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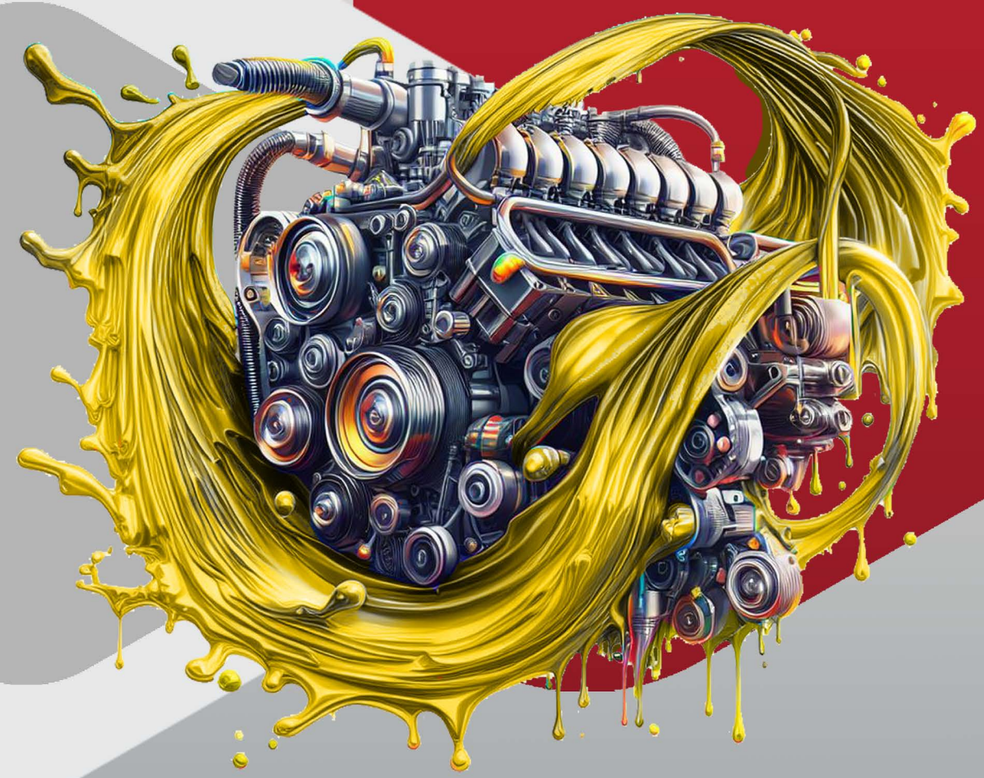


Carlio

Industrial production group

The meaning of production in Petroforce is the creation, development, and the path to progress, and the starting point to achieve the goals that we all have the Petroforce brand, with over 20 years of experience in the oil and petrochemical industry, we officially started our activities in the field of design, engineering, construction of refinery equipment, and the production of various motor and industrial lubricants in the year 1390 (2011)

Our commitment to the production and presentation of quality products has been the beginning of our activities. This commitment, over the years, has led us to unparalleled experiences in the production and manufacturing of products in accordance with international standards. Production and industrial infrastructure in any country are considered indicators of development, leading to employment and, consequently, social welfare. Our activities in the oil and petrochemical sector, engineering, construction, and production of lubricants date back to 25 years ago

An activity that continues to grow and develop through the design and implementation of various projects, as well as the production of quality products and increasing the sales of products in domestic and international markets. The production of special industrial oils to meet the needs of various mines, road construction companies, large industrial factories, as well as gasoline and diesel engine oils for the domestic market, is another significant part of Petroforce's activities

Exporting products to more than 20 countries with international standards and introducing our products in international markets have been achievements of this company over the years. Petroforce with the passage of all these years of ups and downs, has always had a special focus on quality production, and this has been the secret of our longevity over the years

In the pursuit of progress in various fields, we have always had an innovative look at the details and, with the use of modern methods, adherence to global standards, and with the effort and collaboration, we have paved the path of development. And now, with the support of experience, expertise, hope for the future, a development-oriented perspective, and a mind full of ideas derived from two decades of sincere efforts, we have special plans for the future of Petroforce. We intend, with the help of God, to take a company step in the development of the lubricant industry for our beloved country in the not-too-distant future

CARLIO

Better precicisn

Sheers that help better handling of the gallon while pouring

EN TR NL AR AZ

Brith explaintion of the production in 5 languages

Premium Synthetic Engine Oil

Blend type of lubricant accodring t the raw material

ENGINE OIL

Lubricant type, here we indicate the lubricant type and vsege

NOBEL CERTIFICATION ISO 14000

All apporals and certification

SN/CI-4

API: user can find the APF standard of lubricant

5w30

SAE of the lubricant which guide the uset for theviscosity of the lubricant

Our products are all certified and appored by petroforce group in Belgium

APPROVED BY
PETRO FUTURE GROUP CO. IN BELGIUM
PRODUCED BY PF CO.

Made in barcode which indicates the orgin of the product

PETROL ENGINE OIL

SN

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	SN 5W30	SN 5W40	SN 10W40
DENSITY @ 15°C	D4052	kg/m³	860 (±10)	860 (±10)	870 (±10)
FLASH POINT	D92	°C	205 (±5)	210 (±5)	210 (±5)
POUR POINT	D97	°C	-36 (±3)	-36 (±3)	-33 (±3)
VISCOSITY @ 100°C	D445	cSt	11.5 (±0.5)	15.5 (±0.5)	15.5 (±0.5)
VISCOSITY INDEX	D2270	---	140 (±5)	140 (±5)	135 (±5)
TBN	D2896	mg KOH/g	8 (±0.5)	8 (±0.5)	8 (±0.5)
NOACK	D5800	°C	13 (±2)	12 (±3)	12 (±3)

ENGINE OIL
SN 5W30

CRLIO 4-SEASON GASOLINE ENGINE OIL, WITH ITS HIGHLY ADVANCED FORMULA AND A COMBINATION OF THE FINEST BASE OILS AND ADDITIVES IN VARIOUS GRADES, IS PRODUCED FOR VARIOUS GASOLINE-POWERED VEHICLES, FROM CLASSIC TO MODERN. THE LONG LIFE OF THE OIL AND PROTECTION OF ENGINE COMPONENTS ARE WHAT YOU EXPECT FROM A HIGH-QUALITY ENGINE OIL

CRLIO **SN5W30** ENGINE OIL IS SUITABLE FOR ALL WEATHER CONDITIONS, PROVIDING PROTECTION FOR YOUR CAR'S ENGINE UNDER TOUGH CONDITIONS

ENGINE OIL
SN 5W40

A MULTI-PURPOSE ENGINE OIL WITH HIGH QUALITY AS **SN5W40** AND ADVANCED FORMULATION COMPARED TO REGULAR **SM** OIL, DESIGNED FOR USE IN VEHICLES DESIGNED FROM 2018 ONWARDS. THIS OIL IS FORMULATED FOR COLDER WEATHER CONDITIONS

Features:

- VIRGIN BASE OIL
- TEMPERATURES
- EXCELLENT LUBRICATION
- HIGH CLEANING POWER
- ADEQUATE RESISTANCE AGAINST OXIDATION
- PROTECTION OF COMPONENTS AGAINST ABRASION
- HIGH THERMAL STABILITY AND RESISTANCE TO ENGINE WEAR IN HIGH

ENGINE OIL
SN 10W40

A MULTI-PURPOSE ENGINE OIL WITH A HIGH QUALITY LEVEL AS **SN10W40** AND A MORE ADVANCED FORMULATION COMPARED TO **SL** REGULAR OIL DESIGNED FOR USE IN VEHICLES MANUFACTURED BETWEEN 2016 AND 2022. THESE OILS ARE FORMULATED FOR WARMER CLIMATES

Features:

- VIRGIN BASE OIL
- SUITABLE LUBRICATION
- RESISTANCE AGAINST FUEL DEPOSITS
- ADEQUATE RESISTANCE AGAINST OXIDATION
- PROTECTION OF COMPONENTS AGAINST WEAR AND PREVENTION OF DEPOSITS

GASOLINE ENGINE OIL

SM-SL-SJ

ENGINE OIL SM 5W30

Petroforce 4-Season Gasoline Engine Oil, with its highly advanced formula and a combination of the finest base oils and additives in various grades, is produced for various gasoline-powered vehicles, from classic to modern. The long life of the oil and protection of engine components are what you expect from a high-quality engine oil
We are aware of this and give it the

ENGINE OIL SM 5W40

This oil is semi-synthetic and formulated for modern vehicles from 2017 onwards. Features of this product include engine component protection, prevention of wear, resistance against deposits, and guaranteed performance in challenging working conditions. The quality additives used in this product can contribute to excellent performance in consumers' car engines
The long life of the oil and protection of engine components are expectations

ENGINE OIL SM 10W40

This multi-purpose engine oil is recommended for vehicles from 2012 and onward. It is noteworthy that this product is formulated and produced for warmer weather conditions. It is suitable for vehicles with challenging operations and tough working conditions. It features a more advanced formula compared to standard quality as SL levels

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	SM 5W30	SM 5W40	SM 10W40
DENSITY @ 15°C	D4052	kg/m³	860 (±10)	860 (±10)	870 (±10)
FLASH POINT	D92	°C	210 (±5)	210 (±5)	210 (±5)
POUR POINT	D97	°C	-36 (±3)	-36 (±3)	-33 (±3)
VISCOSITY @ 100°C	D445	cSt	11.5 (±0.5)	15.5 (±0.5)	15.5 (±0.5)
VISCOSITY INDEX	D2270	---	145 (±5)	140 (±5)	140 (±5)
TBN	D2896	mg KOH/g	7.5 (±0.5)	7.5 (±0.5)	7.5 (±0.5)
NOACK	D5800	°C	13 (±2)	12 (±2)	13 (±2)

ENGINE OIL SL 10W40

A multi-purpose engine oil with a high-quality level as SL/CF more advanced formula than SJ regular oils, designed for use in vehicles designed from 2004 onwards. This oil is formulated for colder weather
conditions

Features:

- Virgin base oil
- High cleaning power
- Excellent lubrication
- Resistance against fuel deposits
- Adequate resistance against oxidation
- Protection of components against wear
- High thermal stability in high temperatures
- Safe engine combustion in challenging conditions

ENGINE OIL SL 15W40

Engine oil suitable for various domestically manufactured vehicles, designed to perform well under the country's weather conditions. It has obtained international certifications and various approvals from relevant organizations for valuable consumer vehicles. This oil is specifically formulated for colder weather conditions

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	SL/CF 10W40	SL/CF 15W40	SL/CF 20W50
DENSITY @ 15°C	D4052	kg/m³	875 (±5)	885 (±5)	880 (±5)
FLASH POINT	D92	°C	210 (±5)	205 (±5)	225 (±5)
POUR POINT	D97	°C	-33 (±3)	-27 (±2)	-30 (±3)
VISCOSITY @ 100°C	D445	cSt	15.5 (±0.3)	15.2 (±0.3)	19.3 (±0.3)
VISCOSITY INDEX	D2270	---	130 (±5)	135 (±5)	130 (±5)
TBN	D2896	mg KOH/g	7 (±0.5)	7 (±0.5)	7 (±0.5)
NOACK	D5800	°C	12 (±3)	13 (±2)	8 (±2)

ENGINE OIL SJ 20W50

This multi-purpose engine oil is recommended for vehicles manufactured from 2012 onwards. It is noteworthy that this product is formulated and produced for warmer weather conditions. Suitable for vehicles with challenging usage and harsh working conditions, it features an advanced formula compared to standard quality levels

DIESEL ENGINE OIL

CI4+

20W50
15W40
10W40

PETROFORCE DIESEL ENGINE OIL, DESIGNED SPECIFICALLY FOR MINING MACHINERY, IS PRODUCED USING A BLEND OF THE FINEST BASE OILS AND ADDITIVES ACROSS VARIOUS GRADES. POSITIONED AS A NEW AND RELIABLE SOLUTION, IT IS RECOMMENDED FOR REDUCING PRODUCTION COSTS AND INCREASING THE EFFICIENCY OF MINING EQUIPMENT

THIS ADVANCED FORMULATION OF ENGINE OIL NOT ONLY ENSURES SMOOTH LUBRICATION BUT ALSO PROVIDES RESISTANCE TO THE ENGINE AGAINST HIGH TEMPERATURES AND DAMAGES RESULTING FROM DEMANDING AND HEAVY-DUTY OPERATIONS. FURTHERMORE, OWING TO ITS EXCEPTIONAL VISCOSITY STABILITY, IT OFFERS A LIFESPAN THAT IS AT LEAST DOUBLE THAT OF THE REGULAR GRADE WHEN SUBJECTED TO SIMILAR CONDITIONS

THIS OIL IS SPECIFICALLY DESIGNED FOR MACHINERY AND EQUIPMENT IN THE MINING INDUSTRY THAT OPERATE UNDER EXTREMELY HEAVY PRESSURE. IT OFFERS SIGNIFICANTLY GREATER STABILITY COMPARED TO REGULAR OILS, RESULTING IN A LONGER LIFESPAN. IT EFFECTIVELY PREVENTS ENGINE DAMAGE AND WEAR, MAKING IT WELL-SUITED FOR HEAVY-DUTY MINING OPERATIONS

Features:

- VIRGIN BASE OIL
- EXCELLENT LUBRICATION
- HIGH CLEANING POWER
- EXTREMELY HIGH THERMAL STABILITY
- PREVENTION OF CORROSION AND DEPOSITS
- ADEQUATE RESISTANCE AGAINST OXIDATION
- PROTECTION OF COMPONENTS AGAINST WEA
- VERY HIGH AND CONTROLLED VISCOSITY STABILITY
- MUCH LONGER LIFESPAN COMPARED TO REGULAR OIL SAMPLES
- HIGH THERMAL STABILITY AND RESISTANCE TO ENGINE WEAR IN HIGH TEMPERATURES

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	CI-4+ 10W40	CI-4+ 15W40	CI-4+ 20W50
DENSITY @ 15°C	D4052	kg/m³	885 (±5)	885 (±5)	885 (±5)
FLASH POINT	D92	°C	215 (±5)	220 (±5)	225 (±5)
POUR POINT	D97	°C	−33 (±3)	−27 (±3)	−33 (±3)
VISCOSITY @ 100°C	D445	cSt	15.2 (±0.3)	15.5 (±0.3)	19.5 (±0.3)
VISCOSITY INDEX	D2270	---	160 (±5)	150 (±5)	155 (±5)
TBN	D2896	mg KOH/g	11 (±0.5)	11 (±0.5)	11 (±0.5)
NOACK	D5800	°C	12 (±3)	12 (±3)	8 (±2)

DIESEL ENGINE OIL

CI4

20W50
15W40
10W40

This advanced-formula oil is recommended for high-speed four-stroke diesel vehicles with engines designed in 2002 and later, equipped with emission control systems, operating under tough operational conditions Additionally,this oil can serve as a substitute for **CD,CE .CF-4.CG-4** conventional oilsA

In demanding operational conditions, this product demonstrates excellent performance, ensuring stable oil pressure **CCS** throughout its lifespan

Features :

- Virgin base oil
- Resistant to deposit formation
- Excellent resistance to oxidation
- Excellent performance at different temperatures
- Outstanding performance in tough working conditions

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	CI-4 10W40	CI-4 15W40	CI-4 20W50
DENSITY @ 15°C	D4052	kg/m³	885 (±5)	885 (±5)	885 (±5)
FLASH POINT	D92	°C	215 (±5)	220 (±5)	225 (±5)
POUR POINT	D97	°C	–33 (±3)	–27 (±3)	–33 (±3)
VISCOSITY @ 100°C	D445	cSt	15.2 (±0.3)	15.5 (±0.3)	19.5 (±0.3)
VISCOSITY INDEX	D2270	---	160 (±5)	130 (±5)	130 (±5)
TBN	D2896	mg KOH/g	11 (±0.5)	11 (±0.5)	11 (±0.5)
NOACK	D5800	°C	12 (±3)	12 (±3)	8 (±2)

CH4 - CI4

CH4

20W50
15W40
10W40

This oil, with its advanced formulation and high-quality additives, not only provides excellent lubrication for diesel engines but also protects each engine component. It is recommended for use in four-stroke diesel engines, model year 1998 and newer, that operate at high speeds and RPMs

Features :

- Virgin base oil
- High cleaning power
- Anti-corrosion and anti-rust properties
- Protection of engine components against wear
- Performance capability in a wide range of temperatures
- High power in controlling smoke and particles resulting from combustion
- Excellent stability against viscosity reduction during prolonged operations
- Excellent resistance to oxidation in high-temperature conditions resulting in reduced deposit and sludge formation

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	CH-4 10W40	CH-4 15W40	CH-4 20W50
DENSITY @ 15°C	D4052	kg/m³	870 (±5)	875 (±5)	885 (±5)
FLASH POINT	D92	°C	210 (±5)	210 (±5)	230 (±5)
POUR POINT	D97	°C	–36 (±3)	–30 (±3)	–30 (±3)
VISCOSITY @ 100°C	D445	cSt	15.5 (±0.3)	15.5 (±0.3)	19.5 (±0.3)
VISCOSITY INDEX	D2270	---	140 (±5)	140 (±5)	130 (±5)
TBN	D2896	mg KOH/g	10 (±0.5)	10 (±0.5)	10 (±0.5)
NOACK	D5800	°C	13 (±2)	13 (±2)	9 (±0.5)

DIESEL ENGINE OIL

CD
40
50
20W50

CF
40
50
10W40
15W40
20W50

CD-CF

Petroforce diesel engine oils are produced in various grades using a combination of high-quality virgin base oils and additives. They are recommended for a wide range of diesel vehicles, both light and heavy-duty. The advanced formulation ensures not only smooth engine operation but also protects the engine against high temperatures and damages resulting from tough and heavy-duty operations. This, in turn, contributes to extending the engine's lifespan

The CF oil, with its more advanced formulation and stronger anti-wear additives compared to CD-grade oil, is recommended for diesel engines with indirect fuel injection and high-pressure turbocharging systems. It provides optimal performance under high-pressure conditions, making it a suitable replacement for CD oil with a viscosity grade of 40 and 50 is suitable for lubricating various heavy-duty four-stroke diesel engines with or without turbochargers, produced before 1994. It is also recommended for all vehicles where the manufacturer advises using CD-grade oi

Features :

- High Thermal Stability
- Suitable Resistance to Oxidation
- Anti-Corrosion and Rust Protection
- Excellent and Desirable Lubrication
- Very High and Controlled Viscosity Stability
- Much Longer Oil Life Compared to Regular Samples
- High Thermal Stability and Resistance to Motor Wear at High Temperatures

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	CD 40	CD 50	CF 40	CF 50	CF 15W40	CF 20W50	CD 20W50
DENSITY @ 15°C	D4052	kg/m³	885 (±5)	890 (±10)	890 (±5)	900 (±5)	885 (±5)	890 (±5)	885 (±5)
FLASH POINT	D92	°C	230 (±5)	230 (±10)	230 (±5)	240 (±5)	220 (±5)	225 (±5)	225 (±5)
POUR POINT	D97	°C	−12 (±5)	−12 (±5)	−15 (±5)	−15 (±5)	−27 (±3)	−30 (±3)	−33(±3)
VISCOSITY @ 100°C	D445	cSt	15.5 (±0.5)	19.5 (±0.3)	15.5 (±0.3)	19.5 (±0.3)	15.2 (±0.3)	19.5 (±0.3)	19.5 (±0.3)
VISCOSITY INDEX	D2270	---	100 (±5)	98 (±5)	95 (±5)	100 (±5)	135 (±5)	130 (±5)	130 (±5)
TBN	D2896	mg KOH/g	7 (±0.5)	7 (±0.5)	8 (±5)	8 (±0.5)	8 (±0.5)	8 (±0.5)	5.5 (±0.5)
NOACK	D5800		5 (±0.5)	5 (±0.5)	5 (±0.5)	5 (±0.5)	12 (±3)	8 (±2)	8 (±2)

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	GL-1 90	GL-1 140	GL-4 75W80	GL-4 75W90	GL-4 85W90	GL-4 85W140	GL-5 75W80	GL-5 75W90	GL-5 85W90	GL-5 85W140
DENSITY @ 15°C	D1289	kg/m³	880 (±10)	900 (±5)	865 (±5)	880 (±5)	900 (±5)	890 (±5)	875 (±5)	880 (±5)	885 (±5)	890 (±5)
FLASH POINT (min)	D92	°C	225 (±5)	220 (±10)	195 (±5)	195 (±5)	205 (±5)	205 (±5)	195 (±5)	205 (±5)	205 (±5)	205 (±5)
POUR POINT (max)	D97	°C	-15 (±5)	-9 (±2)	-40 (±2)	-40 (±2)	-25 (±5)	-20 (±2)	-40 (±2)	-40 (±2)	-25 (±5)	-25 (±5)
VISCOSITY @ 100°C	D445	cSt	16.5 (±0.3)	25 (±1)	8.5 (±0.3)	16.5 (±0.5)	17 (±0.3)	25 (±1)	8.7 (±0.3)	17 (±1)	17 (±1)	17 (±0.3)
VISCOSITY INDEX	D2270	---	95 (±10)	110 (±10)	160 (±5)	165 (±5)	125 (±5)	110 (±5)	160 (±5)	175 (±5)	125 (±5)	125 (±5)

GEAR OIL

GL

Petroforce Gear Oil, formulated with the finest base oils and high-quality additives, is designed as a lubricant for moving parts in the gearbox (transmission, differential, and steering box) of vehicles. One of the key performance characteristics of a gear lubricant is its load-bearing capacity and minimizing gear wear, which we have paid special attention to in the production of our products

This product boasts excellent load-bearing capacity across various viscosity grades, making it suitable for lubricating manual gearboxes in a wide range of gasoline and diesel vehicles, both light and heavy-duty, operating in open conditions and high temperatures

Features:

- Thermal stability and oxidation resistance in challenging working conditions
- Adequate protection against corrosion and rust
- Excellent lubricating and anti-wear properties
- Excellent stability against viscosity reduction
- Operability in a wide range of temperatures
- Very high load-bearing capacity

GL1
90
140

GL4
85W140
85W90
75W90
75W80

GL5
85W140
85W90
75W90
75W80

Automatic Transmission Fluid (ATF)

The PetroForce automatic transmission fluid, produced with high-quality base oil and virgin additives, is formulated as an exceptional lubricant for the moving parts within the automatic transmission gearbox of vehicles. One of the most critical performance characteristics of a gear lubricant is its load-carrying capacity and minimizing gear wear, which is highly effective in the performance of automatic transmissions

This product exhibits excellent load-carrying capacity with various viscosity grades, making it recommended for lubricating the manual gearbox of both gasoline and diesel light and heavy-duty vehicles that operate in open conditions and high temperatures

Features :

- Thermal and oxidation stability under tough operating conditions
- Highly desirable lubrication and anti-wear properties
- Adequate protection against corrosion and rusting
- Wide temperature range performance capability
- Excellent stability against viscosity breakdown
- Very high load-carrying capacity

CVT

AL4

ATF III IV VI

TECHNICAL DATA
Chemical Analysis

TEST	METHOD	UNIT	CVT	AL4	ATF III	ATF IV	ATF VI
DENSITY @ 15°C	D1289	kg/m³	850 (±5)	850 (±5)	860 (±5)	865 (±5)	855 (±5)
FLASH POINT	D92	°C	195 (±5)	200 (±5)	195 (±5)	200 (±5)	200 (±5)
POUR POINT	D97	°C	−45 (±3)	−40 (±2)	−45 (±5)	−45 (±5)	−45 (±1)
VISCOSITY @ 100°C	D445	cSt	7 (±0.2)	7.3 (±0.2)	8.1 (±0.3)	7.3 (±0.3)	6.3 (±0.2)
VISCOSITY INDEX	D2270	---	175 (±5)	175 (±5)	175 (±5)	170 (±5)	150 (±5)

2T

4T

TECHNICAL DATA
Chemical Analysis

TEST	METHOD	UNIT	SN 10W30	SG / CD 10W40	SG / CD 20W50	SC / CC 50
DENSITY @ 15°C	D4052	kg/m³	870 (±10)	870 (±5)	880 (±5)	890 (±5)
FLASH POINT	D92	°C	210 (±5)	220 (±5)	230 (±5)	230 (±5)
POUR POINT	D97	°C	−33 (±3)	−33 (±3)	−27 (±3)	−12 (±5)
VISCOSITY @ 100°C	D445	cSt	11.5 (±0.5)	15.5 (±0.3)	19.5 (±0.3)	19.5 (±0.5)
VISCOSITY INDEX	D2270	---	135 (±5)	130 (±5)	130 (±5)	100 (±5)
TBN	D2896	mg KOH/g	8 (±0.5)	5.5 (±0.5)	5.5 (±0.5)	4.5 (±0.5)
NOACK	D5800	°C	12 (±3)	12 (±3)	8 (±2)	4.5 (±0.5)

Motorcycle Engine Oil

The PetroForce motorcycle engine oil is produced using virgin base oil derived from the refining of crude oil through a cut process, followed by hydrogenation and the addition of high-quality additives. It is designed for use in all seasons and weather conditions in Iran

This product **JASO MA** and **JASO MB** meets the standard specifications of the Japanese Automotive Standards Organization and has a high-quality level as **SN** for powerful four-stroke motorcycles

- **Features:**
  - Virgin base oil
  - Excellent lubrication and anti-wear properties
  - High oxidation resistance and thermal stability
  - Adequate protection against corrosion and rusting
  - Appropriate friction coefficient to prevent premature clutch slippage and wear
  - Acid neutralizer to prevent engine component corrosion from oxidation by-products

SN/CF
10W30

SG/CD
10W40
20W50

SC/CC
50

2 STROKE

Over time, engines during their operation can have various effects on oil. These include deposition, contamination, increased viscosity, and a decrease in oil quantity. These occurrences can lead to issues such as ring sticking, corrosion, wear, and more. Therefore, the importance of choosing high-quality oil is doubled

Standard organizations have not defined a specific standard for marine engine oils. Requested tests are conducted on specific cases, and there is no specific standard. The absence of a standard is a significant factor due to the high test duration required for these engines, which is at least 5,000 hours, equivalent to about a year

PetroForce provides specialized formulations for marine oils that significantly contribute to improving the marine engine system

TPX TP 40 40

This product is manufactured with the latest innovations in marine diesel engines. Due to its excellent quality and outstanding performance, it is used for lubricating the cylinders and four-stroke marine diesel engine systems with medium and high speeds, using fuels with sulfur content higher than 3% by weight. This product is formulated and produced in two grades of **TPX** and **TP**

Features

Excellent resistance to rust and corrosion

Adequate resistance against oxidation

High thermal stability

Quick neutralization of acidic materials resulting from the combustion of marine engine fuel

Reduction of deposits in rings, pistons, and cylinders

Effective protection against component corrosion

LSC LSC 40 50

Marine oils are used in various types of vessels and boats that operate on undesirable fuels with high sulfur content (up to 5% by weight) and high asphaltic materials (between 5 to 10% by weight). Therefore, the motor oil used in these types of engines must have high quality

Designers of marine vessels place significant importance on improving engine performance and reducing fuel consumption. Hence, there is a high demand for suitable oil with desirable performance from consumers

PetroForce marine oils are formulated with virgin base oil and state-of-the-art formulation, meeting global standards. They are designed as multi-purpose oils for lubricating the diesel marine engine systems, providing optimal performance

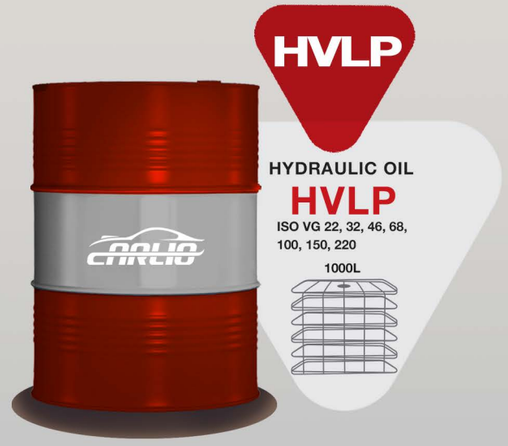
TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	LSC 40	LSC 50	TP 40	TPX 40	TSC-2
DENSITY @ 15°C	D4052	kg/m³	890 (±10)	890 (±10)	885 (±5)	890 (±10)	880 (±5)
FLASH POINT	D92	°C	220 (±10)	220 (±10)	230 (±5)	230 (±10)	210 (±5)
POUR POINT	D97	°C	−15 (±3)	−15 (±3)	−12 (±3)	−15 (±3)	−18 (±5)
VISCOSITY @ 100°C	D445	cSt	15.5 (±0.5)	19.5 (±0.5)	15 (±0.3)	15.5 (±0.5)	9.5 (±0.3)
VISCOSITY INDEX	D2270	---	95 (±5)	95 (±5)	90 (±5)	95 (±5)	95 (±5)
TBN	D2896	mg KOH/g	9 (±1)	7 (±1)	11.5 (±0.5)	19 (±1)	8 (±0.1)

HYDRAULIC OILS

TECHNICAL DATA Chemical analysis								
TEST	METHOD	UNIT	HVLP 32	HVLP 46	HVLP 68	HLP 68	HH 46	HH 68
DENSITY @ 15°C	D1289	kg/m³	870 (±5)	880 (±5)	880 (±5)	870 (±5)	880 (±5)	885 (±5)
FLASH POINT (min)	D92	°C	195 (±5)	185 (±5)	190 (±5)	225 (±5)	195 (±5)	200 (±5)
POUR POINT (max)	D97	°C	−12 (±5)	−25 (±2)	−24 (±2)	−15 (±5)	−12 (±5)	−12 (±5)
VISCOSITY @ 40°C	D445	cSt	32 (±1)	46 (±1)	68 (±1)	68 (±1)	46 (±1)	68 (±1)
VISCOSITY @ 100°C	D445	cSt	1A	1A	1A	1A	1A	1A
VISCOSITY INDEX	D2270	---	135 (±5)	135 (±5)	135 (±5)	100 (±5)	95 (±5)	95 (±5)

HYDRAULIC



PetroForce specialized HVLP hydraulic oils are formulated using the finest mineral oils and special additives, along with viscosity index improvers. These oils are designed for heavy-duty pressing operations, hydraulic systems, and equipment operating under heavy pressure conditions, as well as industrial machining processes in harsh working conditions

These oils are available in viscosity grades of 15, 22, 32, 46, 68, and 100

This product, with its maximum level of anti-wear additives and viscosity index improvers, is recommended as a high-quality hydraulic oil for hydraulic systems where its use is recommended

PetroForce specialized HLP hydraulic oils are formulated by combining the finest mineral oils with special additives that provide anti-oxidation and anti-corrosion properties. Additionally, effective additives are included to reduce friction and enhance high-pressure properties (EP properties) in accordance with technological standards. This product is suitable for various operations such as metal forming, light and heavy-duty pressurized hydraulic systems with high thermal loads, and high-pressure pumps in quick-steering systems

These oils are available in viscosity grades of 15, 22, 32, 46, 68, and 100

They find applications in industrial machining, hydraulic systems, rolling and melting furnaces, high-pressure equipment and machinery in military, agricultural, mining, and construction sector

PetroForce hydraulic circulating oils are produced by combining high-quality mineral oil with special anti-oxidation additives. This product is suitable for various low-pressure hydraulic and circulating systems (R&O), such as enclosed gear systems, chain drives, wheel bearings, and electric motor-pump units

These oils are available in viscosity grades of 15, 22, 32, 46, 68, and 100

Additionally, this product serves as a circulating oil with excellent lubricating properties in most circulating systems that require high-quality oil. It is also used in hydraulic systems and power transmission systems in accordance with the relevant standards

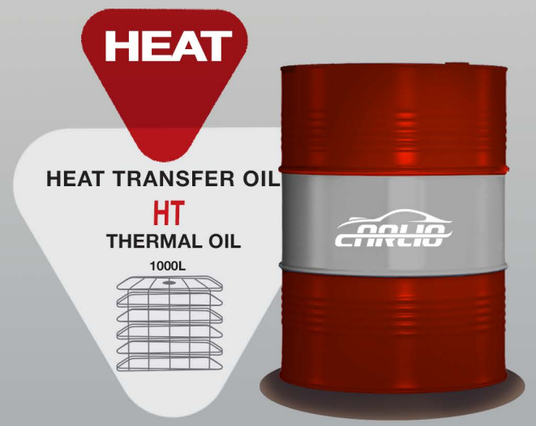
CLP

Industrial gear oil

PetroForce industrial gear oil is a special product produced with high-quality raw materials and virgin base oil. In addition to lubrication, it possesses a high load-carrying capacity and can effectively protect gear surfaces against high pressure

The anti-oxidation and thermal stability additives in this product increase its viscosity, preventing the formation of deposits and, consequently, the settling of the oil after continuous hours of operation

These oils are available in various viscosity grades, including 100, 150, 220, 320, 460, 680, and 1000



HEAT

Heat transfer oil

PetroForce heat transfer oil is a blend of the finest mineral oil and high-quality additives. It not only has a high thermal transfer coefficient but also boasts excellent thermal stability. It is suitable for operation up to 300 degrees Celsius in closed systems and up to 190 degrees Celsius in open systems

- **Features :**

Excellent thermal stability
Prevention of deposit formation
High thermal transfer coefficient
High resistance to oxidation and corrosion

COLD

Heat treatment oil

PetroForce cold quenching oils are a blend of high-quality mineral oils and additives used as cooling fluids in the heat treatment processes of materials, parts, metals, and alloys outside the furnace. They contribute to reducing stress and improving the properties of the final product

These oils, with a high flash point and thermal stability (up to 230 degrees Celsius), along with suitable additives, not only protect against oxidation but also exhibit effective heat transfer during operations

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	CLP 150	CLP 220	CLP 320	HT	Q 68	QS 165
DENSITY @ 15°C	D1289	kg/m³	890 (±5)	895 (±5)	895 (±5)	870 (±3)	890 (±5)	850 (±5)
FLASH POINT	D92	°C	210 (±5)	225 (±5)	220 (±5)	205 (±5)	240 (±5)	200 (±5)
POUR POINT	D97	°C	−7 (±2)	−7 (±2)	−7 (±2)	−12 (±5)	−7 (±3)	−7 (±3)
VISCOSITY @ 40°C	D445	cSt	150 (±5)	220 (±5)	320 (±5)	220 (±5)	115 (±0.3)	26 (±0.3)
VISCOSITY INDEX	D2270	---	---	---	---	100 (±5)	90 (±5)	118 (±5)

TECHNICAL DATA
Chemical analysis

TEST	METHOD	UNIT	CALCIUM NLGI II	CALCIUM NLGI III	MULTIPURPOSE CALCIUM NLGI III	LITHIUM GREASE	BENTONE NLGI III
SOAP TYPE	---	---	Calcium	Calcium	Calcium	Lithium	Bentone
COLOR	ASTM D445	---	Brown	Brown	Dark Green	Brown	Red
CORROSION	ASTM D2270	---	Pass	Pass	Pass	Pass	Pass
WATER RESISTANCE	ASTM D92	---	Very Good	Very Good	Very Good	Very Good	Very Good
DROP POINT	ASTM D97	℃	95 (±5)	95 (±5)	95	190 (±5)	240
NLGI	ASTM D4052	---	2	3	3	2	3
PENETRATION	ASTM D130	0.1 mm	285 (±5)	235 (±5)	230 (±10)	285 (±5)	235 (±5)

CALCIUM

PetroForce calcium-based greases are formulated with high-quality mineral oil, calcium soap, and special additives. They are suitable for use in bearings, universal joints, chassis, and steering gearboxes of industrial machinery

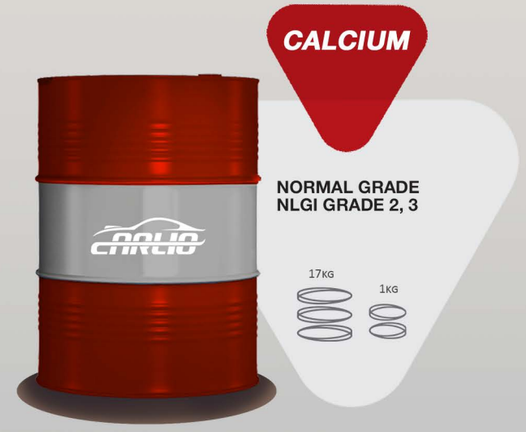
This product is formulated by combining high-quality mineral oil, calcium soap as a thickener, and special additives to enhance the grease properties. Due to the use of high-quality calcium, it exhibits excellent stability in the presence of water

- **Features :**

High stability against water washout and humid environments

High pumpability

Operating temperature range from minus 20 degrees to positive 60 degrees Celsius



LITHIUM

PetroForce lithium grease is a multi-purpose lubricant designed for all industries. Mechanical stability, high durability, and good resistance to water are among the properties of this grease. Additionally, this product is capable of operating in a temperature range of -20 to +130 degrees Celsius. The grease is formulated with quality mineral oil and lithium soap thickener, and it contains anti-wear, anti-corrosion, and antioxidant additives

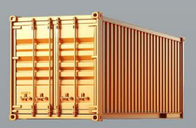
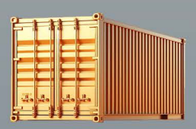
This product, based on lithium soap and the finest mineral oils, is formulated and produced. The lithium stearate ensures excellent mechanical stability and very high thermal resistance for this product

BENTONE

This grease is formulated with a non-soap thickener (mineral powder) in accordance with global standards. Due to its unique structure, it does not melt and is suitable for use in conditions with a maximum temperature of 180 degrees Celsius

The high-quality bentonite-based non-flammable grease is designed for lubricating industrial equipment operating under heavy loads and high temperatures. It is suitable for medium to large-sized, low-speed bearings that operate at very high temperatures, where greases based on conventional soaps often do not provide satisfactory lubrication

PACKAGING

Lenghth x Width x Height (CM)	20 ft	40 ft	TRUCK
 1L X 12	 35x26X25	 1296	 2000	2000
 4L x 6	 41.5x32.5x33.5	 686	 1421	 1421
 5L X 4	 39.5x26X34.5	 882	 1250	 1250
 20L	 28x25X28	 1134	 1315	 1315
 200L	 58x58X88	 80	 122	 124
 1KG X 12	 47x35.5X31.5	 504	 892	 892

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