77 lubricants

PRODUCT GUIDE




Local Service, Worldwide


77
Lubricants
AVON
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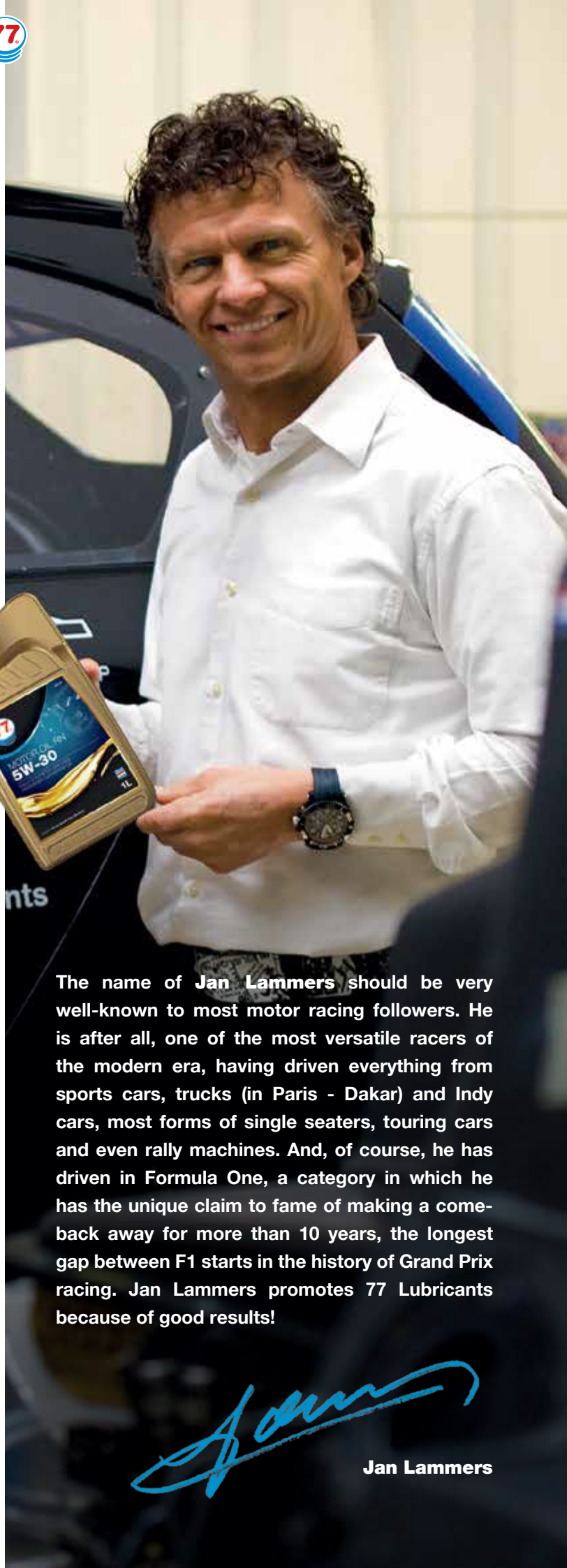

The name of Jan Lammers should be very well-known to most motor racing followers. He is after all, one of the most versatile racers of the modern era, having driven everything from sports cars, trucks (in Paris - Dakar) and Indy cars, most forms of single seaters, touring cars and even rally machines. And, of course, he has driven in Formula One, a category in which he has the unique claim to fame of making a come-back away for more than 10 years, the longest gap between F1 starts in the history of Grand Prix racing. Jan Lammers promotes 77 Lubricants because of good results!

Jan Lammers

ABOUT 77 LUBRICANTS

HIGH QUALITY LUBRICANTS

77 Lubricants is one of the largest independent lubricating oil brands in Europe. 77 Lubricants produces and sells an extensive selection of high quality lubricants and specialties that are used in a wide range of applications. The products are developed and produced by specialists who can choose from a wide variety of base oils and additives, making sure they put together lubricants that meet the latest standards of the Original Equipment Manufacturers (OEM's) and International Standardization Committees.

The products of 77 Lubricants are produced in one of the largest and most advanced lubricant plants in the Netherlands. This plant, with an annual production capacity of 130.000 Metric Tons of finished lubricants, has an oil storage capacity of 17 million liters, more than 60 tanks for the storage of finished products and several warehouses for storing packaged products.

The ISO 9001 certified plant has a fully equipped laboratory at its disposal, which guarantees 100 percent product compliance. It also offers an oil analysis program.

77 Lubricants is a proud international brand that offers a sophisticated product line of the highest quality available in Europe. This is combined with excellent service from the sales staff and the technical team, who put the products on the market.
All products are sold by local distributors and supported by us to make sure we offer the best possible service to end-users.
Commitment and personal support of our partners and customers is in our DNA.
We act quickly and are very reliable. If you have any questions, please do not hesitate to contact us.

77 MARINE LUBRICANTS

77 Lubricants has an extensive marine lubricants portfolio, which includes high-performance diesel-engine cylinder oils, trunk-piston engine oils and special greases. We also provide a range of technical services and lubrication advice to support our customers in gaining optimum results when they use our 77 lubricants products. With a national supply chain of 6 bunker barges for lubricant transport and dedicated tank trucks, 77 Lubricants marine products are guaranteed to be delivered on demand in all Dutch ports.

Worlds biggest bunker barge in the Port of Rotterdam. The Port of Rotterdam, located in the city of Rotterdam, the Netherlands, is the largest port in Europe. Every year about 34.000 sea-going vessels and 100.000 inland vessels call at the Port of Rotterdam. The petrochemical industry and general cargo transshipment handlings are the most important activities in the Port of Rotterdam. For deliveries in the Rotterdam area, 77 Lubricants works with the world's biggest and most modern double hull lubricants bunker barge: the TNB Pride. Use our technical expertise to improve your productivity

As a leading supplier of marine lubricants, we have the resources to develop technology and services that immediately respond to your evolving lubrication needs. Our dedicated team of engineers and technicians offers unrivalled technical expertise. Through our oil analyses we can support you with our technical information and increase your productivity and profit.

For additional information on our services, please do not hesitate to contact us by mail at info@77lubricants.nl.

Introduction

77 Lubricants est une des marques de lubrifiant indépendantes les plus diversifiées d'Europe. 77 Lubricants produit et introduit sur le marché une collection complète de lubrifiants de qualité supérieure, ainsi que des spécialités pour une vaste palette d'applications. Les produits sont développés et produits par des spécialistes qui font leur choix parmi une grande variété d'huiles de base et d'additifs en vue d'obtenir des lubrifiants conformes aux derniers standards de l'OEM (Original Equipment Manufacturers) et du Comité international de standardisation.

Tous les produits de 77 Lubricants sont fabriqués dans une des plus grandes usines de mélange de lubrifiant des Pays-Bas, et une des plus sophistiquées. Sa capacité annuelle est de 13 000 tonnes de produit fini, sa capacité de stockage d'huile de base s'élève à 17 millions de litres, et elle compte plus de 60 réservoirs pour le stockage de produits finis et divers entrepôts pour le stockage de produits finis.

Certifiée ISO 9001, l'usine dispose d'un laboratoire entièrement équipé garantissant une conformité produits de 100%, et propose d'autre part un programme d'analyse « huiles en service ».

77 Lubricants est fier du caractère international de la marque, de son statut de vendeur d'une ligne de produits sophistiquée et d'excellente qualité - une des meilleures en Europe. Le service optimal du département ventes et technique de 77 ne fait que faciliter le marketing de nos produits.

Tous les produits 77 Lubricant sont revendus par des distributeurs locaux, lesquels disposent du support total de l'usine de production aux Pays-Bas. Le résultat : un service excellent à destination des utilisateurs finaux de nos produits.

Fournir à nos partenaires et à nos clients un soutien individuel et personnel est notre seconde nature. Fiables, nous agissons rapidement et sommes à votre disposition pour répondre à vos questions.

Introducción

77 lubricants es una de las marcas independientes de aceites lubricantes más grandes de Europa. 77 lubricants produce y comercializa una selección integral de lubricantes y especialidades de alta calidad, destinada a una gran variedad de aplicaciones. Los productos son desarrollados y producidos por especialistas que tienen a su disposición una amplia variedad de aceites base y aditivos para obtener lubricantes que cumplan con los estándares más recientes de los fabricantes de equipos originales (OEM) y los Comités Internacionales de Estandarización.

Todos los productos de 77 Lubricants son producidos en una de las plantas mezcladoras de lubricantes más grandes y avanzadas de los Países Bajos. Esta planta, con una capacidad de producción anual de 130.000 toneladas métricas de lubricantes terminados, tiene una capacidad de almacenamiento de 17 millones de litros, más de 60 tanques para el almacenamiento de productos terminados y varias instalaciones de almacenamiento para productos envasados.

La planta que cuenta con el certificado ISO 9001, dispone de un laboratorio totalmente equipado lo cual le permite garantizar un cumplimiento absoluto con los requisitos del producto y además ofrece un programa para el análisis de los aceites producidos.

77 Lubricants está orgullosa por ser una marca internacional, que ofrece un producto sofisticado y de la mayor calidad disponible en Europa. La comercialización de los productos cae bajo la responsabilidad del personal de ventas y el equipo técnico de 77, ofreciendo siempre el mejor servicio posible.

Todos los productos son vendidos por distribuidores locales que disfrutan de un soporte incondicional por parte de la fábrica en los Países Bajos. Esto garantiza el mejor servicio posible para los usuarios finales de nuestros productos.

La combinación de compromiso y el apoyo individual y personalizado en el trato con nuestros socios y clientes, es nuestra segunda naturaleza.

Trabajamos con rapidez y fiabilidad y estamos a su total disposición para responder cualquier pregunta.

RACING OIL 10W-60

Product Code 42010

RACING OIL 10W-60 is a high performance fully synthetic motor oil of exceptional quality, delivering extreme performance in gasoline-, diesel- and LPG fueled engines in passenger cars with or without turbocharger, working under severe temperature and load conditions.

RACING OIL 10W-60 is based on high quality 100% synthetic Poly Alpha Olefin (PAO) in combination with an unique additive package to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersant and detergent properties.
- Excellent cold temperature properties for a smooth cold start.
- Excellent protection against wear, corrosion and foam.
- Suited for extreme and severe conditions.

RACING OIL 10W-60 exceeds the following performance criteria:

Exceeds: API SN, ACEA A3/B4

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-60
Density@15°C	kg/m3	ASTM D4052	848
Kin. Viscosity @40°C	mm2/s	ASTM D7042	168
Kin. Viscosity @100°C	mm2/s	ASTM D7042	23.9
Viscosity Index		ASTM D2270	174
Viscosity CCS @-25°C, max	cP	ASTM D5293	6000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48
Total Base Number	mgKOH/g	ASTM D2896	10.1
Sulpated Ash	%Wt	ASTM D874	1.09

RACING OIL 5W-50

Product Code 42020

RACING OIL 5W-50 is a high performance motor oil based on 100% synthetic technology with exceptional quality, delivering extreme performance in gasoline-, diesel- and LPG fueled engines in passenger cars with or without turbocharger, working under severe temperature and load conditions.

RACING OIL 5W-50 is based on high quality synthetic base oil in combination with an unique additive package to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersant and detergent properties.
- Excellent cold temperature properties for a smooth cold start.
- Excellent protection against wear, corrosion and foam.
- Suited for extreme and severe conditions.

RACING OIL 5W-50 meets the following performance criteria:

Exceeds: API SN, ACEA A3/B4, MB 229.1

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-50
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	112
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.5
Viscosity Index		ASTM D2270	186
Viscosity CCS @-30°C, max	cP	ASTM D5293	5660
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	10.2
Sulpated Ash	%Wt	ASTM D874	1.09

MOTOR OIL SYNTETHIC 5W-40

Product Code 42040

MOTOR OIL SYNTHETIC 5W-40 is an universal high performance fuel saving oil based on 100% synthetic technology for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SYNTHETIC 5W-40 is formulated with high quality synthetic base stocks in combination with an unique additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

Approved: MB-Approval 229.3, VW 502.00 / 505.00.
Meets: API SN, ACEA A3/B4, Renault RN 0700/0710, GM-LL-A-025, GM-LL-B-025, Porsche A40, BMW LL-01 > until 2019

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-40
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	85.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.4
Viscosity Index		ASTM D2270	176
Viscosity CCS @-30°C, max	cP	ASTM D5293	5660
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	10.2
Sulpated Ash	%Wt	ASTM D874	1.20

MOTOR OIL SYNTHETIC 5W-20

Product Code 42050

MOTOR OIL SYNTHETIC 5W-20 is high performance fuel conserving engine oil based on 100% synthetic technology for all gasoline engines in passenger cars and light vans. MOTOR OIL SN 5W-20 is specially designed for the lubricating of the latest generation vehicles like hybrid and ECO models which require a SAE 5W-20 and running on gasoline and/or ethanol-containing fuels up to E85.

MOTOR OIL SYNTHETIC 5W-20 is based on synthetic base oil in combination with a special additive package to obtain the following properties.

- Excellent thermal and oxidation stability.
- Excellent cold temperature properties for a smooth cold start.
- Very good dispersant and detergent properties.
- Fuel saving properties due to low friction properties
- Very good antifoam, antiwear and anticorrosion properties.
- Long oil change interval possible.

API SN PLUS, ILSAC GF-5, GM Dexos 1:2015 (Dexos 1: Gen2), MS 6395, GM 4718M

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-20
Density@15°C	kg/m3	ASTM D4052	847
Kin. Viscosity @40°C	mm2/s	ASTM D7042	42.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.2
Viscosity Index		ASTM D2270	174
Viscosity CCS @-30°C, max	cP	ASTM D5293	2770
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	8.4

MOTOR OIL SL 10W-40

Product Code 42060

MOTOR OIL SL 10W-40 is an universal high performance fuel saving semi synthetic oil for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SL 10W-40 is formulated with high quality refined mineral and synthetic base stocks in combination with a special additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High Viscosity Index.

Approved: MB-Approval 229.1
Meets: ACEA A3/B3, API SL/CF, BMW LL-01 > until 2019, VW 501.01/505.00

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	859
Kin. Viscosity @40°C	mm2/s	ASTM D7042	88.7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.8
Viscosity Index		ASTM D2270	159
Viscosity CCS @-25°C, max	cP	ASTM D5293	5260
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	8.5
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR OIL SL 15W-40

Product Code 42080

MOTOR OIL SL 15W-40 is a high performance mineral engine oil suitable for gasoline-, LPG-, and diesel engines in modern passenger cars and light vans with or without turbochargers.

MOTOR OIL SL 15W-40 is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Good thermal and oxidation stability.
- Stay-in-grade.
- Good protection against wear, foam and corrosion.
- Low temperature properties, to ensure a smooth cold start.

Approved:

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	878
Kin. Viscosity @40°C	mm2/s	ASTM D7042	94
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.3
Viscosity Index		ASTM D2270	141
Viscosity CCS @-20°C, max	cP	ASTM D5293	5160
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	8.6
Sulpated Ash	%Wt	ASTM D874	1.05

MOTOR OIL SL/CF 10W-40

Product Code 42090

MOTOR OIL SL/CF 10W-40 is a universal high performance semi synthetic oil for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SL/CF 10W-40 is formulated with high quality re-refined mineral and synthetic base stocks in combination with a special additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

API SL/CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	862
Kin. Viscosity @40°C	mm2/s	ASTM D7042	101
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.5
Viscosity Index		ASTM D2270	162
Viscosity CCS @-25°C, max	cP	ASTM D5293	4610
Flash Point COC	°C	ASTM D92	230
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	7.4
Sulpated Ash	%Wt	ASTM D874	0.91

MOTOR OIL SL 20W-50

Product Code 42100

MOTOR OIL SL 20W-50 is a high performance mineral engine oil suitable for gasoline-, LPG-, and diesel engines in modern passenger cars and light vans with or without turbochargers.

MOTOR OIL SL 20W-50 is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the followingproperties:

- Good thermal and oxidation stability.
- Stay-in-grade.
- Good protection against wear, foam and corrosion.
- Low temperature properties, to ensure a smooth cold start.

ACEA A3/B3, MB 229.1 **VW 505.00, API SL**

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-50
Density@15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	152
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.8
Viscosity Index		ASTM D2270	130
Viscosity CCS @-15°C, max	cP	ASTM D5293	6660
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	8.7
Sulpated Ash	%Wt	ASTM D874	1.06

MOTOR OIL SF 15W-40

Product Code 42120

MOTOR OIL SF 15W-40 is a multi functional mineral engine oil for older gasoline-, diesel- and LGP engines of passenger car and light vans with or without turbo compressor. MOTOR OIL SF 15W-40 is not suited for engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SF 15W-40 is formulated with special selected base stocks in combination with unique additive package to reach the following properties:

- Stable viscosity index.
- Good protection against rust, corrosion and wear.
- Good dispergency and detergency properties.
- Good antifoam properties.

API SF/CD

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	875
Kin. Viscosity @40°C	mm2/s	ASTM D7042	103
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	141
Viscosity CCS @-20°C, max	cP	ASTM D5293	4910
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	5.4
Sulpated Ash	%Wt	ASTM D874	0.66

MOTOR OIL SF 20W-50

Product Code 42140

MOTOR OIL SF 20W-50 is a multi functional mineral engine oil for older gasoline-, diesel- and LGP engines of passenger car and light vans with or without turbo compressor. MOTOR OIL SF 20W-50 is not suited for engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SF 20W-50 is formulated with special selected base stocks in combination with unique additive package to reach the following properties:

- Stable viscosity index.
- Good protection against rust, corrosion and wear.
- Good dispergency and detergency properties.
- Good antifoam properties.

API SF/CD

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-50
Density@15°C	kg/m3	ASTM D4052	881
Kin. Viscosity @40°C	mm2/s	ASTM D7042	154
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.03
Viscosity Index		ASTM D2270	129
Viscosity CCS @-15°C, max	cP	ASTM D5293	5770
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	5.6
Sulpated Ash	%Wt	ASTM D874	0.66

MOTOR OIL SYNTHETIC 0W-20

Product Code 42150

MOTOR OIL SYNTHETIC 0W-20 is high performance fuel conserving engine oil based on 100% synthetic technology for all gasoline engines in passenger cars and light vans.

MOTOR OIL SYNTHETIC 0W-20 is specially designed for the lubricating of the latest generation vehicles like hybrid and ECO models which require a SAE 0W-20 and running on gasoline and/or ethanol-containing fuels up to E85.

MOTOR OIL SYNTHETIC 0W-20 is based on synthetic base oil in combination with a special additive package to obtain the following properties.

- Excellent thermal and oxidation stability.
- Excellent cold temperature properties for a smooth cold start.
- Very good dispersant and detergent properties.
- Fuel saving properties due to low friction properties
- Very good antifoam, antiwear and anticorrosion properties.
- Long oil change interval possible

API SN PLUS, ILSAC GF-5, GM Dexos 1:2015 (Dexos 1: Gen2), GM 4718M

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	0W-20
Density@15°C	kg/m3	ASTM D4052	847
Kin. Viscosity @40°C	mm2/s	ASTM D7042	45.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.7
Viscosity Index		ASTM D2270	174
Viscosity CCS @-35°C, max	cP	ASTM D5293	5740
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	8.6
Sulpated Ash	%Wt	ASTM D874	0.86

MOTOR OIL VX 0W-20

Product Code 42170

MOTOR OIL VX 0W-20 is a fully synthetic fuel saving long life oil based for use in gasoline- and diesel engines of passenger cars and light vans where a VAG norm 508.00/509.00 has been prescribed.

Remark: This product is not backwards compatible with older vehicles that require the VW 504 00/507 00 specification.

MOTOR OIL VX 0W-20 is formulated with high quality 100% Poly Alpha Olefin (PAO) base stocks in combination with an unique additive technology to achieve the following performance:

- Exceptional good low temperature properties.
- Excellent protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.
- Extended oil drain interval.
- Improved fuel economy.

VW 508 00 / 509 00, (VW TL 52577), Porsche C20

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	0W-20
Density@15°C	kg/m3	ASTM D4052	837
Kin. Viscosity @40°C	mm2/s	ASTM D7042	42
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.5
Viscosity Index		ASTM D2270	183
Viscosity CCS @-35°C, max	cP	ASTM D5293	3780
Flash Point COC	°C	ASTM D92	>205
Pour Point	°C	ASTM D7346	-54
Total Base Number	mgKOH/g	ASTM D2896	8.7
Sulpated Ash	%Wt	ASTM D874	0.8

MOTOR OIL FEB 5W-20

Product Code 42180

MOTOR OIL FEB 5W-20 is a high quality fuel saving engine oil based on 100% synthetic technology specially designed for the latest Ford Ecoboost gasoline engines. **MOTOR OLL FEB 5W-20** is also suited for engines where ACEA A1/B1 or API SN is recommended

MOTOR OIL FEB 5W-20 is based on high performance synthetic oil in combination with a specially selected additive technology to ensure the following properties.

- Excellent thermo- and oxidation stability.
- Very high detergency and dispersion.
- Very good low temperature properties.
- Protection to wear by cold start.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High and stable viscosity index.
- Low Fuel Consumption.

Ford WSS M2C-948B, ACEA A1/B1, API SN, STJLR.03.500

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-20
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	42
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.8
Viscosity Index		ASTM D2270	158
Viscosity CCS @-30°C, max	cP	ASTM D5293	4340
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	7.5
Sulpated Ash	%Wt	ASTM D874	0.78

MOTOR OIL SYNTHETIC 0W-30

Product Code 42190

MOTOR OIL SYNTHETIC 0W-30 is a high performance fully synthetic motor oil for gasoline- and diesel engines of modern passenger cars and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SYNTHETIC 0W-30 is formulated with high quality 100% synthetic base oil (Poly Alpha Olefin (PAO)) in combination with an unique additive package to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersant and detergent properties.
- Excellent cold temperature properties for a smooth cold start.
- Excellent protection against wear, corrosion and foam.
- Suited for extreme and severe conditions.

API SL, ACEA A3/B4-16, VW 502.00/505.00, MB 229.5, Renault RN 0700/0710, VCC 95200356

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	0W-30
Density@15°C	kg/m3	ASTM D4052	844
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68.7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	12.3
Viscosity Index		ASTM D2270	180
Viscosity CCS @-35°C, max	cP	ASTM D5293	6010
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-51
Total Base Number	mgKOH/g	ASTM D2896	10
Sulpated Ash	%Wt	ASTM D874	1.51

MOTOR OIL VX 5W-30

Product Code 42240

MOTOR OIL VX 5W-30 is a high performance fuel saving MID SAPS long life oil based on 100% synthetic technology for use in gasoline- and diesel engines of passenger cars and light vans where a VAG norm 504.00/507.00 has been prescribed and also suitable for vehicles where MB 229.51 and BMW LL-04 are required. Also suitable for use for vehicles were originally VW 506.01 is required.

MOTOR OIL VX 5W-30 is formulated with high quality synthetic base stocks in combination with an unique additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.
- Extended oil drain interval.
- Also suitable for engines equipped with other catalyst like TWC

Approved: VW 504.00 / 507.00, MB-approval 229.51
Meets: ACEA C3, API SN, BMW LL-04, Porsche C3

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	852
Kin. Viscosity @40°C	mm2/s	ASTM D7042	67
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.7
Viscosity Index		ASTM D2270	173
Viscosity CCS @-30°C, max	cP	ASTM D5293	5900
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45
Total Base Number	mgKOH/g	ASTM D2896	8.8
Sulpated Ash	%Wt	ASTM D874	0.7

MOTOR OIL LE 5W-30

Product Code 42250

MOTOR OIL LE 5W-30 is a high performance fuel saving MID SAPS engine oil for use in the latest generation gasoline and diesel engines of passenger cars and light vans with or without turbocharger. **MOTOR OIL LE 5W-30** is developed for use in engines which are equipped with or without an exhaust gas after treatment system.

MOTOR OIL LE 5W-30 is based on high performance 100% synthetic base oil in combination with a specially selected additive technology to ensure the following properties:

- Good thermal and oxidation stability.
- MID SAPS technology.
- Good protection against wear, foam and corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Equipped for diesel engines with an exhaust after treatment system.
- Fuel saving properties.

Approved: MB-Approval 229.51, MB-Approval 229.52 (pending)
Meets: API SN/CF, ACEA C2/C3, Renault RN0700/0710, Dexos 2, MB 229.31 VW 502.00/505.00, BMW LL-04

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	851
Kin. Viscosity @40°C	mm2/s	ASTM D7042	66.94
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.7
Viscosity Index		ASTM D2270	172
Viscosity CCS @-30°C, max	cP	ASTM D5293	5000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	7.7
Sulpated Ash	%Wt	ASTM D874	0.78

MOTOR OIL LE 5W-40

Product Code 42260

MOTOR OIL LE 5W-40 is a high performance fuel saving MID SAPS engine oil based on 100% synthetic technology for use in the latest generation gasoline and diesel engines of passenger car and light vans with or without turbocharger. **MOTOR OIL LE 5W-40** is developed for use in engine which are equipped with or without an exhaust gas after treatment system.

MOTOR OIL LE 5W-40 is based on high performance 100% synthetic base oil in combination with a specially selected additive technology to ensure the following properties:

- Good thermal and oxidation stability.
- MID SAPS technology.
- Good protection against wear, foam and corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Equipped for diesel engines with an exhaust after treatment system.
- Fuel saving properties.

Approved: MB-Approval 229.51
Meets: API SN/CF, ACEA C3, Renault RN 0700/0710, Dexos 2, Porsche A40, BMW LL-04 > until 2019, Ford M2C917A MB 226.5, MB229.31, VW 502.00/505.01

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-40
Density@15°C	kg/m3	ASTM D4052	852
Kin. Viscosity @40°C	mm2/s	ASTM D7042	84.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	174
Viscosity CCS @-30°C, max	cP	ASTM D5293	5400
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	7.9
Sulpated Ash	%Wt	ASTM D874	0.8

MOTOR OIL FEC 5W-30

Product Code 42270

MOTOR OIL FEC 5W-30 is a high performance fuel saving oil based on 100% synthetic technology for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger and designed for the last generation Ford vehicles and other vehicles where an ACEA A5/B5 is been required. This product is not to be used in diesel engines equipped with a Diesel Particulate Filter (DPF) except on Ford engines that require Ford WSS M2C913C/D.

MOTOR OIL FEC 5W-30 is formulated with high quality synthetic base stocks in combination with an unique additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.
- Longer oil drain interval.

API SL/CF, ACEA A1/B1 ACEA A5/B5, Renault 0700, Ford WSS M2C913C Ford WSS M2C913D, STJLR 03.5003

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	851
Kin. Viscosity @40°C	mm2/s	ASTM D7042	54.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.9
Viscosity Index		ASTM D2270	172
Viscosity CCS @-30°C, max	cP	ASTM D5293	4100
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	10.0
Sulpated Ash	%Wt	ASTM D874	1.08


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MOTOR OIL HT 0W-40

Product Code 42290

MOTOR OIL HT 0W-40 is a fully synthetic oil for the latest generation engines and specially formulated to meet the requirements of the latest generation gasoline & diesel engines. This multi-grade oil provides excellent protection against wear and good lubrication to help saving fuel and reduction of emissions.

MOTOR OIL HT 0W-40 is formulated with high quality synthetic base oils, PolyAlphaOlefin (PAO), in combination with a special selected additive package to ensure the following properties:

- Excellent thermal and oxidation stability.
- Excellent cold temperature properties for an easy cold start.
- Very good dispersant and detergent properties.
- Very good antifoam, antiwear and anti-corrosion properties.
- Long oil change interval possible.

Approved: MB-Approval 229.5
Exceeds: ACEA A3/B4, API SN, VW 502.00/505.00, Porsche A40, BMW LL-01 > until 2019, Renault RN0700/0710, MB 229.3, Ford M2C937-A

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	0W-40
Density@15°C	kg/m3	ASTM D4052	843
Kin. Viscosity @40°C	mm2/s	ASTM D7042	80.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.5
Viscosity Index		ASTM D2270	190
Viscosity CCS @-35°C, max	cP	ASTM D5293	5900
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45
Total Base Number	mgKOH/g	ASTM D2896	10.1

MOTOR OIL XT 5W-30

Product Code 42310

MOTOR OIL XT 5W-30 is a high performance fuel saving MID SAPS long life oil based on 100% synthetic technology for out-of-warranty service fill use in gasoline- and diesel engines of passenger cars and light vans where a VAG norm 504.00/507.00 has been prescribed. **MOTOR OIL XT 5W-30** is suitable for vehicles where MB 229.51 and BMW LL-04 are required.

Remark: not suitable for R5- and V10 TDI engines and engines where VAG norm VW 506.01 is being advised.

MOTOR OIL XT 5W-30 is formulated with high quality synthetic base stocks in combination with an unique additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.
- Extended oil drain interval.
- Also suitable for engines equipped with other catalyst like TWC.

ACEA C3, VW 504.00 / 507.00, MB 229.51, BMW LL-04 > until 2019, API SN

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	61.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.6
Viscosity Index		ASTM D2270	162
Viscosity CCS @-30°C, max	cP	ASTM D5293	5200
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	9.0
Sulpated Ash	%Wt	ASTM D874	0.79

MOTOR OIL ASP 5W-30

Product Code 42320

MOTOR OIL ASP 5W-30 is a high performance fuel saving MID SAPS engine oil based on 100% synthetic technology to be used in gasoline- and diesel engines of the latest generation passenger cars and light vans where a PSA B71 2290 specification is required and suitable for all engines which require an C2 performance specification.

MOTOR OIL ASP 5W-30 is based on high performance synthetic base oil in combination with a specially selected additive technology to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Fuel saving properties.
- Excellent protection against wear, foam en corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Long oil drain interval possible.

API SN/CF, ACEA C2, Renault RN 0700, PSA B 71 2290 > until 2017, Fiat 9.55535-S1

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	856
Kin. Viscosity @40°C	mm2/s	ASTM D7042	61.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.6
Viscosity Index		ASTM D2270	163
Viscosity CCS @-30°C, max	cP	ASTM D5293	5550
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	7.8
Sulpated Ash	%Wt	ASTM D874	0.8

MOTOR OIL RN 5W-30

Product Code 42330

MOTOR OIL RN 5W-30 is a high performance fuel saving LOW SAPS oil based on 100% synthetic technology for use in gasoline- and diesel engines of passenger cars and light vans specially designed for the latest generation Renault and Nissan diesel engines equipped with a Diesel Particulate Filter (DPF) and all other engines where an ACEA C4 product is required.

MOTOR OIL RN 5W-30 is based on high performance synthetic base oil in combination with a specially selected additive technology to ensure the following properties:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.
- Extend oil drain interval.
- Also suitable for engines equipped with other catalyst like TWC.

ACEA C4, Renault RN0720, MB 226.51

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	850
Kin. Viscosity @40°C	mm2/s	ASTM D7042	70
Kin. Viscosity @100°C	mm2/s	ASTM D7042	12.3
Viscosity Index		ASTM D2270	174
Viscosity CCS @-30°C, max	cP	ASTM D5293	<5300
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	8.0
Sulpated Ash	%Wt	ASTM D874	≤0.5

MOTOR OIL SYNTHETIC 10W-40

Product Code 42340

MOTOR OIL SYNTHETIC 10W-40 is an universal high performance fuel saving synthetic oil for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SYNTHETIC 10W-40 is formulated with high quality synthetic base stock in combination with a special additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

Approved: MB-approval 229.3
Meets: API SN, ACEA A3/B4, MB 226.5, RN 0700/0710, VW 501.01/505.00

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	865
Kin. Viscosity @40°C	mm2/s	ASTM D7042	92.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.8
Viscosity Index		ASTM D2270	153
Viscosity CCS @-25°C, max	cP	ASTM D5293	6200
Flash Point COC	°C	ASTM D92	>215
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	10.2
Sulpated Ash	%Wt	ASTM D874	1.22

MOTOR OIL SYNTHETIC 10W-30

Product Code 42350

MOTOR OIL SYNTHETIC 10W-30 is a high performance fuel saving engine oil based on synthetic technology to be used in gasoline- and diesel engines of the latest generation passenger cars and light vans where a ACEA A3/B4 specification is required and suitable for all engines which require an MB 229.3 and VW 502.00 performance specification.

MOTOR OIL SYNTHETIC 10W-30 is based on synthetic technology base oil in combination with a special additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

API SN/CF, ACEA A3/B4, VW 502.00/505.00, MB 229.3

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-30
Density@15°C	kg/m3	ASTM D4052	869
Kin. Viscosity @40°C	mm2/s	ASTM D7042	75.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	12.0
Viscosity Index		ASTM D2270	154
Viscosity CCS @-25°C, max	cP	ASTM D5293	7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	10.3
Sulpated Ash	%Wt	ASTM D874	1.31

MOTOR OIL DX1 5W-30

Product Code 42360

MOTOR OIL DX1 5W-30 is the advanced synthetic energy conserving motor oil specially developed for the most modern high output gasoline and turbocharged engines in passenger cars, sport utility vehicles and light-duty trucks, operating on ethanol-containing fuels up to E85. It is formulated to help improve & retain fuel economy and protect vehicle emission system & turbocharger components while meeting the latest GM Dexos1™: 2015 demands.

MOTOR OIL DX1 5W-30 is based on exceptional quality synthetic base oil in combination with a special selected additive package to reach to following properties:

- Improved protection against stochastic pre-ignition
- Improving sludge protection, piston cleanliness, turbo-charger protection, seal compatibility, wear protection
- Special friction modifiers used in this Energy conserving oil help improving & retaining fuel economy.
- Offers excellent lubrication at low temperatures and protect engine at high temperatures.
- Superior volatility characteristics reduce oil consumption and hydrocarbon pollution (VOCs).
- Advanced additive chemistry helps in emission system durability.
- Compatible with ethanol-containing fuels up to E85.

GM Dexos1™ :2015 (Gen2), ILSAC GF-5, API: SN PLUS, GM 6094M
GM 4718M, Chrysler MS 6395

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	849
Kin. Viscosity @40°C	mm2/s	ASTM D7042	65
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.7
Viscosity Index		ASTM D2270	179
Viscosity CCS @-30°C, max	cP	ASTM D5293	3960
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	8.5

MOTOR OIL HM 10W-40

Product Code 42390

MOTOR OIL HM 10W-40 is a universal performance semi synthetic oil for use in older (1995-2010) gasoline- and diesel engines of passenger car and light vans with or without turbocharger specially formulated to help demands of “High-Mileage” engines which have been running for more than 100.000 km.
This product is unsuitable for diesel engines equipped with a Diesel Particle Filter (DPF) and not intended for vehicles predating 1990 that need increased zinc/phosphorus (ZDDP) oils.

MOTOR OIL HM 10W-40 is formulated with high quality refined mineral and synthetic base stocks in combination with a special additive technology to achieve the following performance:

- Very good low temperature properties.
- Maximize the life of the engine.
- Special formulated additive helps to stop/reduce small oil leaks on seals.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level + high viscosity index

ACEA A3/B4-08, API SL/CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-40
Density@15°C	kg/m3	ASTM D4052	864
Kin. Viscosity @40°C	mm2/s	ASTM D7042	88
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.6
Viscosity Index		ASTM D2270	156
Viscosity CCS @-25°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	7.1
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR OIL 20W-50

Product Code 42400

MOTOR OIL 20W-50 is a universal high performance engine oil for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL 20W-50 is formulated with high quality hydro-treated mineral base stocks in combination with a special additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

API SN/CF, ACEA A3/B4 **MB 229.1/229.3, VW 501.01/505.00**

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-50
Density@15°C	kg/m3	ASTM D4052	865
Kin. Viscosity @40°C	mm2/s	ASTM D7042	139
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.3
Viscosity Index		ASTM D2270	147
Viscosity CCS @-15°C, max	cP	ASTM D5293	3890
Flash Point COC	°C	ASTM D92	>215
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	10.4
Sulpated Ash	%Wt	ASTM D874	1.31

RACING OIL CLASSIC 20W-50

Product Code 42410

RACING OIL CLASSIC 20W-50 is a 100% high quality mineral multi-grade SAE 20W-50 oil for gasoline and diesel engines for use in classic (pre-1980) high-performance cars.
Formulated with supplementary ZDDP (Zinc dialkyldithiophosphate) additives to maximize wear protection of camshafts and cam followers.

RACING OIL CLASSIC 20W-50 is based on high quality virgin mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Very good lubrication of engine parts.
- Excellent protection against wear.
- High protection against corrosion.
- Good protection against wear, foam and corrosion.
- No danger of encrusted dirt becoming unstuck.
- Compatible with classic seals and rubbers.

API: SG/CD (exceeds phosphorous limits) API: MS, Ford M2C101-A/B/C

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	20W-50
Density@15°C	kg/m3	ASTM D4052	893
Kin. Viscosity @40°C	mm2/s	ASTM D7042	160
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.4
Viscosity Index		ASTM D2270	118
Viscosity CCS @-15°C, max	cP	ASTM D2270	9300
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
Total Base Number	mgKOH/g	ASTM D2896	6.0
Sulpated Ash	%Wt	ASTM D874	1.1
Zinc content	ppm		2300
Phosphorus content	ppm		2000

MOTOR OIL CLASSIC 10W-40

Product Code 42420

MOTOR OIL CLASSIC 10W-40 is a high quality multi-grade SAE 10W-40 oil for gasoline and diesel engines for use in classic and "young-timer" cars predating 1990.
Formulated with supplementary ZDDP (Zinc dialkyldithiophosphate) additives to maximize wear protection of camshafts and cam followers. The composition of this product may affect the durability of certain modern type catalytic convertors.

MOTOR OIL CLASSIC 10W-40 is formulated with high quality refined mineral and synthetic base stocks in combination with a special additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

API: SG/CF, CCMC G1/G2/G3/G4, CCMC PD-1/PD-2, MB 227.1 / 227.5, VW 500.00 / 501.01 / 505.00, MIL-L-2104A/B, Ford M2C101 A/B/C, Ford M2C9001-AA

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-40
Density@15°C	kg/m3	ASTM D4052	868
Kin. Viscosity @40°C	mm2/s	ASTM D7042	89
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.6
Viscosity Index		ASTM D2270	155
Viscosity CCS @-25°C, max	cP	ASTM D2270	<7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	8.4
Zinc content	ppm		1600
Phosphorus content	ppm		1450

MOTOR OIL CP 0W-30

Product Code 42430

MOTOR OIL CP 0W-30 is a high performance fuel saving engine oil based on 100% synthetic technology to be used in gasoline- and diesel engines of the latest generation passenger cars and light vans where a ACEA C2 specification is required and suitable for all engines which require an PSA B71 2290 performance specification.

MOTOR OIL CP 0W-30 is based on high performance 100% synthetic technology oil in combination with a specially selected additive technology to ensure the following properties:

- Excellent thermal and oxidation stability.
- Fuel saving properties.
- Excellent protection against wear, foam and corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Long oil drain interval possible.

ACEA C2, PSA B71 2290 **Ford M2C950-A, JLR 03.5007**

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	0W-30
Density@15°C	kg/m3	ASTM D4052	841
Kin. Viscosity @40°C	mm2/s	ASTM D7042	45.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.6
Viscosity Index		ASTM D2270	204
Viscosity CCS @-35°C, max	cP	ASTM D5293	5050
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	7.9
Sulpated Ash	%Wt	ASTM D874	0.79

MOTOR OIL VLV 0W-20

Product Code 42440

MOTOR OIL VLV 0W-20 is a fuel saving oil based on 100% synthetic technology specially designed for use in Volvo passenger cars with or without turbocharger where Volvo VCC RBS0-2AE is required.

MOTOR OIL VLV 0W-20 can also be used for applications where an oil according to ACEA A1/B1 or API SN is recommended by the manufacturer.

MOTOR OIL VLV 0W-20 is formulated with high quality synthetic base stocks in combination with an unique additive technology to achieve the following performance:

- Protection to wear by cold start.
- Very good low temperature properties.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.
- Added fuel economy

Volvo VCC RBS0/2AE

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	0W-20
Density@15°C	kg/m3	ASTM D4052	844
Kin. Viscosity @40°C	mm2/s	ASTM D7042	46,1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8,9
Viscosity Index		ASTM D2270	178
Viscosity CCS @-35°C, max.	cP	ASTM D5293	4890
Flash Point COC	°C	ASTM D92	230
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	7,9
Sulpated Ash	%Wt	ASTM D874	0,80

MOTOR OIL MP 5W-40

Product Code 42470

MOTOR OIL MP 5W-40 is an high performance engine oil based on 100% synthetic technology for use especially in Mercedes-Benz and Porsche as well as in other gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL MP 5W-40 is formulated with high quality synthetic base stocks in combination with an unique additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index

Approved: Approved, MB-Approval 229.5
Meets: API SN, ACEA A3/B4, BMW Longlife-01 > until 2019, Porsche A40, GM-LL-A-25/B025, Renault RN 0700/0710, VW 502.00 / 505.00

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-40
Density@15°C	kg/m3	ASTM D4052	854
Kin. Viscosity @40°C	mm2/s	ASTM D7042	86
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.3
Viscosity Index		ASTM D2270	173
Viscosity CCS @-30°C, max	cP	ASTM D5293	6150
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	10.4
Sulpated Ash	%Wt	ASTM D874	1.26

MOTOR OIL SEMI-SYNTH 5W-30

Product Code 45210

MOTOR OIL SEMI-SYNTH 5W-30 is an universal high performance fuel saving oil based on semi-synthetic technology for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF).

MOTOR OIL SEMI-SYNTH 5W-30 is formulated with high quality mineral and synthetic base stocks in combination with an unique additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

API SN/CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	850
Kin. Viscosity @40°C	mm2/s	ASTM D7042	61.7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.7
Viscosity Index		ASTM D2270	166
Viscosity CCS @-30°C, max	cP	ASTM D5293	4600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	7.0
Sulpated Ash	%Wt	ASTM D874	1.26

MOTOR OIL VX 0W-30

Product Code 45290

MOTOR OIL VX 0W-30 is a high performance fuel saving LOW SAPS long life oil based on 100% synthetic technology for use in gasoline- and diesel engines of passenger cars and light vans where a VAG norm 504.00/507.00 has been prescribed.

MOTOR OIL VX 0W-30 is formulated with high quality synthetic base stocks (PolyAlphaOlefine) in combination with an unique additive technology to achieve the following performance:

- Very good low temperature properties.
- Protection to wear by cold start.
- Very high thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.
- Extended oil drain interval.
- Also suitable for engines equipped with other catalyst like TWC.

ACEA C3, VW 504 00 / 507 00

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	0W-30
Density@15°C	kg/m3	ASTM D4052	844
Kin. Viscosity @40°C	mm2/s	ASTM D7042	58.7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.4
Viscosity Index		ASTM D2270	203
Viscosity CCS @-35°C, max	cP	ASTM D2270	5900
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48
Total Base Number	mgKOH/g	ASTM D2896	8.4
Sulpated Ash	%Wt	ASTM D874	0.7

MOTOR OIL BLE 5W-30

Product Code 45320

MOTOR OIL BLE 5W-30 is a high performance fuel saving MID SAPS engine oil for use in the latest generation gasoline and diesel engines of passenger cars and light vans with or without turbocharger. MOTOR OIL BLE 5W-30 is developed for use in engines which are equipped with or without an exhaust gas after treatment system.

MOTOR OIL BLE 5W-30 is based on high performance 100% synthetic base oil in combination with a specially selected additive technology to ensure the following properties:

- Good thermal and oxidation stability.
- MID SAPS technology.
- Good protection against wear, foam en corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Equipped for diesel engines with an exhaust after treatment system.
- Fuel saving properties.

ACEA C3, API SN/CF, MB 229.51, Dexos 2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	850
Kin. Viscosity @40°C	mm2/s	ASTM D7042	67.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.9
Viscosity Index		ASTM D2270	175
Viscosity CCS @-30°C, max	cP	ASTM D5293	4700
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	7.9
Sulpated Ash	%Wt	ASTM D874	≤0.8

MOTOR OIL SFD 20W-50

Product Code 45330

MOTOR OIL SFD 20W-50 is a engine oil which is recommended for older vehicles, with or without turbo-charger. It is suitable for use in gasoline-, diesel- and LPG fuelled engines of passenger cars and light commercial vehicles, where an API SF/CD specification is prescribed

MOTOR OIL SFD 20W-50 is formulated with a mineral base oil in combination with an additive package to reach the following properties:

- Stable viscosity index.
- Good protection against rust, corrosion and wear.
- Good dispergency and detergency properties.
- Good antifoam properties.

API SF/CD

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-50
Density@15°C	kg/m3	ASTM D4052	875
Kin. Viscosity @40°C	mm2/s	ASTM D7042	167
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.3
Viscosity Index		ASTM D2270	123
Viscosity CCS @-15°C, max	cP	ASTM D5293	9500
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
Total Base Number	mgKOH/g	ASTM D2896	5.0

PERFORMANCE RACING OIL SAE 70

Product Code 45990

PERFORMANCE RACING OIL SAE 70 is a motor oil specially developed for racing engines running on alcohol and nitro-methane in (drag)racing conditions.

PERFORMANCE RACING OIL SAE 70 is based on a unique blend of base oils in combination with an special additive package to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Excellent handling of combustion by-products of alcohol and nitro-methane fuel (water vapour).
- Very good dispersant and detergent properties.
- Excellent cold temperature properties for a smooth cold start.
- Excellent protection against wear, foam.
- Suited for extreme and severe conditions.

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	70
Density@15°C	kg/m3	ASTM D4052	904
Kin. Viscosity @40°C	mm2/s	ASTM D7042	394
Kin. Viscosity @100°C	mm2/s	ASTM D7042	27.4
Viscosity Index		ASTM D2270	94
Flash Point COC	°C	ASTM D92	>220
Pour Point	°C	ASTM D7346	-21


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ENGINE OIL HDX 25W-60

Product Code 42450

ENGINE OIL HDX 25W-60 is a extra high performance universal engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-3, Euro-4 and Euro-5 engines equipped with EGR and/or SCR. This product is not suitable for vehicles equipped with DPF filters.

ENGINE OIL HDX 25W-60 is formulated with high refined solvent mineral stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals.

API CI-4/SL, ACEA E7, MB 228.3, MTU Type 2, DDC 93K215, MAN M 3275 Volvo VDS-3, Deutz DQC-III, MACK EO-N, JASO DH-1, Global DHD-1, CAT ECF-1a Renault RLD-2, Cummins CES 2077/20078

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	25W-60
Density@15°C	kg/m3	ASTM D4052	891
Kin. Viscosity @40°C	mm2/s	ASTM D7042	236
Kin. Viscosity @100°C	mm2/s	ASTM D7042	23.6
Viscosity Index		ASTM D2270	125
Viscosity CCS @-10°C, max	cP	ASTM D2270	7260
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-21
Total Base Number	mgKOH/g	ASTM D2896	11.4
Sulpated Ash	%Wt	ASTM D874	1.5

ENGINE OIL SHPD 10W-40

Product Code 42460

ENGINE OIL SHPD 10W-40 is a fuel saving MID SAPS super high performance universal oil based on 100% synthetic technology designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-4, Euro-5 and Euro-6 engines equipped with a Diesel Particulate Filter (DPF) and suited for diesel engines equipped with EGR and/or SCR after treatment system.

ENGINE OIL SHPD 10W-40 is formulated with high refined synthetic base stock in combination with an unique additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against “Bore Polishing”.
- Extended drain intervals.
- Complies with strictest European emission regulation.

API CK-4, ACEA E7/E9, MB 228.31, Cummins CES 20086, DFS 93K222, DQC III-10-LA, Mack EOS-4.5, MAN M3575, CAT ECF-3 MTU Type 2.1, Renault RLD-3, Volvo VDS 4.5, JASO DH-2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	858
Kin. Viscosity @40°C	mm2/s	ASTM D7042	97
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.3
Viscosity Index		ASTM D2270	168
Viscosity CCS @-25°C, max	cP	ASTM D5293	4050
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	10.0
Sulpated Ash	%Wt	ASTM D874	1.00

ENGINE OIL HDX 20W-50

Product Code 42480

ENGINE OIL HDX 20W-50 is an extra high performance universal engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-3, Euro-4 and Euro-5 engines equipped with EGR and/or SCR. This product is not suitable for vehicles equipped with DPF filters.

ENGINE OIL HDX 20W-50 is formulated with high refined solvent mineral stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals.

API CI-4, API SL, ACEA E7, MB 228.3/228.1, MAN M 3275, Volvo VDS-3 CAT ECF-1a

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-50
Density@15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	141
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.8
Viscosity Index		ASTM D2270	140
Viscosity CCS @-15°C, max	cP	ASTM D2270	4390
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	11.3
Sulpated Ash	%Wt	ASTM D874	1.5

ENGINE OIL EHPD 10W-40

Product Code 42500

ENGINE OIL EHPD 10W-40 is a high performance fully synthetic engine oil to be used in diesel engines in light- and heavy commercial vehicles with or without turbocharger designed for use in Euro-II, Euro-III and EURO-IV emission requirements and engines equipped with EGR and/or SCR exhaust after treatment system. **ENGINE OIL EHPD 10W-40** is unsuitable for diesel engines equipped with a Diesel Particulate Filter (DPF)

ENGINE OIL EHPD 10W-40 is based on high performance synthetic base oil in combination with a specially selected additive technology to ensure the following properties:

- Excellent thermal and oxidation stability.
- Excellent protection against forming of “Bore Polishing”.
- Suitable for Low emission engine equipped with EGR and SCR technology
- Excellent protection against wear, foam en corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Extended oil drain interval possible.

MAN M3277/M3377
Exceeds: API CI-4, ACEA E7/E4, MB 228.5, Renault RLD-2, Volvo VDS-3, Mack EO-N, MTU Type 3, Deutz DQC IV-10, Renault RXD, Suitable for use: Scania LDF-2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	864
Kin. Viscosity @40°C	mm2/s	ASTM D7042	96.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.3
Viscosity Index		ASTM D2270	153
Viscosity CCS @-25°C, max	cP	ASTM D5293	6400
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	12.3
Sulpated Ash	%Wt	ASTM D874	1.5

ENGINE OIL SHPD 15W-40

Product Code 42510

ENGINE OIL SHPD 15W-40 is a fuel saving MID SAPS super high performance universal oil based on 100% synthetic technology designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-4, Euro-5 and Euro-6 engines equipped with a Diesel Particulate Filter (DPF) and suited for diesel engines equipped with EGR and/or SCR after treatment system.

ENGINE OIL SHPD 15W-40 is formulated with high refined base stock in combination with an unique additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against “Bore Polishing”.
- Extended drain intervals.
- Complies with strictest European emission regulation.

Approved: Volvo VDS 4.5, Mack EOS-4.5, MB-Approval 228.31
Meets: API SN, ACEA E7/E9, API CK-4, DFS 93K222, DQC III-10-LA, MTU Cat 2.1, Cummins CES 20086, MAN M3575, Renault RLD-3, CAT ECF-3, Ford M2C171-F1, JASO DH-2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	863
Kin. Viscosity @40°C	mm2/s	ASTM D7042	102
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.9
Viscosity Index		ASTM D2270	152
Viscosity CCS @-20°C, max	cP	ASTM D5293	3720
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	9.9
Sulpated Ash	%Wt	ASTM D874	1.00

ENGINE OIL SCR 10W-40

Product Code 42540

ENGINE OIL SCR 10W-40 is a fuel conserving super LOW SAPS high performance universal oil designed based on 100% synthetic technology for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year and running on low Sulphur Diesel Fuel (max 50 ppm) for use in Euro-4, Euro-5 and Euro-6 engines equipped with Diesel Particulate Filter (DPF). This product is also suitable for vehicles equipped with EGR and/or SCR after treatment systems.

ENGINE OIL SCR 10W-40 is formulated on high quality refined synthetic base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against “Bore Polishing”.
- Extended drain intervals up to 150.000 km.
- Suitable for engines equipped with a Diesel Particulate Filter (DPF)
- Fuel conserving

Approved: MAN M 3477, Volvo VDS-3, Renault VI RLD-2, MACK EO-N
Meets: ACEA E6/E7, Deutz DQC-IV-10 LA, Renault RXD, API CI-4, MTU Type 3.1, MB 228.51

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-40
Density@15°C	kg/m3	ASTM D4052	862
Kin. Viscosity @40°C	mm2/s	ASTM D7042	94.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	153
Viscosity CCS @-25°C, max	cP	ASTM D2270	6250
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	10.1
Sulpated Ash	%Wt	ASTM D874	0.8

ENGINE OIL HDX 10W-40

Product Code 42550

ENGINE OIL HDX 10W-40 is a extra high performance universal semi synthetic engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-3, Euro-4 and Euro-5 engines equipped with EGR and/or SCR. This product is not suitable for vehicles equipped with DPF filters.

ENGINE OIL HDX 10W-40 is formulated with high refined solvent mineral and synthetic base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals.

Approved: MB Approval 228.3, Volvo VDS-3, Renault RLD-2, MACK EO-N
Meets: API CI-4/SL, ACEA E7, ACEA A3/B4, MB 229.1, MAN M3275, MTU Type 2, Mack EO-M, JASO DH-1, Global DHD-1, DDC 93K215, CAT ECF-1a, ECF-2, Deutz DQC-III-10, Cummins CES 20077/20078

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	861
Kin. Viscosity @40°C	mm2/s	ASTM D7042	91.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	161
Viscosity CCS @-25°C, max	cP	ASTM D2270	5020
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	11.4
Sulpated Ash	%Wt	ASTM D874	1.5

ENGINE OIL HDX 15W-40

Product Code 42560

ENGINE OIL HDX 15W-40 is a extra high performance universal engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-3, Euro-4 and Euro-5 engines equipped with EGR and/or SCR. This product is not suitable for vehicles equipped with DPF filters.

ENGINE OIL HDX 15W-40 is formulated with high refined solvent mineral stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals.

Approved: MB Approval 228.3, Volvo VDS-3, Renault RLD-2, MACK EO-N
Meets: API CI-4/ SL, ACEA E7, MB 228.1, DDC 93K215, Global DHD-1, JASO DH-1 Deutz DQC-III, MTU Type 2, CAT ECF-1a, MAN M 3275, Cummins CES 2077/20078

roperty	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	883
Kin. Viscosity @40°C	mm2/s	ASTM D7042	100
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.8
Viscosity Index		ASTM D2270	140
Viscosity CCS @-20°C, max	cP	ASTM D2270	5740
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	11.6
Sulpated Ash	%Wt	ASTM D874	1.5

ENGINE OIL HDL 10W-40

Product Code 42570

ENGINE OIL HDL 10W-40 is a high performance universal semi synthetic engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under heavy operating conditions through the whole year for use in Euro I, Euro II and Euro III engines. This product is not suitable for vehicles equipped with particulate filters.

ENGINE OIL HDL 10W-40 is formulated with high refined solvent mineral and synthetic base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Not suitable for engine equipped with a Diesel Particulate Filter (DPF).

API CH-4, ACEA A3/B4, Global DHD-1, JASO DH-1, MB 228.3, MB 229.1 MTU Type 2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	862
Kin. Viscosity @40°C	mm2/s	ASTM D7042	92.4
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	159
Viscosity CCS @-25°C, max	cP	ASTM D5293	4850
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	11.1
Sulpated Ash	%Wt	ASTM D874	1.26

ENGINE OIL HDL 15W-40

Product Code 42580

ENGINE OIL HDL 15W-40 is a high performance universal diesel engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under heavy operating conditions through the whole year for use in Euro I, Euro II, Euro III, Euro IV and Euro V engines. This product is not suitable for vehicles equipped with particulate filters.

ENGINE OIL HDL 15W-40 is formulated with high refined solvent mineral base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Not suitable for engine equipped with a Diesel Particulate Filter (DPF)

API CH-4, API S, ACEA E7, MB 228.3/MB228.1, MAN M 3275, Deutz DQC-III, MTU type 2, Cat ECF-1a

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	881
Kin. Viscosity @40°C	mm2/s	ASTM D7042	99.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.9
Viscosity Index		ASTM D2270	142
Viscosity CCS @-20°C, max	cP	ASTM D5293	5140
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	11.1
Sulpated Ash	%Wt	ASTM D874	1.26

ENGINE OIL LSP 5W-30

Product Code 42590

ENGINE OIL LSP 5W-30 is a fuel conserving super high performance universal oil designed based on 100% synthetic technology for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year and running on low Sulphur Diesel Fuel (max. 50 ppm).
ENGINE OIL LSP 5W-30 is developed for use in Euro-4, Euro-5 and Euro-6 engines equipped with Diesel Particulate Filter (DPF). This product is also suitable for vehicles equipped with EGR and/or SCR after treatment systems.

ENGINE OIL LSP 5W-30 is formulated on high refined synthetic base stock in combination with an special additive package to reach the following properties.

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against “Bore Polishing”.
- Extended drain intervals up to 150.000 km.
- Suitable for engines equipped with a Diesel Particulate Filter (DPF)
- Fuel conserving

Approved:ACEA E6/E7, API CI-4, MB 228.51, MAN M3477, MAN M3271-1, MACK EO-N, Volvo VDS-3, MTU Type 3.1, Deutz DQC III-10 LA, Renault RLD-2, Cummins 20076/20077

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	855
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.4
Viscosity Index		ASTM D2270	162
Viscosity CCS @-30°C, max	cP	ASTM D5293	5600
Flash Point COC	°C	ASTM D92	>219
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	10.2
Sulpated Ash	%Wt	ASTM D874	0.8

ENGINE OIL HD 15W-40

Product Code 42600

ENGINE OIL HD 15W-40 is a mineral based “High Performance Diesel” (HPD) engine oil providing good performance in high output , high speed, turbo charged engines operating under severe conditions.

ENGINE OIL HD 15W-40 is formulated with high quality mineral base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Controlling deposits and viscosity increase
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.

API CG-4, ACEA E2, Volvo VDS, MTU Type 1, MAN M271, MB 228.1, Renault RD

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	881
Kin. Viscosity @40°C	mm2/s	ASTM D7042	108
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	135
Viscosity CCS @-20°C, max	cP	ASTM D5293	6700
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	8.5
Sulpated Ash	%Wt	ASTM D874	1.27

ENGINE OIL HD 20W-50

Product Code 42610

ENGINE OIL HD 20W-50 is a mineral based "High Performance Diesel" (HPD) engine oil providing good performance in high output, high speed, turbo charged engines operating under severe conditions.

ENGINE OIL HD 20W-50 is formulated with high quality mineral base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Controlling deposits and viscosity increase
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.

API CG-4, MB 228.1, MAN M271, Volvo VDS, MTU Type 1, ACEA E2, Renault RD

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-50
Density@15°C	kg/m3	ASTM D4052	882
Kin. Viscosity @40°C	mm2/s	ASTM D7042	143
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.7
Viscosity Index		ASTM D2270	136
Viscosity CCS @-15°C, max	cP	ASTM D5293	4800
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
Total Base Number	mgKOH/g	ASTM D2896	8.4
Sulpated Ash	%Wt	ASTM D874	1.27

MONO ENGINE OIL CF 10W

Product Code 42620

MONO ENGINE OIL CF 10W is a heavy duty diesel engine oil developed to meet the requirements of a variety of diesel engines operating under severe conditions.

MONO ENGINE OIL CF 10W is suitable for use in a wide range of on- and off-highway applications where an API CF oil is recommended.

MONO ENGINE OIL CF 10W is based on high quality refined virgin base oil in combination with a special additive package to ensure the following properties:

- High thermal and oxidation stability.
- Effective in preventing from wear, corrosion and foam.
- High dispersancy and detergency properties.

API SF/CF, MTU Type 2, CCMC G2/D1, MIL-L-46152

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W
Density@15°C	kg/m3	ASTM D4052	882
Kin. Viscosity @40°C	mm2/s	ASTM D7042	38
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.1
Viscosity Index		ASTM D2270	103
Viscosity CCS @-25°C, max	cP	ASTM D5293	6300
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	12.0

ENGINE OIL HDX EXTRA 15W-40

Product Code 42630

ENGINE OIL HDX EXTRA 15W-40 is a extra high performance, extra high TBN, universal engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions in combination with high-sulphur diesel fuels.

ENGINE OIL HDX EXTRA 15W-40 is suitable for use in engine with (EGR and SCR) and without exhaust gas after treatment systems, making the product suitable for engines of Euro-1 up to Euro-5. This product is not suitable for vehicles equipped with DPF filters.

ENGINE OIL HDX EXTRA 15W-40 is formulated with high refined solvent mineral stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Extra protection against high sulphur fuels.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals.

API CI-4/SL, ACEA E7 , Volvo VDS-3, MACK EO-N, MB 228.3, MAN M 3275, Renault RLD-2, Global DHD-1, JASO DH-1 Allison C4, MTU Type 2, Mack EO-M DAF HP-2, Cummins CES 2077/20078, CAT ECF-2, DDC 93K215

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	871
Kin. Viscosity @40°C	mm2/s	ASTM D7042	111
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.4
Viscosity Index		ASTM D2270	149
Viscosity CCS @-20°C, max	cP	ASTM D5293	5200
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	15.7
Sulpated Ash	%Wt	ASTM D874	1.5

MONO ENGINE OIL CF 20W-20

Product Code 42640

MONO ENGINE OIL CF 20W-20 is a heavy duty diesel engine oil developed to meet the requirements of a variety of diesel engines operating under severe conditions.

MONO ENGINE OIL CF 20W-20 is suitable for use in a wide range of on- and off-highway applications where an API CF oil is recommended.

MONO ENGINE OIL CF 20W-20 is based on high quality refined virgin base oil in combination with a special additive package to ensure the following properties:

- High thermal and oxidation stability.
- Effective in preventing from wear, corrosion and foam.
- High dispersancy and detergency properties.

API SF/CF, MTU Type 2, CCMC G2/D1, MIL-L-46152

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-20
Density@15°C	kg/m3	ASTM D4052	890
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.9
Viscosity Index		ASTM D2270	103
Viscosity CCS @-15°C, max	cP	ASTM D5293	4200
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	12.9
Sulpated Ash	%Wt	ASTM D874	1.5

MONO ENGINE OIL CF 30

Product Code 42660

MONO ENGINE OIL CF 30 is a heavy duty diesel engine oil developed to meet the requirements of a variety of diesel engines operating under severe conditions.

MONO ENGINE OIL CF 30 is suitable for use in a wide range of on- and off-highway applications where an API CF oil is recommended.

MONO ENGINE OIL CF 30 is based on high quality refined virgin base oil in combination with a special additive package to ensure the following properties:

- High thermal and oxidation stability.
- Effective in preventing from wear, corrosion and foam.
- High dispersancy and detergency properties.

API SF/CF, MTU Type 2, CCMC G2/D1, MIL-L-46152

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	891
Kin. Viscosity @40°C	mm2/s	ASTM D7042	95
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.9
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-24
Total Base Number	mgKOH/g	ASTM D2896	12.8

ENGINE OIL SUPER UHPD 10W-40

Product Code 42670

ENGINE OIL SUPER UHPD 10W-40 is a high performance fully synthetic engine oil to be used in diesel engines in light- and heavy commercial vehicles with or without turbocharger. **ENGINE OIL SUPER UHPD 10W-40** is designed for use in Euro-II, Euro-III and EURO-IV emission requirements and engines equipped with EGR and/or SCR exhaust after treatment system. **ENGINE OIL SUPER UHPD 10W-40** may not been used in diesel engines equipped with a Diesel Particulate Filter (DPF). Suited for Scania engines which require a LDF-3 performance oil

ENGINE OIL SUPER UHPD 10W-40 is based on high performance synthetic base oil in combination with especially selected additive technology to ensure the following properties.

- Excellent thermal and oxidation stability.
- Excellent protection against forming of “Bore Polishing”.
- Suitable for Low emission engine equipped with EGR and SCR technology
- Excellent protection against wear, foam en corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Extended oil drain interval possible

ACEA E4/E7, API CF, MB 228.5, MAN M3277, MTU Type 3, Deutz DQC III-10, Volvo VDS-3, Renault RVI RLD-2, Mack EO-N, Scania LDF-2/ LDF-3, DAF extended drain, CES 20072, Renault RVI RD-2 / RXD

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	867
Kin. Viscosity @40°C	mm2/s	ASTM D7042	89.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.5
Viscosity Index		ASTM D2270	154
Viscosity CCS @-25°C, max	cP	ASTM D5293	6400
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	16.1
Sulpated Ash	%Wt	ASTM D874	1.85

MONO ENGINE OIL CF 40

Product Code 42680

MONO ENGINE OIL CF 40 is a heavy duty diesel engine oil developed to meet the requirements of a variety of diesel engines operating under severe conditions.

MONO ENGINE OIL CF 40 is suitable for use in a wide range of on- and off-highway applications where an API CF oil is recommended.

MONO ENGINE OIL CF 40 is based on high quality refined virgin base oil in combination with a special additive package to ensure the following properties:

- High thermal and oxidation stability.
- Effective in preventing from wear, corrosion and foam.
- High dispersancy and detergency properties.

API SF/CF, MTU Type 2, CCMC G2/D1, MIL-L-46152

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	894
Kin. Viscosity @40°C	mm2/s	ASTM D7042	139.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	160
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
Total Base Number	mgKOH/g	ASTM D2896	13.0
Sulpated Ash	%Wt	ASTM D874	1.85

ENGINE OIL SHPD 10W-30

Product Code 42690

ENGINE OIL SHPD 10W-30 is a fuel saving MID SAPS super high performance universal oil based on 100% synthetic technology designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-4, Euro-5 and Euro-6 engines equipped with a Diesel Particulate Filter (DPF) and suited for diesel engines equipped with EGR and/or SCR after treatment system.

ENGINE OIL SHPD 10W-30 is formulated with high refined synthetic base stock in combination with an unique additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against “Bore Polishing”.
- Extended drain intervals.
- Complies with strictest European emission regulation.

Approved: Volvo VDS 4.5, Mack EOS-4.5
Meets: API CK-4, ACEA E7/E9, MB 228.31, DFS 93K222 DQC III-10-LA, MTU Type 2.1, CAT ECF-3, Cummins CES 20086, Renault RLD-3, Ford M2C171-F1

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-30
Density@15°C	kg/m3	ASTM D4052	859
Kin. Viscosity @40°C	mm2/s	ASTM D7042	71.4
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.5
Viscosity Index		ASTM D2270	155
Viscosity CCS @-25°C, max	cP	ASTM D5293	4300
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	9.8
Sulpated Ash	%Wt	ASTM D874	0.98

MONO ENGINE OIL CF 50

Product Code 42700

MONO ENGINE OIL CF 50 is a heavy duty diesel engine oil developed to meet the requirements of a variety of diesel engines operating under severe conditions.

MONO ENGINE OIL CF 50 is suitable for use in a wide range of on- and off-highway applications where an API CF oil is recommended.

MONO ENGINE OIL CF 50 is based on high quality refined virgin base oil in combination with a special additive package to ensure the following properties:

- High thermal and oxidation stability.
- Effective in preventing from wear, corrosion and foam.
- High dispersancy and detergency properties.

API SF/CF, MTU Type 2, CCMC G2/D1, MIL-L-46152

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	50
Density@15°C	kg/m3	ASTM D4052	900
Kin. Viscosity @40°C	mm2/s	ASTM D7042	214
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.4
Viscosity Index		ASTM D2270	95
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15
Total Base Number	mgKOH/g	ASTM D2896	13.0

ENGINE OIL HDL 10W-30

Product Code 42750

ENGINE OIL HDL 10W-30 is a high performance universal semi synthetic engine oil designed for high loaded diesel engines in light- and heavy commercial vehicles working under heavy operating conditions through the whole year for use in Euro-2 and Euro-3 engines. This product is not suitable for vehicles equipped with particulate filters.

ENGINE OIL HDL 10W-30 is formulated with high refined solvent mineral and synthetic base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.

API CH-4, API SJ, MB 228.3, MAN M 3275, MTU Type 2 JASO DH-1, ACEA E7

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-30
Density@15°C	kg/m3	ASTM D4052	866
Kin. Viscosity @40°C	mm2/s	ASTM D7042	71.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.0
Viscosity Index		ASTM D2270	145
Viscosity CCS @-25°C, max	cP	ASTM D5293	7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	11.5
Sulpated Ash	%Wt	ASTM D874	1.48

ENGINE OIL SCR 10W-30

Product Code 42770

ENGINE OIL SCR 10W-30 is a fuel conserving super high performance universal oil designed based on 100% synthetic technology for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year and running on low Sulphur Diesel Fuel (max. 50 ppm).

ENGINE OIL SCR 10W-30 is developed for use in Euro-4 and Euro-5 engines equipped with Diesel Particle Filter (DPF). This product is also suitable for vehicles equipped with EGR and/or SCR after treatment systems.

ENGINE OIL SCR 10W-30 is formulated on high refined synthetic base stock in combination with an special additive package to reach the following properties.

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against “Bore Polishing”.
- Extended drain intervals up to 150.000 km.
- Suitable for engines equipped with a Diesel Particle Filter (DPF)
- Fuel conserving

ACEA E6/E7, API CI-4, MB 228.51, MAN M3477, MAN M3271-1, MACK EO-N, Volvo VDS-3, MTU Type 3.1, Deutz DQC III-10 LA, Renault RLD-2, Cummins 20076/20077

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-30
Density@15°C	kg/m3	ASTM D4052	861
Kin. Viscosity @40°C	mm2/s	ASTM D7042	74
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.7
Viscosity Index		ASTM D2270	153
Viscosity CCS @-25°C, max	cP	ASTM D2270	5000
Flash Point COC	°C	ASTM D92	>219
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	10.1
Sulpated Ash	%Wt	ASTM D874	0.95

ENGINE OIL SPECIAL UHPD 10W-40

Product Code 42790

ENGINE OIL SPECIAL UHPD 10W-40 is a fuel conserving super high performance “MID SAPS” oil, designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year and running on low sulphur diesel fuel (max. 50 ppm).

ENGINE OIL SPECIAL UHPD 10W-40 is formulated for use in Euro 5 and Euro 6 engines equipped with Diesel Particulate Filter (DPF). This product is also suitable for vehicles equipped with EGR and/or SCR after treatment system.

ENGINE OIL SPECIAL UHPD 10W-40 is formulated on high refined 100% synthetic base stock in combination with an special additive package to reach the following properties.

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against “Bore Polishing”.
- Extended drain intervals up to 150.000 km.
- Suitable for engines equipped with a Diesel Particulate Filter (DPF).

Approved: Volvo VDS-4, Mack EO-O Premium Plus, Renault VI RLD-3
Meets: ACEA E4/E6/E7/E9, API CJ-4, MB 228.31/228.51, MTU Type 3.1/2.1 MAN M3477/3575/3271-1, Cummins CES 20081, Scania Low-Ash, Detroit 93K218 JASO DH-2, Deutz DQC IV-10-LA Mack EO-N Premium Plus, Renault VI RLD-2, CAT ECF-3

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	862
Kin. Viscosity @40°C	mm2/s	ASTM D7042	94.4
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	155
Viscosity CCS @-25°C, max	cP	ASTM D5293	6800
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	12.7
Sulpated Ash	%Wt	ASTM D874	0.98

MONO ENGINE OIL SA 50

Product Code 42840

MONO ENGINE OIL SA 50 is an engine oil developed to meet the requirements of a variety of older engines.

API SA

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	50
Density@15°C	kg/m3	ASTM D4052	895
Kin. Viscosity @40°C	mm2/s	ASTM D7042	264.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	21.2
Viscosity Index		ASTM D2270	97
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18

ENGINE OIL SYNTHETIC UHPD 5W-30

Product Code 45020

ENGINE OIL SYNTHETIC UHPD 5W-30 is a fuel conserving super high performance "MID SAPS" oil based on 100% synthetic technology designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year and running on low Sulphur Diesel Fuel (max. 50 ppm). ENGINE **OIL SYNTHETIC UHPD 5W-30** is formulated for use in Euro-5 and Euro-6 engines equipped with Diesel Particle Filter (DPF). This product is also suitable for vehicles equipped with EGR and/or SCR after treatment systems.
ENGINE OIL SYNTHETIC UHPD 5W-30 is formulated on high refined synthetic base stock in combination with an special additive package to reach the following properties.

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against "Bore Polishing".
- Extended drain intervals up to 150.000 km.
- Suitable for engines equipped with a Diesel Particulate Filter (DPF).
- Fuel conserving.

Approved: MAN M3677, MB-approval 228.51, MAN M3477
Exceeds: API CJ-4, ACEA E4/E6/E7/E9, MTU Type 3.1, Volvo VDS-4, Renault RLD-3 Scania LDF-4, Mack EO-N, Deutz DQC IV-10-LACAT ECF-3, JASO DH-2, Detroit Diesel 93K218, Cummins CES 20081

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-30
Density@15°C	kg/m3	ASTM D4052	858
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.8
Viscosity Index		ASTM D2270	170
Viscosity CCS @-30°C, max	cP	ASTM D5293	5600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	12.3
Sulpated Ash	%Wt	ASTM D874	1.0

ENGINE OIL HDX 15W-50

Product Code 45230

ENGINE OIL HDX 15W-50 is a extra high performance universal engine oil de-signed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year for use in Euro-3, Euro-4 and Euro-5 engines equipped with EGR and/or SCR. This product is not suitable for vehicles equipped with DPF filters.

ENGINE OIL HDX 15W-50 is formulated with high refined solvent mineral base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals.

API CI-4, API SL, ACEA E7, MB 228.3/MB228.1, MAN M 3275, Volvo VDS-3, CAT ECF-1a

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	15W-50
Density@15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	126
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.7
Viscosity Index		ASTM D2270	156
Viscosity CCS @-20°C, max	cP	ASTM D2270	4900
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	12.2
Sulpated Ash	%Wt	ASTM D874	1.5

RAILROAD ENGINE OIL 413

Product Code 42710

RAILROAD ENGINE OIL 413 is a high performance, zinc-free and chlorine-free oil specially designed to provide excellent engine cleanliness and oil filter life in the modern railroad diesel locomotive engines.
RAILROAD ENGINE OIL 413 is recommended for railroad diesel locomotive engines specifying LMOA Generation 5 quality oils & for medium speed two-cycle and four-cycle railroad engines, including newer diesel locomotive engines of GE and EMD of General Motors.
RAILROAD ENGINE OIL 413 is also suited for marine and stationary engines for power generation or off-shore drilling requiring zinc-free oils and for Detroit Diesel 149 series engines operating under severe conditions and stationary engines requiring API CF and CF-2 quality oils.
RAILROAD ENGINE OIL 413 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Exceptional detergency and dispersancy provides excellent engine cleanliness, especially engine top decks.
- Excellent retention of TBN facilitates extended drain intervals.
- High thermo-oxidative.
- Zinc-free formulation protects silver bearings against corrosion.
- Non-chlorinated additive package helps in reducing used oil disposal costs.

Approved: Electro-Motive Diesel (EMD)
Meets: API CF / CF-2, LMOA Generation 5, GE Generation 4 Long Life

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density @15°C	kg/m3	ASTM D4052	898
Kin. Viscosity @40°C	mm2/s	ASTM D7042	154
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.5
Viscosity Index		ASTM D2270	102
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
Total Base Number	mgKOH/g	ASTM D2896	13.9
Sulphated Ash	%Wt	ASTM D874	1.5

SNOW MOBILE OIL SYN 2T

Product Code 42910

SNOW MOBILE OIL SYN 2T is a fully synthetic excellent performance lubricant developed for air & water cooled 2-stroke engines. The special formulation ensures excellent engine protection, cleanliness and low smoke, even under extreme operating conditions.

SNOW MOBILE OIL SYN 2T is based on a high quality fully synthetic base oils in combination with a special selected additive package to obtain the following properties:

- Outstanding protection against piston scuffing and premature wear of engine components.
- Excellent control against engine deposits, exhaust system blocking.
- Extended engine life without power loss.
- Low ash additive technology prevents pre-ignition and spark plug fouling.
- Specially selected synthetic base fluid reduces visible exhaust smoke.
- Easy miscibility with gasoline ensures stable homogeneous mixture even at very low ambient temperatures.

API TC, JASO FD, ISO-L-EGD, ROTAX 253, Husqvarna 346, Husqvarna 372

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	875
Kin. Viscosity @40°C	mm2/s	ASTM D7042	50
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.1
Viscosity Index		ASTM D2270	164
Flash Point COC	°C	ASTM D92	>90
Pour Point	°C	ASTM D7346	-54
Total Base Number	mgKOH/g	ASTM D2896	1.6
Sulphated Ash	%Wt	ASTM D78	0.15

MOTOR CYCLE OIL 2T

Product Code 42920

MOTOR CYCLE OIL 2T is a high quality mineral lubricant specially developed for 2-stroke air cooled gasoline engines fitted with oil-injection or premix systems.

MOTOR CYCLE OIL 2T is based on a high quality virgin mineral base oils in combination with a special selected additive package to obtain the following properties:

- Outstanding protection against piston scuffing and premature wear of engine components.
- Excellent control against engine deposits, exhaust system blocking.
- Extended engine life without power loss.
- Low ash additive technology prevents pre-ignition and spark plug fouling.
- Easy miscibility with gasoline ensures stable homogeneous mixture even at low ambient temperatures.

API TC, JASO FB, ISO-L-EGC

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	878
Color	Visual		amber
Kin. Viscosity @40°C	mm2/s	ASTM D7042	69.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.3
Viscosity Index		ASTM D2270	111
Flash Point COC	°C	ASTM D92	85
Pour Point	°C	ASTM D7346	-30
Total Base Number	mg KOH/g	ASTM D2896	1.2
Sulphated Ash	%Wt	ASTM D78	0.25

MOTOR CYCLE OIL 4T 10W-50

Product Code 42930

MOTOR CYCLE OIL 4T 10W-50 is a semi synthetic 4-stroke gasoline engine oil developed specifically to meet the special requirements of latest high performance air cooled 4-stroke motorcycles. It provides excellent protection to engine, gearbox and wet clutch used in 4-stroke motorcycles and ensures highest degree of reliability even under severe operating conditions and temperatures.

MOTOR CYCLE OIL 4T 10W-50 is based on a high quality mineral and synthetic base oils in combination with a special selected additive package to obtain the following properties:

- Outstanding thermo-oxidative stability.
- Exceptional anti-wear, anti-rust and anti-corrosion properties.
- Controlled frictional properties eliminate clutch slippage.
- Increased power/ fuel economy and improves drivability.
- Excellent dispersancy and detergency properties.
- Excellent shear stability maintains viscosity under high temperature-high shear environment.
- Provides improved wear protection.
- Outstanding low temperature properties enable easy starting at low ambient temperatures.
- Ensure effective lubrication and wear protection at start up.
- Low volatility characteristics reduce oil consumption and hydrocarbon pollution.

API SL, JASO MA-2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-50
Density@15°C	kg/m3	ASTM D4052	858
Kin. Viscosity @40°C	mm2/s	ASTM D7042	114
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.4
Viscosity Index		ASTM D2270	168
Viscosity CCS @-25°C, max	cP	ASTM D5293	5230
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	8.4
Sulpated Ash	%Wt	ASTM D874	1.15

MOTOR CYCLE OIL 2T EXTRA

Product Code 42940

MOTOR CYCLE OIL 2T EXTRA is a high quality semi-synthetic lubricant specially developed for high powered 2-stroke air and water cooled gasoline engines fitted with oil-injection or premix systems.

MOTOR CYCLE OIL 2T EXTRA is based on a high quality virgin and synthetic base oils in combination with a special selected additive package to obtain the following properties:

- Outstanding protection against piston scuffing and premature wear of engine components.
- Excellent control against engine deposits, exhaust system blocking.
- Extended engine life without power loss.
- Low ash additive technology prevents pre-ignition and spark plug fouling.
- Specially selected synthetic base fluid reduces visible exhaust smoke.
- Easy miscibility with gasoline ensures stable homogeneous mixture even at low ambient temperatures.

API TC, JASO FD, ISO-L-EGD, TISI

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	872
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.7
Viscosity Index		ASTM D2270	122
Flash Point COC	°C	ASTM D92	>90
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	1.4
Sulphated Ash	%Wt	ASTM D78	0.14

MOTOR CYCLE OIL SYN 2T

Product Co 42950

MOTOR CYCLE OIL SYN 2T is a high performance low smoke 2-stroke motorcycle oil based on 100% synthetic technology to be used in 2-stroke motorcycle, scooter, snow mobiles and other variety gasoline engines.

MOTOR CYCLE OIL SYN 2T is based on high performance synthetic base oil in combination with a specially selected additive technology to ensure the following properties.

- Excellent engine protection on cleanliness.
- Low smoke even under extreme operation conditions.
- High thermal and oxidation stability.
- Exceptional protection against piston scuffing.
- High anti-wear and anti-corrosion properties.
- Homogeneous mixture even at low ambient temperatures.

API TC **JASO FD** **Husqvarna 372**
ROTAX 253 **ISO 6743-15** **Husqvarna 346**

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	875
Kin. Viscosity @40°C	mm2/s	ASTM D7042	50
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.1
Viscosity Index		ASTM D2270	164
Flash Point COC	°C	ASTM D92	>90
Pour Point	°C	ASTM D7346	-54
Total Base Number	mgKOH/g	ASTM D2896	1.6
Sulphated Ash	%Wt	ASTM D78	0.15

OUTBOARD ENGINE OIL 2T

Product Code 42960

OUTBOARD ENGINE OIL 2T is a high performance ashless 2-stroke engine oil for use in modern cooled outboard engines where NMMA TC-W3 is required

OUTBOARD ENGINE OIL 2T is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties.

- Excellent lubricity.
- Protection against wear and rust.
- High protection against scuffing and deposit forming.
- Easy mixing and stable mixture even at low temperatures

NMMA TC-W3®

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	874
Kin. Viscosity @40°C	mm2/s	ASTM D7042	43.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.8
Viscosity Index		ASTM D2270	116
Flash Point COC	°C	ASTM D92	>90
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	8.7
Sulphated Ash	%Wt	ASTM D78	0.15

MOTOR CYCLE OIL 4T 15W-50

Product Code 42970

MOTOR CYCLE OIL 4T 15W-50 is a high performance semi synthetic engine oil especially developed for use in air-, oil-, and water-cooled 4-stroke motorcycles to provide excellent protection towards engine, gearbox and wet clutches and ensures the highest possible reliability even under the most severe operation conditions.

MOTOR CYCLE OIL 4T 15W-50 is based on a mixture of high performance hydrocracked- and mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Good thermal and oxidation stability.
- Stay-in-grade.
- Good protection against wear, foam en corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Controlled frictional properties eliminate clutch slippage, effectively improving the driveability of the vehicle.

API SL, JASO MA2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-50
Density@15°C	kg/m3	ASTM D4052	874
Kin. Viscosity @40°C	mm2/s	ASTM D7042	127
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.8
Viscosity Index		ASTM D2270	156
Viscosity CCS @-20°C, max	cP	ASTM D5293	5020
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	8.6
Sulpated Ash	%Wt	ASTM D874	1.25

MOTOR CYCLE OIL 4T EXTRA 5W-40

Product Code 42980

MOTOR CYCLE OIL 4T EXTRA 5W-40 is a high performance 4-stroke gasoline engine oil developed specifically to meet the special requirements of latest high performance air cooled 4-stroke motorcycles. It provides excellent protection to engine, gearbox and wet clutch used in 4-stroke motorcycles and ensures highest degree of reliability even under severe operating conditions and temperatures.

MOTOR CYCLE OIL 4T EXTRA 5W-40 is based on 100% synthetic Poly Alpha Olefin (PAO) base stock in combination with esters and a special selected additive package to obtain the following properties:

- Outstanding thermo-oxidative stability.
- Exceptional anti-wear, anti-rust and anti-corrosion properties.
- Controlled frictional properties eliminate clutch slippage.
- Increased power/ fuel economy and improves drivability.
- Excellent dispersancy and detergency properties.
- Excellent shear stability maintains viscosity under high temperature-high shear environment and provides improved wear protection.
- Outstanding low temperature properties enable easy starting at low ambient temperatures and ensure effective lubrication and wear protection at start up.
- Low volatility characteristics reduce oil consumption and hydrocarbon pollution.

API SL, JASO MA / MA2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	5W-40
Density@15°C	kg/m3	ASTM D4052	849
Kin. Viscosity @40°C	mm2/s	ASTM D7042	85.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.5
Viscosity Index		ASTM D2270	159
Viscosity CCS @-30°C, max	cP	ASTM D5293	6240
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48
Total Base Number	mgKOH/g	ASTM D2896	10.1
Sulpated Ash	%Wt	ASTM D874	1.2

MOTOR CYCLE OIL 4T 10W-40

Product Code 42990

MOTOR CYCLE OIL 4T 10W-40 is a synthetic technology based 4-stroke gasoline engine oil developed specifically to meet the special requirements of latest high performance air and liquid cooled 4-stroke motorcycles. It provides excellent protection to engine, gearbox and wet clutch used in 4-stroke motorcycles and ensures highest degree of reliability even under severe operating conditions and temperatures.

MOTOR CYCLE OIL 4T 10W-40 is based on a high quality synthetic technology base oils in combination with a special selected additive package to obtain the following properties:

- Excellent anti-wear, anti-rust and anti-corrosion properties.
- Good thermo-and oxidative stability.
- Controlled frictional properties eliminate clutch slippage and improves drivability.
- Excellent dispersant and detergent properties.

API SL, JASO MA-2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	859
Kin. Viscosity @40°C	mm2/s	ASTM D7042	88l7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.8
Viscosity Index		ASTM D2270	159
Viscosity CCS @-25°C, max	cP	ASTM D5293	5260
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	8.5
Sulpated Ash	%Wt	ASTM D874	1.15

KART 2T RACING

Product Code 43000

KART 2T RACING is a high performance ultimate lubricant based on synthetic ester and castor proven base oil. KART 2T is specially developed for high revving 2-stroke air- and/or water-cooled kart engines which run under severe/ racing conditions.

KART 2T RACING is formulated with high quality synthetic ester and castor base stocks in combination with an unique additive technology to achieve the following performance:

- More power and better bearing protection.
- Very high film strength and affinity for hot metal.
- Excellent scuff protection.
- Exceptional Piston Cleanliness.
- Low carbon residue, reduces smoke.

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	939
Kin. Viscosity @40°C	mm2/s	ASTM D7042	150
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.1
Viscosity Index		ASTM D2270	134
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45

4-STROKE OUTBOARD OIL 10W-30

Product Code 43280

4-STROKE OUTBOARD OIL 10W-30 is a premium 4-stroke engine oil specially designed for the most modern high output gasoline power, water cooled outboard / inboard and personal watercraft engines. It is specially developed to exceed the performance requirements of National Marine Manufacturers Association's specification NMMA FC-W® (Four Cycle-Water specification) and various manufacturers like Yamaha, Honda, and Tohatsu/Nissan marine.

4-STROKE OUTBOARD OIL 10W-30 is based on a high quality hydro processed base oils in combination with a special selected additive package to obtain the following properties:

- Exceptional shear stability.
- Advanced rust inhibitors guard against rust & corrosion even in marine salt water environment.
- Good Low temperature fluidity assists easy cold start.
- Active cleaning agents provide superior engine cleanliness

NMMA FC-W

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-30
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.2
Viscosity Index		ASTM D2270	158
Viscosity CCS @-25°C, max	cP	ASTM D2270	3900
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	7.4

MOTOR CYCLE OIL 2T EXTRA (RED)

Product Code

MOTOR CYCLE OIL 2T EXTRA (RED) is a high quality semi-synthetic lubricant specially developed for high powered 2-stroke air cooled gasoline engines fitted with oil-injection or premix systems.

MOTOR CYCLE OIL 2T EXTRA (RED) is based on a high quality virgin and synthetic base oils in combination with a special selected additive package to obtain the following properties:

- Outstanding protection against piston scuffing and premature wear of engine components.
- Excellent control against engine deposits, exhaust system blocking.
- Extended engine life without power loss.
- Low ash additive technology prevents pre-ignition and spark plug fouling.
- Specially selected synthetic base fluid reduces visible exhaust smoke.
- Easy miscibility with gasoline ensures stable homogeneous mixture even at low ambient temperatures.

API TC, JASO FD, ISO-L-EGD

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	873
Color	Visual		Red
Kin. Viscosity @40°C	mm2/s	ASTM D7042	52.4
Kin. Viscosity @100°C	mm22/s	ASTM D7042	9.5
Viscosity Index		ASTM D2270	122
Flash Point COC	°C	ASTM D92	85
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	1.4
Sulphated Ash	%Wt	ASTM D78	0.14

MOTOR CYCLE OIL 4T 20W-50

Product Code 45160

MOTOR CYCLE OIL 4T 20W-50 is a high performance mineral engine oil especially developed for use in air-, oil-, and water-cooled 4-stroke motorcycles to provide excellent protection towards engine, gearbox and wet clutches and ensures the highest possible reliability even under the most severe operation conditions.

MOTOR CYCLE OIL 4T 20W-50 is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Good thermal and oxidation stability.
- Stay-in-grade.
- Good protection against wear, foam and corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Controlled frictional properties eliminate clutch slippage, effectively improving the driveability of the vehicle.

API SL **JASO MA-2**

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	20W-50
Density@15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	152
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.8
Viscosity Index		ASTM D2270	130
Viscosity CCS @-15°C, max	cP	ASTM D2270	6660
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	8.7
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR CYCLE OIL 4T 25W-60

Product Code 45220

MOTOR CYCLE OIL 4T 25W-60 is a high performance mineral engine oil especially developed for use in air-, oil-, and water-cooled 4-stroke motorcycles to provide excellent protection towards engine, gearbox and wet clutches and ensures the highest possible reliability even under the most severe operation conditions.

MOTOR CYCLE OIL 4T 25W-60 is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Good thermal and oxidation stability.
- Stay-in-grade.
- Good protection against wear, foam en corrosion.
- Low temperature properties, to ensure a smooth cold start.
- Controlled frictional properties eliminate clutch slippage, effectively improving the driveability of the vehicle.

API SL **JASO MA-2**

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	25W-60
Density@15°C	kg/m3	ASTM D4052	895
Kin. Viscosity @40°C	mm2/s	ASTM D7042	244
Kin. Viscosity @100°C	mm2/s	ASTM D7042	22.9
Viscosity Index		ASTM D2270	116
Viscosity CCS @-10°C, max	cP	ASTM D2270	13000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-21
Total Base Number	mgKOH/g	ASTM D2896	5.9

AUTOGEAR OIL EP 80W-90

Product Code 43020

AUTOGEAR OIL EP 80W-90 is an universal high performance mineral EP gear oil for use in manual transmission en transaxles of passenger cars, vans, light- and heavy commercial vehicles, off-highway equipment, mining and agriculture where a SAE 80W-90 GL-4 is been required.

AUTOGEAR OIL EP 80W-90 is formulated with high refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Good Extreme Pressure and anti-wear properties.
- High thermal- and oxidation stability.
- Effective rust, wear and corrosion protection.
- Better low temperature provides easy start-up at low ambient temperatures.
- Good anti-foam properties ensure film strength for effective lubrication.
- Excellent seal compatibility.

API GL-4, MIL-L-2105

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W-90
Density@15°C	kg/m3	ASTM D4052	891
Kin. Viscosity @40°C	mm2/s	ASTM D7042	142
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.3
Low-Temperature Brookfield Viscosity @ -26°	cP	ASTM D2983	< 150000
Viscosity Index		ASTM D2270	98
Flash Point	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30

AUTOGEAR OIL EP 85W-140

Product Code 43040

AUTOGEAR OIL EP 85W-140 is an universal high performance mineral EP gear oil for use in manual transmission en transaxles of passenger cars, vans, light- and heavy commercial vehicles, off-highway equipment, mining and agriculture where a SAE 85W-140 GL-4 is been required.

AUTOGEAR OIL EP 85W-140 is formulated with high refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Good Extreme Pressure and anti-wear properties.
- High thermal- and oxidation stability.
- Effective rust, wear and corrosion protection.
- Better low temperature provides easy start-up at low ambient temperatures.
- Good anti-foam properties ensure film strength for effective lubrication.
- Excellent seal compatibility.

API GL-4, MIL-L-2105

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	85W-140
Density@15°C	kg/m3	ASTM D4052	904
Kin. Viscosity @40°C	mm2/s	ASTM D7042	437
Kin. Viscosity @100°C	mm2/s	ASTM D7042	29.8
Low-Temperature Brookfield Viscosity @ -12°	cP	ASTM D2983	< 150000
Viscosity Index		ASTM D2270	97
Flash Point	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15

AUTOGEAR OIL MP 80W-90

Product Code 43060

AUTOGEAR OIL MP 80W-90 is an universal high performance mineral multi purpose gear oil for use in different applications, such as; manual transmission and transaxles of passenger cars, vans, light- and heavy commercial vehicles, off-highway equipment, mining and agriculture, where a SAE 80W-90 GL-5 oil is been required.

AUTOGEAR OIL MP 80W-90 is formulated with high refined mineral base stocks in combination with a special additive technology to achieve the following performance:

- Very good protection against wear.
- Very good performance against the forming of foam and corrosion.
- Good Oxidation- and thermal stability.

API GL-5, MIL-L-2105D, MAN 342 M1, MAN 342 M2, MB 235.0, Volvo 1273.10, ZF TE-ML 05A, 7A, 16B, 16C, 16D, 17B, 19B, 21A

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W-90
Density@15°C	kg/m3	ASTM D4052	895
Kin. Viscosity @40°C	mm2/s	ASTM D7042	138
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.4
Low-Temperature Brookfield Viscosity @ -26° < 150000	cP		ASTM D2983
Viscosity Index		ASTM D2270	103
Flash Point	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30

AUTOGEAR OIL MP 85W-90

Product Code 43070

AUTOGEAR OIL MP 85W-90 is an universal high performance mineral multi-purpose gear oil for use in manual transmission en transaxles of passenger cars, vans, light- and heavy commercial vehicles, off-highway equipment, mining and agriculture where a SAE 85W-90 GL-5 is been required.

AUTOGEAR OIL MP 85W-90 is based on high quality mineral base oil in combination with a special additive package to ensure the following properties:

- Good thermo-oxidative stability.
- Good load bearing characteristics.
- Effective rust and corrosion protection.
- High low temperature fluidity provides smoother shifting at low ambient temperatures.
- Exceptional shear stable.

API GL-5, MIL-L-2105D, MAN 342 M1/M2, MB 235.6, VOLVO 97310, VOLVO 97316, SAE J2360, Meritor 0-76-D, MACK GO-J, Scania STO 1.0, ZF TE-ML05A/07A/08/12M/16D/17B/19B/21A

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	85W-90
Density@15°C	kg/m3	ASTM D4052	885
Kin. Viscosity @40°C	mm2/s	ASTM D7042	167
Kin. Viscosity @100°C	mm2/s	ASTM D7042	16.3
Low-Temperature Brookfield Viscosity @ -12° < 150000	cP		ASTM D2983
Viscosity Index		ASTM D2270	102
Flash Point	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27

AUTOGEAR OIL MP 85W-140

Product Code 43080

AUTOGEAR OIL MP 85W-140 is a universal high performance mineral multi-purpose gear oil for use in manual transmission en transaxles of passenger cars, vans, light- and heavy commercial vehicles, off-highway equipment, mining and agriculture where a SAE 85W-140 GL-5 is been required.

AUTOGEAR OIL MP 85W-140 is based on high quality mineral base oil in combination with a special additive package to ensure the following properties:

- Good thermo-oxidative stability.
- Good load bearing characteristics.
- Effective rust and corrosion protection.
- High low temperature fluidity provides smoother shifting at low ambient temperatures.
- Exceptional shear stable.

API GL-5, MIL-L-2105D

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	85W-140
Density@15°C	kg/m3	ASTM D4052	906
Kin. Viscosity @40°C	mm2/s	ASTM D7042	414
Kin. Viscosity @100°C	mm2/s	ASTM D7042	29.0.
Low-Temperature Brookfield Viscosity @ -12°	cP	ASTM D2983	100000
Viscosity Index		ASTM D2270	99
Flash Point	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15

AUTOGEAR OIL MP 80W-140

Product Code 43090

AUTOGEAR OIL MP 80W-140 is a universal high performance mineral multi-purpose gear oil for use in manual transmission en transaxles of passenger cars, vans, light- and heavy commercial vehicles, off-highway equipment, mining and agriculture where a SAE 80W-140 GL-5 is been required. This product is also suitable for applications where a SAE 85W-140 GL-5 is required.

AUTOGEAR OIL MP 80W-140 is based on high quality mineral base oil in combination with a special additive package to ensure the following properties:

- Good thermo-oxidative stability.
- Good load bearing characteristics.
- Effective rust and corrosion protection.
- High low temperature fluidity provides smoother shifting at low ambient temperatures.
- Exceptional shear stable.

API GL-5, MIL-L-2105D

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W-140
Density@15°C	kg/m3	ASTM D4052	894
Kin. Viscosity @40°C	mm2/s	ASTM D7042	224
Kin. Viscosity @100°C	mm2/s	ASTM D7042	26.7
Low-Temperature Brookfield Viscosity @ -26°	cP	ASTM D2983	< 150000
Viscosity Index		ASTM D2270	153
Flash Point	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33

AUTOGEAR OIL SYN 75W-90

Product Code 43100

AUTOGEAR OIL SYN 75W-90 is a high quality fuel conserving fully synthetic total driveline gear lubricants designed to meet the demanding requirements of light duty and heavy duty commercial vehicles and off-highway equipment operating in most severe operating conditions. Unique additive technology allows the use of a single lubricant in rear axles, synchronized and non-synchronized manual transmission.
AUTOGEAR OIL SYN 75W-90 is formulated with high quality synthetic base oil in combination with a special additive package to reach the following properties:

- Unique additive technology allows the use of a single lubricant in rear axles, synchronised and non-synchronised manual transmissions and therefore helps in rationalisation of products.
- Exceptional thermo-oxidative stability and load bearing characteristics help in extending the life of the driveline components and the oil.
- Effective rust and corrosion protection, especially to copper and its alloys reduces wear, extends synchroniser life and improves shifting performance.
- Outstanding low temperature fluidity reduces wear at start up and provides smoother shifting at low ambient temperatures.
- Exceptional shear stability helps in retaining viscosity and film strength to protect against wear even under severe operating conditions.
- Superior frictional properties provide improved fuel economy and smoother shift ability

API GL-4/5, MT-1, MAN 342 M3, MIL-PRF-2105E, Scania STO 1:0, Volvo 97312, SAE J2360, MACK GO-J, DAF, MAN 341 E3, MAN 341 Z2, Arvin Meritor 0-76-N, ZF TE-ML 02B/05A/07A/12L/12N/16B/17B/19B/21A, Bosch TE-ML 08, IVECO

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	75W-90
Density@15°C	kg/m3	ASTM D4052	877
Kin. Viscosity @40°C	mm2/s	ASTM D7042	105.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.8
Viscosity Index		ASTM D2270	160
Brookfield @-40°C	cP	ASTM D2983	150000
Flash Point COC	°C	ASTM D92	>201

AUTOGEAR OIL XP 80W-90

Product Code 43110

AUTOGEAR OIL XP 80W-90 is a high performance total driveline gear lubricant designed to provide excellent lubrication in a wide range of drive trains of light & heavy duty commercial vehicles.

AUTOGEAR OIL XP 80W-90 is based on high quality mineral base oil in combination with a special additive package to ensure the following properties:

- Good thermo-oxidative stability.
- Good load bearing characteristics.
- Effective rust and corrosion protection.
- High low temperature fluidity provides smoother shifting at low ambient temperatures.
- Exceptional shear stable.
- Excellent frictional properties provide improved fuel economy and smoother shiftability.

API GL-4/5, MT-1, MACK GO-J, MB 235.0, Scania STO 1:0, SAE J2360, MAN 341 Z2, MAN 341 E2, MAN 342 M2, Arvin Meritor 0-76-D, ZF TE-ML 08, DAF, IVECO, ZF TE-ML 02B/05A/07A/12L/12M/16B/17H/19C/21A, Volvo 97321

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W-90
Density@15°C	kg/m3	ASTM D4052	899
Kin. Viscosity @40°C	mm2/s	ASTM D7042	145.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.5
Low-Temperature Brookfield Viscosity @ -26° < 150000	cP	ASTM D2983	
Viscosity Index		ASTM D2270	98
Flash Point	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30

AUTOGEAR OIL LS 80W-90

Product Code 43120

AUTOGEAR OIL LS 80W-90 is a extra high performance extreme pressure type automotive gear lubricant specially developed for use in modern high performance passenger cars, sports utility vehicles, vans and light duty trucks with limited slip differentials.

AUTOGEAR OIL LS 80W-90 is based on high quality mineral virgin base oil in combination with a special additive package to ensure the following properties:

- Exceptional thermo-oxidative stability.
- Exceptional load bearing characteristics.
- Effective rust and corrosion protection.
- Excellent limited slip performance to reduce chatter and improves traction.
- Outstanding low temperature fluidity provides smoother shifting at low ambient temperatures.
- Exceptional shear stable.
- Good frictional properties provide improved fuel economy and smoother shift ability.

API GL-5, MAN 342 M1/M2, ZF TE-ML 05C, 07A, 08, 12E, 16E, 17B, 19B, 21C, MIL-L-2105D, Volvo 1273.10, Arvin Meritor

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W-90
Density@15°C	kg/m3	ASTM D4052	891
Kin. Viscosity @40°C	mm2/s	ASTM D7042	128.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.3
Low-Temperature Brookfield viscosity@-26°C	cP	ASTM D2983	139000
Viscosity Index		ASTM D2270	111
Flash Point COC	°C	ASTM D92	>200
Pour Point	°C	ASTM D7346	-30

AUTOGEAR OIL LS 90

Product Code 43130

AUTOGEAR OIL LS 90 is an extra high performance extreme pressure type automotive gear lubricant specially developed for use in modern high performance passenger cars, sports utility vehicles, vans and light duty trucks with limited slip differentials.

AUTOGEAR OIL LS 90 is based on high quality mineral virgin base oil in combination with a special additive package to ensure the following properties:

- Exceptional thermo-oxidative stability.
- Exceptional load bearing characteristics.
- Effective rust and corrosion protection.
- Excellent limited slip performance to reduce chatter and improves traction.
- Outstanding low temperature fluidity provides smoother shifting at low ambient temperatures.
- Exceptional shear stable.
- Good frictional properties provide improved fuel economy and smoother shift ability.

API GL-5, MAN 342 M1, ZF TE-ML 05C, 07A, 08, 12C, 16E, 17B, 19B, 21C, MB 235.0 Volvo 97310, VW TL 727, Arvin Meritor, Volvo 97316, Voith 3.325-339

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	90
Density@15°C	kg/m3	ASTM D4052	902
Kin. Viscosity @40°C	mm2/s	ASTM D7042	167.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.8
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	220
Pour Point	°C	ASTM D7346	-15

TO-4 TRANSMISSION FLUID 10W

Product Code 43160

TO-4 TRANSMISSION FLUID 10W is specifically designed for powershift transmissions, final drives and wet brakes on heavy duty off-highway equipment used in earthmoving, mining logging, road transport and agricultural applications.

TO-4 TRANSMISSION FLUID 10W 10W is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals possible.

Caterpillar TO-4, Komatsu KES 07.868.1, API: GL-4, Allison C-4, ZF TE-ML 03, Komatsu Dresser, Vickers 35VQ25, Eaton I-286-S, Vickers M2950S, DANA Powershift transmissions

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W
Density@15°C	kg/m3	ASTM D4052	860
Kin. Viscosity @40°C	mm2/s	ASTM D7042	38
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.4
Viscosity Index		ASTM D2270	121
Viscosity CCS @-25°C, max	cP	ASTM D5293	3800
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36

TO-4 TRANSMISSION FLUID 30

Product Code 43140

TO-4 TRANSMISSION FLUID 30 is specifically designed for powershift transmissions, final drives and wet brakes on heavy duty off-highway equipment used in earthmoving, mining logging, road transport and agricultural applications.

TO-4 TRANSMISSION FLUID 30 is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals possible

Caterpillar TO-4, Komatsu KES 07.868.1, Allison C-4, API: GL-4, Caterpillar TO-2

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	888
Kin. Viscosity @40°C	mm2/s	ASTM D7042	98
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.1
Viscosity Index		ASTM D2270	97
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30

TO-4 TRANSMISSION FLUID 50

Product Code 43150

TO-4 TRANSMISSION FLUID 50 is specifically designed for powershift transmissions, final drives and wet brakes on heavy duty off-highway equipment used in earthmoving, mining logging, road transport and agricultural applications.

TO-4 TRANSMISSION FLUID 50 is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals possible.

Caterpillar TO-4, Komatsu KES 07.868.1, API: GL-4

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	50
Density@15°C	kg/m3	ASTM D4052	897
Kin. Viscosity @40°C	mm2/s	ASTM D7042	208
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.1
Viscosity Index		ASTM D2270	95
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-21

AUTOGEAR OIL TX 75W-80

Product Code 43330

AUTOGEAR OIL TX 75W-80 is a high quality fuel saving synthetic thermally stable long life gear lubricant designed for passenger- and commercial vehicles using manual transmissions fitted with different synchronizers including latest ones based on carbon.

AUTOGEAR OIL TX 75W-80 is based on high quality synthetic base oil in combination with a special additive package to ensure the following properties:

- Exceptional thermo and oxidative stability.
- Superior lubricating properties provide improved fuel economy.
- Exceptional load bearing characteristics.
- Effective rust and corrosion protection.
- Outstanding low temperature fluidity provides smoother shifting at low ambient temperatures.
- Good gear engagement with a variety of synchronizer materials including latest carbon.
- Good frictional properties provide improved fuel economy and smoother shift ability.

ApprovedL MAN 341 Z4
Exceeds: API GL-4, Volvo 97307, Renault B0032/2, IVECO, Eaton Europe, DAF, ZF TE-ML 01L,02L,08,13,16K

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	75W-80
Density@15°C	kg/m3	ASTM D4052	861
Kin. Viscosity @40°C	mm2/s	ASTM D7042	60.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.1
Brookfield Viscosity @-40°C	cP	ASTM D2983	99800
Viscosity Index		ASTM D2270	155
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39

AUTOGEAR OIL SYN 75W-85

Product Code 43340

AUTOGEAR OIL SYN 75W-85 is an universal high performance fuel saving transmission on synthetic technology for use in manual shifted transmission of the modern passenger car and light vans where an API GL-5, SAE 75W-85 is recommended.

AUTOGEAR OIL SYN 75W-85 is based on special selected high performance synthetic base oil in combination with a special selected EP-additive package to reach to following properties:

- Excellent EP-properties.
- Excellent thermal- and oxidation stability.
- Good shifting even at low temperatures.
- Low pour point.
- Fuel saving properties.
- Excellent protection against the forming of foam, corrosion and wear.

API GL-5, MB 235.7, ZF TE-ML 18, VW G 052 190, VW G 055 190, Alfa-Romeo, BMW Fiat, Lancia, VW G 052 145

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	75W-85
Density@15°C	kg/m3	ASTM D4052	870
Kin. Viscosity @40°C	mm2/s	ASTM D7042	81.4
Kin. Viscosity @100°C	mm2/s	ASTM D7042	12.2
Viscosity Index		ASTM D2270	146
Brookfield @-40°C	cP	ASTM D2983	150000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-51

AUTOGEAR OIL TDL 85W-140

Product Code 43360

AUTOGEAR OIL TDL 85W-140 is a thermally stable high quality total driveline gear lubricants designed to meet the severe requirements of drivetrains of light and heavy duty commercial vehicles.

AUTOGEAR OIL TDL 85W-140 is formulated with high refined solvent mineral stock in combination with a special additive package to reach the following properties:

- Unique additive technology allows the use of a single lubricant in rear axles.
- Exceptional thermo-oxidative stability.
- High load bearing characteristics help in extending the life of the driveline components and the oil.
- Effective rust and corrosion protection, especially to copper and its alloys reduces wear.
- Extends synchroniser life and improves shifting performance.
- Good low temperature fluidity reduces wear and provides easy start-up.
- Good anti-foam properties ensure film strength for effective lubrication.
- Superior seal compatibility minimises leakage and reduces chance of contamination.

API GL-5, MT-1, MIL-PRF-2105E, MIL-L-2105D, SAE J2360, MACK GO-J, Scania STO 1:0, MAN M 3343M, ZF TE ML 05A, 07A, 08, 12E, 16C/D, 19B

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	85W-140
Density@15°C	kg/m3	ASTM D4052	909
Kin. Viscosity @40°C	mm2/s	ASTM D7042	378
Kin. Viscosity @100°C	mm2/s	ASTM D7042	27.7
Viscosity Index		ASTM D2270	99
Low-Temperature Brookfield viscosity @-12°C 150000	cP	ASTM D2983	
Flash Point COC	°C	ASTM D92	211
Pour Point	°C	ASTM D7346	-18

AUTOGEAR OIL SYN LS 75W-140

Product Code 43370

UTOGEAR OIL SYN LS 75W-140 is a synthetic extra high performance multi-functional gear lubricant designed to provide effective lubrication in modern high performance passenger cars, sports utility vehicles, vans and light duty trucks and “off highway” equipment equipped with both conventional and limited slip differentials. The special friction modifier used in this oil helps in reducing chatter and improving traction besides retaining the frictional properties for longer service life.

AUTOGEAR OIL SYN LS 75W-140 is formulated with high quality synthetic base oils in combination with a special additive package to reach the following properties:

- Unique additive technology allows the use of a single lubricant in rear axles, synchronised and non-synchronised manual transmissions and therefore helps in rationalisation of products.
- Exceptional thermo-oxidative stability and load bearing characteristics help in extending the life of the driveline components and the oil.
- Effective rust and corrosion protection, especially to copper and its alloys reduces wear, extends synchroniser life and improves shifting performance.
- Outstanding low temperature fluidity reduces wear at start up and provides smoother shifting at low ambient temperatures.
- Exceptional shear stability helps in retaining viscosity and film strength to protect against wear even under severe operating conditions.
- Superior frictional properties provide improved fuel economy and smoother shift ability.
- Excellent limited slip performance reduces chatter and improves traction.

API GL-5 (LS), MT-1, MIL-PRF-2105E, MIL-L-2105D, SAE J2360, MACK GO-J, Scania STO 1:0 (Axle), ZF TE-ML-05D, ZF TE-ML-21D, Ford M2C192-A

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	75W-140
Density@15°C	kg/m3	ASTM D4052	874
Kin. Viscosity @40°C	mm2/s	ASTM D7042	168
Kin. Viscosity @100°C	mm2/s	ASTM D7042	25.9
Viscosity Index		ASTM D2270	190
Low-Temperature Brookfield viscosity@-40°C	cP	ASTM D2983	150000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45

AUTOGEAR OIL MTF 75W-80

Product Code 43380

AUTOGEAR OIL MTF 75W-80 is a high quality manual transmission fluid designed for passenger- and light commercial vehicles using both manual transmissions, transaxles and (dry-clutch) dual clutch transmissions of various manufacturers. Not suitable for differentials and other API: GL-5 applications.

AUTOGEAR OIL MTF 75W-80 is based on high quality synthetic technology base oil in combination with a special additive package to ensure the following properties:

- Exceptional thermo-oxidative stability.
- Superior lubricating properties provide improved fuel economy.
- Exceptional load bearing characteristics.
- Effective rust and corrosion protection.
- Outstanding low temperature fluidity provides smoother shifting at low ambient temperatures.
- Good gear engagement with a variety of synchronizer materials including brass, carbon, sintered bronze and molybdenum.

API: GL-4, BMW MTF LT-2, BMW MTF LT-3, BMW MTF LT-4, Ford WSD-M2C200-C Ford WSS-M2C200-D2, GM 1940004, GM 19259104, GM 1940764, GM 1940768, GM 1940182, MB 235.10, MTF94, Honda MTF, Honda MTF II, Honda MTF III, Nissan MT-XZ, Nissan MT-XZ TL, Volvo 97308, Volvo 97309, VW G 009 317, VW G 052 171 VW G 052 178, VW G 052 512, VW G 052 726, VW G 060 726, VW G 052 527, VW G 060 726, VW G 070 726, VW G50, PSA B71 2330, Renault (NFJ/NFP/TRJ/TRT/TRZ)

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	75W-80
Density@15°C	kg/m3	ASTM D4052	865
Kin. Viscosity @40°C	mm2/s	ASTM D7042	51.31
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.6
Low-Temperature Brookfield Viscosity @-40°C	cP	ASTM D2983	<75000
Viscosity Index		ASTM D2270	165
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39

RACING GEAR OIL SYN 75W-140

Product Code 43390

RACING GEAR OIL SYN 75W-140 is a fully synthetic thermally stable limited slip gear lubricant designed to meet the demanding requirements of light duty and heavy duty commercial vehicles and off-highway equipment operating in most severe operating conditions.

RACING GEAR OIL SYN 75W-140 is formulated with high quality 100% synthetic Poly Alpha Olefin (PAO) base oil in combination with a special additive package to reach the following properties:

- Exceptional thermo-oxidative stability and load bearing characteristics help in extending the life of the driveline components and the oil.
- Effective rust and corrosion protection, especially to copper and its alloys reduces wear, extends synchroniser life and improves shifting performance
- Outstanding low temperature fluidity reduces wear at start up and provides smoother shifting at low ambient temperatures
- Exceptional shear stability helps in retaining viscosity and film strength to protect against wear even under severe operating conditions

API GL-5 (LS), MIL-PRF-2105E, MIL-L-2105D, SAE, J2360MACK GO-J, Scania STO 2:0A

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	75W-140
Density@15°C	kg/m3	ASTM D4052	870
Kin. Viscosity @40°C	mm2/s	ASTM D7042	202
Kin. Viscosity @100°C	mm2/s	ASTM D7042	28.8
Viscosity Index		ASTM D2270	182
Brookfield @-40°C	cP	ASTM D2983	150000
Flash Point COC	°C	ASTM D92	>210
Pour Point	°C	ASTM D7346	-51

AUTOGEAR OIL SYN HD 75W-90

Product Code 45300

AUTOGEAR OIL SYN HD 75W-90 is a high quality fuel conserving fully synthetic total driveline gear lubricants designed to meet the demanding requirements of light duty and heavy duty commercial vehicles and off-highway equipment operating in most severe operating conditions. Unique additive technology allows the use of a single lubricant in rear axles, synchronized and non-synchronized manual transmission.

AUTOGEAR OIL SYN HD 75W-90 is based on high quality PolyAlphaOlefine (PAO) base oil in combination with a special additive package to ensure the following properties:

- Exceptional thermo-oxidative stability.
- Exceptional load bearing characteristics.
- Effective rust and corrosion protection.
- Outstanding low temperature fluidity provides smoother shifting at low ambient temperatures.
- Exceptional shear stable.
- Superior frictional properties provide improved fuel economy and smoother shiftability.

API GL-4/5, MT-1, SAE J2360, MIL-PRF-2105E, Scania STO 1:0, Scania STO 2:0A FS MAN 341 Type E3, MAN 341 Type Z2, MAN 342 Type S1Mack GO-J, MB 235.8, Arvin Meritor 0-76-N, Volvo 97312, DAF, IVECO, MB 235.11, ZF TE-ML 02B, 05A, 07A, 08, 12L, 12N, 16F, 17B, 19C, 21A

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	75W-90
Density@15°C	kg/m3	ASTM D4052	868
Kin. Viscosity @40°C	mm2/s	ASTM D7042	104.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.4
Viscosity Index		ASTM D2270	156
Brookfield @-40°C	cP	ASTM D2983	65000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-57

SPECIAL RACING GEAR LS 80W-250

Product Code 45980

SPECIAL RACING GEAR LS 80W-250 is a fully synthetic extremely thermally stable limited slip differential lubricant designed for racing and supercar applications. Extreme protection again heavy shock loads and very high torque applications. This product has successfully been tested and race-proven on OS Giken differentials.

SPECIAL RACING GEAR LS 80W-250 is not recommended for transaxle applications.

SPECIAL RACING GEAR LS 80W-250 is formulated with high quality 100% synthetic Poly Alpha Olefin (PAO) base oil in combination with a special additive package to reach the following properties:

- Exceptional thermo-oxidative stability and load bearing characteristics help in extending the life of the driveline components and the oil.
- Exceptional high anti-wear additive dosage providing maximum differential protection (2600+ ppm Phosphorus).
- Outstanding low temperature fluidity reduces wear at start up and provides smoother shifting at low ambient temperatures.
- Exceptional shear stability helps in retaining viscosity and film strength to protect against wear even under severe racing conditions.

API GL-5 (LS), MIL-L-2105D

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W-250
Density@15°C	kg/m3	ASTM D4052	865
Kin. Viscosity @40°C	mm2/s	ASTM D7042	431
Kin. Viscosity @100°C	mm2/s	ASTM D7042	55.2
Viscosity Index		ASTM D2270	196
Low-Temperature Brookfield Viscosity @-26°C	cP	ASTM D2983	150000
Flash Point COC	°C	ASTM D92	>210
Pour Point	°C	ASTM D7346	-45

AUTOGEAR OIL GL-1 140

Product Code 43010

AUTOGEAR OIL GL-1 140 is a oil for the lubrication of older gearboxes and rear axles not requiring EP properties.

AUTOGEAR OIL GL-1 140 is based on high performance mineral base oil in combination with a specially selected additive technology to ensure the following properties:

- Good resistance against oxidation.
- Good resistance against sludge formation.
- Effectively offsets the formation of foam.

API GL-1

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	140
Density@15°C	kg/m3	ASTM D4052	900
Kin. Viscosity @40°C	mm2/s	ASTM D7042	450
Kin. Viscosity @100°C	mm2/s	ASTM D7042	30.5
Viscosity Index		ASTM D2270	97
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	15


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ATF TYPE F

Product Code 43170

ATF TYPE F is a high friction automatic transmission fluid intended for use in automatic transmissions of all Ford vehicles that were built prior to 1977 and certain models built during 1977-1980 requiring fluids meeting Ford ESW-M2C33-F specification.

ATF TYPE F is formulated on high refined mineral base stock in combination with an unique additive package to reach the following properties.

- Extended thermal- and oxidation stability.
- Superior anti-wear technology protects transmission against wear.
- Improved low temperature fluidity provides fast circulation in cold climatic conditions.
- Compatible with all common seal materials.

FORD M2C33-F, Ford M2C33-G, Ford M2C9007-AA, Borg-Warner

Property	Unit	Test Method	Typical Value
Color		Visual	Red
Density @15°C	kg/m3	ASTM D4052	865
Kin. Viscosity @40°C	mm2/s	ASTM D7042	35
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.2
Viscosity Index		ASTM D2270	177
Flash Point COC	°C	ASTM D92	195
Pour Point	°C	ASTM D7346	-42

ATF MBF

Product Code 43180

ATF MBF is a high quality fuel saving fully synthetic automatic transmission oil specially developed for the last generation MB (NAG-2) 7-speeds automatic transmissions.

ATF MBF is backwards compatible to automatic transmissions where a MB 236.12 specification is recommended.

ATF MBF is based on special selected high performance synthetic base oil in combination with a special selected EP-additive package to reach to following properties:

- Excellent thermal- and oxidation stability.
- Excellent low temperature properties.
- Good shifting even at low temperatures.
- High Viscosity Index.
- Excellent shifting even after long use.
- Extended drain interval possible.
- Fuel saving properties.
- Excellent protection against the forming of foam, corrosion and wear.

MB 236.14 **Ssang Yong**

Property	Unit	Test Method	Typical Value
Color		Visual	RED
Density @15°C	kg/m3	ASTM D4052	849
Kin. Viscosity @40°C	mm2/s	ASTM D7042	27.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.7
Viscosity Index		ASTM D2270	160
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48

ATF DX II

Product Code

ATF DX II is a high quality universal fluid to be used in automatic transmission, torque convertors and power steering of passenger cars, light vans and commercial vehicles.

ATF DX II is formulated on high quality re-refined mineral and virgin synthetic base oil in combination with an unique additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Special friction modifiers.
- Very High Viscosity Index.
- Low pour point.
- Excellent shifting at very low and high temperatures.
- Excellent protection against corrosion, foam and wear.

GM Dexron II-D, MAN 339 type V1, MAN 339 type Z1 MB 236.9, Voith H55.6335. xx, ZF TE-ML 03D/04D/14A/17

Property	Unit	Test Method	Typical Value
Color		Visual	Red
Density @15°C	kg/m3	ASTM D4052	855
Kin. Viscosity @40°C	mm2/s	ASTM D7042	35.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.3
Viscosity Index		ASTM D2270	175
Viscosity Brookfield @-40°, max	cP	ASTM D2983	50.000
Flash Point COC	°C	ASTM D92	172
Pour Point	°C	ASTM D7346	-48

ATF DCT FLUID

Product Code 43210

ATF DCT FLUID is a high performance full synthetic long life ATF specially designed for use in the last generation wet DCT (Double Coupling Transmission) transmission of the VAG group and various other manufacturers like Renault, BMW, Ford and PSA and are characterized for fast and sportive shifting.

ATF DCT FLUID is based on fully synthetic base in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Excellent lubrication, even under extreme conditions.
- Very high protection against wear, corrosion and foam.
- High “shear stable”.
- Very low pour point, can be used by very cold temperatures.
- High Viscosity Index.

BMW DCTF-1, BMW 6-speed DCT, BMW EU 83 22 2 148 578, BMW EU 83 22 2 148 579, BMW EU 83 22 0 440 214, BMW EU 83 22 2 147 477, BMW MTF LT-5, Chrysler 68044345 EA / GA, Chrysler Powershift 6-speed, DCT-1, Ferrari TE DCT-3, Ford WSS-M2C936-A, Ford M2C200-D2 / XT-11-QDC, MB 236.21, Mitsubishi TC-SST, Mitsubishi SSTF-1 MZ320065, Porsche 000 043 207 29, Porsche 000 043 207 30, Porsche 999.917.067.00, Porsche 999.917.080.00/01 Porsche 999.917.090.00 PSA 9734.S2, Renault EDC, Volvo 1161838/1161839, VW G 052 182, VW G 052 529 VW TL 521 82, VW TL 525 29, ZF TE-ML 11

Property	Unit	Test Method	Typical Value
Color		Visual	Amber
Density @15°C	kg/m3	ASTM D4052	848
Kin. Viscosity @40°C	mm2/s	ASTM D7042	33.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.9
Viscosity Index		ASTM D2270	178
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45

ATF DX III

Product Code 43220

ATF DX III is a high quality universal fluid to be used in automatic transmission, torque convertors and power steering of passenger car, light vans and commercial vehicles.

ATF DX III is formulated on high refined solvent mineral and synthetic base stock in combination with an unique additive package to reach the following properties.

- Excellent thermal- and oxidation stability.
- Special friction modifiers.
- Very high viscosity Index.
- Low pourpoint.
- Excellent shifting at very low and high temperatures.
- Excellent protection against the forming corrosion, foam and wear.

DEXRON III H, Allison C4, MAN 339 V1/Z1, MB 236.9, Voith H55.6335.xx, ZF TE-ML 03D , ZF TE-ML 14A, VOLVO 97341, FORD M, GM D-IID GM D-IIIG/H, VOLVO 97340

Property	Unit	Test Method	Typical Value
Color		Visual	Red
Density @15°C	kg/m3	ASTM D4052	850
Kin. Viscosity @40°C	mm2/s	ASTM D7042	36.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.6
Viscosity Index		ASTM D2270	180
Viscosity Brookfield @-40°, max.	cP	ASTM D2983	< 20000
Flash Point COC	°C	ASTM D92	201

ATF MV

Product Code 43230

ATF MV is a high quality synthetic fluid specially designed with advanced multi-vehicle additive technology to serve a broad range of. **ATF MV** exceeds the complex requirements of Automatic Transmission/ Vehicle Manufacturers of Europe, North America and Asia including the JASO 1-A performance standard created by Japanese Automobile Manufacturers Association.
Remark: Not suitable for use in Continuously Variable Transmissions (CVT), Dual Clutch Transmission (DCT), Daimler MB 7 speed (NAG 2), ZF 6 Speed.
ATF MV is based on fully synthetic base in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Excellent lubrication, even under extreme conditions.
- Very high protection against wear, corrosion and foam.
- High “shear stable”.
- Very low Pour point, can be used by very cold temperatures.
- High Viscosity Index.

Allison C4, TES 295, LT 71141, LA 2634, ETL -7045E, 8072B, Chrysler AS68RC, ATF Chrysler +3, +4, Ford Mercon, Ford Mercon V, Dexron IID, IIIG/H, Honda Z1, Mitsubishi SP-II / III, Hyundai/ KIA SPII /III, Idemitsu K17 / ATF HP, JWS 3309/3314/3317, JASO M315-2004, Texaco N402, MAN 339 V1/Z1/Z2, Mazda ATF M-III, M5, MB 236.3, 5, 6, 7, 8, MB 236.9, 10, 11, 91, Nissan Matic D,J,K,W, Subaru ATF, HP, Toyota T-III, T-IV, Voith H55.6335.xx, Volvo Std 1273.4, VW G 052 025, VW G 055 025, VW G 052 162, VW G 052 990, Volvo P/N 1161521, Volvo 1161540, Volvo 1161640, Volvo CE 1273,41, PSA P/N Z 000169756, Ssang Yong DSIH 5M-66, ZF TE ML 03D, 04D, 11A/B, 14A, 14B, 17C

Property	Unit	Test Method	Typical Value
Color		Visual	Colorless to
light Yellow			
Density @15°C	kg/m3	ASTM D4052	845
Kin. Viscosity @40°C	mm2/s	ASTM D7042	34.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.5
Viscosity Index		ASTM D2270	195
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-51

ATF MDX VI

Product Code 43240

ATF DX VI is a high quality universal fluid based on 100% synthetic base stocks to be used in automatic transmission, torque convertors and powersteering of passenger car, light vans and commercial vehicles where a GM Dexron VI specification is required. This product is backwards compatible where DEXRON® III (H), DEXRON® III(G), DEXRON®IIE and DEXRON®IID is been required.

ATF DX VI is formulated on high refined synthetic base stock in combination with an unique additive package to reach the following properties.

- Excellent thermal- and oxidation stability.
- Special friction modifiers.
- Verry high viscosity Index.
- Low pour point.
- Excellent shifting at very low and high temperatures.
- Excellent protection against the forming corrosion, foam and wear.

Dexron VI

Property	Unit	Test Method	Typical Value
Color		Visual	RED
Density @15°C	kg/m3	ASTM D4052	844
Kin. Viscosity @40°C	mm2/s	ASTM D7042	27.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.7
Viscosity Index		ASTM D2270	160
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48

ATF CVT FLUID

Product Code 43250

ATF CVT FLUID is a fully synthetic ultra-high performance CVT fluid formulated with selected base stocks and specially developed for use in the latest generation of Continuously Variable Transmission (CVT) – gearboxes which transfer traction via steel-made traction chain or push-belts.

ATF CVT FLUID is formulated on high refined synthetic base stock in combination with an unique additive package to reach the following properties.

- Good thermo-and oxidation stability.
- Extended drain interval possible.
- Excellent anti-wear, anti-rust and anti-corrosion technology.
- High Viscosity Index ensures adequate lubrication in both high operating & low starting temperatures.
- Better foam control leads to smooth & lasting shift feel and reduces fluid loss.
- Enhanced Low temperature fluidity assist in good cold start performance.
- Compatibility with all common seal materials

MB 236.20, Ford M2C928-A, BMW 83 22 0 136 376, BMW 83 22 0 429 154, VW G 052 180, Toyota CVTF-TC, Toyota CVT-FE, Nissan NS-1 / NS-2 / NS-3, Honda HMMF, Honda HCF-2, Mitsubishi SP-III, Mitsubishi CVTF-J1, Mitsubishi CVTF-J4 / CVTF-J4+, Suzuki CVTF TC / 3320, Suzuki NS-2, Subaru ECVT, Subaru iCVT, Daihatsu Ammix CVT, Suzuki CVTF Green 1 / 1V, Hyundai SP-III, EZL 799 / 799A, Chrysler/Jeep NS-2, JWS 3320, VW G 052 516

Property	Unit	Test Method	Typical Value
Color		Visual	Amber
Density @15°C	kg/m3	ASTM D4052	846
Kin. Viscosity @40°C	mm2/s	ASTM D7042	34.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.3
Viscosity Index		ASTM D2270	186
Flash Point COC	°C	ASTM D92	>210
Pour Point	°C	ASTM D7346	-45

ATF ECOMAT

Product Code 43410

ATF ECOMAT is a high performance fully synthetic fuel economy automatic transmission fluid specially designed for automatic transmissions for city buses.

ATF ECOMAT is formulated on high quality synthetic base oils in combination with an unique additive package to reach the following properties:

- Lower service cost through increased oil change interval.
- High level of anti-wear protection.
- Extended thermal- and oxidation stability.
- Limited viscosity increase
- Prevents acid formation and soft metal corrosion.
- Friction durability leading to good shift performance and drivability even at end of drain interval.
- Avoid sludge formation that could lead to sluggish transmission operation.

Voith H55.6335.xx, Voith 150.014524.xx, MAN 339 V2/Z3/Z12, MB 236.9, Volvo 97341, ZF TE-ML 14C/20C

Property	Unit	Test Method	Typical Value
Color		Visual	Amber
Density @15°C	kg/m3	ASTM D4052	860
Kin. Viscosity @40°C	mm2/s	ASTM D7042	40.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.1
Viscosity Index		ASTM D2270	144
Viscosity Brookfield @-40°	cP	ASTM D2983	<20.000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-51

ATF L6S

Product Code 45010

ATF L6S is a high performance full synthetic long life ATF specially designed for all 6-speeds automatic transmissions developed by ZF where a constructor requires a M.1375-4 specification.

ATF L6S is based on fully synthetic base in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Excellent lubrication, even under extreme conditions.
- Very high protection against wear, corrosion and foam.
- High “shear stable”.
- Very low Pour point, can be used by very cold temperatures.
- High Viscosity Index.

M.1375-4, VW G 055 005, Toyota Type WS, Nissan Matic S, Hyundai SP-IV, Mercon LV, Dexron VI, MB 236.12, BMW P/N 83 22 0 142 516

Property	Unit	Test Method	Typical Value
Color		Visual	Colorless to light Yellow
Density @15°C	kg/m3	ASTM D4052	843
Kin. Viscosity @40°C	mm2/s	ASTM D7042	27.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.8
Viscosity Index		ASTM D2270	161
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48

ATF L8S

Product Code 45040

ATF L8S is a synthetic high quality heavy-duty oil intended exclusively for ZF 6-speed and 8-speed automatic car transmissions. Subjected to extreme testing, ATF L8S guarantees maximum performance of the automatic transmission. At the same time, the wear of heavily loaded components is minimized due to the specifically matched oils.

ATF L8S is based on fully synthetic base in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Excellent lubrication, even under extreme conditions.
- Very high protection against wear, corrosion and foam.
- High “shear stable”.
- Very low Pour point, can be used by very cold temperatures.
- High Viscosity Index.

VW G 060 162, BMW 83 22 2 152 426, BMW83 22 2 305 397, BMW 83 22 2 289 720 VW G 055 540, ATF SP-IV-RR

ATF L8S is also suitable where the following specifications are required:

M 1375.4, VW G 055 005, Toyota Type WS, Nissan Matic S, Hyundai SP-IV, Mercon LV, Dexron VI, JWS 3324

Property	Unit	Test Method	Typical Value
Color		Visual	Colorless to light Yellow
Density @15°C	kg/m3	ASTM D4052	844
Kin. Viscosity @40°C	mm2/s	ASTM D7042	27.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.7
Brookfield Viscosity @-40°C	cP	ASTM D2983	9300
Viscosity Index		ASTM D2270	160
Flash Point COC	°C	ASTM D92	>201

ATF MBS

Product Code 45050

ATF MBS is a high quality fuel saving fully synthetic automatic transmission oil specially developed for the last generation MB (NAG II+) 7-G Tronic Plus automatic transmissions.

ATF MBS is based on special selected high performance synthetic base oil in combination with a special selected EP-additive package to reach to following properties:

- Excellent thermal- and oxidation stability.
- Excellent low temperature properties.
- Good shifting even at low temperatures.
- High Viscosity Index.
- Excellent shifting even after long use.
- Extended drain interval possible.
- Fuel saving properties.
- Excellent protection against the forming of foam, corrosion and wear.

MB 236.15

Property	Unit	Test Method	Typical Value
Color		Visual	BLUE
Density @15°C	kg/m3	ASTM D4052	844
Kin. Viscosity @40°C	mm2/s	ASTM D7042	27.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.7
Viscosity Index		ASTM D2270	162
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48


TWIN TURBO


77
MOTOR
5W-4
77

SUPER TRACTOR OIL 10W-40

Product Code 43260

SUPER TRACTOR OIL 10W-40 is a high quality universal synthetic so called “Super Tractor Oil Universal” (STOU) developed for use in tractors, combines, harvesters and off the road equipment with or without turbocharger diesel engines. Super Tractor Oil Universal is also designed to lubricate the transmission, power take-off, final drive, hydraulic system and oil immersed “wet brakes”. This product cannot been used in diesel engines equipped with a Diesel Particulate Filter (DPF).

SUPER TRACTOR OIL 10W-40 is formulated on synthetic base stocks in combination with an unique additive package to reach the following properties.

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- Excellent cold start properties.
- High anti-foam, anti-wear and anti-corrosion properties.
- Suitable for Wet Brakes.

Engine Spec: API CG-4/CF-4/CE/SF, MB 228.1, ACEA E3
UTTO Spec:JD J20C/D, J27, Ford M2C86B/C, Ford M2C134D, MF M1135/1139 MF M1143/1145, Cat TO-2, Allison C-4, ZF TE-ML 06A, 06B, 06C, 06D, 06E, 06H 07B, NH 82009201, 2, 3
Hydr Spec: Eaton M-2950S, Eaton 1-280-S, Danfoss

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-40
Density@15°C	kg/m3	ASTM D4052	860
Kin. Viscosity @40°C	mm2/s	ASTM D7042	90.7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.3
Viscosity Index		ASTM D2270	163
Viscosity CCS @-25°C,	cP	ASTM D5293	4600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	10.9

SUPER TRACTOR OIL 10W-30

Product Code 43270

SUPER TRACTOR OIL 10W-30 is a high quality universal mineral based so called “Super Tractor Oil Universal” (STOU) developed for use in tractors, combines, harvesters and off the road equipment with or without turbocharger diesel engines. Super Tractor Oil Universal is also designed to lubricate the transmission, power take-off, final drive, hydraulic system and oil immersed “wet brakes”. This product cannot been used in diesel engines equipped with a Diesel Particulate Filter (DPF).

SUPER TRACTOR OIL 10W-30 is formulated on high refined solvent mineral base stock in combination with an unique additive package to reach the following properties;

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- Excellent cold start properties.
- High anti-foam, anti-wear and anti-corrosion properties.
- Suitable for Wet Brakes.

Engine Spec: API CG-4/CF-4/CE/SF, MB 227.1, ACEA E3
STOU/UTTO Spec: JD J27, J20C/D, Ford M2C86B/C, Ford M2C134D, Ford M2C159B/C, MF M1135/1139, MF M1143/1144/1145, Caterpillar TO-2, API GL-4, Allison C-4, ZF TE-ML 06B,C,R,07BNH 82009201, CNH MAT 3525,3526, NH 024C/030C, CASE MS 1204/6/7/9, NH 410B, NH 420A
Hydr Spec: Eaton M-2950S, Eaton 1-280-S, Danfoss

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	10W-30
Density@15°C	kg/m3	ASTM D4052	874
Kin. Viscosity @40°C	mm2/s	ASTM D7042	67.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.5
Viscosity Index		ASTM D2270	144
Viscosity CCS @-25°C	cP	ASTM D5293	5900
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	10.9

SUPER TRACTOR OIL 15W-40

Product Code 43290

SUPER TRACTOR OIL 15W-40 is a high quality so called “Super Tractor Oil Universal” (STOU) developed for use in tractors, combines, harvesters and off the road equipment with or without turbocharger diesel engines. Super Tractor Oil Universal is also designed to lubricate the transmission, power take-off, final drive, hydraulic system and oil immersed “wet brakes”. This product cannot been used in diesel engines equipped with a Diesel Particulate Filter (DPF).

SUPER TRACTOR OIL 15W-40 is formulated on mineral base stocks in combination with an unique additive package to reach the following properties;

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- Excellent cold start properties.
- High anti-foam, anti-wear and anti-corrosion properties.
- Suitable for Wet Brakes.

Engine Spec: API CG-4/CF-4/CE/SF, MB 228.1, ACEA E3
UTTO Spec: Ford M2C134-A, Ford M2C159B/C, FNH 82009203, Allison C-4, Cat TO-2, API GL-4, JD J27, ZF TE-ML 6B/C, 7B/D
Hydr Spec: Eaton M-2950S, Eaton 1-280-S, Danfoss

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	876
Kin. Viscosity @40°C	mm2/s	ASTM D7042	95
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.5
Viscosity Index		ASTM D2270	142
Viscosity CCS @-20°C, max	cP	ASTM D5293	7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-33
Total Base Number	mgKOH/g	ASTM D2896	10.6

UNIVERSAL TRACTOR OIL SYN 80W

Product Code 43300

UNIVERSAL TRACTOR OIL SYN 80W is a high performance fluid for use in (CVT) transmissions, hydraulic systems, oil immersed brakes of tractors and off-road equipment. These fluids are specially designed for use where a common lubricant reservoir serves transmissions, final drives and hydraulic systems and to optimize the performance of agricultural and commercial tractors. This product can also be used where a 10W-30 UTTO product is recommend.

UNIVERSAL TRACTOR OIL SYN 80W is based on high quality synthetic base oil in combination with an unique additive package to ensure the following properties:

- High oil aging resistance due to its synthetic base oils, allowing high drain intervals.
- Enhanced frictional properties optimize clutch performance and ensure noise free operation of wet brakes.
- High viscosity index coupled with high shear stability provides consistent performance.
- Excellent low temperature fluidity provides good response and effective lubrication at low ambient temperatures.
- Robust anti-wear and extreme pressure properties control wear, extend equipment life and reduce maintenance costs.
- Multipurpose capability reduces inventory and prevents accidental contamination and misapplication.

API GL-4, John Deere J20C, J20D, ZF TE ML-06B/D/E/F/H/M, Volvo WB101 (97303), MF M1145, AGCO CVT ML200, Case MS 1204/6/7/9, Fendt Vario, Allison C-4, Valtra G2-08 (XT-60), Valtra G2-10 (XT-60+), Caterpillar TO-2, Claas CVT, MAT 3540 (CVT) CNH MAT 3525/3526, NH410B, NH420A, Ford M2C134D Ford M2C86A/B, New Holland 82948718, Oliver: Type 55/Type 5J, Eaton I-280-S, I.H.C: B-5 & B-6 Hydran White: Q-1705/1722/1766B, White: Q-1802/1826, Eaton M2950S, Kubota: UDT fluid Sauer Sundstrand/ Danfoss, Denison HF(-0-2), JCMAS HK P-041, DIN 51524-3

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W
Density@15°C	kg/m3	ASTM D4052	861
Kin. Viscosity @40°C	mm2/s	ASTM D7042	51.7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.7
Brookfield Viscosity @-26°C	cP	ASTM D2983	5000
Viscosity Index		ASTM D2270	177
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42

UNIVERSAL TRACTOR OIL 80W

Product Code 43320

UNIVERSAL TRACTOR OIL 80W is a high performance fluids for use in transmissions, hydraulic systems, oil immersed brakes of tractors and off-road equipment. These fluids are specially designed for use where a common lubricant reservoir serves transmissions, final drives and hydraulic systems and to optimize the performance of agricultural and commercial tractors. This product can also be used where a 10W-30 UTTO product is recommend.

UNIVERSAL TRACTOR OIL 80W is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Enhanced frictional properties optimize clutch performance and ensure noise free operation of wet brakes.
- High Viscosity Index coupled with high shear stability provides consistent performance.
- Excellent low temperature fluidity provides good response and effective lubrication at low ambient temperatures.
- Robust anti-wear and extreme pressure properties control wear, extend equipment life and reduce maintenance costs.
- Multipurpose capability reduces inventory and prevents accidental contamination and misapplication.

UTTO/Trans Spec John Deere J20C/J20D Ford M2C86A/B Ford M2C134D API GL-4 Allison C-4 Caterpillar TO-2 Case MS 1204/6/7/9 MF M1135/1143/1145 NH410B, NH420A CNH MAT 3525/3526 Oliver: Type 55/Type 5J New Holland 82948718 I.H.C: B-5 & B-6 Hydran Volvo WB101 (97303) Valtra G2-08 / G2-B10 White: Q-1705/1722/1766B White: Q-1802/1826 ZF TE-ML 03E/05F/06K Hydr. Spec Eaton M2950S Eaton I-280-S JCMAS HK P-041 Denison(pump only) HF(-0-2) Kubota: UDT fluid Sauer Sundstrand/ Danfoss DIN 51524-3

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	80W
Density@15°C	kg/m3	ASTM D4052	882
Kin. Viscosity @40°C	mm2/s	ASTM D7042	58.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.7
Viscosity Index		ASTM D2270	152
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	9.0

UNIVERSAL TRACTOR OIL 85W

Product Code 43310

UNIVERSAL TRACTOR OIL 85W is a high performance fluids for use in transmissions, hydraulic systems, oil immersed brakes of tractors and off-road equipment. These fluids are specially designed for use where a common lubricant reservoir serves transmissions, final drives and hydraulic systems and to optimize the performance of agricultural and commercial tractors.

UNIVERSAL TRACTOR OIL 85W is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Enhanced frictional properties optimize clutch performance and ensure noise free operation of wet brakes.
- High viscosity index coupled with high shear stability provides consistent performance.
- Excellent low temperature fluidity provides good response and effective lubrication at low ambient temperatures.
- Robust anti-wear and extreme pressure properties control wear, extend equipment life and reduce maintenance costs.
- Multipurpose capability reduces inventory and prevents accidental contamination and misapplication.

UTTO/Trans Spec John Deere J20C/J20D Ford M2C86A/B Ford M2C134D API GL-4 Allison C-4 Caterpillar TO-2 Case MS 1204/6/7/9 MF M1135/1143/1145 NH410B, NH420A CNH MAT 3525/3526 Oliver: Type 55/Type 5J New Holland 82948718 I.H.C: B-5 & B-6 Hydran Volvo WB101 (97303) Valtra G2-08 / G2-B10 White: Q-1705/1722/1766B White: Q-1802/1826 ZF TE-ML 03E/05F/06K Hydr. Spec Eaton M2950S Eaton I-280-S JCMAS HK P-041 Denison(pump only) HF(-0-2) Kubota: UDT fluid Sauer Sundstrand/ Danfoss DIN 51524-3

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J306	85W
Density@15°C	kg/m3	ASTM D4052	888
Kin. Viscosity @40°C	mm2/s	ASTM D7042	72.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.6
Viscosity Index		ASTM D2270	155
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	8.9

MILKING MACHINE OIL 68

Product Code 43400

MILKING MACHINE OIL 68 is a high-quality oil developed for use in milking machines and formulated from specially selected highly refined mineral oils. This product is a non-foaming oil for use in all piston and rotary milking machine vacuum pumps.

MILKING MACHINE OIL 68 is formulated with high quality refined mineral base stocks in combination with a special additive technology to achieve the following performance:

- Good water separation ensuring the oil does not emulsify with moisture or condensation.
- Excellent filterability ensuring solid contaminants are easily removed from the oil, therefore promoting long pump life and reliability.
- Low volatility that prevents oil constituents evaporating during periods of high temperature operation.
- Low pour point provides protection for the equipment when starting up and operating at temperatures below 0°C.
- High Viscosity Index maintains the oil film at high temperatures.

MILKING MACHINE OIL 68 should NOT be permitted to come into contact with the milk, i.e. no incidental food contact.

AFNOR NFE-48-603 ISO 11158 HM ISO 6743-4 HM DIN 51524/2 HLP

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	880
Kin. Viscosity @40°C	mm2/s	ASTM D7042	66
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.5
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D7346	-27
Demulsibility @54°C	Minutes	ASTM D1401	15

INDUSTRIAL GEAR OIL SYNTH 100

Product Code 43460

INDUSTRIAL GEAR OIL SYNTH 100 is an ultra-high performance fully synthetic industrial gear oil suitable for wind-turbines, heavy loaded closed gear boxes and circulation systems operating under extreme conditions and high temperatures.

INDUSTRIAL GEAR OIL SYNTH 100 is formulated with special selected Poly Alpha Olefine (PAO) and Ester base stocks in combination with an unique EP-additive technology to achieve the following performance.

- Outstanding load carrying capability.
- Excellent low temperature properties.
- Effective lubrication over a wide temperature range.
- Superior thermo- and oxidation stability.
- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Excellent corrosion and micro pitting protection (both 90°C and 60°C tests of Winergy and Vestas).

DIN 51517-3, ISO 12925-L-CKE, AGMA 9005 E-02, AGMA 9005-F16, CM P74, David Brown S1.53.106, Siemens / Flender, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	100
Density@15°C	kg/m3	ASTM D4052	851
Kin. Viscosity @40°C	mm2/s	ASTM D7042	94.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.8
Viscosity Index		ASTM D2270	164
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48
FZG Fail Load Stage, min		DIN 51354-2	12
Demulsibility @82°C	Min	ASTM D1401	10

INDUSTRIAL GEAR OIL SYNTH 150

Product Code 43440

INDUSTRIAL GEAR OIL SYNTH 150 is an ultra-high performance fully synthetic industrial gear oil suitable for wind-turbines, heavy loaded closed gear boxes and circulation systems operating under extreme conditions and high temperatures.

INDUSTRIAL GEAR OIL SYNTH 150 is formulated with special selected Poly Alpha Olefine (PAO) and Ester base stocks in combination with an unique EP-additive technology to achieve the following performance.

- Outstanding load carrying capability.
- Excellent low temperature properties.
- Effective lubrication over a wide temperature range.
- Superior thermo- and oxidation stability.
- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Excellent corrosion and micro pitting protection (both 90°C and 60°C tests of Winergy and Vestas).

DIN 51517-3, ISO 12925-L-CKE, AGMA 9005 E-02, AGMA 9005-F16, CM P74, David Brown S1.53.106, Siemens / Flender, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	150
Density@15°C	kg/m3	ASTM D4052	852
Kin. Viscosity @40°C	mm2/s	ASTM D7042	150
Kin. Viscosity @100°C	mm2/s	ASTM D7042	21.4
Viscosity Index		ASTM D2270	168
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48
FZG Fail Load Stage, min		DIN 51354-2	12
Demulsibility @82°C	Min	ASTM D1401	10

INDUSTRIAL GEAR OIL SYNTH 220

Product Code 44970

INDUSTRIAL GEAR OIL SYNTH 220 is a ultra-high performance fully synthetic industrial gear oil suitable for wind-turbines, heavy loaded closed gear boxes and circulation systems operating under extreme conditions and high temperatures.

INDUSTRIAL GEAR OIL SYNTH 220 is formulated with special selected Poly Alpha Olefine (PAO) and Ester base stocks in combination with an unique EP-additive technology to achieve the following performance.

- Outstanding load carrying capability.
- Excellent low temperature properties.
- Effective lubrication over a wide temperature range.
- Superior thermo- and oxidation stability.
- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Excellent corrosion and micropitting protection (both 90°C and 60°C tests of Winergy and Vestas).

DIN 51517-3, ISO 12925-L-CKD/CKE, AGMA 9005 E-02, AGMA/AWEA 6006-A03, T7300 SEW, Siemens / Flender, CM P74, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	220
Density@15°C	kg/m3	ASTM D4052	854
Kin. Viscosity @40°C	mm2/s	ASTM D7042	230
Kin. Viscosity @100°C	mm2/s	ASTM D7042	32.7
Viscosity Index		ASTM D2270	187
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-48
FZG Fail Load Stage, min		DIN 51354-2	12
Demulsibility @82°C	max	ASTM D1401	15

INDUSTRIALGEAR OIL SYNTH 320

Product Code 44750

INDUSTRIAL GEAR OIL SYNTH 320 is an ultra-high performance fully synthetic industrial gear oil suitable for wind-turbines, heavy loaded closed gear boxes and circulation systems operating under extreme conditions and high temperatures.

INDUSTRIAL GEAR OIL SYNTH 320 is formulated with special selected Poly Alpha Olefine (PAO) and Ester base stocks in combination with an unique EP-additive technology to achieve the following performance.

- Outstanding load carrying capability.
- Excellent low temperature properties.
- Effective lubrication over a wide temperature range.
- Superior thermo- and oxidation stability.
- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Excellent corrosion and micropitting protection (both 90°C and 60°C tests of Winergy and Vestas).

DIN 51517-3, ISO 12925-L-CKE, AGMA 9005 E-02, AGMA 9005-F16, CM P74, David Brown S1.53.106, Siemens / Flender, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	320
Density@15°C	kg/m3	ASTM D4052	857
Kin. Viscosity @40°C	mm2/s	ASTM D7042	318
Kin. Viscosity @100°C	mm2/s	ASTM D7042	41.4
Viscosity Index		ASTM D2270	188
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45
FZG Fail Load Stage, min		DIN 51354-2	12
Demulsibility @82°C	max	ASTM D1401	15

INDUSTRIAL GEAR OIL CLP 68

Product Code 43450

INDUSTRIAL GEAR OIL CLP 68 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 68 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP, ISO 12925-1 CKD, AGMA 9005 E-02, AGMA 9005-F16, David Brown S1.53.101 E, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	880
Kin. Viscosity @40°C	mm2/s	ASTM D7042	64.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.4
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-24
FZG Fail Load Stage, min		DIN 51354-2	12
Total Acid Number	mg KOH/g	ASTM D664	<0.6

INDUSTRIAL GEAR OIL CLP 100

Product Code 43700

INDUSTRIAL GEAR OIL CLP 100 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 100 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP ISO 12925-1 CKD AGMA 9005 E-02 AGMA 9005-F16 David Brown S1.53.101 E AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	100
Density@15°C	kg/m3	ASTM D4052	890
Kin. Viscosity @40°C	mm2/s	ASTM D7042	98.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.9
Viscosity Index		ASTM D2270	94
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
FZG Fail Load Stage, min		DIN 51354-2	12
Total Acid Number	mg KOH/g	ASTM D664	<0.6

INDUSTRIAL GEAR OIL CLP 150

Product Code 43720

INDUSTRIAL GEAR OIL CLP 150 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 150 is based on high quality mineral base oil in combination with an unique zinc-free additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP, SO 12925-1 CKDAGMA 9005 E-02, AGMA 9005-F16, David Brown S1.53.101 E, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	150
Density@15°C	kg/m3	ASTM D4052	892
Kin. Viscosity @40°C	mm2/s	ASTM D7042	149
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.4
Viscosity Index		ASTM D2270	94
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15
FZG Fail Load Stage, min		DIN 51354-2	>12
Total Acid Number	mg KOH/g	ASTM D664	<0.5

INDUSTRIAL GEAR OIL CLP 220

Product Code 43740

INDUSTRIAL GEAR OIL CLP 220 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 220 is based on high quality mineral base oil in combination with an unique zinc-free additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP, ISO 12925-1 CKD, AGMA 9005 E-02, AGMA 9005-F16, David Brown S1.53.101 E, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	220
Density@15°C	kg/m3	ASTM D4052	896
Kin. Viscosity @40°C	mm2/s	ASTM D7042	224
Kin. Viscosity @100°C	mm2/s	ASTM D7042	19.0
Viscosity Index		ASTM D2270	95
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15
FZG Fail Load Stage, min		DIN 51354-2	>12
Total Acid Number	mg KOH/g	ASTM D664	<0.5

INDUSTRIAL GEAR OIL CLP 320

Product Code 43760

INDUSTRIAL GEAR OIL CLP 320 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 320 is based on high quality mineral base oil in combination with an unique zinc-free additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP, ISO 12925-1 CKD, AGMA 9005 E-02, AGMA 9005-F16, David Brown S1.53.101 E, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	320
Density@15°C	kg/m3	ASTM D4052	899
Kin. Viscosity @40°C	mm2/s	ASTM D7042	323
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-9
FZG Fail Load Stage, min		DIN 51354-2	>12
Total Acid Number	mg KOH/g	ASTM D664	0.5

INDUSTRIAL GEAR OIL CLP 460

Product Code 43780

INDUSTRIAL GEAR OIL CLP 460 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 460 is based on high quality mineral base oil in combination with an unique zinc-free additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP, ISO 12925-1 CKD, AGMA 9005 E-02, AGMA 9005-F16, David Brown S1.53.101 E, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	460
Density@15°C	kg/m3	ASTM D4052	903
Kin. Viscosity @40°C	mm2/s	ASTM D7042	467
Kin. Viscosity @100°C	mm2/s	ASTM D7042	31.1
Viscosity Index		ASTM D2270	97
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15
FZG Fail Load Stage, min		DIN 51354-2	>12
Total Acid Number	mg KOH/g	ASTM D664	0.5

INDUSTRIAL GEAR OIL CLP 680

Product Code 43800

INDUSTRIAL GEAR OIL CLP 680 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 680 is based on high quality mineral base oil in combination with an unique zinc-free additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP, ISO 12925-1 CKD, AGMA 9005 E-02, AGMA 9005-F16, David Brown S1.53.101 E, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	680
Density@15°C	kg/m3	ASTM D4052	903
Kin. Viscosity @40°C	mm2/s	ASTM D7042	670
Kin. Viscosity @100°C	mm2/s	ASTM D7042	40.4
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-9
FZG Fail Load Stage, min		DIN 51354-2	>12
Total Acid Number	mg KOH/g	ASTM D664	0.5

INDUSTRIAL GEAR OIL CLP 1000

Product Code 44930

INDUSTRIAL GEAR OIL CLP 1000 is a high performance extreme pressure gear oils developed for lubrication of heavy duty industrial gears working under severe operating conditions.

INDUSTRIAL GEAR OIL CLP 1000 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent load carrying capability protects gears against scuffing and wear and offers long equipment life and reduced maintenance costs.
- High thermo-oxidative stability helps resist deposit formation, provides enhanced system cleanliness and enables longer service intervals.
- Provides effective rust and corrosion protection to all gearbox components.
- Excellent demulsibility property enables trouble-free operation in conditions encountering water/ moisture.

DIN 51517-3 CLP, ISO 12925-1 CKD, AGMA 9005 -E02, David Brown S1.53.101 AGMA 9005-F16, AIST 224 (former US Steel 224)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	1000
Density@15°C	kg/m3	ASTM D4052	900
Kin. Viscosity @40°C	mm2/s	ASTM D7042	1012
Kin. Viscosity @100°C	mm2/s	ASTM D7042	54.2
Viscosity Index		ASTM D2270	102
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-12
FZG Fail Load Stage, min		DIN 51354-2	>12
Total Acid Number	mg KOH/g	ASTM D664	<0.6

SLIDEWAY OIL 32

Product Code 43670

SLIDEWAY OIL 32 is a universal high performance machine tool lubricant specially designed for the lubrication of slide ways. Slideway Oil 32 also exceeds to the requirements of gear boxes, spindles and hydraulic systems of different machine tools.

SLIDEWAY OIL 32 is based on high quality mineral virgin base oil in combination with a special additive to ensure the following properties.

- Excellent stick-slip properties.
- Very good anti-wear, anti-rust and anti-foam properties.
- High oxidation stability.
- Good resistance to high pressure and load.
- Excellent demulsification properties.
- Good filterability.
- Strong adhesion to (vertical) slides.

ISO 19378 GA & GB, General Motors LS2, ISO 11158 HG, DIN 51524 part II, DIN 51517 part III, AIST 224, AGMA 9005 E02 (EP)

Property	Unit	Test Method	Typical Value
ISO VG Grade			32
Density@15°C	kg/m3	ASTM D4052	874
Kin. Viscosity @40°C	mm2/s	ASTM D7042	330
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.5
Viscosity Index		ASTM D2270	102
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
FZG Fail Load Stage, min		DIN 51354-2	12
Total Acid Number	mgKOH/g	ASTM D974	0.5

SLIDEWAY OIL 68

Product Code 43680

SLIDEWAY OIL 68 is a universal high performance machine tool lubricant specially designed for the lubrication of slide ways. This product also exceeds to the requirements of gear boxes, spindles and hydraulic systems of different machine tools.

SLIDEWAY OIL 68 is based on high quality mineral virgin base oil in combination with a special additive to ensure the following properties.

- Excellent stick-slip properties.
- Very good anti-wear, anti-rust and anti-foam properties.
- High oxidation stability.
- Good resistance to high pressure and load.
- Excellent demulsification properties.
- Good filterability.
- Strong adhesion to (vertical) slides.

ISO 19378 GA & GB, General Motors LS2, ISO 11158 HG, DIN 51524 part II, DIN 51517 part III, AIST 224, AGMA 9005 E02 (EP)

Property	Unit	Test Method	Typical Value
ISO VG Grade			68
Density@15°C	kg/m3	ASTM D4052	881
Kin. Viscosity @40°C	mm2/s	ASTM D7042	69.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.8
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
FZG Fail Load Stage, min		DIN 51354-2	12
Total Acid Number	mgKOH/g	ASTM D974	0.5

SLIDEWAY OIL 150

Product Code 44950

SLIDEWAY OIL 150 is a universal high performance machine tool lubricant specially designed for the lubrication of slide ways. This product also exceeds to the requirements of gear boxes, spindles and hydraulic systems of different machine tools.

SLIDEWAY OIL 150 is based on high quality mineral virgin base oil in combination with a special additive to ensure the following properties.

- Excellent stick-slip properties.
- Very good anti-wear, anti-rust and anti-foam properties.
- High oxidation stability.
- Good resistance to high pressure and load.
- Excellent demulsification properties.
- Good filterability.
- Strong adhesion to (vertical) slide.

ISO 19378 GA & GB, General Motors LS2, ISO 11158 HG, DIN 51524 part II, DIN 51517 part III, AIST 224, AGMA 9005 E02 (EP)

Property	Unit	Test Method	Typical Value
ISO VG Grade			150
Density@15°C	kg/m3	ASTM D4052	893
Kin. Viscosity @40°C	mm2/s	ASTM D7042	152
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.5
Viscosity Index		ASTM D2270	94
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18
FZG Fail Load Stage, min		DIN 51354-2	12
Total Acid Number	mgKOH/g	ASTM D974	0.6

SLIDEWAY OIL 220

Product Code 43690

SLIDEWAY OIL 220 is a universal high performance machine tool lubricant specially designed for the lubrication of slide ways. This product also exceeds to the requirements of gear boxes, spindles and hydraulic systems of different machine tools.

SLIDEWAY OIL 220 is based on high quality mineral virgin base oil in combination with a special additive to ensure the following properties.

- Excellent stick-slip properties.
- Very good anti-wear, anti-rust and anti-foam properties.
- High oxidation stability.
- Good resistance to high pressure and load.
- Excellent demulsification properties.
- Good filterability.
- Strong adhesion to (vertical) slides.

ISO 19378 GA & GB, General Motors LS2, ISO 11158 HG, DIN 51524 part II, DIN 51517 part III, AIST 224, AGMA 9005 E02 (EP)

Property	Unit	Test Method	Typical Value
ISO VG Grade			220
Density@15°C	kg/m3	ASTM D4052	895
Kin. Viscosity @40°C	mm2/s	ASTM D7042	214
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.5
Viscosity Index		ASTM D2270	95
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18
FZG Fail Load Stage, min		DIN 51354-2	12
Total Acid Number	mgKOH/g	ASTM D974	0.5

SLIDEWAY OIL 460

Product Code 44840

SLIDEWAY OIL 460 is an universal high performance machine tool lubricant specially designed for the lubrication of slide ways. This product also exceeds to the requirements of gear boxes, spindles and hydraulic systems of different machine tools.

SLIDEWAY OIL 460 is based on high quality mineral virgin base oil in combination with a special additive to ensure the following properties.

- Excellent stick-slip properties.
- Very good anti-wear, anti-rust and anti-foam properties.
- High oxidation stability.
- Good resistance to high pressure and load.
- Excellent demulsification properties.
- Good filterability.
- Strong adhesion to (vertical) slides.

ISO 19378 GA & GB, General Motors LS2, ISO 11158 HG, DIN 51524 part II, DIN 51517 part III, AIST 224, AGMA 9005 E02 (EP)

Property	Unit	Test Method	Typical Value
ISO VG Grade			460
Density@15°C	kg/m3	ASTM D4052	904
Kin. Viscosity @40°C	mm2/s	ASTM D7042	488
Kin. Viscosity @100°C	mm2/s	ASTM D7042	31.3
Viscosity Index		ASTM D2270	94
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-9
FZG Fail Load Stage, min		DIN 51354-2	12
Total Acid Number	mg KOH/g	ASTM D974	0.5

INDUSTRIAL SYSTEM OIL CL 68

Product Code 44920

INDUSTRIAL SYSTEM OIL CL 68 is a good quality multipurpose lubricating oil for use in circulating systems and certain other industrial applications which do not require oils with EP properties.

INDUSTRIAL SYSTEM OIL CL 68 is formulated with special selected virgin mineral base stocks in combination with an unique additive technology to achieve the following performance.

- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Good air release properties.

DIN 51517-2 CL, DIN 51524-1 HL, AFNOR NF E 48-603 HL

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	883
Kin. Viscosity @40°C	mm2/s	ASTM D7042	66
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.5
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-24
Demulsibility @54°C	max	ASTM D1401	15

INDUSTRIAL SYSTEM OIL CL 100

Product Code 44870

INDUSTRIAL SYSTEM OIL CL 100 is a good quality multipurpose lubricating oil for use in circulating systems and certain other industrial applications which do not require oils with EP properties.

INDUSTRIAL SYSTEM OIL CL 100 is formulated with special selected virgin mineral base stocks in combination with an unique additive technology to achieve the following performance.

- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Good air release properties.

DIN 51517-2 CL, DIN 51524-1 HL, AFNOR NF E 48-603 HL

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	100
Density@15°C	kg/m3	ASTM D4052	877
Kin. Viscosity @40°C	mm2/s	ASTM D7042	91.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.7
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15
Demulsibility @82°C	max	ASTM D1401	10

INDUSTRIAL SYSTEM OIL CL 150

Product Code 44880

INDUSTRIAL SYSTEM OIL CL 150 is a good quality multipurpose lubricating oil for use in circulating systems and certain other industrial applications which do not require oils with EP properties.

INDUSTRIAL SYSTEM OIL CL 150 is formulated with special selected virgin mineral base stocks in combination with an unique additive technology to achieve the following performance.

- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Good air release properties.

DIN 51517-2 CL, DIN 51524-1 HL, AFNOR NF E 48-603 HL

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	150
Density@15°C	kg/m3	ASTM D4052	892
Kin. Viscosity @40°C	mm2/s	ASTM D7042	142
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.0
Viscosity Index		ASTM D2270	95
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15
Demulsibility @82°C	max	ASTM D1401	10

INDUSTRIAL SYSTEM OIL CL 220

Product Code 44890

INDUSTRIAL SYSTEM OIL CL 220 is a good quality multipurpose lubricating oil for use in circulating systems and certain other industrial applications which do not require oils with EP properties.

INDUSTRIAL SYSTEM OIL CL 220 is formulated with special selected virgin mineral base stocks in combination with an unique additive technology to achieve the following performance.

- Long service intervals.
- Excellent protection against rust, wear and foaming.
- Very high demulsibility.
- Good air release properties.

DIN 51517-2 CL, DIN 51524-1 HL, AFNOR NF E 48-603 HL

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	220
Density@15°C	kg/m3	ASTM D4052	894
Kin. Viscosity @40°C	mm2/s	ASTM D7042	207
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.2
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-12

INDUSTRIAL SYSTEM OIL CL 460

Product Code 45200

INDUSTRIAL SYSTEM OIL CL 460 is a good quality multipurpose lubricating oil for use in circulating systems and certain other industrial applications which do not require oils with EP properties. This product is blended with carefully selected additives in mineral oil.

INDUSTRIAL SYSTEM OIL CL 460 gives extended life in the oil system, reduces rust and corrosion, increases bearing life due to good water separation and has good air release properties. Pump cavitation is minimised due to low foaming tendency.

INDUSTRIAL SYSTEM OIL CL 460 is suited for circulating systems with oil lubricated plain and rolling element bearings and in low or moderately enclosed gears.

DIN 51517-CL, DIN 51524-1 HL, AFNOR NF E 48-603 HL

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	460
Density@15°C	kg/m3	ASTM D4052	900
Kin. Viscosity @40°C	mm2/s	ASTM D7042	460
Kin. Viscosity @100°C	mm2/s	ASTM D7042	30.5
Viscosity Index		ASTM D2270	95
Flash Point COC	°C	ASTM D92	>260
Pour Point	°C	ASTM D7346	-12
FZG Fail Load Stage, min		DIN 51354-2	>12
Total Acid Number	mgKOH/g	ASTM D664	0.1

BRAKE FLUID DOT 4

Product Code 43920

BRAKE FLUID DOT 4 is a very high performance brake fluid especially designed for use in disc, drum and Anti Brake Systems (ABS) of all commercial vehicles, passenger cars and motor cycles operating under moderate to severe conditions, where a DOT 4 fluid is prescribed.

BRAKE FLUID DOT 4 should never be used in place of or mixed with silicone based brake fluids (DOT 4)

BRAKE FLUID DOT 4 is based on a Glycol-type Base fluid combination with an unique additive package to ensure the following properties:

- Superior oxidative stability resists oxidation at high temperatures encountered in disk braking systems.
- Superior high temperature stability and low temperature fluidity ensure trouble free operation.
- Effective corrosion inhibitors provide long term corrosion protection to the metallic components of the brake systems.
- Provides lubricity and system protection.
- Compatible with all seals and metals used in conventional braking systems requiring glycol-type brake fluids.

FMVSS-116 DOT 4.0, SAE J1704, ISO 4925

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m3	ASTM D4052	1,07
Kin. Viscosity @-40°C	mm2/s	FMVSS 116	<900
Kin. Viscosity @100°C	mm2/s	FMVSS 116	>1,5
Equilibrium Reflex Boiling Point (ERBP)	°C	FMVSS 116	>260
Wet Equilibrium Reflex Boiling Point (WBP)	°C	FMVSS 116	>175
pH Value			7,0 – 11,5
Flash Point COC	°C	DIN 51354-2	

COOLANT RTU G12 PLUS

Product Code 43970

COOLANT RTU G 12 PLUS (Ready To Use) is a silicate free cooling fluid, composed of mono ethylene glycol, water and specially selected additives. **COOLANT RTU G 12 PLUS** can be used throughout the year in all cooling systems in petrol- and diesel engines. Thanks to the balanced additive package and the high quality mono-ethylene glycol, this standard quality cooling fluid is one of the highest quality cooling fluids in the market.
COOLANT RTU G 12 PLUS should be used undiluted, only then the coolant gives a protection to -40°C. **COOLANT RTU G 12 PLUS** offers good protection of all metals in the cooling system and engine and is neutral towards seals and flexible hoses.
COOLANT RTU G 12 PLUS has extremely powerful organic corrosion inhibitors resulting in extended life-time of the radiator, pump and pipes. Offers strong protection: up to 650.000 km for buses and trucks, 250.000 km for passenger vehicles and up to 16.000 hours for steady-state engines. It is recommended to change the coolant every five years or at above mileages or operating times, whichever comes first. Strong compatibility with seals: completely compatible with elastomers used by European constructors. Excellent stability with hard water, because this coolant doesn't contain silicates nor other mineral salts and prevents the formation of deposits and scale. Perfectly mixable with other cooling fluids based on Mono Ethylene Glycol.

COOLANT RTU G 12 PLUS is the latest generation silicate free coolant and is because of its high-grade quality already used as a first fill by more than 75% of automobile manufacturers. **COOLANT RTU G 12 PLUS** is developed partly due to the demand of a full organic coolant. This special coolant needs to be used undiluted!
WARNING:
Keep all cooling fluids out of reach of children! Do not drink cooling fluids! If swallowed, induce vomiting and immediately call for a doctor!

FORD ESE-M97B49-4/44C FORD WSS-M97B44-D, SCANIA, MAN 248 & 324 SNF, MB 325.3, GM/OPEL 1940656/6277M, Volvo no: 260, Renault: 41-01-001, PSA B715110 VW TL-774D/F (G12+)

Property	Unit	Test Method	Typical Value
Color			Blue
Density @20°C	kg/m3	ASTM D1298	1.068
Freezing Point @ 50% in water	°C	ASTM D1177	-40
pH (50% in water)		ASTM D1287	8.6

COOLANT RTU 40

Product Code 43960

COOLANT RTU 40 is a silicate, amine-, nitrites- and phosphates free ready to use coolant (50% diluted) providing frost and corrosion protection. For the perfect operation of water-cooled internal combustion engines.

COOLANT RTU 40 is based mono ethylene glycol in combination with a powerful additive technology to obtain the following benefits:

- Corrosion protection, also for non-ferro metals.
- Frost protection.
- Boling protection.
- Seal compatibility.

British Standard (BS) 6580, CUNA NC 956-16

Property	Unit	Test Method	Typical Value
Color			Blue
Density @15°C	kg/l	ASTM D5931	1.060
Equilibrium Boiling Point	°C	ASTM D1120	>125
Reserve Alkalinity (pH 5.5)		ASTM D1121	3.0
Refractive Index, 20°C		ASTM D1218	1.435
Freezing Protection	°C	ASTM D1177	-26

ANTIFREEZE G12 PLUS

Product Code 43850

ANTIFREEZE G12 PLUS is a long life silicate-, amine-, nitrite- and phosphates free antifreeze based on Organic Acid Technology (OAT) technology in ethylene glycol to be used as a cooling and heat transferring fluid in combustion engines.

ANTIFREEZE G12 PLUS is based on ethylene glycol and in combination of a patent silicate free aliphatic additive technology to obtain the following properties:

- Extended life.
- Environmentally friendly.
- Reliability.
- Excellent corrosion protection for aluminium heat transfer surfaces.
- Excellent cavitation protection.
- Improved heat transfer.
- Reduces repairs.
- Improved hard water stability.
- Suitable for mixed fleets.

ASTM D3306, ASTM D6210, VW TL-774 D (G12), VW TL-774 F (G12+), BS 6580, MAT 3624, Cummins CES 14603, Cummins CES 14439, DAF 74002, DDC DFS93K217 Deutz DQC CB-14, Ford WSS-M97N44-D, Foton Q-FPT 2313005-2013, STJLR 651.5003, Jaguar CMR 8229, JIS K2234, Jenbacher TA 1000-0201, JDM H5 Komatsu 07.892 (2009), KSM 2142, Liebherr MD1-36-130, Mack 014 GS 17009 MAN 324 Typ SNF, Renault Type D, Mazda MEZ MN 121D, MB 325.3, MTU 5048 MWM 0199-99-2091/12, Opel/GM GMW 3420, Volvo VCS

Property	Unit	Test Method	Typical Value
Color			Orange/red
Density @15°C	kg/m3	ASTM D5931	1.116
Equilibrium Boiling Point	°C	ASTM D1120	180
Reserve Alkalinity (pH 5.5)		ASTM D1121	6.2
Refractive Index, 20°C		ASTM D1218	1.430
Freezing Protection			
33% dilution with water	°C		-18
40% dilution with water	°C		-24
50% dilution with water	°C		-40

ANTIFREEZE

Product Code 43940

ANTIFREEZE is a silicate, amine-, nitrites- and phosphates free antifreeze concentrate providing frost and corrosion protection. For the perfect operation of water-cooled internal combustion engines.

ANTIFREEZE may not be used undiluted in a combustion engine.

ANTIFREEZE is based Mono Ethylene Glycol in combination with a powerful additive technology to obtain the following benefits:

- Corrosion protection, also for non-ferro metals.
- Frost protection.
- Boling protection.
- Seal compatibility.
- Hard water stability.
- Miscibility.

British Standard (BS) 6580, AFNOR 15-601, ASTM D3306, SAE J-1304, CUNA NC 956-16

Property	Unit	Test Method	Typical Value
Color			Blue
Density @15°C	kg/m3	ASTM D5931	1.131
Equilibrium Boiling Point	°C	ASTM D1120	155
Reserve Alkalinity (pH 5.5)		ASTM D1121	3.0
Refractive Index, 20°C		ASTM D1218	1.435
Freezing Protection			
33% dilution with water	°C		-17
50% dilution with water	°C		-3

ANTIFREEZE XL

Product Code 43950

ANTIFREEZE XL is a long life silicate-containing nitrites, amines and phosphate free antifreeze in ethylene glycol to be used as a cooling and heat transferring fluid in combustion engines.

ANTIFREEZE XL may not be used undiluted in a combustion engine.

ANTIFREEZE XL is based on ethylene glycol in combination with a powerful additive technology to obtain the following properties:

- Efficient and long lasting corrosion protection.
- Maintenance-free operation against freezing and boiling.
- Extended coolant life.
- Excellent seal compatibility.

ASTM D3306, FIAT 9.55523, VW TL-774 C (G11), BMW GS 94000, British Standard BS 6580, Chrysler MS 7170, Cummins 85T8-2, Deutz DQC CA-14, Ford ESD-M97B49-A, NFR 15-601, Iveco 18-1830, Case JIC-501, KSM 2142, VAZ 1.97.717-97, MAN 324 –NF, MB 325.0 / 325.2, MTU 5048, Opel / GM GME L1301, Volvo 128 6083 / 002, Volvo

Property	Unit	Test Method	Typical Value
Color			Blue/green
Density @15°C	kg/m3	ASTM D5931	1.125
Equilibrium Boiling Point	°C	ASTM D1120	174
Reserve Alkalinity (pH 5.5)		ASTM D1121	16
Refractive Index, 20°C		ASTM D1218	1.432
Freezing Protection 33% dilution with water	°C		-18
40% dilution with water	°C		-28
50% dilution with water	°C		-40

ANTIFREEZE G13

Product Code 45140

ANTIFREEZE G13 is a long life silicate containing antifreeze based on low silicate Organic Acid Technology (Si-OAT) in ethylene glycol to be used as a cooling and heat transferring fluid in the latest generation VAG, MB and MAN combustion engines.

ANTIFREEZE G13 is based on ethylene glycol and in combination Lobrid additive technology to obtain the following properties.

- Extended life.
- Environmentally friendly due to the absence of borate, nitrite, amines and phosphates.
- Reliability.
- Excellent corrosion protection for aluminium heat transfer surfaces.
- Excellent cavitation protection.

VAG TL 774J, MB 325.5, MAN 324 Si-OAT

Property	Unit	Test Method	Typical Value
Color			Light Red/ Voilet
Density @15°C	kg/m3	ASTM D5931	1.135
Equilibrium Boiling Point	°C	ASTM D1120	>170
Reserve Alkalinity (pH 5.5)		ASTM D1121	5.7
Refractive Index, 20°C		ASTM D1218	1.437
Freezing Protection 35.6% dilution with water	°C		-20
41.0% dilution with water	°C		-25
49.8% dilution with water	°C		-35

EP GREASE NLGI 00

Product Code 43980

EP GREASE NLGI 00 is a high quality multipurpose lithium thickened EP-00 grease suited for automotive, agriculture and industrial applications. EP GREASE NLGI 00 is suitable in centralized lubrication systems that require semi-fluid grease

EP GREASE NLGI 00 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent resistance to humidity, preventing that moisture reaches the metal surfaces that need to be lubricated.
- High anti-corrosion, antioxidant and anti-rust capacity.
- High adhesion and smoothness.
- Excellent pumpability.

Temp Range: Continuous operation: -30°C to + 100°C. Short periods maximum +120°C

KP00G-30, L-XCEB-00

Property	Unit	Test Method	Typical Value
NLGI Grade		ASTM D217	00
Thickener type			Lithium
Color		Visual	Amber
Dropping Point	°C	IP 396	>180
Base Oil Viscosity @40°C	mm2/s	ISO 12058	220
4-Ball Weld Load	N	DIN 51350-4	2450
Water resistance, 3h, 90 ºC		DIN 51807	1

EPS GREASE NLGI 0

Product Code 45260

EPS GREASE NLGI 0 is a multifunctional EP grease enhanced by the plastic deformation of its micro additives and formulated for lubrication under hard mechanical conditions and high rates of lubrication frequency.

EPS GREASE NLGI 0 can be used for the following applications:

- types of bearings which work with strong loads, vibrations or in a humid environment.
- On smooth bearings, including yellow alloys, which work with heavy loads or partial rotation with wear and tear due to abrasion.
- To protect the development of rough or accelerated wear and tear of bearings and grooves in Cardan type transmissions and grooved joints with high torques.
- Lubrication in rolling mills.
- NLGI class 0 is best suited for the centralized lubrication of trucks, cars, etc.

EPS GREASE NLGI 0 has the following benefits:

- Great wear and tear reduction, anticorrosive, antioxidant and anti-rust properties
- High adherence and lubricity.
- Operating temperature of -30ºC to +120ºC, with peaks of 135ºC. Maximum usage temperatures recommended for treads depending on the speed factor.
- Excellent pump-ability for use with gun and centralised greasing.

DIN 51502: KP0G-30

Property	Unit	Test Method	Typical Value
NLGI Grade		ASTM D217	0
Thickener			Lithium
Base Oil Nature			Mineral
Base Oil Viscosity	cSt	ASTM D445	100
Colour		Visual	Amber
Dropping Point	°C	ASTM D2265	>160
Worked penetration, 25°C / 60 strokes		ASTM D217	355-385
Penetration loss: After 105 strokes, 25°C		ASTM D217	<30
Water Resistance, 3h, 90°C		DIN 51807	1
TIMKEN, LOAD O.K	Lbs	ASTM D2509	>45
4-BALL E.P. test: - Welding load	Kg	ASTM D2783	250
4-BALL WEAR test: - (40 Kg/1200rpm/75ºC/1h)	Mm	ASTM D2266	<0.40

EP GREASE NLGI 1

Product Code 44060

EP GREASE NLGI 1 is a high quality multipurpose lithium thickened EP-1 grease suited for automotive, agriculture and industrial applications. EP GREASE NLGI 1 is suitable for a wide range of plain and rolling bearings.

EP GREASE NLGI 1 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Good mechanical stability.
- High load carrying capacity.
- Good corrosion protection.
- Easy to pump at low temperatures.
- Suited for loaded bearings as well as wet environments.

Temp Range: Continuou operation: -30°C to + 120°C. Short perios maximum +130°C

DIN 51502 **KP1K-30** **ISO 6743-9**
ISO-L-XCCFB1

Property	Unit	Test Method	Typical Value
NLGI Grade		ASTM D217	1
Color		Visual	Yellow/Brown
Density @20°C	kg/m3	IPPM-CS/03	930
Dropping Point	°C	IP 396	>180
Base Oil Viscosity @40°C	mm2/s	ISO 12058	200
Base Oil Viscosity @100°C	mm2/s	ISO 12058	15
4-Ball Weld Load	N	DIN 51350-4	2600
Mechanical Stability			
Penetration 60 strokes		ISO 2137	310-340
Penetration 100.000 Strokes		ISO 2137	+30
Shell Roll Stability, 2 hrs / rt		ASTM D1831	+30
Shell Roll Stability, 50 hrs @80°C		ASTM D1831 mod	+80
Oxidation Stability, 100hrs @100°C	kPa	ASTM D942	30
Oil Separation 168hrs @40°C	%	IP 121	10

EP GREASE NLGI 2

Product Code 43990

EP GREASE NLGI 2 is a high quality multipurpose lithium thickened EP-2 grease suited for automotive, agriculture and industrial applications. EP GREASE NLGI 2 is suitable for use in a wide range of plain and rolling bearings.

EP GREASE NLGI 2 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent resistance to humidity, preventing that moisture reaches the metal surfaces that need to be lubricated.
- High anti-corrosion, antioxidant and anti-rust capacity.
- High adhesion and smoothness.
- Excellent mechanical stability.

Temp Range: Continuous operation: -20°C to + 130°C. Short periods maximum +140°C

KP2K-30, L-XCCEB-2

Property	Unit	Test Method	Typical Value
NLGI Grade		ASTM D217	2
Thickener type			Lithium
Color		Visual	Amber
Penetration loss after 105 strokes, 25 °C	mm	ASTM D-217	10
Dropping Point	°C	IP 396	>1+0
Base Oil Viscosity @40°C	mm2/s	ISO 12058	220
4-Ball Weld Load	N	DIN 51350-4	>2500
Water resistance, 3h, 90 °C		DIN 51807	1

EPBF GREASE NLGI 2

Product Code 44000

EPBF GREASE NLGI 2 is a multipurpose lithium thickened EP-2 grease suited for automotive, agriculture and industrial applications. EPBF GREASE NLGI 2 is suitable for use in a wide range of plain and rolling bearings.

EPBF GREASE NLGI 2 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- All types of bearings subjected to high loads, vibrations or in a humid environment.
- In journal bearings, including yellow alloys, subjected to heavy loads or partial rotation with abrasive wear.
- To protect the development of rough or accelerated wear and tear of bearings and grooves in Cardan type transmissions and grooved joints with high torques.
- Lubrication in rolling mills.

Temp Range: Continuous operation: -20°C to + 120°C. Short periods maximum +135°C

KP2K-30, L-XCEB-2

Property	Unit	Test Method	Typical Value
NLGI Grade		ASTM D217	2
Thickener type			Lithium
Color		Visual	Amber
Penetration loss after 105 strokes, 25 °C	mm	ASTM D-217	10
Dropping Point	°C	IP 396	>185
Base Oil Viscosity @40°C	mm2/s	ISO 12058	100/150
4-Ball Weld Load	N	DIN 51350-4	>2500
Water resistance, 3h, 90 °C		DIN 51807	1

EPX GREASE NLGI 2

Product Code 44020

EPX GREASE NLGI 2 is a lithium complex thickened lubricating grease based on mineral oil and contains antioxidants, corrosion inhibitors and EP/AW additives.
The lithium complex soap makes **EPX GREASE NLGI 2** suitable for applications within a very wide temperature range and especially applications at elevated temperatures. The complex soap structure also gives **EPX GREASE NLGI 2** a high degree of mechanical stability. This enhances the performance in vibrating housings and prolongs relubrications intervals.

EPX GREASE NLGI 2 is a modern high performance product setting a new standard for a truly universal grease suitable for both industrial and automotive applications.

EPX GREASE NLGI 2 all-round properties make it the primary choice for various types of bearing applications including heavy load conditions.

Property	Test Method	Typical Value
Classification:	DIN 51502	ISO 6743
	KP2N-30	ISO-L-XCDEB2
NLGI Grade	ASTM D217	2
Base Oil Viscosity @ 40°C	ISO 12058	200 mm2/s
Base Oil Viscosity @ 100°C	ISO 12058	14 mm2/s
Colour	Visual	Brown
Dropping Point	IP 396	>250°C
Approximate Density @ 20°C	IPPM-CS/03	910 kg/m3
4-Ball weld load	DIN 51350-4	3000 N
Temperature Range		
Continuous operation:	-	-30°C to +140°C
Maximum short period:	-	+220°C
Penetration 60 strokes:	ISO 2137	265-295
Penetration 100 strokes:	ISO 2137	+40
SKF Emcor WWO distilled water	ISO 11007mod	0-0
Copper Corrosion 24 hrs @ 100°C	ASTM D4048	1b
Oil Separation 168 hrs @ 40°C	IP 121	4%
4-ball wear scar 1 hr @ 400 N	DIN 51350-5	0.6 mm
Flow pressure @ -30°C	DIN 51805	<1400 hPa

EPWR GREASE NLGI 2.5

Product Code 44050

EPWR GREASE NLGI 2.5 is a lithium-calcium thickened lubricating grease based on mineral oil.

EPWR GREASE NLGI 2.5 contains antioxidants, corrosion inhibitors and EP/AW additives. The thickener, together with the base oil, makes

EPWR GREASE NLGI 2.5 suitable for the lubrication of slow moving and heavily loaded bearings.

EPWR GREASE NLGI 2.5 has excellent water resistance, good load carrying capacity and endures high shock loads.

EPWR GREASE NLGI 2.5 is suitable for heavily loaded agricultural & industrial applications where water wash is problematic.

EPWR GREASE NLGI 2.5 is also suitable for heavy-duty vehicles working outdoors in we and dirty conditions.

Property	Test Method	Typical Value
Classification:	DIN 51502 ISO 6743	KP2.5K-20 ISO-L-XBCHB2.5
NLGI Grade	ASTM D217	2.5
Base Oil Viscosity @ 40°C	ISO 12058	465 mm2/s
Base Oil Viscosity @ 100°C	ISO 12058	27 mm2/s
Colour	Visual	Brown
Dropping Point	IP 396	>180°C
Approximate Density @ 20°C	IPPM-CS/03	920 kg/m3
4-Ball weld load	DIN 51350-4	3200 N
Temperature Range		
Continuous operation:	-	-20°C to +120°C
Maximum short period:	-	+130°C
Penetration 60 strokes:	ISO 2137	245-275
Penetration 100 strokes:	ISO 2137	+40
SKF Emcor WWO distilled water	ISO 11007mod	2-2
Copper Corrosion 24 hrs @ 100°C	ASTM D4048	1b
Oil Separation 168 hrs @ 40°C	IP 121	3%
Water resistance	DIN 51807-1	1-90
4-ball wear scar 1 hr @ 400 N	DIN 51350-5	0.7 mm
Flow pressure @ -35°C	DIN 51805	<1400 hPa

CHAINSAW OIL 68

Product Code 45000

CHAINSAW OIL 68 is a high quality oil specially developed to lubricate the chain of chain saws.

CHAINSAW OIL 68 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Very good adhesive strength.
- Excellent lubricating properties, helps to prevent premature chain failure.
- Extend working life.
- The specially selected additives also inhibit rust.

CHAINSAW OIL 68 is **NOT suitable to lubricate the engine.**

Property	Unit	Test Method	Typical Value
ISO VG Class			68
Density @15°C	kg/m³	ASTM D4052	878
Kin. Viscosity @40°C	mm²/s	ASTM D7042	70.2
Kin. Viscosity @100°C	mm²/s	ASTM D7042	9.2
Viscosity Index		ASTM D2270	106
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-21

CHAINSAW OIL 100

Product Code 43870

CHAINSAW OIL 100 is a high quality oil specially developed to lubricate the chain of chain saws.

CHAINSAW OIL 100 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Very good adhesive strength.
- Excellent lubricating properties, helps to prevent premature chain failure.
- Extend working life.
- The specially selected additives also inhibit rust.

CHAINSAW OIL 100 is NOT suitable to lubricate the engine.

Property	Unit	Test Method	Typical Value
ISO VG Class			100
Density @15°C	kg/m³	ASTM D4052	885
Kin. Viscosity @40°C	mm²/s	ASTM D7042	101
Kin. Viscosity @100°C	mm²/s	ASTM D7042	11.5
Viscosity Index		ASTM D2270	102
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27

CHAINSAW OIL 150

Product Code 43880

CHAINSAW OIL 150 is a high quality oil specially developed to lubricate the chain of chain saws.

CHAINSAW OIL 150 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Very good adhesive strength.
- Excellent lubricating properties, helps to prevent premature chain failure.
- Extend working life.
- The specially selected additives also inhibit rust.

CHAINSAW OIL 150 is NOT suitable to lubricate the engine.

Property	Unit	Test Method	Typical Value
ISO VG Class			150
Density @15°C	kg/m³	ASTM D4052	887
Kin. Viscosity @40°C	mm²/s	ASTM D7042	147
Kin. Viscosity @100°C	mm²/s	ASTM D7042	14.6
Viscosity Index		ASTM D2270	98
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18

CHAINSAW OIL 220

Product Code 43730

CHAINSAW OIL 220 is a high quality oil specially developed to lubricate the chain of chain saws.

CHAINSAW OIL 220 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Very good adhesive strength.
- Excellent lubricating properties, helps to prevent premature chain failure.
- Extend working life.
- The specially selected additives also inhibit rust.

CHAINSAW OIL 220 is NOT suitable to lubricate the engine.

Property	Unit	Test Method	Typical Value
ISO VG Class			220
Density @15°C	kg/m³	ASTM D4052	894
Kin. Viscosity @40°C	mm²/s	ASTM D7042	217
Kin. Viscosity @100°C	mm²/s	ASTM D7042	19.2
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-12

CHAINSAW OIL 320

Product Code 44740

CHAINSAW OIL 320 is a high quality oil specially developed to lubricate the chain of chain saws.

CHAINSAW OIL 320 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Very good adhesive strength.
- Excellent lubricating properties, helps to prevent premature chain failure.
- Extend working life.
- The specially selected additives also inhibit rust.

CHAINSAW OIL 320 is NOT suitable to lubricate the engine.

Property	Unit	Test Method	Typical Value
ISO VG Class			320
Density @15°C	kg/m³	ASTM D4052	894
Kin. Viscosity @40°C	mm²/s	ASTM D7042	329
Kin. Viscosity @100°C	mm²/s	ASTM D7042	25.7
Viscosity Index		ASTM D2270	101
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-15

COMPRESSOR OIL VDL 32

Product Code 43790

COMPRESSOR OIL VDL 32 is a high performance ash less air compressor oil specially designed to meet the stringent requirements of major compressor manufacturers. **COMPRESSOR OIL VDL 32** is suited for reciprocating air-, rotary screw and vane compressors. Also used in circulating oil systems, plain and rolling element bearings, lightly loaded Gear sets, etc

COMPRESSOR OIL VDL 32 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Improved equipment reliability, availability and efficiency.
- Low ash and carbon forming tendency ensures improved valve performance.
- Reduced potential for fires and explosions in the discharge systems.
- Exceptional wear and rust protection.
- Superior demulsibility reduces oil carryover and corrosion, maintains lubrication efficiency.
- Reduces sludge formation and improves life of coalesces.

DIN 51506 VBL/VCL/VDL, ISO 6743 DAA/DAB/DAG/DAH

Property	Unit	Test Method	Typical Value
ISO VG Class			32
Density @15°C	kg/m3	ASTM D4052	873
Kin. Viscosity @40°C	mm2/s	ASTM D7042	46.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.7
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-24
FZG A/8, 3/90°C		DIN 51354-2	12
Demulsibility @54°C, max	min	DIN 51999	30

COMPRESSOR OIL VDL 46

Product Code 43810

COMPRESSOR VDL 46 is a high performance ash less air compressor oil specially designed to meet the stringent requirements of major compressor manufacturers. **COMPRESSOR OIL VDL 46** is suited for reciprocating air-, rotary screw and vane compressors. Also used in circulating oil systems, plain and rolling element bearings, lightly loaded Gear sets, etc

COMPRESSOR OIL VDL 46 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Improved equipment reliability, availability and efficiency.
- Low ash and carbon forming tendency ensures improved valve performance.
- Reduced potential for fires and explosions in the discharge systems.
- Exceptional wear and rust.
- Superior demulsibility reduces oil carryover and corrosion, maintains lubrication efficiency.
- Reduces sludge formation and improves life of coalesces.

DIN 51506 VBL/VCL/VDL, ISO 6743 DAA/DAB/DAG/DAH

Property	Unit	Test Method	Typical Value
ISO VG Class			46
Density @15°C	kg/m3	ASTM D4052	873
Kin. Viscosity @40°C	mm2/s	ASTM D7042	43.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.6
Viscosity Index		ASTM D2270	105
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
FZG A/8, 3/90°C		DIN 51354-2	12
Demulsibility @54°C, max	min	DIN 51999	30

COMPRESSOR OIL VDL 68

Product Code 43820

COMPRESSOR OIL VDL 68 is a high performance ash less air compressor oil specially designed to meet the stringent requirements of major compressor manufacturers. **COMPRESSOR OIL VDL 68** is suited for reciprocating air-, rotary screw and vane compressors. Also used in circulating oil systems, plain and rolling element bearings, lightly loaded Gear sets, etc

COMPRESSOR OIL VDL 68 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Improved equipment reliability, availability and efficiency.
- Low ash and carbon forming tendency ensures improved valve performance.
- Reduced potential for fires and explosions in the discharge systems.
- Exceptional wear and rust protection.
- Superior demulsibility reduces oil carryover and corrosion, maintains lubrication efficiency.
- Reduces sludge formation and improves life of coalesces.

DIN 51506 VBL/VCL/VDL, ISO 6743 DAA/DAB/DAG/DAH

Property	Unit	Test Method	Typical Value
ISO VG Class			68
Density @15°C	kg/m3	ASTM D4052	883.7
Kin. Viscosity @40°C	mm2/s	ASTM D7042	71.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.5
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
FZG A/8, 3/90°C		DIN 51354-2	12
Demulsibility @54°C, max	min	DIN 51999	30

COMPRESSOR OIL VDL 100

Product Code 43830

COMPRESSOR OIL VDL 100 is a high performance ashless air compressor oil specially designed to meet the stringent requirements of major compressor manufacturers. **COMPRESSOR OIL VDL 100** is suited for reciprocating air-, rotary screw and vane compressors. Also used in circulating oil systems, plain and rolling element bearings, lightly loaded Gear sets, etc

COMPRESSOR OIL VDL 100 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties.

- Excellent thermo- and oxidation stability.
- Improved equipment reliability, availability and efficiency.
- Low ash and carbon forming tendency ensures improved valve performance.
- Reduced potential for fires and explosions in the discharge systems.
- Exceptional wear and rust protection.
- Superior demulsibility reduces oil carryover and corrosion, maintains lubrication efficiency.
- Reduces sludge formation and improves life of coalesces.

DIN 51506 VBL/VCL/VDL, ISO 6743 DAA/DAB/DAG/DAH

Property	Unit	Test Method	Typical Value
ISO VG Class			100
Density @15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	94.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.7
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-24
FZG A/8, 3/90°C		DIN 51354-2	12
Demulsibility @54°C, max	min	DIN 51999	30

COMPRESSOR OIL VDL 150

Product Code 43840

COMPRESSOR OIL VDL 150 is a high performance ash less air compressor oil specially designed to meet the stringent requirements of major compressor manufacturers.

COMPRESSOR OIL VDL 150 is suited for reciprocating air-, rotary screw and vane compressors. Also used in circulating oil systems, plain and rolling element bearings, lightly loaded Gear sets, etc

COMPRESSOR OIL VDL 150 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Improved equipment reliability, availability and efficiency.
- Low ash and carbon forming tendency ensures improved valve performance.
- Reduced potential for fires and explosions in the discharge systems.
- Exceptional wear and rust protection.
- Superior demulsibility reduces oil carryover and corrosion, maintains lubrication efficiency.
- Reduces sludge formation and improves life of coalesces.

DIN 51506 VBL/VCL/VDL **ISO 6743 DAA/DAB/DAG/DAH**

Property	Unit	Test Method	Typical Value
ISO VG Class			150
Density@15°C	kg/m3	ASTM D4052	888
Kin. Viscosity @40°C	mm2/s	ASTM D7042	142
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.0
Viscosity Index		ASTM D2270	95
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18
FZG A/8, 3/90°C		DIN 51354-2	12
Demulsibility @54°C, max	min	DIN 51999	30

COMPRESSOR OIL VDL 220

Product Code 44760

COMPRESSOR OIL VDL 220 is a high performance ash less air compressor oil specially designed to meet the stringent requirements of major compressor manufacturers. **COMPRESSOR OIL VDL 220** is suited for reciprocating air-, rotary screw and vane compressors. Also used in circulating oil systems, plain and rolling element bearings, lightly loaded Gear sets, etc

COMPRESSOR OIL VDL 220 is based on high quality mineral base oil in combination with an unique additive package to ensure the following properties:

- Excellent thermo- and oxidation stability.
- Improved equipment reliability, availability and efficiency.
- Low ash and carbon forming tendency ensures improved valve performance.
- Reduced potential for fires and explosions in the discharge systems.
- Exceptional wear and rust protection.
- Superior demulsibility reduces oil carryover and corrosion, maintains lubrication efficiency.
- Reduces sludge formation and improves life of coalesces.

DIN 51506 VBL/VCL/BDL, ISO 6743 DAA/DAB/DAG/DAH

Property	Unit	Test Method	Typical Value
ISO VG Class			220
Density@15°C	kg/m3	ASTM D4052	897
Kin. Viscosity @40°C	mm2/s	ASTM D7042	220
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18
FZG A/8, 3/90°C		DIN 51354-2	12
Demulsibility @54°C, max	min	DIN 51999	30

COMPRESSOR OIL SYNTH 32

Product Code 44120

COMPRESSOR OIL SYNTH 32 is an advanced fully synthetic ashless air compressor lubricant developed for use in rotary compressors of screw or vane design, reciprocating compressors and centrifugal compressors. **COMPRESSOR OIL SYNTH 32** is suited single or multiple stage rotary screw or vane, centrifugal compressors and reciprocating compressors of various OEMs including Hydrovane, Atlas Copco, Compare, and Worthington.

COMPRESSOR OIL SYNTH 32 is based on high quality Polyalphaolefin (PAO) base oil in combination with an unique additive package to ensure the following properties:

- Outstanding thermo-oxidative stability.
- Excellent anti-wear protection leads to longer oil and equipment life.
- Low varnish and carbon forming tendency help in reducing maintenance cost.
- Extra high viscosity index.
- Excellent low temperature fluidity for use in wide operating temperature range.
- Zinc-free formulation ensures excellent filterability by minimizing oil filter blockage in wet condition.
- Excellent low volatility characteristics give low oil.
- Improved surface properties results in very good anti-foaming and air release properties and superior demulsibility.
- Offers excellent protection against rust and corrosion.
- Compatible with mineral lubricants and also with seals and paints normally used with mineral oils.

DIN 51506 VDL; ISO 6743-3-DAB/DAJ

Property	Unit	Test Method	Typical Value
ISO VG Class			32
Density @15°C	kg/m3	ASTM D4052	833
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.2
Viscosity Index		ASTM D2270	145
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D97	-57
FZG A/8, 3/90°C		DIN 51354-2	>12
Demulsibility @54°C, max	min	DIN 51599	Pass

COMPRESSOR OIL SYNTH 46

Product Code 44130

COMPRESSOR OIL SYNTH 46 is a advanced fully synthetic ashless air compressor lubricant developed for use in rotary compressors of screw or vane design, reciprocating compressors and centrifugal compressors. **COMPRESSOR OIL SYNTH 46** is suited for single or multiple stage rotary screw or vane, centrifugal compressors and reciprocating compressors of various OEMs including Hydrovane, Atlas Copco, Compare, and Worthington.

COMPRESSOR OIL SYNTH 46 is based on high quality Polyalphaolefin (PAO) base oil in combination with an unique additive package to ensure the following properties:

- Outstanding thermo-oxidative stability.
- Excellent anti-wear protection leads to longer oil and equipment life.
- Low varnish and carbon forming tendency help in reducing maintenance cost.
- Extra high viscosity index.
- Excellent low temperature fluidity for use in wide operating temperature range.
- Zinc-free formulation ensures excellent filterability by minimizing oil filter blockage in wet condition.
- Excellent low volatility characteristics give low oil.
- Improved surface properties results in very good anti-foaming and air release properties and superior demulsibility.
- Offers excellent protection against rust and corrosion.
- Compatible with mineral lubricants and also with seals and paints normally used with mineral oils.

DIN 51506 VDL; ISO 6743-3-DAB/DAJ

Property	Unit	Test Method	Typical Value
ISO VG Class			46
Density @15°C	kg/m3	ASTM D4052	839
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.2
Viscosity Index		ASTM D2270	143
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D97	-57
FZG A/8, 3/90°C		DIN 51354-2	>12
Demulsibility @54°C, max	min	DIN 51599	Pass

COMPRESSOR OIL SYNTH 68

Product Code 44140

COMPRESSOR OIL SYNTH 68 is an advanced fully synthetic ashless air compressor lubricant developed for use in rotary compressors of screw or vane design, reciprocating compressors and centrifugal compressors. **COMPRESSOR OIL SYNTH 68** is suited single or multiple stage rotary screw or vane, centrifugal compressors and reciprocating compressors of various OEMs including Hydrovane, Atlas Copco, Compare, and Worthington.

COMPRESSOR OIL SYNTH 68 is based on high quality Polyalphaolefin (PAO) base oil in combination with an unique additive package to ensure the following properties:

- Outstanding thermo-oxidative stability.
- Excellent anti-wear protection leads to longer oil and equipment life.
- Low varnish and carbon forming tendency help in reducing maintenance cost.
- Extra high viscosity index.
- Excellent low temperature fluidity for use in wide operating temperature range.
- Zinc-free formulation ensures excellent filterability by minimizing oil filter blockage in wet condition.
- Excellent low volatility characteristics give low oil.
- Improved surface properties results in very good anti-foaming and air release properties and superior demulsibility.
- Offers excellent protection against rust and corrosion.
- Compatible with mineral lubricants and also with seals and paints normally used with mineral oils.

DIN 51506 VDL; ISO 6743-3-DAB/DAJ

Property	Unit	Test Method	Typical Value
ISO VG Class			68
Density @15°C	kg/m3	ASTM D4052	839
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.0
Viscosity Index		ASTM D2270	153
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D97	-57
FZG A/8, 3/90°C		DIN 51354-2	>12
Demulsibility @54°C, max	min	DIN 51599	Pass

HYDRAULIC OIL HV 15

Product Code 43490

HYDRAULIC OIL HV 15 is an universal HVI mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV 15 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E-48-603, ISO 11158 HV, DIN 51524/3 HVLP, Eaton Vickers M-2950-S/I-386, Sauer Danfoss 520L0463, ISO 6742-4 HV

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	15
Density@15°C	kg/m3	ASTM D4052	850
Kin. Viscosity @40°C	mm2/s	ASTM D7042	15.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	4.2
Viscosity Index		ASTM D2270	177
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C	Minutes	ASTM D1401	5

HYDRAULIC OIL HV 22

Product Code 43590

HYDRAULIC OIL HV 22 is an universal HVI mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV 22 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E-48-603, ISO 11158 HV, DIN 51524/3 HVLP ISO 6743-4 HV, Sauer Danfoss 520L0463, Eaton Vickers M-2950-S/I-386

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	22
Density@15°C	kg/m3	ASTM D4052	858
Kin. Viscosity @40°C	mm2/s	ASTM D7042	21.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.2
Viscosity Index		ASTM D2270	184
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C	Minutes	ASTM D1401	10

HYDRAULIC OIL HV 32

Product Code 43580

HYDRAULIC OIL HV 32 is an universal HVI mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV 32 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E-48-603, ISO 11158 HV, DIN 51524/3 HVLP, ISO 6743-4 HV, Sauer Danfoss 520L0463, Eaton Vickers M-2950-S/I-386

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	32
Density@15°C	kg/m3	ASTM D4052	868
Kin. Viscosity @40°C	mm2/s	ASTM D7042	33.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.7
Viscosity Index		ASTM D2270	165
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C	Minutes	ASTM D1401	10

HYDRAULIC OIL HV 46

Product Code 43600

HYDRAULIC OIL HV 46 is an universal extreme HVI mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV 46 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E-48-603, ISO 11158 HVISO 6743-4 HV, DIN 51524/3 HVLP, Sauer Danfoss 520L0463, Eaton Vickers M-2950-S/I-386

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	46
Density@15°C	kg/m3	ASTM D4052	874
Kin. Viscosity @40°C	mm2/s	ASTM D7042	47.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.7
Viscosity Index		ASTM D2270	162
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C	Minutes	ASTM D1401	15

HYDRAULIC OIL HV 68

Product Code 43620

HYDRAULIC OIL HV 68 is a universal HVI mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV 68 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E-48-603, ISO 11158 HVISO 6743-4 HV, DIN 51524/3 HVLP, Sauer Danfoss 520L0463, Eaton Vickers M-2950-S/I-386

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	877
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.6
Viscosity Index		ASTM D2270	165
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C	Minutes	ASTM D1401	15

HYDRAULIC OIL HV 100

Product Code 43550

HYDRAULIC OIL HV 100 is an universal HVI mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV 100 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E-48-603, ISO 11158 HVISO 6743-4 HV, DIN 51524/3 HVLP, Sauer Danfoss 520L0463, Eaton Vickers M-2950-S/I-386

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	100
Density@15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	104.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.7
Viscosity Index		ASTM D2270	159
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C	Minutes	ASTM D1401	15

HYDRAULIC OIL HV ZF 32

Product Code 43750

HYDRAULIC OIL HV ZF 32 is an universal Zinc free mineral oil with a High Viscosity Index (HVI) for the use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV ZF 32 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

DIN 51524/3 HVLP, GM LS-2, ISO 11158 HV, ASTM D6158-99, SAE MS1024, ISO 6743-4 HV, Eaton Vickers M-2950-S, Eaton Vickers I-286-S, Bosch Rexroth RE 90 220

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	32
Density@15°C	kg/m3	ASTM D4052	856
Kin. Viscosity @40°C	mm2/s	ASTM D7042	32
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.7
Viscosity Index		ASTM D2270	172
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45
Demulsibility @54°C		ASTM D1401	10
FZA A/8.3/90, Load Stage Fail, min		DIN 51354-2	11

HYDRAULIC OIL HV ZF 46

Product Code 43630

HYDRAULIC OIL HV ZF 46 is an universal Zinc free mineral oil with a High Viscosity Index (HVI) for the use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV ZF 46 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

DIN 51524/3 HVLP, GM LS-2, ISO 11158 HV, ASTM D6158-99, SAE MS1004, ISO 6743-4 HV, Eaton Vickers M-2950-S, Eaton Vickers I-286-S, Bosch Rexroth RE 90 220

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	46
Density@15°C	kg/m3	ASTM D4052	874
Kin. Viscosity @40°C	mm2/s	ASTM D7042	49
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.7
Viscosity Index		ASTM D2270	157
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C		ASTM D1401	10
FZA A/8.3/90, Load Stage Fail, min		DIN 51354-2	11

HYDRAULIC OIL HV ZF 68

Product Code 43770

HYDRAULIC OIL HV ZF 68 is an universal Zinc free mineral oil with a High Viscosity Index (HVI) for the use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HV ZF 68 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

DIN 51524/3 HVLP, GM LS-2, ISO 11158 HV, ASTM D6158-99, SAE MS1024, ISO 6743-4 HV, Eaton Vickers M-2950-S, Eaton Vickers I-286-S, Bosch Rexroth RE 90 220

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	877
Kin. Viscosity @40°C	mm2/s	ASTM D7042	70
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.4
Viscosity Index		ASTM D2270	154
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Demulsibility @54°C		ASTM D1401	20
FZA A/8.3/90, Load Stage Fail, min		DIN 51354-2	11

HYDRAULIC OIL HM 22

Product Code 43510

HYDRAULIC OIL HM 22 is a universal mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HM 22 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.

AFNOR NF E 48-603, ISO 11158 HM, DIN 51524/2 HLP, ISO 6743-4 HM

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	22
Density@15°C	kg/m3	ASTM D4052	859
Kin. Viscosity @40°C	mm2/s	ASTM D7042	22
Kin. Viscosity @100°C	mm2/s	ASTM D7042	4.5
Viscosity Index		ASTM D2270	112
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D97	-30
Demulsibility @54°C	min	ASTM D1401	5

HYDRAULIC OIL HM 32

Product Code 43520

HYDRAULIC OIL HM 32 is a universal mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HM 32 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	22
Density@15°C	kg/m3	ASTM D4052	871
Kin. Viscosity @40°C	mm2/s	ASTM D7042	32
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.5
Viscosity Index		ASTM D2270	104
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D97	-33
Demulsibility @54°C	min	ASTM D1401	10

HYDRAULIC OIL HM 46

Product Code 43540

HYDRAULIC OIL HM 46 is a universal mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HM 46 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.

AFNOR NF E 48-603, ISO 11158 HM, ISO 6743-4 HM, DIN 51524/2 HLP

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	46
Density@15°C	kg/m3	ASTM D4052	876
Kin. Viscosity @40°C	mm2/s	ASTM D7042	45.7
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.8
Viscosity Index		ASTM D2270	104
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D97	-33
Demulsibility @54°C	min	ASTM D1401	10

HYDRAULIC OIL HM 68

Product Code 43560

HYDRAULIC OIL HM 68 is an universal mineral high grade EP oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. Not suitable for turbine application.

HYDRAULIC OIL HM 68 is formulated with high quality refined mineral base stocks in combination with a special EP-additive technology to achieve the following performance:

- Excellent stability against oxidation.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.

AFNOR NF E 48-603, ISO 11158 HM, ISO 6743-4 HM, DIN 51524/2 HLP

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	880
Kin. Viscosity @40°C	mm2/s	ASTM D7042	66
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.5
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D97	-27
Demulsibility @54°C	min	ASTM D1401	15
FZA A/8.3/90, Load Stage Fail		DIN 51354-2	>12

HYDRAULIC OIL HM ZF 32

Product Code 43530

HYDRAULIC OIL HM ZF 32 is a premium quality zinc free mineral oil with a high viscosity index for use in high pressure hydraulic systems, light duty gearboxes, bearings, and general lubrication. The oil is not suitable for turbine applications.

HYDRAULIC OIL HM ZF 32 is formulated with high quality refined mineral base stocks in combination with a special additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Good thermal stability.

DIN 51524/2 HLP, GM LS-2, ISO 11158 HM, Eaton Vickers M-2950-S, Denison HF -1 ISO 6743-4 HM, MAG P 68, ASTM D6158, SAE MS 1004, Bosch Rexroth RE 90220

Property	Unit	Test Method	Typical Value
ISO grade		ISO 3448	32
Density @15°C	kg/m3	ASTM D4052	871
Kin. Viscosity @40°C	mm2/s	ASTM D7042	34.4
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.7
Viscosity Index		ASTM D2270	102
Flash Point COC	°C	ASTM D92	>210
Pour Point	°C	ASTM D7346	-24
Demulsibility @54°C	min	ASTM D1401	10
FZA A/8.3/90, Load Stage Fail	min	DIN 51354-2	11

HYDRAULIC OIL HM ZF 46

Product Code 43650

HYDRAULIC OIL HM ZF 46 is a premium quality zinc free mineral oil with a high viscosity index for use in high pressure hydraulic systems, light duty gearboxes, bearings, and general lubrication. The oil is not suitable for turbine applications.

HYDRAULIC OIL HM ZF 46 is formulated with high quality refined mineral base stocks in combination with a special additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Good thermal stability.

DIN 51524/2 HLP, GM LS-2, ISO 11158 HM, Eaton Vickers M-2950-S, Denison HF -1 ISO 6743-4 HM, MAG P 70, ASTM D6158, SAE MS 1004, Bosch Rexroth RE 90220

Property	Unit	Test Method	Typical Value
ISO grade		ISO 3448	46
Density @15°C	kg/m3	ASTM D4052	876
Kin. Viscosity @40°C	mm2/s	ASTM D7042	46.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.9
Viscosity Index		ASTM D2270	101
Flash Point COC	°C	ASTM D92	>210
Pour Point	°C	ASTM D7346	-27
Demulsibility @54°C	min	ASTM D1401	10
FZA A/8.3/90, Load Stage Fail	min	DIN 51354-2	11

HYDRAULIC OIL HM ZF 68

Product Code 43710

HYDRAULIC OIL HM ZF 68 is a premium quality zinc free mineral oil with a high viscosity index for use in high pressure hydraulic systems, light duty gearboxes, bearings, and general lubrication. The oil is not suitable for turbine applications.

HYDRAULIC OIL HM ZF 68 is formulated with high quality refined mineral base stocks in combination with a special additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Good thermal stability.

DIN 51524/2 HLP, GM LS-2, ISO 11158 HM, Eaton Vickers M-2950-S, Denison HF -1 ISO 6743-4 HM, MAG P 68, ASTM D6158, SAE MS 1004, Bosch Rexroth RE 90220

Property	Unit	Test Method	Typical Value
ISO grade		ISO 3448	68
Density @15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	70
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.8
Viscosity Index		ASTM D2270	98
Flash Point COC	°C	ASTM D92	>210
Pour Point	°C	ASTM D7346	-24
Demulsibility @54°C	min	ASTM D1401	10
FZA A/8.3/90, Load Stage Fail	min	DIN 51354-2	12

HYDRAULIC OIL HLPD 46

Product Code 43660

HYDRAULIC OIL HLPD 46 is a superior quality so called “detergent” hydraulic oil blended from high quality base stocks with an ashless antiwear hydraulic oil package having water tolerance and detergency properties to meet the requirements of the HLPD classification for hydraulic oils formulated primarily as heavy duty, anti-wear hydraulic oil. **HYDRAULIC OIL HLPD 46** specially suitable for use in a wide variety of applications where drain of water condensation is difficult.

HYDRAULIC OIL HLPD 46 is formulated with high quality refined mineral base stocks in combination with a special ashless additive technology to achieve the following performance:

- Good stability against oxidation.
- Compatible with a wide variety of pump designs (vane type pumps, axial piston, gear and other types of hydraulic pumps and motors) at oil pressures in the range of 70 to 350 bar.
- Very good protection against wear.
- Good water absorbing properties (upto 2%)
- Very good foaming properties.
- Very effective to rust and corrosion.
- Good thermal stability.

DBL 6713 HLPD, DIN 51524/2 HLP *, ISO 11158 HM*

Property	Unit	Test Method	Typical Value
ISO grade		ISO 3448	46
Density @15°C	kg/m3	ASTM D4052	876
Kin. Viscosity @40°C	mm2/s	ASTM D7042	47.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.0
Viscosity Index		ASTM D2270	102
Flash Point COC	°C	ASTM D92	>210
Pour Point	°C	ASTM D7346	-27

HYDRAULIC OIL HVLPD 46

Product Code 44200

HYDRAULIC OIL HVLPD 46 is heavy duty detergent type ashless anti-wear high viscosity hydraulic oil specially developed for machine-tool hydraulic systems, mobile hydraulic systems and clutch drives where minor water contamination can be expected.

HYDRAULIC OIL HVLPD 46 is formulated with high quality mineral base oil in combination with a special additive package to ensure to following properties.

- Special detergent and dispersant properties ensure smooth functioning of hydraulic systems by minimizing formation of sticky residues and deposits.
- Excellent water emulsifying ability maintains proper functioning of hydraulic systems even in case of contamination of oil with small amounts of water.
- Superior anti-wear properties help reduce wear of mechanical components.
- High resistance to oxidation and thermal degradation controls the formation of sludge & varnish and improves oil life .
- Superior foam control and rapid air release properties ensure trouble-free operations.
- Effective corrosion inhibitors provide corrosion protection in arduous service conditions.
- Superior thermo- and oxidation stability.
- High Viscosity.

AFNOR NF E-48-603, ISO 6743/4 HV, DIN 51524/3 HVLPD, Daimler DBL 6721, ISO 11158 HV

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	46
Density@15°C	kg/m3	ASTM D4052	875
Kin. Viscosity @40°C	mm2/s	ASTM D7042	48.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.8
Viscosity Index		ASTM D2270	164
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39

BIO SYNTH HYDRAULIC OIL 46

Product Code 43610

BIO-SYNTH HYDRAULIC OIL 46 is a premium quality biodegradable hydraulic oil for heavy duty hydraulic systems of earthmoving equipment and permanent installations working under severe conditions like high pressures over a wide range of temperatures where pollution of the environment is expected.

BIO-SYNTH HYDRAULIC OIL 46 is developed from easily biologically degradable synthetic ester base oils together with an environmentally friendly additive package to ensure the following properties:

- High and stable Viscosity Index.
- Excellent wear-preventing properties.
- High good activity against corrosion.
- Excellent stability against oxidation.
- Good deaerating and foam suppressing properties.
- Good compatibility with seals and gaskets made from synthetic material.
- Low pour point.
- Good water separation.
- Reduced harm for water and soil during use.

ISO 15380 HEES, Swedish Standard (SS) 155434, CEC L33-T82 >90% in three weeks

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	46
Density@15°C	kg/m3	ASTM D4052	923
Kin. Viscosity @40°C	mm2/s	ASTM D7042	50
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.1
Viscosity Index		ASTM D2270	196
Flash Point COC	°C	ASTM D92	>300
Pour Point	°C	ASTM D7346	-33

HYDRAULIC OIL BC 32

Product Code 45340

HYDRAULIC OIL BC 32 is an universal mineral high grade AW oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. This product is not suitable for turbine applications.

HYDRAULIC OIL BC 32 is formulated with high quality re-refined mineral base stocks in combination with a special AW-additive technology to achieve the following performance:

- Good stability against oxidation.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.

AFNOR NF E 48-603, ISO 11158 HM, DIN 51524/2 HLP, ISO 6743-4 HM

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	32
Colour		ASTM D1500	3.5
Density@15°C	kg/m3	ASTM D4052	858
Kin. Viscosity @40°C	mm2/s	ASTM D7042	32.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.7
Viscosity Index		ASTM D2270	118
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D7346	-36
Demulsibility @54°C	min	DIN 51381	10
FZA A/8.3/90, Load Stage Fail		DIN 51354-2	>10

HYDRAULIC OIL BC 46

Product Code 45100

HYDRAULIC OIL BC 46 is an universal mineral high grade AW oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. This product is not suitable for turbine applications.

HYDRAULIC OIL BC 46 is formulated with high quality re-refined mineral base stocks in combination with a special AW-additive technology to achieve the following performance:

- Good stability against oxidation.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.

AFNOR NF E 48-603, ISO 11158 HM, DIN 51524/2 HLP ISO 6743-4 HM

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	46
Colour		ASTM D1500	3.5
Density@15°C	kg/m3	ASTM D4052	867
Kin. Viscosity @40°C	mm2/s	ASTM D7042	45.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.1
Viscosity Index		ASTM D2270	116
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D7346	-33
Demulsibility @54°C	min	ASTM D1401	15
FZA A/8.3/90, Load Stage Fail		DIN 51354-2	>10

HYDRAULIC OIL BC 68

Product Code 45110

HYDRAULIC OIL BC 68 is an universal mineral high grade AW oil for use in heavy duty hydraulic systems and light duty gearboxes, bearings and general lubrication. This product is not suitable for turbine applications.

HYDRAULIC OIL BC 68 is formulated with high quality re-refined mineral base stocks in combination with a special AW-additive technology to achieve the following performance:

- Good stability against oxidation.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.

AFNOR NF E 48-603, ISO 11158 HM, DIN 51524/2 HLP, ISO 6743-4 HM

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	68
Colour		ASTM D1500	3.5
Density@15°C	kg/m3	ASTM D4052	876
Kin. Viscosity @40°C	mm2/s	ASTM D7042	64.6
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.6
Viscosity Index		ASTM D2270	104
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D97	-30
Demulsibility @54°C	min	DIN 51381	15
FZA A/8.3/90, Load Stage Fail		DIN 51354-2	>10

HYDRAULIC OIL HPV 32

Product Code 45270

HYDRAULIC OIL HPV 32 is an universal high viscosity index (HVI) mineral grade AW oil for use in heavy duty hydraulic systems, light duty gearboxes, bearings and general lubrication applications. This product is not suitable for the use in turbine applications.

HYDRAULIC OIL HPV 32 is formulated with high quality re-refined mineral base stocks in combination with a special AW-additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E 48-603, ISO 11158 HV, DIN 51524/3 HVLP, ISO 6743-4 HV

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	32
Colour		ASTM D1500	3.5
Density@15°C	kg/m3	ASTM D4052	856
Kin. Viscosity @40°C	mm2/s	ASTM D7042	33.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.9
Viscosity Index		ASTM D2270	168
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D7346	-42
Demulsibility @54°C	min	DIN 51381	10
FZA A/8.3/90, Load Stage Fail		DIN 51354-2	>10

HYDRAULIC OIL HPV 46

Product Code 45280

HYDRAULIC OIL HPV 46 is an universal high viscosity index (HVI) mineral grade AW oil for use in heavy duty hydraulic systems, light duty gearboxes, bearings and general lubrication applications. This product is not suitable for the use in turbine applications.

HYDRAULIC OIL HPV 46 is formulated with high quality re-refined mineral base stocks in combination with a special AW-additive technology to achieve the following performance:

- Good stability against oxidation.
- High Viscosity Index.
- Very good protection against wear.
- Good water demulsibility.
- Very good foaming properties.
- Very effective to rust and corrosion.
- Very good thermal stability.

AFNOR NF E 48-603, ISO 11158 HV, DIN 51524/3 HVLP, ISO 6743-4 HV

Property	Unit	Test Method	Typical Value
ISO Grade		ISO 3448	46
Colour		ASTM D1500	3.5
Density@15°C	kg/m3	ASTM D4052	859
Kin. Viscosity @40°C	mm2/s	ASTM D7042	43.3
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.5
Viscosity Index		ASTM D2270	177
Flash Point COC	°C	ASTM D92	>180
Pour Point	°C	ASTM D7346	-42
Demulsibility @54°C	min	DIN 51381	15
FZA A/8.3/90, Load Stage Fail		DIN 51354-2	>10

MARINE TPEO 312

Product Code 42880

MARINE TPEO 312 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 1.0%

MARINE TPEO 312 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Good anti wear properties,
- Good superior demulsibility
- Good protection against bearing corrosion
- Good protection against 'bore-polishing' and lacquering.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	890
Kin. Viscosity @40°C	mm2/s	ASTM D7042	97
Kin. Viscosity @100°C	mm2/s	ASTM D7042	12.3
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	12

MARINE TPEO 315

Product Code 42890

MARINE TPEO 315 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 1.5%

MARINE TPEO 315 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Good anti wear properties,
- Good superior demulsibility
- Good protection against bearing corrosion
- Good protection against 'bore-polishing' and lacquering.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	895
Kin. Viscosity @40°C	mm2/s	ASTM D7042	99
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.2
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	15

MARINE TPEO 320

Product Code 44590

MARINE TPEO 320 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 1.5%.

MARINE TPEO 320 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Good anti wear properties.
- Good superior demulsibility.
- Good protection against bearing corrosion.
- Good protection against 'bore-polishing' and lacquering.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	891
Kin. Viscosity @40°C	mm2/s	ASTM D7042	141
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.1
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	20

MARINE TPEO 330

Product Code 44660

MARINE TPEO 330 is a high quality marine diesel engine oil, developed for high output,medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 2.5%.

MARINE TPEO 330 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Good anti wear properties.
- Good superior demulsibility.
- Good protection against bearing corrosion.
- Good protection against 'bore-polishing' and lacquering.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	900
Kin. Viscosity @40°C	mm2/s	ASTM D7042	96
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.1
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	30

MARINE TPEO 340

Product Code 44770

MARINE TPEO 340 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 3.5%.

MARINE TPEO 340 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Acidic by-products are effectively neutralized and the engine is protected from corrosive wear by the unique formulation providing the reserve alkalinity.
- Superior demulsibility characteristics.
- Robust anti-wear technology provides excellent piston & linear wear control and good gear performance.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	906
Kin. Viscosity @40°C	mm2/s	ASTM D7042	93
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.2
Viscosity Index		ASTM D2270	107
Flash Point COC	°C	ASTM D92	>220
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	40
Sulphated Ash	%Wt	ASTM D874	5.1

MARINE TPEO 412

Product Code 42850

MARINE TPEO 412 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 1.0%

MARINE TPEO 412 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Good anti wear properties,
- Good superior demulsibility
- Good protection against bearing corrosion
- Good protection against 'bore-polishing' and lacquering.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	899
Kin. Viscosity @40°C	mm2/s	ASTM D7042	146
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.4
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-18
Total Base Number	mgKOH/g	ASTM D2896	12

MARINE TPEO 415

Product Code 42860

MARINE TPEO 415 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 1.5%

MARINE TPEO 415 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Good anti wear properties,
- Good superior demulsibility
- Good protection against bearing corrosion
- Good protection against 'bore-polishing' and lacquering.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	893
Kin. Viscosity @40°C	mm2/s	ASTM D7042	131
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.3
Viscosity Index		ASTM D2270	98
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	15

MARINE TPEO 420

Product Code 44600

MARINE TPEO 420 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 1.5%.

MARINE TPEO 420 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Good anti wear properties.
- Good superior demulsibility.
- Good protection against bearing corrosion.
- Good protection against 'bore-polishing' and lacquering.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	898
Kin. Viscosity @40°C	mm2/s	ASTM D7042	141
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	20

MARINE TPEO 430

Product Code 42900

MARINE TPEO 430 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 2.5%.

MARINE TPEO 430 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Acidic by-products are effectively neutralized and the engine is protected from corrosive wear by the unique formulation providing the reserve alkalinity.
- Superior demulsibility characteristics.
- Robust anti-wear technology provides excellent piston & linear wear control and good gear performance.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	903
Kin. Viscosity @40°C	mm2/s	ASTM D7042	140
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.3
Viscosity Index		ASTM D2270	99
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-18
Total Base Number	mgKOH/g	ASTM D2896	30

MARINE TPEO 440

Product Code 42820

MARINE TPEO 440 is a high quality marine diesel engine oil, developed for high output, medium speed trunk piston diesel engines, running on distillate or light residual fuel with a sulphur content of maximum 3.5%.

MARINE TPEO 440 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency reduces build-up of soot & black sludge, improves tolerance for fuel contaminants and keeps the engine clean.
- Acidic by-products are effectively neutralized and the engine is protected from corrosive wear by the unique formulation providing the reserve alkalinity.
- Superior demulsibility characteristics.
- Robust anti-wear technology provides excellent piston & linear wear control and good gear performance.
- Excellent thermo-oxidative stability retards oil degradation facilitating extended oil life.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	908
Kin. Viscosity @40°C	mm2/s	ASTM D7042	137
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	102
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-18
Total Base Number	mgKOH/g	ASTM D2896	40
Sulphated Ash	%Wt	ASTM D874	5.1

MARINE SO 307

Product Code 44570

MARINE SO 307 is a premium quality trunk piston engine oil designed for use in the modern medium speed diesel engines operating on distillate fuels.

MARINE SO 307 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Superior detergency ensures piston and crankcase cleanliness.
- Improved anti-wear property minimizes engine wear.
- Excellent thermo-oxidative stability.
- Protection of engine parts against corrosive combustion products.
- Better demulsibility characteristics ensure water.
- Special rust & corrosion inhibitors prevent corrosion of engine parts in severe salt water environment.
- Excellent dispersancy and detergency properties.
- Good protection against "Bore Polishing" and lacquering.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	30
Density@15°C	kg/m3	ASTM D4052	891
Kin. Viscosity @40°C	mm2/s	ASTM D7042	104
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.2
Viscosity Index		ASTM D2270	93
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	7
Sulphated Ash	%Wt	ASTM D874	1.1

MARINE SO 407

Product Code 44580

MARINE SO 407 is a premium quality trunk piston engine oil designed for use in the modern medium speed diesel engines operating on distillate fuels.

MARINE SO 407 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Superior detergency ensures piston and crankcase cleanliness.
- Improved anti-wear property minimizes engine wear.
- Excellent thermo-oxidative stability.
- Protection of engine parts against corrosive combustion products.
- Better demulsibility characteristics ensure water.
- Special rust & corrosion inhibitors prevent corrosion of engine parts in severe salt water environment.
- Excellent dispersancy and detergency properties.
- Good protection against “Bore Polishing” and lacquering.

API CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	896
Kin. Viscosity @40°C	mm2/s	ASTM D7042	150
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.6
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	7
Sulphated Ash	%Wt	ASTM D874	1.1

MARINE MGEO 15W-40

Product Code 42870

MARINE MGEO 15W-40 is a mineral based marine engine oil and is recommended for turbo charged and naturally aspirated diesel engines such as used on board ships and can also be used in marine transmissions requiring an oil with Allison C-4 specifications.

MARINE MGEO 15W-40 is formulated with high quality mineral base stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Controlling deposits and viscosity increase
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.

API CG-4, ACEA E2, Volvo VDS, MTU Type 1, MAN M271, MB 228.1

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	882
Kin. Viscosity @40°C	mm2/s	ASTM D7042	108
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	135
Viscosity CCS @-20°C	cP	ASTM D5293	6700
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	8.5
Sulpated Ash	%Wt	ASTM D874	1.27

MARINE DDEO 40

Product Code 44670

MARINE DDEO 40 is a good quality monograde engine oil developed for high output, high speed two- and four cycle diesel engines. MARINE DDEO 40 is in particularly recommended for Detroit Diesel two-cycle diesel engines in marine fleets operating on low sulphur fuels.

MARINE DDEO 40 is based on highquality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Exceptional detergency thus reducing deposits, sludge build-up & varnish and extends engine life & durability.
- Superior thermo-oxidative stability assists in controlling oxidative thickening and increases oil life.
- Antiwear technology protects against scuffing & wear of cylinder liner and walls.
- Rust inhibitors retard rust & corrosion formation in critical engine parts.
- Adequate TBN level ensures protection against corrosive combustion products.

API CF-2/CF

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	895
Kin. Viscosity @40°C	mm2/s	ASTM D7042	149
Kin. Viscosity @100°C	mm2/s	ASTM D7042	15.0
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>220
Pour Point	°C	ASTM D7346	-21
Total Base Number	mgKOH/g	ASTM D2896	7.5

MARINE CEO 570

Product Code 44520

MARINE CEO 570 is an extra high performance Marine Cylinder Lubricant (MCL) designed for the latest generation technology of low speed crosshead diesel engines operating on wide range of residual fuels having sulphur content in excess of 1.0%
Feed rates recommended by the manufacturer should be maintained as a minimum. Higher feed rates may be required when running new liners and/or rings.

MARINE CEO 570 is based on high quality virgin mineral base oils in combination with an unique additive package to ensure the following properties:

- Good acid neutralising capability.
- Superior detergency minimises deposits on critical parts such as pistons, piston rings, ring grooves and cylinder ports.
- Good antiwear properties minimizes piston ring & cylinder wear leading to reduced maintenance costs.
- Good compatibility with all normal seal materials.

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	50
Density@15°C	kg/m3	ASTM D4052	932
Kin. Viscosity @40°C	mm2/s	ASTM D7042	227
Kin. Viscosity @100°C	mm2/s	ASTM D7042	19.8
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>230
Pour Point	°C	ASTM D7346	-12
Total Base Number	mgKOH/g	ASTM D2896	70

MARINE MGEO SP 15W-40

Product Code 44780

MARINE MGEO SP 15W-40 is a extra high performance universal marine engine oil recommended for turbo charged and naturally aspirated diesel engines such as used on board ships and can also be used in marine transmissions requiring an oil with Allison C-4 specifications.

MARINE MGEO SP 15W-40 is formulated with high refined solvent mineral stock in combination with a special additive package to reach the following properties:

- Excellent thermal- and oxidation stability.
- Very good dispersancy and detergency.
- High anti-foam, anti-wear and anti-corrosion properties.
- Excellent protection against Bore Polishing.
- Extended drain intervals.

MB 228.1 / 228.3, VOLVO VDS-3, API CI-4/ SL, ACEA E7, DDC 93K215, Global DHD-1 JASO DH-1, Deutz DQC-III, MTU Type 2, CAT ECF-1a, MAN M 3275, Cummins CES 2077/20078

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	884
Kin. Viscosity @40°C	mm2/s	ASTM D7042	100
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.8
Viscosity Index		ASTM D2270	140
Viscosity CCS @-20°C	cP	ASTM D2270	5740
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mg KOH/g	ASTM D2896	11.6
Sulpated Ash	%Wt	ASTM D874	1.5

TURBINE OIL 32

Product Code 44550

TURBINE OIL 32 is a supreme performance turbine oil specially designed for use in non-geared steam turbines, gas turbines and combined cycle gas turbines (CCGT) including the gas turbines operating at high temperatures.

TURBINE OIL 32 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Outstanding thermal and oxidation stability.
- Prevents sludge formation, controls deposits and minimizes oil degradation.
- Excellent water separation capability resists formation of emulsion and leads to easy removal of excess water from the lubrication system.
- Effective rust and corrosion inhibitors provide long term protection to critical system components.
- Good air release properties and foam control.
- Increased conductivity to prevent build-up of electrostatic charges (microsparks) than can cause fire/explosion hazards.

ASTM D4304 Type I, DIN 51515-1 (TD), DIN 51515-2 (TG), ALSTOM HTGD 90117 W (non EP), GEK 107395A/27070/32568J/46506E, AIST 125, Solar ES 9-224, Siemens TLV 9013 04 & 05 (non EP), Fives Cincinnati P-38

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	32
Density@15°C	kg/m3	ASTM D4052	850
Kin. Viscosity @40°C	mm2/s	ASTM D7042	33.9
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.9
Viscosity Index		ASTM D2270	122
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Copper Corrosion		ASTM D130	1b
Air Release Value @50°C	Minutes	ASTM D3427	<4:00
Total Acid Number	mgKOH/g	ASTM D664	0.1
Water separability @54°C	Min.	ASTM D1401	10
Oil Stability Test (TOST)	Hrs	ASTM D943	>10.000

TURBINE OIL46

Product Code 44540

TURBINE OIL 46 is a supreme performance turbine oil specially designed for use in geared and non-geared steam turbines, gas turbines and combined cycle gas turbines (CCGT) including the gas turbines operating at high temperatures.

TURBINE OIL 46 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Outstanding thermal and oxidation stability.
- Prevents sludge formation, controls deposits and minimizes oil degradation.
- Superior anti-wear property and load carrying capability provide excellent protection for geared turbines.
- Excellent water separation capability resists formation of emulsion and leads to easy removal of excess water from the lubrication system.
- Effective rust and corrosion inhibitors provide long term protection to critical system components.
- Good air release properties and foam control.
- Increased conductivity to prevent build-up of electrostatic charges (microsparks) than can cause fire/explosion hazards.

ASTM D4304 Type I, DIN 51515-1 (TD), DIN 51515-2 (TG), ALSTOM HTGD 90117 W (non EP), GEK 107395A/27070/32568J/46506E, AIST 125, Solar ES 9-224, Siemens TLV 9013 04 & 05 (non EP), Fives Cincinnati P-55, AGMA 9005-E02

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	46
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	44.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	7.2
Viscosity Index		ASTM D2270	124
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
FZG A/8, 3 90°C		DIN 51354-2	>10
Demulsibility @54°C	Min.	DIN 51599	10
Total Acid Number	mgKOH/g	ASTM D664	0.1

TURBINE OIL 68

Product Code 44530

TURBINE OIL 68 is a supreme performance turbine oil specially designed for use in geared and non-geared steam turbines, gas turbines and combined cycle gas turbines (CCGT) including the gas turbines operating at high temperatures.

TURBINE OIL 68 is based on high quality virgin mineral base oil in combination with an unique additive package to ensure the following properties:

- Outstanding thermal and oxidation stability.
- Prevents sludge formation, controls deposits and minimizes oil degradation.
- Superior anti-wear property and load carrying capability provide excellent protection for geared turbines.
- Excellent water separation capability resists formation of emulsion and leads to easy removal of excess water from the lubrication system.
- Effective rust and corrosion inhibitors provide long term protection to critical system components.
- Good air release properties and foam control.

ASTM D4304 Type I, DIN 51515-1 (TD), DIN 51515-2 (TG), Alstom HTGD 90117 W (non EP), Fives Cincinnati P-54, GEK 27070,32568J,46506E,107395A, Siemens TLV 9013 04 & 05 (non EP), Solar Turbines ES9-224, AIST 125, AGMA 9005-E02(R&O)

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	864
Kin. Viscosity @40°C	mm2/s	ASTM D7042	70
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.5
Viscosity Index		ASTM D2270	113
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
Total Acid Number	mgKOH/g	ASTM D664	0.1
Copper Corrosion		ASTM D130	1b
Water separability @54°C		ASTM D1401	Pass
FZG, Fail Load Stage		DIN 51534-2	10
Oil Stability Test (TOST)	Hrs	ASTM D943	>10.000

GAS ENGINE OIL MA 40

Product Code 44500

GAS ENGINE OIL MA 40 is a medium ash high performance Heavy Duty Gas Engine Oil specially designed for use in stationary gas engines which run on natural and/or biogas and operate under severe conditions and high temperatures.

GAS ENGINE OIL MA 40 is based on a high quality hydro processed base oils in combination with a special selected additive package to obtain the following properties:

- Excellent thermal-, nitration-, and oxidation stability.
- Reducing of combustion chamber deposits.
- Minimize ring scuffing.
- Protect against corrosive wear.
- Improving engine performance.

API CF, Waukesha Cogeneration, Dresser Rand Cat II
77 recommends this product where following specifications are required: MAN 3271-4, GE Jenbacher for Fuel Class B (Biogas) and C, (Landfill gas), Type 2 and 3 all engines; Type 4, Version A, B; Type 6 up to version E

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density@15°C	kg/m3	ASTM D4052	893
Kin. Viscosity @40°C	mm2/s	ASTM D7042	143
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	97
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18
Total Base Number	mgKOH/g	ASTM D2896	8.6
Sulpated Ash	%Wt	ASTM D874	0.9

GAS ENGINE OIL LA 40

Product Code 44510

GAS ENGINE OIL LA 40 is a low ash high performance Heavy Duty Gas Engine Oil specially designed for use in stationary gas engines which run on natural and/or biogas and operate under severe conditions and high temperatures.

GAS ENGINE OIL LA 40 is based on a high quality hydro processed base oils in combination with a special selected additive package to obtain the following properties:

- Excellent thermal-, nitration-, and oxidation stability.
- Reducing of combustion chamber deposits.
- Minimize ring scuffing.
- Protect against corrosive wear.
- Improving engine performance.

Approved: MWM
Exceeds: GE Jenbacher for Fuel Class A (Natural gas) and B (Biogas), Type 2 and 3 all engines; Type 4, Version A, B; Type 6 up to version E, API CF, Waukesha Cogeneration, Dresser Rand Cat II

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	40
Density @15°C	kg/m3	ASTM D4052	877
Kin. Viscosity @40°C	mm2/s	ASTM D7042	126
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	110
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	5.6
Sulpated Ash	%Wt	ASTM D874	0.49

GAS ENGINE OIL ZA 15W-40

Product Code 44560

GAS ENGINE OIL ZA 15W-40 is a premium quality heavy-duty ashless natural gas engine oil specially developed for lubrication of high performance, turbo-charged, 2-stroke gas engines requiring “ashless” oil.

GAS ENGINE OIL ZA 15W-40 is based on a high quality virgin mineral base oils in combination with a special selected additive package to obtain the following properties:

- Excellent thermal-, nitration-, and oxidation stability.
- Very effective in controlling carbon and ash deposits in combustion chamber and on exhaust and intake ports.
- Minimize ring scuffing.
- Controls carbon and ash deposits minimizing port plugging in two cycle engines and keeps spark plugs clean.

Ajax, Superior, Cooper, Clark, Dresser-Rand

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J300	15W-40
Density@15°C	kg/m3	ASTM D4052	887
Kin. Viscosity @40°C	mm2/s	ASTM D7042	96
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.8
Viscosity Index		ASTM D2270	145
Flash Point COC	°C	ASTM D92	>240
Pour Point	°C	ASTM D7346	-24
Total Base Number	mgKOH/g	ASTM D2896	1.2
Sulpated Ash	%Wt	ASTM D874	<0.01

PSF SYNTH

Product Code 43190

PSF SYNTH is a fully synthetic, high-performance central hydraulic system oil. **PSF SYNTH** is based on advanced technology, which shows improved performance regarding viscosity temperature characteristics and simultaneously optimized shear stability. This fully synthetic power steering fluid is NOT suitable for Honda and Acura vehicles. **PSF SYNTH** is developed for highly stressed centralized hydraulic systems, power steering systems and shock absorbers which can reach permanent oil temperatures up to approximately 140°C.
PSF SYNTH is based on high quality synthetic base oil in combination with an unique additive package to ensure the following properties:

- Optimized temperature stability.
- High oxidation stability.
- Proven OEM technology.
- Excellent cold temperatures properties.
- High shear stability.
- Improvement of efficiency possible.

Chrysler MS-1872, Chrysler MS-5931, Chrysler MS-9602, Chrysler MS-11655, Ford M2C195-A, Ford M2C204-A, GM P/N 88901975, GM P/N 89021184, GM 9985010 P/N 1052884, ATF+4, GM IID/III/VI, GM 9985835 P/N 12345866, Hyundai/ Kia PSF-3, Hyundai/ Kia PSF-4, MB 236.3, MB 345.0, Mitsubishi PS Fluid, Mitsubishi diamond SPIII, Nissan PSF-II, CHF 7.1/11S/202, Saab P/N (45) 30 09 800, Saab P/N 30 32 380, Subaru P/N K0209A0080, Toyota PSF-EH P/N 008886-01, VW G002000, VW G002012, VOLVO 1161529

Property	Unit	Test Method	Typical Value
Color			Green
Density@15°C	kg/m3	ASTM D4052	838
Kin. Viscosity @40°C	mm2/s	ASTM D7042	26.2
Kin. Viscosity @100°C	mm2/s	ASTM D7042	6.2
Viscosity Index		ASTM D2270	199
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-72

FLUSHING OIL 32

Product Code 45120

FLUSHING OIL 32 is a high quality effective oil to flush gasoline- and diesel engines. FLUSHING OIL is very effective in between switching from a low quality oil to a higher quality oil. It is also suitable to clean out the used engine oil if it is contaminated with moisture, coolant, fuel and/or engine sludge.

FLUSHING OIL 32 is based on high quality base oil, in combination with special additive to obtain the following properties.

- High dispersant and detergent properties.
- Good resistance against corrosion.
- Mixable with mineral and synthetic multigrade engine oils.
- Good emulsification and neutralization properties.
- Good antiwear, anticorrosion and antifoam properties.

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	ISO 32
Density@15°C	kg/m3	ASTM D4052	864
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.8
Viscosity Index		ASTM D2270	32
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D97	-21
Total Base Number	mgKOH/g	ASTM D2896	2.4

SYNTHETIC HEAT TRANSFER OIL25

Product Code 43895

SYNTHETIC HEAT TRANSFER OIL 25 is a high quality synthetic heat transfer oil intended for use in closed indirect heating systems with expansion tanks temperatures up to 350°C.

SYNTHETIC HEAT TRANSFER OIL 25 is based on high quality synthetic base oil to ensure the following properties:

- Excellent thermal and oxidation stability.
- Minimizes deposit formation and viscosity increase.
- Extended service life and reduced downtime.
- Exceptional resistance to thermal cracking and decomposition enables this oil to perform well up to a maximum bulk oil temperature of 350°C with minimal interference with heat transfer capability.
- High specific heat and thermal conductivity of this oil provides more rapid heat dissipation.
- Superior low temperature fluidity ensures quick circulation at start-up and reduced risk of local over-heating.
- Non corrosive to aluminium, steel, copper, brass or bronze.
- Non-toxicity of this oil provides easy disposal of used oil.

Property	Unit	Typical Value
Density at 15°C	kg/m3	838
Kinematic Viscosity at 40°C	mm2/s	23.2
Kinematic Viscosity at 100°C	mm2/s	4.8
Viscosity index		131
Pour Point	°C	-18
Flash Point COC	°C	220
Total Acid Number	mg KOH/g	0,1
Spec. Heat at 300°C	KJ/kg*K	3,051
Spec. Heat at 200°C	KJ/kg*K	2,757
Spec. Heat at 100°C	KJ/kg*K	2,343
Thermal conductivity at 150°C	W/m*K	0,1099

DEF BLUE

Product Code 44850

DEF BLUE is an extremely pure solution, especially developed for the diesel engines with a SCR system. It is injected into exhaust gas to reduce harmful NOx emissions and exceeds the Euro 5 and Euro 6 emission standards.

DEF BLUE is formulated with demineralized water in combination with a special additive and is produced according to ISO standards, which insures the quality of this product.

DEF BLUE exceeds the following performance criteria:

Property	Unit	Test Method	Typical Value
Color			Colorless
Density@20°C	kg/m3		1090
UREA Content	%Wt		31.8 – 33.2
pH (10% HS-Solution), max			10
Refractive Index @20°C			1.3814 – 1.3843
Alkalinity as NH3, max	%Wt		0.2
Freezing point	°C		-11
Boiling Point	°C		100
Insoluble matter, max	mg/kg		20

THERM OIL 32

Product Code 43890

THERM OIL 32 is a premium quality heat transfer oil intended for use in closed indirect heating systems with expansion tanks temperatures up to 315°C.and for open heating systems provided that the oil temperature does not exceed 180°C

THERM OIL 32 is based on high quality mineral base oil to ensure the following properties:

- Excellent thermal and oxidation stability.
- Minimizes deposit formation and viscosity increase.
- Extended service life and reduced downtime.
- Exceptional resistance to thermal cracking and decomposition enables this oil to perform well up to a maximum bulk oil temperature of 315°C with minimal interference with heat transfer capability.
- High specific heat and thermal conductivity of this oil provides more rapid heat dissipation.
- Superior low temperature fluidity ensures quick circulation at start-up and reduced risk of local over-heating.
- Non corrosive to aluminium, steel, copper, brass or bronze.
- Non-toxicity of this oil provides easy disposal of used oil.

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	32
Density@15°C	kg/m3	ASTM D4052	868
Kin. Viscosity @100°C	mm2/s	ASTM D7042	5.3
Viscosity Index		ASTM D2270	101
Flash Point COC	°C	ASTM D92	230
Fire Point	°C	ISO 2592	250
Pour Point	°C	ASTM D7346	-15
Initial Boiling Point	°C	ISO 3771	>355
Auto Ignition Temperature	°C	DIN 51794	>360
Total Acid Number	mgKOH/g	ASTM D974	< 0.05

FORM OIL 10

Product Code 43900

FORM OIL 10 is a concrete mould oil for the construction of houses, buildings, subways and bridges.

FORM OIL 10 is based on high-grade refined base oils containing non-toxic surface-active compounds and together with the bleeding water from the concrete, it provides a low interfacial surface tension, which gives a smooth surface finish.

FORM OIL 10 is ready to use, and should be applied as thin as possible on the surface.

FORM OIL 10 enables easy removal from the moulds without damaging the concrete and gives a good rust protection of the steel moulds under normal condition. Has good release characteristics and gives no discolouring of the concrete-surface and can be used where limited heated moulds are adapted.

Appliance in a thin layer, by spraying, swabbing or brushing.
Over spill must be removed.

Property	Unit	Test Method	Typical Value
ISO VG Grade			10
Density@15°C	kg/m3	ASTM D4052	845
Kin. Viscosity @40°C	mm2/s	ASTM D7042	10.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	2.8
Viscosity Index		ASTM D2270	104
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-24

FORM OIL 68

Product Code 44700

FORM OIL 68 is a concrete mould oil for the construction of houses, buildings, subways and bridges.

FORM OIL 68 is based on high-grade refined base oils containing non-toxic surface-active compounds and together with the bleeding water from the concrete, it provides a low interfacial surface tension, which gives a smooth surface finish.

FORM OIL 68 is ready to use, and should be applied as thin as possible on the surface.

FORM OIL 68 enables easy removal from the moulds without damaging the concrete and gives a good rust protection of the steel moulds under normal condition. Has good release characteristics and gives no discolouring of the concrete-surface and can be used where limited heated moulds are adapted.

Appliance in a thin layer, by spraying, swabbing or brushing.
Over spill must be removed.

Property	Unit	Test Method	Typical Value
ISO VG Grade			68
Density@15°C	kg/m3	ASTM D4052	883
Kin. Viscosity @40°C	mm2/s	ASTM D7042	66.1
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.6
Viscosity Index		ASTM D2270	101
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-12

FORM OIL 135

Product Code 44030

FORM OIL 135 is a concrete mould oil for the construction of houses, buildings, subways and bridges.

FORM OIL 135 is based on high-grade refined base oils containing non-toxic surface-active compounds and together with the bleeding water from the concrete, it provides a low interfacial surface tension, which gives a smooth surface finish.

FORM OIL 135 is ready to use, and should be applied as thin as possible on the surface.

FORM OIL 135 enables easy removal from the moulds without damaging the concrete and gives a good rust protection of the steel moulds under normal condition. Has good release characteristics and gives no discolouring of the concrete-surface and can be used where limited heated moulds are adapted.

Appliance in a thin layer, by spraying, swabbing or brushing.
Over spill must be removed.

Property	Unit	Test Method	Typical Value
ISO VG Grade			135
Density@15°C	kg/m3	ASTM D4052	892
Kin. Viscosity @40°C	mm2/s	ASTM D7042	122.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.1
Viscosity Index		ASTM D2270	100
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-9

FORM OIL 150

Product Code 43910

FORM OIL 150 is a concrete mould oil for the construction of houses, buildings, subways and bridges.

FORM OIL 150 is based on high-grade refined base oils containing non-toxic surface-active compounds and together with the bleeding water from the concrete, it provides a low interfacial surface tension, which gives a smooth surface finish.

FORM OIL 150 is ready to use, and should be applied as thin as possible on the surface.

FORM OIL 150 enables easy removal from the moulds without damaging the concrete and gives a good rust protection of the steel moulds under normal condition. Has good release characteristics and gives no discolouring of the concrete-surface and can be used where limited heated moulds are adapted.

Appliance in a thin layer, by spraying, swabbing or brushing.
Over spill must be removed.

Property	Unit	Test Method	Typical Value
ISO VG Grade			150
Density@15°C	kg/m3	ASTM D4052	893
Kin. Viscosity @40°C	mm2/s	ASTM D7042	142.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	97
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-12

VACUUMPUMP OIL 100

Product Code 44990

VACUUMPUMP OIL 100 is a premium quality vacuum pump oil special develop to lubricate the gearboxes of vacuum pumps.

VACUUMPUMP OIL 100 is based on high quality mineral base oil with a special additive technology to ensure the following properties:

- an excellent protection against wear.
- a very good activity against rust and corrosion.
- excellent stability against oxidation.
- very good deaerating and foam-suppressing properties.
- very good demulsification properties.
- good compatibility with seals and gaskets made from synthetic material.
- a low pour point.

DBL 6713 HLPD

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	100
Density@15°C	kg/m3	ASTM D4052	888
Kin. Viscosity @40°C	mm2/s	ASTM D7042	94.8
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.5
Viscosity Index		ASTM D2270	96
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-18
Total Acid Number	mg KOH/g	ASTM D974	< 0.25
FZG Fail Load		DIN 51354-2	11

HANDCLEANER ORANGE

Product Code 44940

HANDCLEANER ORANGE is an very effective solvent-free hand cleaning paste. Made with natural Citrus oils, Aloe Vera extracts, Jojoba Esters and an environmentally friendly abrasive. **HANDCLEANER ORANGE** is extremely suitable for removing stubborn soiling such as lubricants and sealants.
HANDCLEANER ORANGE is a powerful workshop hand cleaning gel for removing industrial soiling and is formulated with a pleasant fresh fragrance. **HANDCLEANER ORANGE** is a classic hand cleaning paste for workshops and factories.
Directions for use: Rub a small amount of **HAND CLEANER ORANGE** on the hands until dirt loosens, preferably with the use of a dispenser pump. Rinse off with water or wipe off with a towel. Dry hands thoroughly.
Storage: Keep the package of **HAND CLEANER ORANGE** well closed and store in a cool but frost-free place.

ENVIRONMENT & SAFETY:
Complies with EEC directive 73/404/EEC on biodegradation for surfactants. In addition, the surfactants in the products comply with the criteria for biodegradation set out in Directive 648/2004/EC concerning detergents. Complies with European regulations on cosmetics (76/768/EU).

Property	Unit	Test Method	Typical Value
Color		Visual	Orange
pH			6.5
Skin care			Aloe Vera Extracts, Jojoba Oil, Glycerine
Cleaning			Surfactants
Abrasive			Natural granules

HANDCLEANER YELLOW

Product Code 44820

HANDCLEANER YELLOW is a premium quality hand cleaning paste based on Orange Terpenes, Aloe Vera extracts, Jojoba Esters and natural abrasives. HAND CLEANER YELLOW is specially developed for removing extremely stubborn industrial contamination. It's unique product formulation easily removes contaminations such as lubricants, grease, paint, varnish, ink, tar, bitumen and adhesives.
HAND CLEANER YELLOW cleans, moisturizes, protects and is dermatologically tested, pH-neutral and biodegradable.
HANDCLEANER YELLOW has fresh citrus scent from natural ingredients and is extreme effective due to skin-friendly abrasive and natural ingredients.
Directions for use: Rub a small amount of **HAND CLEANER YELLOW** on the hands until dirt loosens, preferably with the use of a dispenser pump. Rinse off with water or wipe off with a towel. Dry hands thoroughly.
Storage: Keep the package of **HAND CLEANER YELLOW** well closed and store in a cool but frost-free place.

ENVIRONMENT & SAFETY:
Complies with EEC directive 73/404/EEC on biodegradation for surfactants. In addition, the surfactants in the products comply with the criteria for biodegradation set out in Directive 648/2004/EC concerning detergents. Complies with European regulations on cosmetics (76/768/EU).

Property	Unit	Test Method	Typical Value
Color		Visual	Yellow
pH			9
Skin care			Aloe Vera Extracts, Jojoba Oil
Cleaning			Surfactants
Abrasive			Natural granules

HANDCLEANER SPECIAL

Product Code 44830

HANDCLEANER SPECIAL is an very effective solvent-free hand cleaning paste. Made with Aloe Vera extracts, Jojoba Esters and an environmentally friendly abrasive. **HAND CLEANER SPECIAL** is specially developed for removing extremely stubborn industrial contamination. It's unique product formulation easily removes contaminations such as lubricants, grease, paint, varnish, ink, tar, bitumen and adhesives.
HAND CLEANER SPECIAL cleans, moisturizes, protects and is dermatologically tested, pH-neutral and biodegradable.
HANDCLEANER SPECIAL moisturizes the skin and keeps hands soft and free from irritation.
Directions for use: Rub a small amount of **HAND CLEANER SPECIAL** on the hands until dirt loosens, preferably with the use of a dispenser pump. Rinse off with water or wipe off with a towel. Dry hands thoroughly.
Storage: Keep the package of **HAND CLEANER SPECIAL** well closed and store in a cool but frost-free place.

ENVIRONMENT & SAFETY:
Complies with EEC directive 73/404/EEC on biodegradation for surfactants. In addition, the surfactants in the products comply with the criteria for biodegradation set out in Directive 648/2004/EC concerning detergents. Complies with European regulations on cosmetics (76/768/EU).

Property	Unit	Test Method	Typical Value
Color		Visual	Beige
pH			9
Skin care			Aloe Vera Extracts, Jojoba Oil, Lanolin Derivatives
Cleaning			Surfactants
Abrasive			Natural granules

WALL BRACKET FOR HANDCLEANER

Product Code H1001

DISPOSABLE DISPENSER PUMP

Product Code H1016

DISPENSER PUMP

Product Code H1022

POLO SHIRT

Product Code MERCHA 77011 / 77012 / 77013

This high quality polo shirt with embroidered logo is available in L / XL / XXL
Made of 100% cotton

RACE CAP

Product Code MERCHA 77002

This a high quality Racing Cap fits every number One.

MONEY-DRUM

Product Code MERCHA 77001

Save money with this 77 lubricants money-drum.

PRODUCT DISPLAY

Product Code MERCHA 77005

This high quality polo shirt with embroidered logo is available in L / XL / XXL
Made of 100% cotton

PRODUCT GUIDE

Product Code MERCHA 77004

77Lubricants Product Guide. Delivered in a box of 100 pieces.

FLAG

Product Code MERCHA 77003

77Lubricants flag. Dimensions: 150x100cm (width x height)

OVERALL

Product Code

DRUM SLEEVE

Product Code

LET THE LIONS ROAR

Stichting Leeuw is a rescue facility for big cats, which is situated on Landgoed Hoenderdaell. In April 2012 the first big cats were moved to Stichting Leeuw. The foundation aims to shelter big cats in need. If at all possible, shelter will be temporary and will prepare the animals for a return to the wild. The rescued cats come for example from private parties or from circuses, which as a result of new legislation in an increasing number of countries, are no longer allowed wild animal acts. The owners look for a place where these lions and tigers can live in comfort for the rest of their lives. Stichting Leeuw provides such a place.

BACK TO THE ORIGINS

Stichting Leeuw strives to return the rescued animals, if at all possible, to their natural habitats. Because all animals at the foundation were kept in captivity their whole lives, they cannot survive in the wild. They are not used to natural enemies and have never had to hunt for their own food. It is possible, however, to relocate the animals to an enclosed natural reserve in their land of origin, where they can be closely observed.

Stichting Leeuw has established partnerships with big rescue organisations where the sheltered animals will go as soon as they are strong enough to live in their natural surroundings.

LEARN ABOUT THE FATE OF FELINE PREDATORS

One of the objectives of Stichting Leeuw is education. The foundation aims to make visitors aware of the ways in which feline predators all over the world are endangered, and show them how they can help determine their fate on a small scale and a larger scale.

So what can we do to prevent the abuse of lions, tigers and other feline predators? Sometimes apparently harmless activities can have a major effect on an animal's well-being. For instance posing for a photograph with a cute small cub. These cubs are taken away from their mother at a very young age, to be photographed with

STICHTING LEEUW

tourists. As long as tourists are willing to pay to have their picture taken with a cub, this form of animal abuse will continue to happen.

LEARN FROM THE ANIMALS

Stichting Leeuw aims to provide a comfortable life to all feline predators that arrive in the rescue facility. All animals have different requirements. That is why the foundation spends a lot of time on behavioural research.

In the interest of the animals, Stichting Leeuw tries to imitate the natural surroundings of the felines as closely as possible, for example by using a hunting simulator and natural fencing. The effects of these on the animals is being studied. The results of these studies will be used to improve the quality of life of the rescued animals wherever possible. The research on the well-being of the animals doesn't stop when they are returned to their natural habitat.

SAVE ENDANGERED BIG CATS

To ensure the survival of lions and tigers in the wild, Stichting Leeuw is happy to participate in breeding programmes. The one and only purpose of breeding should be to return more animals to the wild, and not to have more animals in zoos.

77 B.V. supports this initiative, buy 77 Lubricants products and let the lions roar!

HUNTING SIMULATOR UNIQUE IN THE WORLD

Since September 2015 Stichting Leeuw has a unique hunting simulator at its disposal. It took three years to get the system up and running smoothly and it is the first hunting simulator in the world. The simulator consists of a system of pulleys, which allows an operator to manoeuvre a piece of meat randomly through the big hall. The foundation uses the simulator to stimulate the hunting instincts and techniques of the big cats.


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