 5293	≤ 7000 @ -20°C	≤ 9500 @ -15°C	Viscosity in Winter , CCS,cp

Characteristics

- Excellent anti-oxidation and thermal stability properties
- Excellent cleaning and suspending properties and reduction of soot and deposits from the engine surface.
- Excellent anti-wear properties and prevents corrosion of engine parts.
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- Excellent engine protection under all weather operating conditions, resulting in a significant increase in oil life.
- Excellent bearing lubrication at low temperatures, easy starting and reduced deposit formation at low temperatures, especially when used over short distances.
- High shear stability of the product and viscosity retention at high operating temperatures
- Excellent ability to remove waste heat from the engine to maintain the metallurgical structure of the parts

- Excellent control of oil consumption and cost reduction.



Barsava CF-4

- API CF-4/SJ
- ACEA A2 - 96/B2 - 96/E2 - 96
- ISIRI 22260

Barsava CF-4 engine oil is produced using paraffinic base oil obtained from shear refining of crude oil called Lube Cut with a high viscosity index by performing a hydrogenation process (Hydro-Finishing) and high-quality additives based on the formulation of Vulcan Petrochem Ltd, England, for use in heavy diesel engines and in all seasons and weather conditions in Iran.

Applications:

Suitable for buses and trucks, Benz, Volvo, Scania, Akia, Hyundai, road construction machinery, all types of lifts and cranes, light and heavy machinery of mining and agricultural equipment, diesel engines of marine boats, and all four-stroke, supercharged, and turbocharged diesel engines that meet the above standards with SAE15W40, 20W50 grades recommended by the vehicle manufacturer.

ASTM	SAE			Specification
	20W50	15W40	10W	
D 445	19	15.5	6.5	Kinematic viscosity @ 100°C, cSt
D 2270	≥125	≥135	≥100	Viscosity Index (VI)
D 92	≥220	≥210	≥195	Flash Point, °C
D 97	≤-24	≤-27	≤-30	Pour Point, °C
D 2896	Min 8, or as used Additives Specifications			Alkaline (TBN), mg KOH/g oil
D 1298	890	885	880	Density @ 15°C, kg/m³
D 5293	≤ 9500 @ -15°C	≤ 7000 @ -20°C	≤ 7000 @ -25°C	Viscosity in Winter , CCS,cp

Characteristics

- High anti-oxidation and thermal stability properties
- Excellent cleaning and suspending properties and reduces soot and deposits from the engine surface.
- Excellent anti-wear properties and prevents corrosion of engine parts.
- Excellent engine protection under all weather operating conditions, resulting in a significant increase in oil life.
- Neutralizes acids resulting from oxidation and combustion to prevent corrosion of engine parts.
- High bearing lubrication at low temperatures, easy starting and reduced deposit formation at low temperatures, especially when used over short distances.
- High shear stability of the product and viscosity retention at high operating temperatures.
- Excellent ability to remove waste heat from the engine to maintain the metallurgical structure of the parts.
- Excellent control of oil consumption and cost reduction.

Barsava CC/SC

- API CC/SC
- ISIRI 22260



Barsava CC/SC engine oil is produced using high-quality paraffinic base oil with a high viscosity index obtained by shear refining from Lube Cut crude oil with a high viscosity index and performing a hydrogenation process (Hydro-Finishing) and suitable additives based on the formula of Vulcan Petrochem Ltd, England, for use in all light and heavy four-stroke supercharged and turbocharged diesel engines and gasoline engines, and in all seasons and weather conditions in Iran.

Applications:

Suitable for all light and heavy duty Diesel and gasoline engines, road construction machinery, equipment used in agricultural and mines, and all vehicles for which the above standards with SAE 25W50 grade are recommended by the vehicle manufacturer.

ASTM	SAE 20W50		Specification
D 445	19.5		Kinematic viscosity @ 100°C, cSt
D 2270	≥ 100		Viscosity Index (VI)
D 92	≥ 220		Flash Point, °C
D 97	≤ -21		Pour Point, °C
D 2896		Min 5, or as used Additives Specifications	Alkaline (TBN), mg KOH/g oil
D 1298	890		Density @ 15°C, kg/m³
D 5293	≤ 13000 @ -10°C		Viscosity in Winter , CCS,cp

Characteristics

- Using hydrogenated base oil to increase anti-oxidation properties and thermal stability
- Excellent anti-wear properties and prevents corrosion of engine parts.
- High cleaning and suspending effects to reduce soot and deposits from engine surfaces
- Appropriate alkalinity to prevent adverse effects caused by acids produced by internal combustion and thus increase oil life.
- Maintains oil viscosity at high operating temperatures.
- Reduce fuel consumption



Barsava CD/SF

- API CD/SF
- MIL-L 2104D
- ISIRI 22260

Barsava CD/SF engine oil is produced using high-quality paraffinic base oil with a high viscosity index obtained by shear refining from Lube Cut crude oil with a high viscosity index and performing a hydrogenation process (Hydro-Finishing) and suitable additives based on the formula of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:

Suitable for all supercharged diesel engines and road construction machinery, equipment used in agriculture, mines, and all vehicles for which the above standards are recommended by the vehicle manufacturer.

ASTM	SAE				Specification
	20W50	50	40	30	
D-445	19	20	15.5	12	Kinematic viscosity @ 100°C, cSt
D-2270	≥120	≥90	≥90	≥90	Viscosity Index (VI)
D-92	≥220	≥240	≥235	≥225	Flash Point, °C
D-97	≤-24	≤-9	≤-12	≤-18	Pour Point, °C
D-2896	Min5	Min5	Min5	Min5	Alkaline (TBN), mg KOH/g oil
D-1298	895	900	895	890	Density @ 15°C, kg/m³

Characteristics

- Use of hydrogenated base oil to increase anti-oxidation properties and thermal stability.
- Excellent anti-wear properties and prevents corrosion of engine parts.
- High cleaning and suspending effects to reduce soot and deposits from engine surfaces.
- Appropriate alkalinity to prevent adverse effects caused by acids produced by internal combustion and thus increase oil life.
- Ability to remove waste heat from the engine to maintain the metallurgical structure of the parts.
- Control fuel consumption and reduce costs.

Barsava CC/SE

- API CC/SE
- ISIRI 22260



Barsava CC/SE engine oil is produced using high-quality paraffinic base oil with a high viscosity index, obtained by shear refining from Lube Cut crude oil with a high viscosity index, and a hydrogenation process (Hydro-Finishing), and suitable additives based on the formula of Vulcan Petrochem Ltd, England, for use in all seasons and weather conditions in Iran.

Applications:
Suitable for all light diesel and gasoline engines where the above standards are recommended by the vehicle manufacturer.

ASTM	SAE			Specification
	50	40	30	
D-445	20	15.5	12	Kinematic viscosity @ 100°C, cSt
D-2270	90	90	90	Viscosity Index (VI)
D-92	240	235	225	Flash Point, °C
D-97	-9	-12	-18	Pour Point, °C
D-2896	Min5	Min5	Min5	Alkaline (TBN), mg KOH/g oil
D-1298	900	895	890	Density @ 15°C, kg/m³

Characteristics

- Anti-oxidation and thermal stability properties.
- High anti-wear properties and prevention of corrosion of engine parts.
- High cleaning and suspending effects to reduce soot and deposits from the engine surface.
- Appropriate alkalinity to prevent adverse effects caused by acids produced by internal combustion and thus increase oil life.
- Ability to remove waste heat from the engine to maintain the metallurgical structure of the parts.
- Control fuel consumption and reduce costs.



Barsava CF-4/SJ

- API CF-4/SJ
- ACEA E2 - 96
- ISIRI 22260

Barsava CF-4/SJ (Marine-diesel engine oil) is produced using high-quality paraffinic base oil with a high viscosity index obtained by shear refining from Lube Cut crude oil with a high viscosity index and performing a hydrogenation process (Hydro-Finishing) and suitable additives based on the formulation of Vulcan Petrochem Ltd, England, for use in low-speed marine diesel engines for use in Iranian climatic conditions.

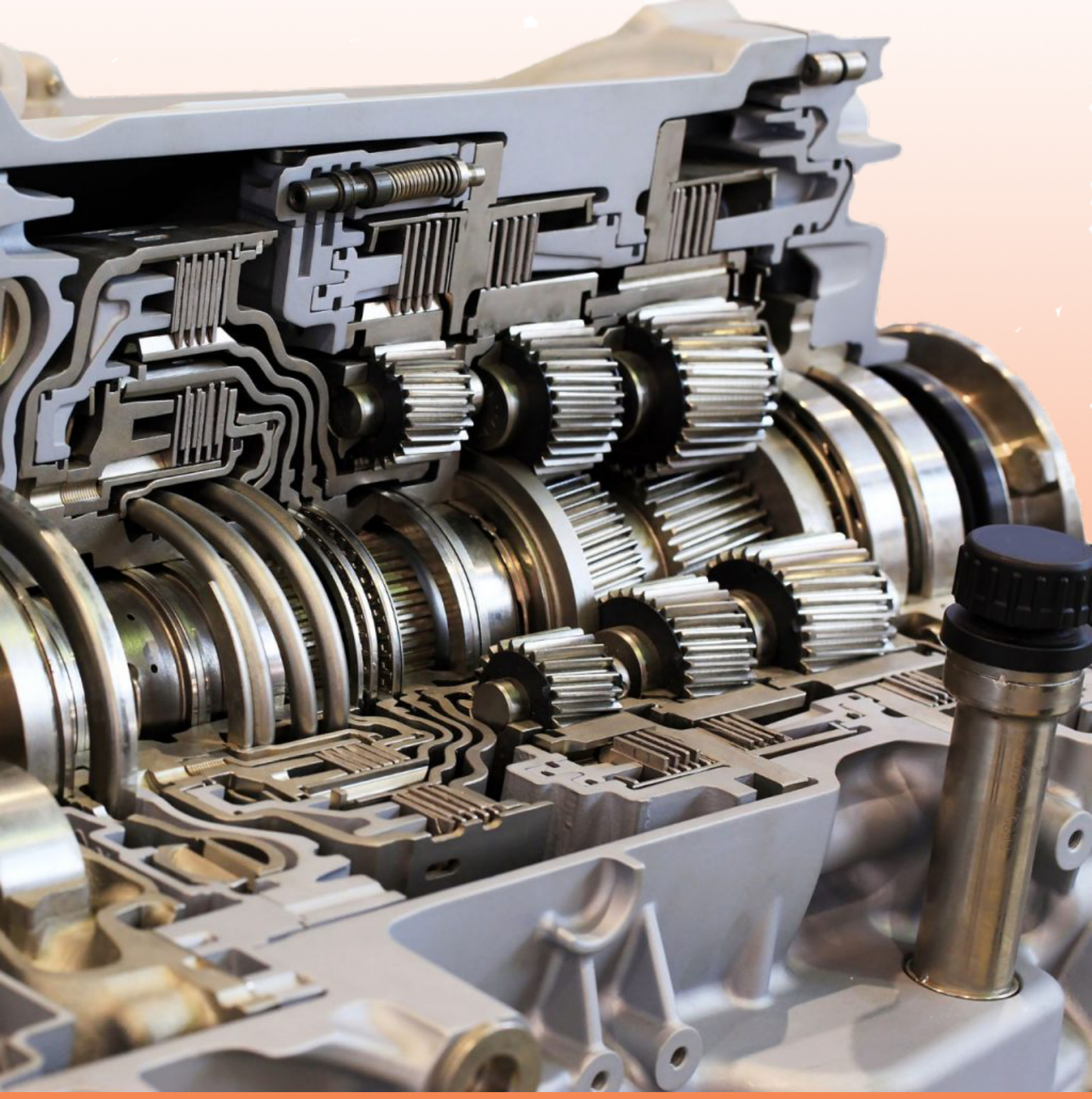
Applications:

- For use in all marine diesel engines four-stroke, supercharged and turbocharged, where the above quality levels are recommended.
- For use in low-speed marine engines at deposit-forming fuels under normal operating conditions.
- For use in piston and crankshaft cooling systems.

ASTM	SAE			Specification
	20W50	50	40	
D-445	19	20	15	Kinematic viscosity @ 100°C, cSt
D-2270	125	90	90	Viscosity Index (VI)
D-92	220	240	235	Flash Point, °C
D-97	-24	-9	-12	Pour Point, °C
D-2896	15	15	15	Alkaline (TBN), mg KOH/g oil
D-1298	890	900	895	Density @ 15°C, kg/m³
D-5239	≤ 9500 @-15°C	-	-	Viscosity in Winter , CCS,cp

Characteristics

- High performance marine diesel engine oil.
- Excellent anti-wear properties and prevents corrosion of engine parts.
- Excellent cleaning and suspension properties and reduction of soot and deposits from the engine surface.
- Excellent anti-oxidation and thermal stability properties and increased oil life.



Barsava

GEAR OILS



Barsava DEXRON III

Automatic Gear Oil

- Dexron III
- ISIRI 5814

Barsava DEXRON III automatic transmission oil is produced using high-quality Group III base oil with a high viscosity index and the most suitable special additives with excellent power transmission, anti-wear and anti-oxidation properties, based on the formula of Vulcan Petrochem Ltd, England.

Applications:

In all automatic car gearboxes and hydraulic steering boxes of all types of vehicles and the hydraulic systems of many industrial devices.

ASTM	Amount	Specification
D-445	7.5	Kinematic viscosity @ 100°C, cSt
D-2270	190	Viscosity Index (VI)
D-92	180	Flash Point, °C
D-97	-36	Pour Point, °C
D-1298	860	Density @ 15°C, kg/m³
D-2983	20000	Viscosity in Winter @-40°, Brookfield, cp

Characteristics

• High thermal and oxidation stability that prevents the formation of glaze, sludge and deposits and increases the efficiency of the power transmission system.

• Good anti-wear properties to extend the life of the power transmission system.

• Low temperature fluidity, which leads to easy lubrication and reduced power transmission loss at starting temperature.

• Control of foam level to improve lubrication and control wear and friction between parts under severe operating conditions.

• Compatibility with all sealing components used in power transmission.

Barsava DEXRON II

Automatic Gear Oil

- Dexron IID
- ISIRI 5814



Barsava DEXRON II automatic transmission oil is produced using high-quality Group 3 base oil with a high viscosity index and the most suitable special additives with excellent power transmission, anti-wear and anti-oxidation properties, based on the formula of Vulcan Petrochem Ltd, England.

Applications:
In all automatic car gearboxes and hydraulic steering boxes of all types of vehicles and the hydraulic systems of many industrial devices.

ASTM	Amount	Specification
D-445	8.5	Kinematic viscosity @ 100°C, cSt
D-2270	170	Viscosity Index (VI)
D-92	180	Flash Point, °C
D-97	-36	Pour Point, °C
D-1298	860	Density @ 15°C, kg/m³
D-2983	50000	Viscosity in Winter @-40°, Brookfield, cp

Characteristics

• High thermal and oxidation stability that prevents the formation of glaze, sludge, and deposits and increases the efficiency of the power transmission system.

• Good anti-wear properties to extend the life of the power transmission system.

• Low temperature fluidity, which leads to easy lubrication and reduced power transmission loss at starting temperature.

• Foam level control to improve lubrication and control wear and friction between parts under severe operating conditions

• Compatible with all seal components used in Type IID transmissions, which plays an effective role in controlling oil leakage.



Barsava GL5

Manual Gear Oil

- API GL-5
- MIL-L-2105 D
- ISIRI 2810

Barsava GL5 automotive gear and differential oil is produced using high-quality paraffinic base oil obtained from shear refining of crude oil called Lube Cut by performing a hydrogenation process (Hydro-Finishing) and suitable additives resistant to high pressures (Extreme Pressure) based on the formula of Vulcan Petrochem Ltd, England.

Applications:

In all non-automatic gearboxes of light and heavy vehicles and other vehicles and all power transmission systems where the above efficiency levels are recommended by the manufacturer.

Attention: This product is recommended for hypoid gears and differentials of vehicles.

ASTM	SAE			Specification
	85W-140	85W-90	75W	
D-445	27	18	5.5	Kinematic viscosity @ 100°C, cSt
D-2270	90	90	100	Viscosity Index (VI)
D-92	210	200	150	Flash Point, °C
D-97	-9	-18	-27	Pour Point, °C
D-1298	900	895	865	Density @ 15°C, kg/m³

Characteristics

- Excellent wear protection and load carrying at low speed/high torque, and high speed/low torque
- Excellent protection against corrosion and wear, extending the life of gears and bearings.
- Excellent thermal stability and oxidation resistance, which extends the life of the oil.
- Good lubrication with resistance to oil channeling at low temperatures
- Bright color of products and ease of detection of contamination

Barsava GL4

Manual GearOil

- API GL-4
- MIL-L-2105
- ISIRI 2873



Barsava GL4 automotive gear oil is produced using high-quality paraffinic base oil obtained from shear refining of crude oil called Lube Cut, through a hydrogenation process (Hydro-Finishing) and suitable additives resistant to high pressures (Extreme Pressure), based on the formulation of Vulcan Petrochem Ltd, England.

Applications:

Non-automatic gearboxes of light and heavy vehicles that operate in high speed/low torque or low speed/high torque conditions.

Note: The use of this product in gearboxes with hypoid gears is not recommended.

ASTM	SAE			Specification
	85W-140	85W-90	75W	
D-445	27	18	5.5	Kinematic viscosity @ 100°C, cSt
D-2270	90	90	100	Viscosity Index (VI)
D-92	210	200	150	Flash Point, °C
D-97	-9	-18	-27	Pour Point, °C
D-1298	900	895	865	Density @ 15°C, kg/m³

Characteristics

- High wear protection and load carrying capacity at low speed/high torque and high speed/ low torque.
- High protection against corrosion and wear and increased life of gears and bearings.
- High thermal stability and oxidation resistance, which increases oil life.
- Good lubrication with resistance to oil channeling at low temperatures.
- Bright color of products and ease of detection of contamination.



Barsava

Industrial Oils



Barsava HLP

Hydraulic Oil

- DIN 51524 PART-ll (HLP)
- DENISON HF-0
- ISIRI 6423

Barsava HLP hydraulic oil is produced using high-quality paraffinic base oil obtained from shear refining of crude oil called Lube cut and hydrogenation process, as well as anti-wear, anti-oxidation and anti-rust additives based on the formulation of Vulcan Petrochem Ltd, England.

Applications:

Marine and industrial power transmission and hydraulic systems, and static and dynamic hydraulic equipment of road construction and construction machinery in cases where the above efficiency levels are recommended by the manufacturer.

ASTM	ISO							Specification
	220	150	100	68	46	32	22	
D-445	220	150	100	68	46	32	22	Kinematic viscosity @ 100°C, cSt
D-2270	95	95	95	95	95	95	95	Viscosity Index (VI)
D-92	240	235	230	215	210	195	180	Flash Point, °C
D-97	-15	-18	-21	-24	-27	-30	-30	Pour Point, °C
D-1298	895	890	885	880	875	870	865	Density @ 15°C, kg/m³
D-1401				Pass				The rate of separation from water
D-130				Class 1a				Copper Corrosion @ 100°C



Characteristics

- Power transmission property
- Prevent wear of parts
- Good stability against oxidation
- Water-separability property
- Air release property
- Resistance to compressibility
- Excellent filterability
- Protection against corrosion and rust

Barsava



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