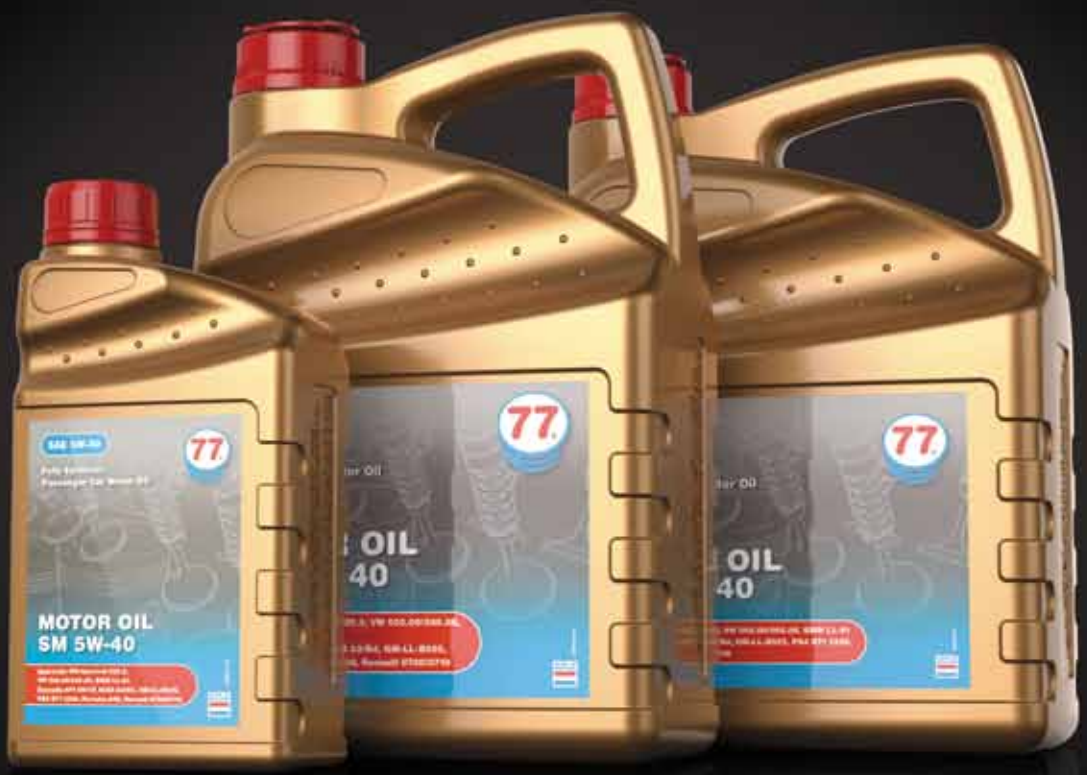
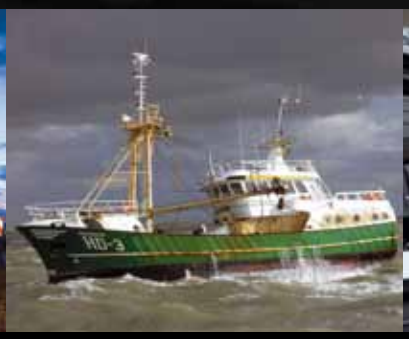
77 lubricants

Product Guide





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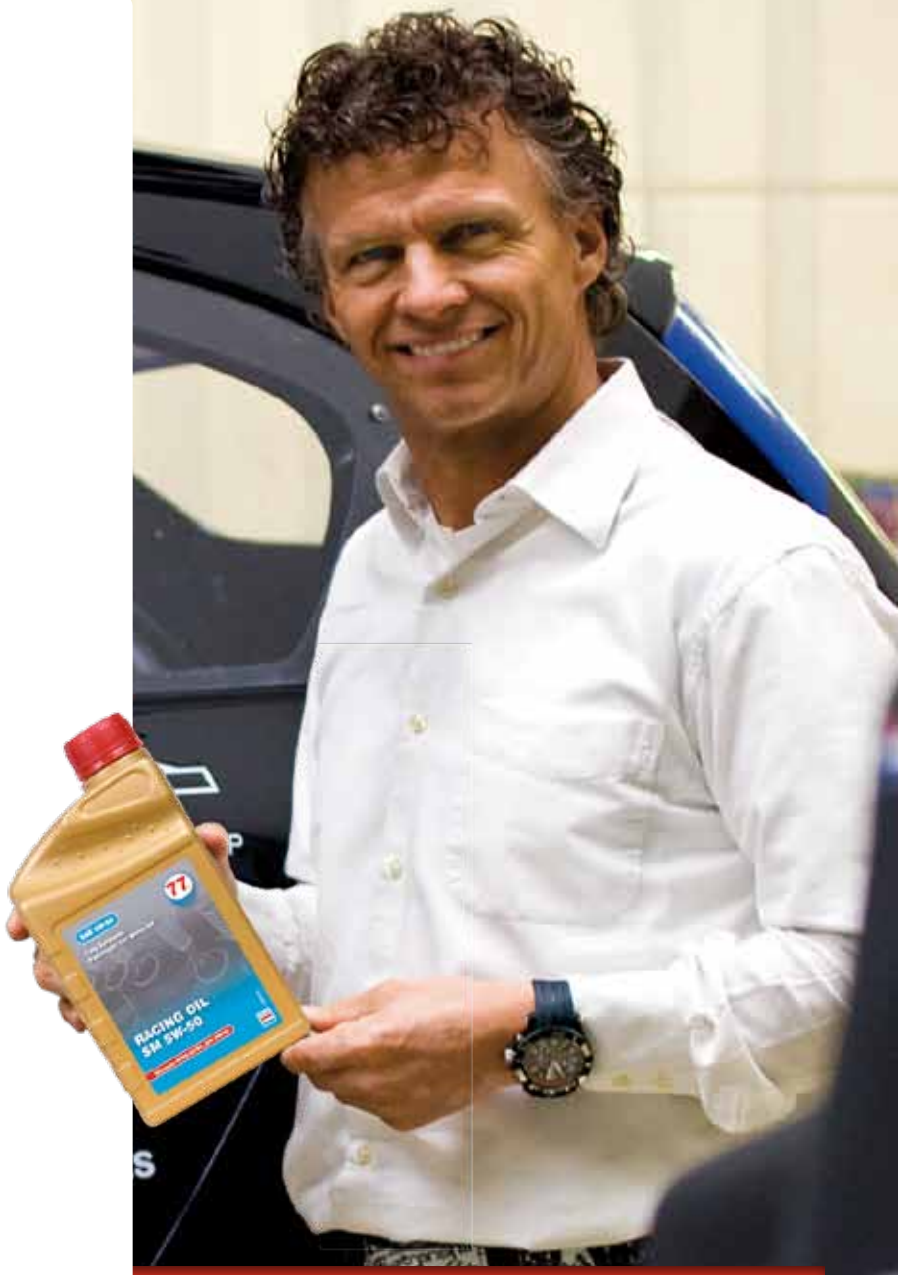
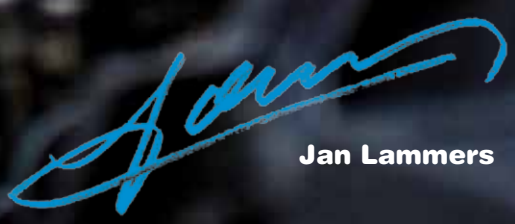


The name of Jan Lammers should be very well-known to most motor racing followers. He is after all, one of the most versatile racers of the modern era, having driven everything from sports cars, trucks (in Paris - Dakar) and Indy cars, most forms of single seaters, touring cars and even rally machines. 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

Introduction

77 Lubricants is one of the largest independent lubricating oil brands in Europe. 77 Lubricants produces and markets a comprehensive selection of high quality lubricants and specialties which find their way 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, to obtain lubricants meeting the latest standards of the Original Equipment Manufacturers(OEM's) and International Standardization Committees.

All 77 Lubricants products are produced in one of the largest and most sophisticated lubricant blending plants in the Netherlands. This blending plant has an annual production capacity of 130.000 Metric Tons of finished lubricant product, a base oil storage capacity of 17 million litres, more than 60 tanks for the storage of finished products and several warehouses for storing packaged products.

The ISO 2001 certified blending plant has a fully equipped laboratory at its disposal which guarantees 100 percent product compliance, and is furthermore capable of offering an "oils in service" analyses program. 77 Lubricants prides itself as an International Brand offering a sophisticated product line of the highest quality available in Europe. The best possible service of 77's sales- and technical staff facilitates the marketing of the products.

All 77 Lubricant products are sold by local distributors, who are fully backed up by the production facility in the Netherlands. This ensures the best possible service for the end-users of our products.

Commitment, personal and individual support towards our partners and customers is our second nature. We act quickly and reliable and look forward to answer your questions.

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 2001, 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 SL 10W-60

Productcode 4201

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

RACING OIL SL 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.

Exceeds:
API SL ACEA A3/B4 MB 229.1 VW 502.00/505.00

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-60
Density@15°C	kg/m3	ASTM D4052	851
Kin. Viscosity @40°C	mm2/s	ASTM D7042	173
Kin. Viscosity @100°C	mm2/s	ASTM D7042	24
Viscosity Index		ASTM D2270	170
Viscosity CCS @-20°C, max	cP	ASTM D2270	7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	11.4
Sulpated Ash	%Wt	ASTM D874	1.3

RACING OIL SM 5W-50

Productcode 4202

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

RACING OIL SM 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..

Exceeds: API SM/CF ACEA A3/B4 MB 229.1 VW 502.00/505.00

Properties	Unit Test	Method	Typical Value
SAE Grade		SAE J3000	5W-50
Density@15°C	kg/m3	ASTM D4052	850
Kin. Viscosity @40°C	mm2/s	ASTM D7042	109
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18
Viscosity Index		ASTM D2270	175
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-45
Total Base Number	mgKOH/g	ASTM D2896	11.4
Sulpated Ash	%Wt	ASTM D874	1.3

MOTOR OIL SM 5W-40

Productcode 4204

MOTOR OIL SM 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 Particle Filter (DPF).

MOTOR OIL SM 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, BMW LL-01, VW 502.00 / 505.00
Exceeds: API SN/CF, ACEA A3/B4, Renault RN 0700/0710, GM-LL-B025, PSA B 71 2296, Porsche A40

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-40
Density@15°C	kg/m3	ASTM D4052	855
Kin. Viscosity @40°C	mm2/s	ASTM D7042	86
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	171
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	9.6
Sulpated Ash	%Wt	ASTM D874	1.16

MOTOR OIL SN 5W-20

Productcode 4205

MOTOR OIL SN 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 SN 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.

Exceeds: API SN/SN-RC, ILSAC GF-5, GM Dexos 1, GM 4718M, MS 6395

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-20
Density@15°C	kg/m3	ASTM D4052	851
Kin. Viscosity @40°C	mm2/s	ASTM D7042	48
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.7
Viscosity Index		ASTM D2270	165
Viscosity CCS @-30°C, max	cP	ASTM D2270	<4500
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	7.8
Sulpated Ash	%Wt	ASTM D874	0.86

MOTOR OIL SL 10W-40

Productcode 4206

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 Particle 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, VW 501.01/505.00
Exceeds: ACEA A3/B3, API SL/CF, RN 0700

Properties	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	92
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.2
Viscosity Index		ASTM D2270	158
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	7.9
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR OIL SL 10W-50

Productcode 4207

MOTOR OIL SL 10W-50 is an universal 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 Particle Filter (DPF).

MOTOR Oil SL 10W-50 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.
- Good thermal- and oxidation stability.
- Excellent resistance against foaming, corrosion and wear.
- High dispersancy and detergency level.
- High viscosity index.

Exceeds: MB 229.1, ACEA A3/B4, API SL/CF, VW 505.00

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-50
Density@15°C	kg/m3	ASTM D4052	871
Kin. Viscosity @40°C	mm2/s	ASTM D7042	135
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.0
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	8.9
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR OIL SL 15W-40

Productcode 4208

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 en corrosion.
- Low temperature properties, to ensure a smooth cold start.

Exceeds: ACEA A3/B3, MB 229.1, VW 505.00, API SL/CF

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	15W-40
Density@15°C	kg/m3	ASTM D4052	882
Kin. Viscosity @40°C	mm2/s	ASTM D7042	105
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	136
Viscosity CCS @-20°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	7.9
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR OIL SL/CF 10W-40

Productcode 4209

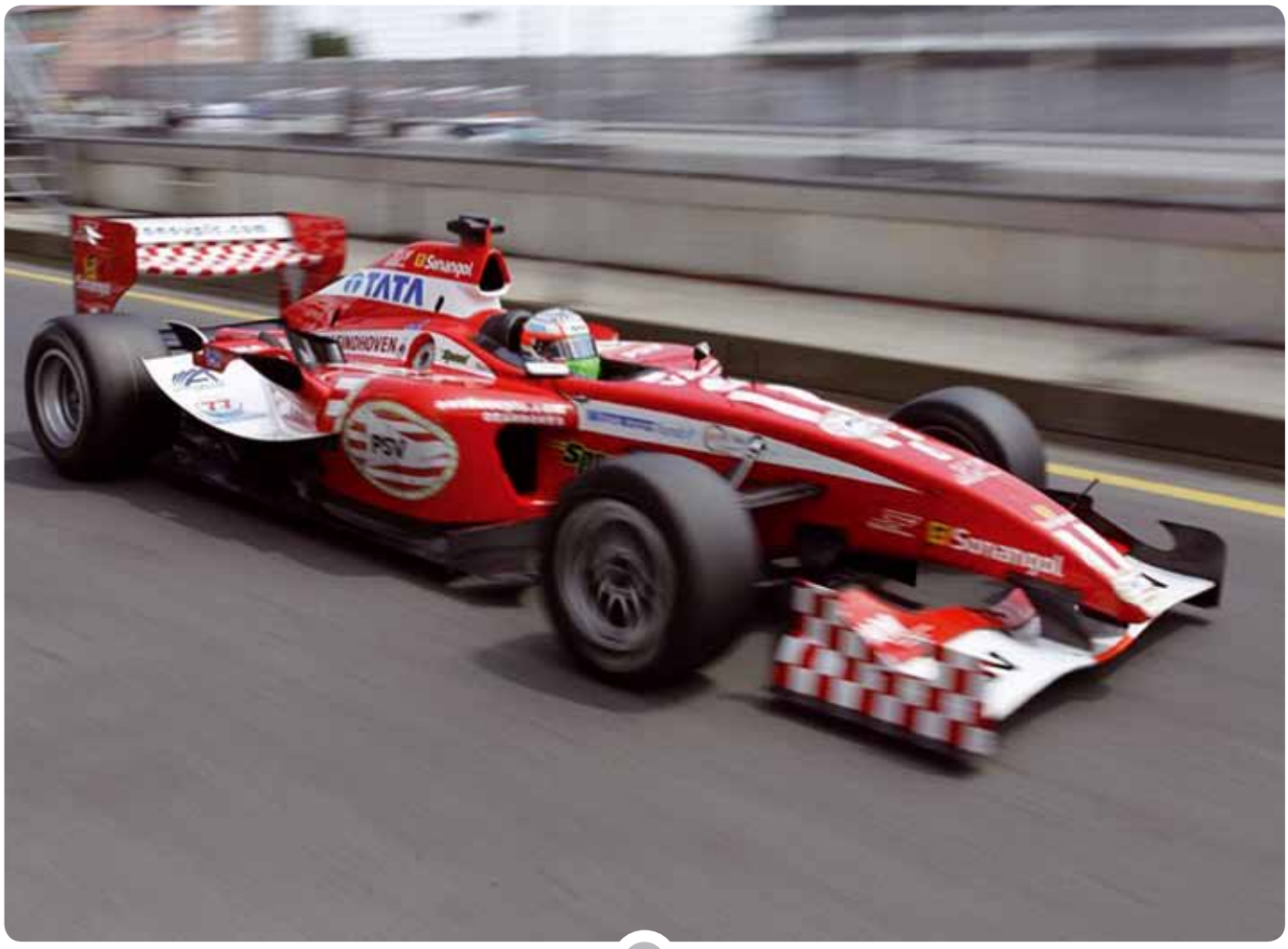
MOTOR OIL SL/CF 10W-40 is an universal high performance semi synthetic oil for use in gasoline- and diesel engines of passenger car and light vans with or without turbocharger. This product is unsuitable for diesel engines equipped with a Diesel Particle Filter (DPF).

MOTOR OIL SL/CF 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.

Exceeds: ACEA A3/B4, API SL/CF

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-40
Density@15°C	kg/m3	ASTM D4052	863
Kin. Viscosity @40°C	mm2/s	ASTM D7042	96
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.5
Viscosity Index		ASTM D2270	152
Viscosity CCS @-25°C, max	cP	ASTM D2270	7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	6.4
Sulpated Ash	%Wt	ASTM D874	0.95



MOTOR OIL SL 20W-50

Productcode 4210

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 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.

Exceeds: ACEA A3/B3, MB 229.1, VW 505.00, API SL/CF

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	20W-50
Density@15°C	kg/m3	ASTM D4052	890
Kin. Viscosity @40°C	mm2/s	ASTM D7042	159
Kin. Viscosity @100°C	mm2/s	ASTM D7042	18.0
Viscosity Index		ASTM D2270	125
Viscosity CCS @-15°C, max	cP	ASTM D2270	9500
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-30
Total Base Number	mgKOH/g	ASTM D2896	8.2
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR OIL GMX 5W-30

Productcode 4211

MOTOR OIL GMX 5W-30 is a fuel conserving high performance MID SAPS engine oil based on 100% synthetic technology for gasoline- and diesel engines of passenger cars and light vans specially designed for the latest generation Opel/GM vehicles which require GM Dexos 2 and is backwards compatible to engines which require GMLL-A-025/B-025 type engine oils.

MOTOR OIL GMX 5W-30 is formulated with high quality synthetic base oil 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.
- Fuel saving properties due to low friction properties
- Very good antifoam, antiwear and anti-corrosion properties.
- MID SAPS technology, suitable for engines equipped with exhaust gas after treatment like DPF
- Long oil change interval possible.

Exceeds: GM Dexos 2, API SN/CF, ACEA A3/B4, C3, MB 229.51 BMW LL-04, VW 502.00/505.00, GM-LL-A025/B-025

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/m3	ASTM D4052	854
Kin. Viscosity @40°C	mm2/s	ASTM D7042	72
Kin. Viscosity @100°C	mm2/s	ASTM D7042	12.1
Viscosity Index		ASTM D2270	165
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	7.5
Sulpated Ash	%Wt	ASTM D874	0.80

MOTOR OIL SF 15W-40

Productcode 4212

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 Particle 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.

Exceeds: API SF/CD

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	15W-40
Density@15°C	kg/m3	ASTM D4052	879
Kin. Viscosity @40°C	mm2/s	ASTM D7042	107
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.1
Viscosity Index		ASTM D2270	135
Viscosity CCS @-20°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	5.2
Sulpated Ash	%Wt	ASTM D874	0.66

MOTOR OIL SF 20W-50

Productcode 4214

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 Particle 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.

Exceeds: API SF/CD

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	20W-50
Density@15°C	kg/m3	ASTM D4052	889
Kin. Viscosity @40°C	mm2/s	ASTM D7042	160
Kin. Viscosity @100°C	mm2/s	ASTM D7042	17.5
Viscosity Index		ASTM D2270	120
Viscosity CCS @-15°C, max	cP	ASTM D2270	9500
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-27
Total Base Number	mgKOH/g	ASTM D2896	5.2
Sulpated Ash	%Wt	ASTM D874	0.66

MOTOR OIL SN 0W-20

Productcode 4215

MOTOR OIL SN 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 SN 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 SN 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.

Exceeds: API SN/SN-RC, ILSAC GF-5, GM Dexos 1, GM 4718M

Property	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	0W-20
Density@15°C	kg/m3	ASTM D4052	848
Kin. Viscosity @40°C	mm2/s	ASTM D7042	44
Kin. Viscosity @100°C	mm2/s	ASTM D7042	8.5
Viscosity Index		ASTM D2270	175
Viscosity CCS @-35°C, max	cP	ASTM D2270	6200
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	7.8
Sulpated Ash	%Wt	ASTM D874	0.86

MOTOR OIL SL 0W-30

Productcode 4219

MOTOR OIL SL 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 Particle Filter (DPF)

MOTOR OIL SL 0W-30 is formulated with 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.

Exceeds: API SJ/CF, ACEA A3/B3, VW 502.00/505.00, VW 503.01 MB 229.3, BMW LL-98

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	0W-30
Density@15°C	kg/m3	ASTM D4052	854
Kin. Viscosity @40°C	mm2/s	ASTM D7042	65.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.9
Viscosity Index		ASTM D2270	177
Viscosity CCS @-35°C, max	cP	ASTM D2270	6200
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-51
Total Base Number	mgKOH/g	ASTM D2896	11.4
Sulpated Ash	%Wt	ASTM D874	1.51

MOTOR OIL FE 5W-30

Productcode 4220

MOTOR OIL FE 5W-30 is a high performance fuel conserving semi synthetic oil for gasoline- and diesel engines of passenger cars en light vans with or without turbocharger.

MOTOR OIL FE 5W-30 is specially designed for Ford Zetec engines and suitable for all other vehicles which require an ACEA A1/B1 performance specification. This product is unsuitable for diesel engines equipped with a Diesel Particle Filter (DPF).

MOTOR OIL FE 5W-30 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.
- Longer oil drain interval

Exceeds: API SL, ACEA A1/B1, Ford WSS M2C913A/B

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/mt3	ASTM D4052	856
Kin. Viscosity @40°C	mm2/s	ASTM D7042	69
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.6
Viscosity Index		ASTM D2270	175
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	8.8
Sulpated Ash	%Wt	ASTM D874	1.2

MOTOR OIL VX 5W-30

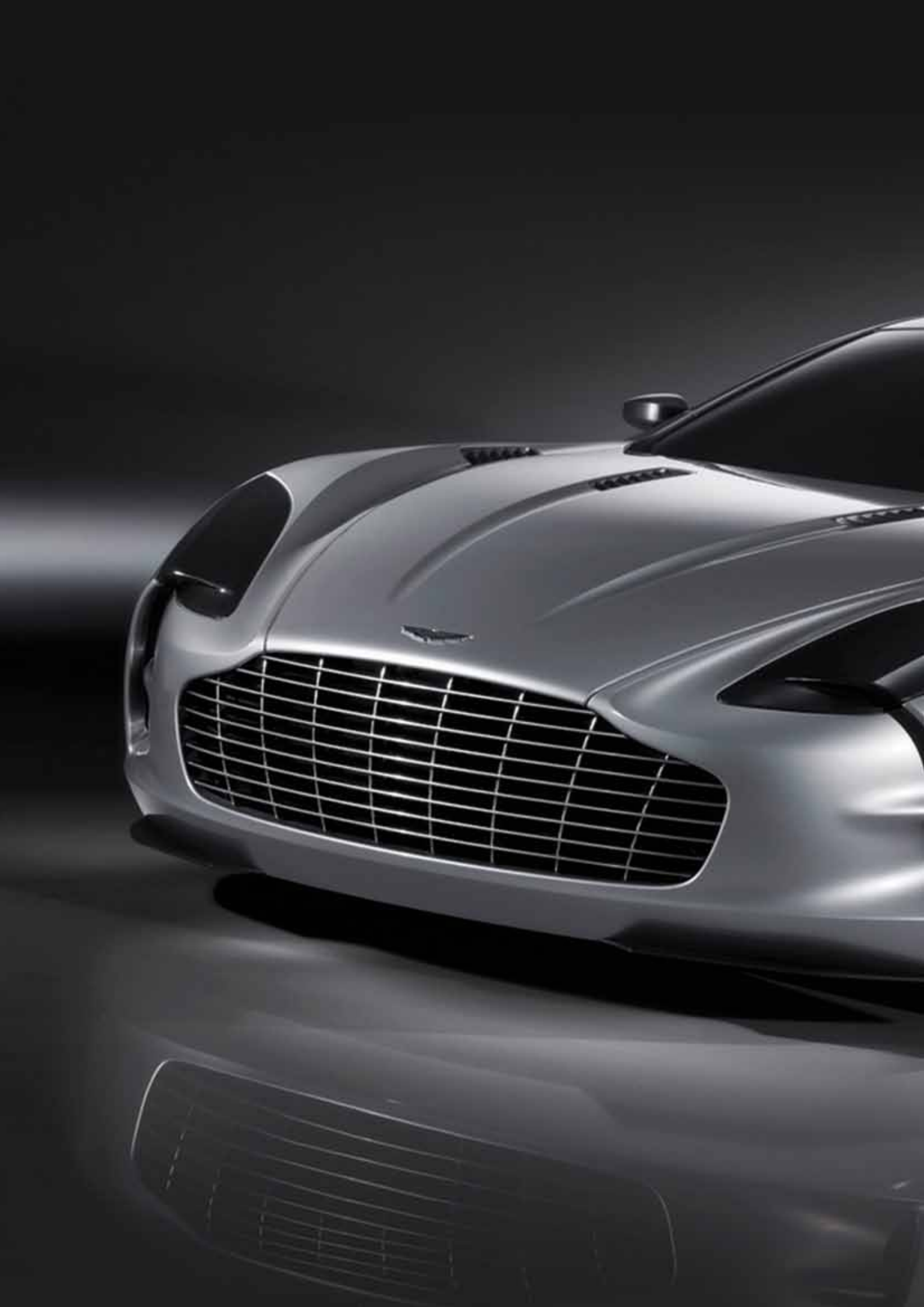
Productcode 4224

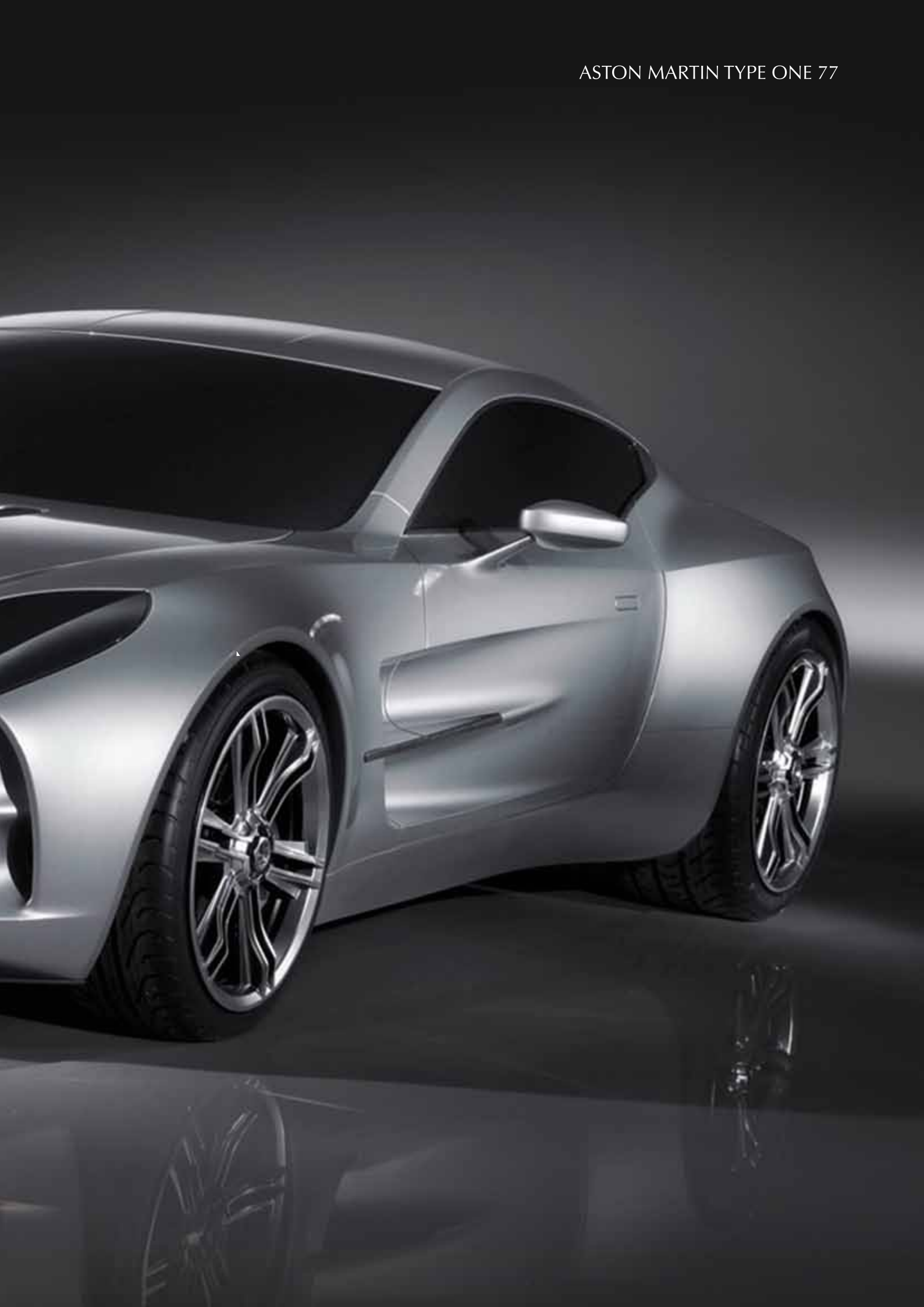
MOTOR OIL VX 5W-30 is a high performance fuel saving LOW SAPS long life oil based on 100% synthetic technology for use in gasoline- and diesel engines of passenger cars and light vans where a VAG norm 504.00/507.00 has been prescribed and also suitable for vehicles where MB 229.51 and BMW LL-04 are required. Remark: not suitable for R5- en V10 TDI engines and engines where VAG norm VW 506.01 is being advised.

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: BMW LL-04
Exceeds: ACEA A3/B4, C3, Porsche C30, VW 504 00/507 00, MB 229.51

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/m3	ASTM D4052	852
Kin. Viscosity @40°C	mm2/s	ASTM D7042	69
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.7
Viscosity Index		ASTM D2270	172
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	6,5
Sulpated Ash	%Wt	ASTM D874	0.7





MOTOR OIL LE 5W-30

Productcode 4225

MOTOR OIL LE 5W-30 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-30 is developed for use in engine 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 en 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, BMW LL-04, VW 502.00 / 505.00
Exceeds: API SN/CF, ACEA A3/B4, C3, Renault RN 0700/0710, VW 505.01

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	68
Kin. Viscosity @100°C	mm2/s	ASTM D7042	12,0
Viscosity Index		ASTM D2270	172
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-36
Total Base Number	mgKOH/g	ASTM D2896	7.6
Sulpated Ash	%Wt	ASTM D874	0.9

MOTOR OIL LE 5W-40

Productcode 4226

MOTOR OILI 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 en 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, BMW LL-04, VW 502.00 / 505.00, VW 505.01
Exceeds: API SN/CF, ACEA A3/B4, C3, Renault RN 0700/0710

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-40
Density@15°C	kg/m3	ASTM D4052	854
Kin. Viscosity @40°C	mm2/s	ASTM D7042	84.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	14.4
Viscosity Index		ASTM D2270	172
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	7.6
Sulpated Ash	%Wt	ASTM D874	0.8

MOTOR OIL FEC 5W-30

Productcode 4227

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 Particle Filter (DPF).

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.

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

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/m3	ASTM D4052	853
Kin. Viscosity @40°C	mm2/s	ASTM D7042	54.5
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.9
Viscosity Index		ASTM D2270	170
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
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	1.08

MOTOR OIL SL 10W-30

Productcode 4228

MOTOR OIL SL 10W-30 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 Particle Filter (DPF).

MOTOR Oil SL 10W-30 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.

Exceeds: API SL/CF, MB-Approval 229.1, VW 501.01 / 505.00, ACEA A3/B4

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-30
Density@15°C	kg/m3	ASTM D4052	868
Kin. Viscosity @40°C	mm2/s	ASTM D7042	77
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11,2
Viscosity Index		ASTM D2270	139
Viscosity CCS @-25°C, max	cP	ASTM D2270	7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	7.6
Sulpated Ash	%Wt	ASTM D874	0.95

MOTOR OIL HT 0W-40

Productcode 4229

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 oil 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.

Exceeds: GM Dexos 2, API SN/CF, ACEA A3/B4, C3, MB 229.51, BMW LL-04, VW 502.00/505.00, GM-LL-A025/B-025, Porsche, Renault RN 0700/0710

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	0W-40
Density@15°C	kg/m3	ASTM D4052	854
Kin. Viscosity @40°C	mm2/s	ASTM D7042	72
Kin. Viscosity @100°C	mm2/s	ASTM D7042	13.2
Viscosity Index		ASTM D2270	185
Viscosity CCS @-35°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	7.8
Sulpated Ash	%Wt	ASTM D874	0.80

MOTOR OIL XT 5W-30

Productcode 4231

MOTOR OIL XT 5W-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 and also 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.

Exceeds: ACEA A3/B4, C3, VW 504.00/507.00, MB 229.51, BMW LL-04

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/m3	ASTM D4052	855
Kin. Viscosity @40°C	mm2/s	ASTM D7042	58
Kin. Viscosity @100°C	mm2/s	ASTM D7042	10.6
Viscosity Index		ASTM D2270	174
Viscosity CCS @-30°C, max	cP	ASTM D2270	5500
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-42
Total Base Number	mgKOH/g	ASTM D2896	5.5
Sulpated Ash	%Wt	ASTM D874	0.7

MOTOR OIL ASP 5W-30

Productcode 4232

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 ACEA A5/B5, 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.

Exceeds: API SN/CF, ACEA A1/B1, A5/B5, ACEA C2, PSA B 71 2290, Renault RN 0700

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/m3	ASTM D4052	854
Kin. Viscosity @40°C	mm2/s	ASTM D7042	67
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.4
Viscosity Index		ASTM D2270	165
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D7346	-39
Total Base Number	mgKOH/g	ASTM D2896	7.5
Sulpated Ash	%Wt	ASTM D874	0.8

MOTOR OIL RN 5W-30

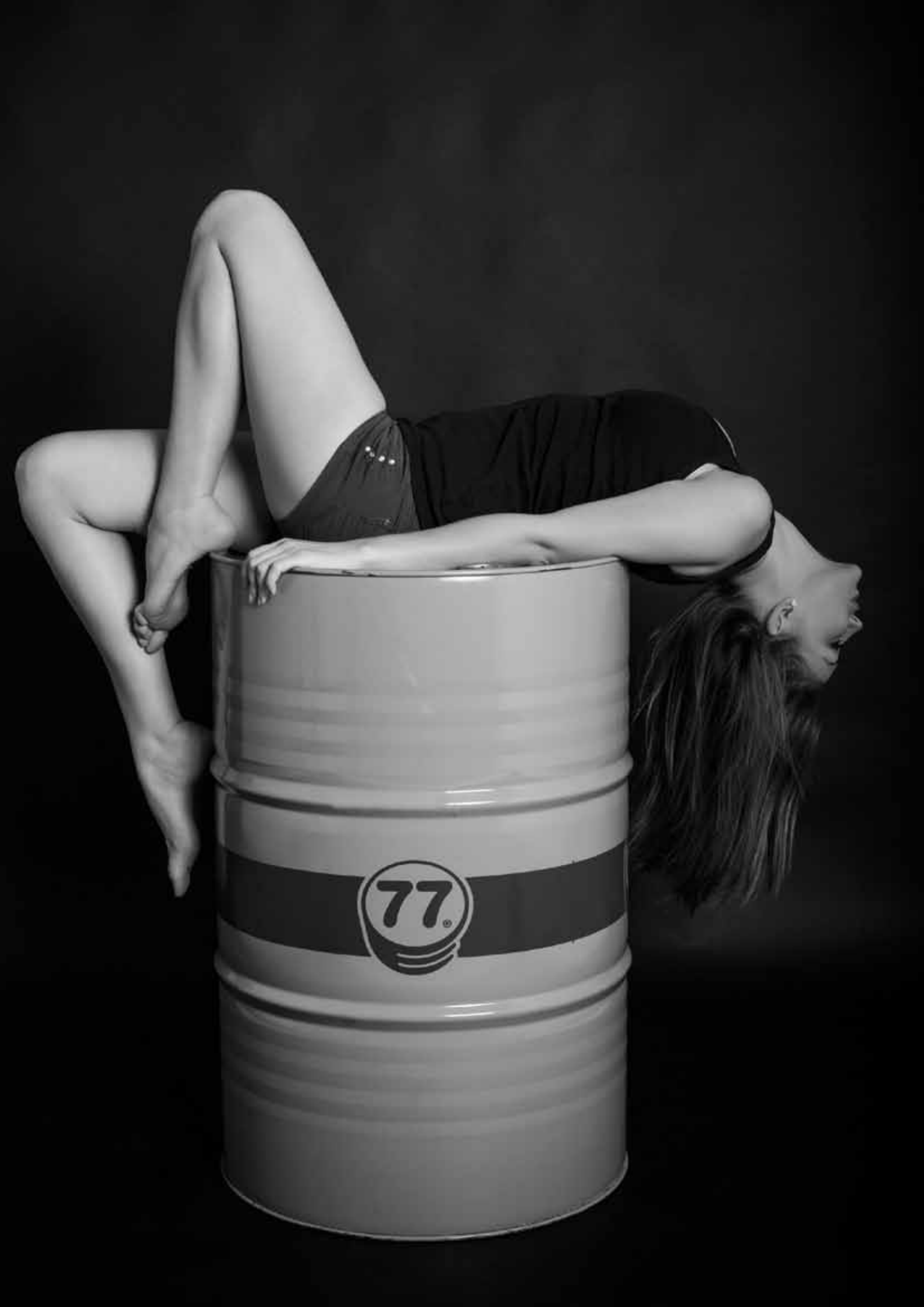
Productcode 4233

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 Particle 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.

Exceeds: ACEA C4, Renault 0720, MB 229.51, MB 226.51

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5W-30
Density@15°C	kg/m3	ASTM D4052	849
Kin. Viscosity @40°C	mm2/s	ASTM D7042	67
Kin. Viscosity @100°C	mm2/s	ASTM D7042	11.9
Viscosity Index		ASTM D2270	177
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
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	0.51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ENGINE OIL EHPD 10W-40

Productcode 4250

ENGINE OIL EHPD 10W-40 is a premium quality, semi-synthetic extra high performance diesel engine oil. ENGINE OIL EHPD 10W-40 has been especially designed for heavy duty engines meeting EURO IV & previous emission standards.

ENGINE OIL EHPD 10W-40 meets the latest industry & OEM Heavy Duty specifications for Extended Drain Intervals.

ENGINE OIL EHPD 10W-40 has outstanding protection against wear and bore polishing and the TBN reserve enables extended drain interval capability. The high shear stability of ENGINE OIL EHPD 10W-40 ensures viscosity control and lower oil consumption.

ENGINE OIL EHPD 10W-40 is suited for use in heavy duty diesel engines meeting EURO IV emission standards. Also recommended for on- and off highway applications such as in mining, construction, agriculture and other applications.

Exceeds: API CI-4, ACEA E7/E4, MB 228.5, MAN M 3277, Volvo VDS-3, MTU DDC Oil Category 3, Renault Trucks RXD/RLD-2, DAF Extended Drains, Scania LDF-2, Mack EO-M Plus, Cummins CES 20077/20078.

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	873 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	98.5 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.6 mm2/s
Low-Temp.Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	154
Flash Point	ASTM D92	214°C
Pour Point	ASTM D97	-30°C
Total Base Number	ASTM D2896	12.5 mgKOH/g
Sulphated Ash	ASTM D874	1.6 wt %

ENGINE OIL SHPD 15W-40

Productcode 4251

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 Particle 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.

Exceeds: ACEA E9/E7, MB-228.31, Volvo VDS-4, MAN M3575, MACK EO-O+, API CJ-4, Renault VI RLD-3, Cummins CES 20081, CAT ECF-3/2/1a, DCC PGOS 93K218, Deutz DQC III-05, MTU Type 2.1

Property:	Test Method:	Typical Values:
SAE Grade	SAE J3000	15W-40
Density@15°C kg/m3	ASTM D4052	873
Kin. Viscosity @40°C mm2/s	ASTM D7042	112
Kin. Viscosity @100°C mm2/s	ASTM D7042	14.9
Viscosity Index	ASTM D2270	135
Viscosity CCS @-20°C, max cP	ASTM D2270	7000
Flash Point COC °C	ASTM D92	>201
Pour Point °C	ASTM D7346	-36
Total Base Number mgKOH/g	ASTM D2896	8.1
Sulpated Ash %Wt	ASTM D874	0.96

ENGINE OIL UHPD 10W-40

Productcode 4252

ENGINE OIL UHPD 10W-40 is an ‘’Ultra High Performance Diesel” (UHPD) engine oil, formulated with synthetic base stocks and high quality performance additives and has been especially developed for the lubrication of high speed, high output, turbocharged diesel engines meeting the Euro I, Euro II, Euro III & Euro IV emission requirements. ENGINE OIL UHPD 10W-40 is designed to provide optimal lubrication under all circumstances and to allow significantly extended oil drain intervals according to the manufacturers recommendation.

ENGINE OIL UHPD 10W-40 is suitable for engines without particulate filters and for some EGR engines. ENGINE OIL UHPD 10W-40 can also be used in certain engines fitted with SCR NOx reduction systems. ENGINE OIL UHPD 10W-40 can be used with confidence in all low emission heavy duty diesel engines, such as those from Mercedes Benz, Volvo and MAN, even in the most challenging applications.

ENGINE OIL UHPD 10W-40 minimizes engine deposits and provides excellent protection against “Bore Polishing”. The composition of the oil reduces oil consumption and contributes to a better fuel economy.

ENGINE OIL UHPD 10W-40 is recommended for numerous Heavy Duty Diesel Engines meeting Euro I, II, III & IV emission requirements and running with extended drain intervals. As recommendations may differ between “Original Equipment Manufacturers” (OEM’s) the Driver Manual and/or Dealer shall be consulted if in doubt.

Exceeds: ACEA E4/E7, API CI-4/CF, MB 228.5, MAN M 3277, MTU Oil Category 3, Renault VI RXD/RLD-2, Volvo VDS-3

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	868 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	89.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.0 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	6900 mPa.s
Viscosity Index	ASTM D2270	153
Flash Point	ASTM D92	226°C
Pour Point	ASTM D97	-39°C
Total Base Number	ASTM D2896	12.7 mgKOH/g
Sulphated Ash	ASTM D874	1.5 wt %

ENGINE OIL SCR 10W-40

Productcode 4254

ENGINE OIL SCR 10W-40 is a premium quality, fully synthetic, low SAPS (Sulphated Ash, Phosphorus and Sulphur) diesel engine lubricant. ENGINE OIL SCR 10W-40 has been developed for use in engines fitted with Diesel Particulate Filters (DPFs) or Selective Catalytic Reduction (SCR) NOx reduction systems. ENGINE OIL SCR 10W-40 is compatible with exhaust after-treatment devices such as used in the latest commercial vehicles which need an engine oil meeting the chemical limits for SAPS. ENGINE OIL SCR 10W-40 meets the current heavy duty truck OEM specifications required for engines meeting EURO IV & V emission standards and equipped with after-treatment systems.

ENGINE OIL SCR 10W-40 maintains engine cleanliness, prevents bore polishing, minimizes engine wear by means of it’s soot handling capabilities and allows longer drain intervals.

ENGINE OIL SCR 10W-40 is recommended for diesel engines meeting EURO IV & V and earlier emission standards and is suitable for EGR-engines with or without Diesel Particulate Filters (DPFs) and for engines fitted with SCR exhaust gas after-treatment devices. ENGINE OIL SCR 10W-40 is designed for diesel engines running on low sulphur diesel fuel (max. 50 ppm).

Exceeds: ACEA E6/E7, MAN M 3271-1, MTU Oil Category 3.1, Deutz DQC III-05. Approved by: MB-Approval 228.51, Volvo VDS-3, Renault Trucks RXD, MAN M 3477.

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	863 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	98 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	>145
Flash Point	ASTM D92	240°C
Pour Point	ASTM D97	-27°C
Total Base Number	ASTM D2896	9.7 mgKOH/g
Sulphated Ash	ASTM D874	1.0 wt %

ENGINE OIL HDX 10W-40

Productcode 4255

ENGINE OIL HDX 10W-40 is a semi synthetic “Extra High Performance Diesel” (XHPD) engine oil providing superior performance and long service potential in high output , high speed, turbo charged engines operating under severe conditions and has been formulated with carefully selected additives in synthetic and mineral base stocks to provide excellent detergency, dispersancy and anti- wear performance. ENGINE OIL HDX 10W-40 is especially formulated to guarantee engine durability where Exhaust Gas Recirculation (EGR) is employed.

ENGINE OIL HDX 10W-40 exceeds the requirements of the major European heavy duty engine manufacturers for extended drain intervals and complies with the strict-test European emission limits.

ENGINE OIL HDX 10W-40 reduces piston deposits, protects against “Bore Polishing”, reduces oil consumption and allows extended drain intervals.

ENGINE OIL HDX 10W-40 is recommended for low emission diesel engines using gas exhaust recirculation systems (EGR), meeting Euro IV emission specifications.

Exceeds: ACEA E7, API CI-4, Scania LDF-2, MTU Oil Category 2, Cummins 20077/20078. Approved by: MB 228.3, Volvo VDS-3, Mack EO-N, MAN M 3275-1, Renault VI RLD-2 compliance.

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	872 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	98.3 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.1 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	>135
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	<-30°C
Total Base Number	ASTM D2896	10.1 mgKOH/g
Sulphated Ash	ASTM D874	1.47 wt %

ENGINE OIL HDX 15W-40

Productcode 4256

ENGINE OIL HDX 15W-40 is a “Extra High Performance Diesel” (XHPD) engine oil providing superior performance and long service potential in high output , high speed, turbo charged engines operating under severe conditions and has been formulated with carefully selected additives and mineral base stocks to provide excellent detergency, dispersancy and anti- wear performance. ENGINE OIL HDX 15W-40 is especially formulated to guarantee engine durability where Exhaust Gas Recirculation (EGR) is employed.

ENGINE OIL HDX 15W-40 exceeds the requirements of the major European heavy duty engine manufacturers for extended drain intervals and complies with the strict-test European emission limits.

ENGINE OIL HDX 15W-40 reduces piston deposits, protects against “Bore Polishing”, reduces oil consumption and allows extended drain intervals.

ENGINE OIL HDX 15W-40 is recommended for low emission diesel engines using gas exhaust recirculation systems (EGR), meeting Euro IV emission specifications.

Exceeds: ACEA E7, API CI-4, Scania LDF-2, MTU Oil Category 2, Cummins 20076/77/78, Deutz DQC III, Caterpillar ECF-1a Approved by: MB-Approval 228.3, Volvo VDS-3, Mack EO-N MAN M 3275-1, Renault VI RLD-2 compliance

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	881 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	106 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Low-Temp. Cranking Viscosity @ -20°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	140
Flash Point	ASTM D92	225°C
Pour Point	ASTM D97	-24°C
Total Base Number	ASTM D2896	10.5 mgKOH/g
Sulphated Ash	ASTM D874	1.5 wt %

ENGINE OIL HDL 10W-40

Productcode 4257

ENGINE OIL HDL 10W-40 is a semi synthetic “Super High Performance Diesel” (SHPD) engine oil providing superior performance and long service potential in high output , high speed, turbo charged engines operating under severe conditions.

ENGINE OIL HDL 10W-40 has been formulated with carefully selected additives in synthetic and mineral base stocks, to provide excellent detergency, dispersancy and anti wear performance. ENGINE OIL HDL 10W-40 has been especially developed to meet the requirements of engines conforming to Euro 2 and Euro 3 emission standards and meets the stringent requirements of most “Original Equipment Manufacturers” (OEM’s).

ENGINE OIL HDL 10W-40 has excellent thermo-oxidative stability, controlling deposits and viscosity increase. Excellent soot handling controls soot induced oil thickening and effectively prevents wear. ENGINE OIL HDL 10W-40 reduces piston deposits, protects against “Bore Polishing”, reduces oil consumption and allows extended drain intervals.

ENGINE OIL HDL 10W-40 is recommended for all turbo charged and naturally aspirated diesel engines, such as used in on highway light and heavy duty trucking, construction, mining, agriculture and other off highway applications.

Exceeds: ACEA E5/A3/B4, API CH-4/SL, MB 228.3, MAN M 3275, Renault RLD, Volvo VDS-2, MTU Category 2, Mack EO-M Plus, Cummins CES 20076/77, Caterpillar ECF-1, Allison C-4

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	876 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	102 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.1 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	135
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-30°C
Total Base Number	ASTM D2896	10.5 mgKOH/g
Sulphated Ash	ASTM D874	1.42 wt %

ENGINE OIL HDL 15W-40

Productcode 4258

ENGINE OIL HDL 15W-40 is a “Super High Performance Diesel” (SHPD) engine oil providing superior performance and long service potential in high output , high speed, turbo charged engines operating under severe conditions.

ENGINE OIL HDL 15W-40 has been formulated with carefully selected additives in mineral base stocks, to provide excellent detergency, dispersancy and anti wear performance. ENGINE OIL HDL 15W-40 has been especially developed to meet the requirements of engines conforming to Euro 2 and Euro 3 emission standards and meets the stringent requirements of most “Original Equipment Manufacturers” (OEM’s).

ENGINE OIL HDL 15W-40 has excellent thermo-oxidative stability, controlling deposits and viscosity increase. Excellent soot handling controls soot induced oil thickening and effectively prevents wear. ENGINE OIL HDL 15W-40 reduces piston deposits, protects against “Bore Polishing”, reduces oil consumption and allows extended drain intervals.

ENGINE OIL HDL 15W-40 is recommended for all turbo charged and naturally aspirated diesel engines, such as used in on highway light and heavy duty trucking, construction, mining, agriculture and other off highway applications.

Exceeds: ACEA E5/A3/B3/B4, API CH-4/SL, MB 228.3,MAN M3275, Renault RLD, Volvo VDS-2, MTU Category 2, Mack EO-M Plus, Cummins CES 20076/20077, Caterpillar ECF-1, Allison C-4

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	15W-40
Density @ 15°C	ASTM D4052	886 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	108 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.1 mm2/s
Low-Temp. Cranking Viscosity @ -20°C	ASTM D5293	6600 mPa.s
Viscosity Index	ASTM D2270	135
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-27°C
Total Base Number	ASTM D2896	10.1 mgKOH/g
Sulphated Ash	ASTM D874	1.34 wt %

ENGINE OIL LSP 5W-30

Productcode 4259

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 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 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 Particle Filter (DPF)
- Fuel conserving

Exceeds: ACEA E6/E7, API CI-4, MB 228.51, MAN M3477, MAN M3271, MACK EO-N, Volvo VDF-3, MTU Type 3.1, Deutz DQC III-10 LA, Renault RLD-2, Cummins 20076/2007

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	5w-30
Density@15°C	kg/m^3	ASTM D4052	884
Kin. Viscosity @40°C	mm^2/s	ASTM D7042	76
Kin. Viscosity @100°C	mm^2/s	ASTM D7042	12.0
Viscosity Index		ASTM D2270	>145
Viscosity CCS @-30°C, max	cP	ASTM D2270	6600
Flash Point COC	°C	ASTM D92	>219
Pour Point	°C	ASTM D97	-36
Total Base Number	mgKOH/g	ASTM d2896	10.1
Sulpated Ash	%Wt	ASTM D874	0.8

ENGINE OIL LSP 10W-40

Productcode 4498

ENGINE OIL LSP 10W-40 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 10W-40 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 LSP 10W-40 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

Exceeds: ACEA E6/E7, API CI-4, MB 228.51, MAN M3477, MAN M3271, MACK EO-N, Volvo VDF-3, MTU Type 3.1, Deutz DQC III-10 LA, Renault RLD-2, Cummins 20076/2007

Properties	Unit	Test Method	Typical Value
SAE Grade		SAE J3000	10W-40
Density@15°C	kg/m^3	ASTM D4052	863
Kin. Viscosity @40°C	mm^2/s	ASTM D7042	98
Kin. Viscosity @100°C	mm^2/s	ASTM D7042	14.5
Viscosity Index		ASTM D2270	145
Viscosity CCS @-25°C, max	cP	ASTM D2270	7000
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D97	-30
Total Base Number	mgKOH/g	ASTM d2896	10.1
Sulpated Ash	%Wt	ASTM D874	0.8

ENGINE OIL HD 15W-40

Productcode 4260

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 has been formulated with carefully selected additives in mineral base stocks, to provide excellent detergency, dispersancy and anti wear performance.

ENGINE OIL HD 15W-40 has excellent thermo-oxidative stability, controlling deposits and viscosity increase. Excellent soot handling controls soot induced oil thickening and effectively prevents wear.

ENGINE OIL HD 15W-40 reduces piston deposits, protects against “Bore Polishing”, reduces oil consumption and allows extended drain intervals.

ENGINE OIL HD 15W-40 is recommended for turbo charged and naturally aspirated diesel engines such as used in on highway light and heavy duty trucking, construction, mining, agriculture and other off highway applications.

Exceeds: ACEA E2/A3/B3/B4, API CG-4/CF/SL, MB 229.1, Volvo VDS, Mack EO-L, MTU Oil Category 2, Allison C4
Approved by: MAN M 3275-1, MB-Approval 228.3

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	15W-40
Density @ 15°C	ASTM D4052	884 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	106 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Low-Temp. Cranking Viscosity @ -20°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	>135
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	<-27°C
Total Base Number	ASTM D2896	8.7 mgKOH/g
Sulphated Ash	ASTM D874	1.27 wt %

ENGINE OIL HD 20W-50

Productcode 4261

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 has been formulated with carefully selected additives in mineral base stocks, to provide excellent detergency, dispersancy and anti wear performance.

ENGINE OIL HD 20W-50 has excellent thermo-oxidative stability, controlling deposits and viscosity increase. Excellent soot handling controls soot induced oil thickening and effectively prevents wear.

ENGINE OIL HD 20W-50 reduces piston deposits, protects against “Bore Polishing”, reduces oil consumption and allows extended drain intervals.

ENGINE OIL HD 20W-50 is recommended for turbo charged and naturally aspirated diesel engines such as used in on highway light and heavy duty trucking, construction, mining, agriculture and other off highway applications.

Exceeds: ACEA E2/A3/B3/B4, API CG-4/CF/SL, MB 228.3/229.1, MAN 271, Volvo VDS,Mack EO-L, MTU Oil Category 2

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	20W-50
Density @ 15°C	ASTM D4052	894 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	165 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	18.5 mm2/s
Low-Temp. Cranking Viscosity @ -15°C	ASTM D5293	<9500 mPa.s
Viscosity Index	ASTM D2270	125
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-24°C
Total Base Number	ASTM D2896	9.2 mgKOH/g
Sulphated Ash	ASTM D874	1.3 wt %

MONO ENGINE OIL CF 10W

Productcode 4262

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

MONO ENGINE OIL CF 10W is formulated from highly refined base stocks and balanced additives to provide effective protection to engines operating under various environments.

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

MONO ENGINE OIL CF 10W has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CF 10W is suitable for turbocharged and naturally aspirated engines of most engine manufacturers working under the most demanding conditions.

Exceeds: API C F

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W
Density @ 15°C	ASTM D4052	874 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	34 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.1 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	100
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-33°C
Total Base Number	ASTM D2896	10.6 mgKOH/g
Sulphated Ash	ASTM D874	1.4 wt %

MONO ENGINE OIL CF 20W-20

Productcode 4264

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

MONO ENGINE OIL CF 20W-20 is formulated from highly refined base stocks and balanced additives to provide effective protection to engines operating under various environments.

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

MONO ENGINE OIL CF 20W-20 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge build-up, deposits & oil degradation and controls oil thickening. Effective antiwear properties protect engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CF 20W-20 is suitable for turbocharged and naturally aspirated engines of most engine manufacturers working under the most demanding conditions.

Exceeds: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	20W-20
Density @ 15°C	ASTM D4052	884 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	68 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.6 mm2/s
Low-Temp. Cranking Viscosity @ -15°C	ASTM D5293	<9500 mPa.s
Viscosity Index	ASTM D2270	100
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-27°C
Total Base Number	ASTM D2896	10.6 mgKOH/g
Sulphated Ash	ASTM D874	1.4 wt %

MONO ENGINE OIL CF 30

Productcode 4266

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

MONO ENGINE OIL CF 30 is formulated from highly refined base stocks and balanced additives to provide effective protection to engines operating in various environments.

MONO ENGINE OIL CF 30 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CF 30 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protect against corrosion and wear.

MONO ENGINE OIL CF 30 is suitable for turbocharged and naturally aspirated engines of most engine manufacturers working under the most demanding conditions.

Exceeds: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	892 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	99.3 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.1 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-24°C
Total Base Number	ASTM D2896	10.6 mgKOH/g
Sulphated Ash	ASTM D874	1.4 wt %

ENGINE OIL SUPER UHPD 10W-40

Productcode 4267

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 Particle 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

Exceeds: MB 228.5, MAN M3277, MTU Type 3, Scania LDF-3, ACEA E7/E4, Mack EO-M, Renault RVI RXD, Global DHD -1, Cumminns 20076/77/78, Volvo VDS-3

Property:	Test Method:	Typical Values:
SAE Grade	SAE J3000	10W-40
Density@15°C kg/m3	ASTM D4052	876
Kin. Viscosity @40°C mm2/s	ASTM D7042	86
Kin. Viscosity @100°C mm2/s	ASTM D7042	13.1
Viscosity Index	ASTM D2270	152
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	15.5
Sulpated Ash %Wt	ASTM D874	1.85

MONO ENGINE OIL CF 40

Productcode 4268

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

MONO ENGINE OIL CF 40 is formulated from highly refined base stocks and balanced additives to provide effective protection to engines operating under various environments.

MONO ENGINE OIL CF 40 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CF 40 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CF 40 is suitable for turbocharged and naturally aspirated engines of most engine manufacturers working under the most demanding conditions.

Exceeds: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	896 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	143 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.3 mm2/s
Viscosity Index	ASTM D2270	96
Flash Point	ASTM D92	230°C
Pour Point	ASTM D97	-15°C
Total Base Number	ASTM D2896	10.6 mgKOH/g
Sulphated Ash	ASTM D874	1.4 wt %

ENGINE OIL SHPD 10W-30

Productcode 4269

ENGINE OIL SHPD 10W-30 is a “Super High Performance Diesel” (SHPD) engine oil providing superior performance and long service potential in high output, high speed turbo charged engines operating under severe conditions and has been formulated with carefully selected additives in mineral base stocks to provide excellent detergency, dispersancy and anti wear performance. ENGINE OIL SHPD 10W-30 is a new mid SAPS lubricant for mid drain applications & for use in modern low emission engines meeting EURO IV & V exhaust emission standards.

ENGINE OIL SHPD 10W-30 exceeds the requirements of the major European heavy duty engine manufacturers for extended drain intervals and complies with the strictest European emission limits

ENGINE OIL SHPD 10W-30 reduces piston deposits, protects against “Bore Polishing”, reduces oil consumption and allows extended drain intervals.

ENGINE OIL SHPD 10W-30 is recommended use in vehicles fitted with advanced exhaust aftertreatment systems for the reduction of particulate matter (DPFs) and the oxides of nitrogen (EGR and/or SCR) in combination with low sulphur diesel.

Exceeds: ACEA E9/E7, API CJ-4/SM, MTU Oil Category 2.1, Caterpillar ECF-3/ECF-2/ECF-1a, Volvo VDS-4, MB 228.31,MAN M 3575, Cummins CES 20081, Renault VI RLD-3

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-30
Density @ 15°C	ASTM D4052	873 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	83.8 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	12.2 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	6560 mPa.s
Viscosity Index	ASTM D2270	141
Flash Point	ASTM D92	231°C
Pour Point	ASTM D97	-33°C
Total Base Number	ASTM D2896	8.9 mgKOH/g
Sulphated Ash	ASTM D874	0.99 wt %

MONO ENGINE OIL CF 50

Productcode 4270

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

MONO ENGINE OIL CF 50 is formulated from highly refined base stocks and balanced additives to provide effective protection to engines operating under various environments.

MONO ENGINE OIL CF 50 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CF 50 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge build up, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CF 50 is suitable for turbocharged and naturally aspirated engines of most engine manufacturers working under the most demanding conditions.

Exceeds: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	50
Density @ 15°C	ASTM D4052	899 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	201 mm2/s
Kinematic Viscosity @ 100°C A	STM D7042	18.2 mm2/s
Viscosity Index	ASTM D2270	96
Flash Point	ASTM D92	240°C
Pour Point	ASTM D97	-12°C
Total Base Number	ASTM D2896	10.6 mgKOH/g
Sulphated Ash	ASTM D874	1.4 wt %

RAILROAD ENGINE OIL 413

Productcode 4271

RAILROAD ENGINE OIL 413 is a zinc- and chlorine free diesel engine oil specially designed to provide engine cleanliness in modern railroad diesel locomotive engines and is formulated with an additive package that meets the requirements of newer diesel locomotive engines of General Electric (GE) and Electro-Motive Division (EMD) of General Motors. Today’s locomotive diesel engines consumes less oil and operates at higher temperatures, thus the good TBN retention property of RAILROAD ENGINE OIL 413 facilitates extended drain intervals.

RAILROAD ENGINE OIL 413 has very good detergency/dispersancy qualities that provides excellent engine cleanliness, especially engine top decks. The zinc-free formulation protects silver bearings against corrosion and the non-chlorinated additive package helps in reducing used oil disposal costs.

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.

Avoid mixing with zinc-containing oils!!!

Exceeds: API CF / CF-2 , Locomotive Maintenance Officers Association (LMOA) Generation 5, General Electric (GE): Generation 4 Long Life.
Approved by: Electro-Motive Diesel, Inc (EMD)

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	899 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	154 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	15.6 mm2/s
Viscosity Index	ASTM D2270	98
Flash Point	ASTM D92	>220°C
Pour Point	ASTM D97	<-30°C
Total Base Number	ASTM D2896	13 mgKOH/g
Sulphated Ash	ASTM D874	1.5 wt %

MONO ENGINE OIL CBSB 10 Productcode 4272

MONO ENGINE OIL CBSB 10 is an engine oil developed to meet the requirements of a variety of older engines operating under severe conditions.

MONO ENGINE OIL CBSB 10 is formulated from highly refined mineral base stocks and balanced additives to provide effective protection to engines operating under various environments.

MONO ENGINE OIL CBSB 10 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CBSB 10 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CBSB 10 is suitable for naturally aspirated engines.

Exceeds: API CB/SB

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W
Density @ 15°C	ASTM D4052	872 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	36 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.0 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-24°C
Total Base Number	ASTM D2896	2.8 mgKOH/g
Sulphated Ash	ASTM D874	0.38 wt %

MONO ENGINE OIL CBSB 20 Productcode 4274

MONO ENGINE OIL CBSB 20 is an engine oil developed to meet the requirements of a variety of older engines operating under severe conditions.

MONO ENGINE OIL CBSB 20 is formulated from highly refined mineral base stocks and balanced additives to provide effective protection to engines operating under various environments.

MONO ENGINE OIL CBSB 20 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CBSB 20 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CBSB 20 is suitable for naturally aspirated engines.

Exceeds: API CB/SB

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	20
Density @ 15°C	ASTM D4052	882 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	68 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.5 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-21°C
Total Base Number	ASTM D2896	2.8 mgKOH/g
Sulphated Ash	ASTM D874	0.38 wt %

MONO ENGINE OIL CBSB 30 Productcode 4276

MONO ENGINE OIL CBSB 30 is an engine oil developed to meet the requirements of a variety of older engines operating under severe conditions.

MONO ENGINE OIL CBSB 30 is formulated from highly refined mineral base stocks and balanced additives to provide effective protection to engines operating under various environments.

MONO ENGINE OIL CBSB 30 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CBSB 30 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CBSB 30 is suitable for naturally aspirated engines.

Exceeds: API CB/SB

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	890 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	99.5 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.1 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-18°C
Total Base Number	ASTM D2896	2.8 mgKOH/g
Sulphated Ash	ASTM D874	0.38 wt %

MONO ENGINE OIL CBSB 40 Productcode 4278

MONO ENGINE OIL CBSB 40 is an engine oil developed to meet the requirements of a variety of older engines operating under severe conditions.

MONO ENGINE OIL CBSB 40 is formulated from highly refined mineral base stocks and balanced additives to provide effective protection to engines operating under various environments.

MONO ENGINE OIL CBSB 40 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CBSB 40 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CBSB 40 is suitable for naturally aspirated engines.

Exceeds: API CB/SB

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	895 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	144 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	240°C
Pour Point	ASTM D97	-15°C
Total Base Number	ASTM D2896	2.8 mgKOH/g
Sulphated Ash	ASTM D874	0.38 wt %

MONO ENGINE OIL CBSB 50

Productcode 4280

MONO ENGINE OIL CBSB 50 is an engine oil developed to meet the requirements of a variety of older engines operating under severe conditions.

MONO ENGINE OIL CBSB 50 is formulated from highly refined mineral base stocks and balanced additives to provide effective protection to engines operating under various environments.

MONO ENGINE OIL CBSB 50 is suitable for use in a wide range of on and off-highway applications where such type of lubricant is recommended.

MONO ENGINE OIL CBSB 50 has improved detergency that helps to reduce deposits and keeps engines cleaner, better thermo-oxidative stability protects against sludge buildup, deposits & oil degradation and controls oil thickening. Effective antiwear properties protects engine components against wear to offer extended engine life and reduced maintenance costs and good corrosion inhibition properties protects against corrosion and wear.

MONO ENGINE OIL CBSB 50 is suitable for naturally aspirated engines.

Exceeds: API CB/SB

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	50
Density @ 15°C	ASTM D4052	899 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	210 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	18.1 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	240°C
Pour Point	ASTM D97	-15°C
Total Base Number	ASTM D2896	2.8 mgKOH/g
Sulphated Ash	ASTM D874	0.38 wt %

MONO ENGINE OIL SA 50

Productcode 4284

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

Exceeds: API SA

SAE Viscosity Grade	SAE J300	50
Density @ 15°C	ASTM D4052	899 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	215 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	20.7 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	240°C
Pour Point	ASTM D97	-12°C

ENGINE OIL SYNTHETIC UHPD 5W-30

Productcode 4502

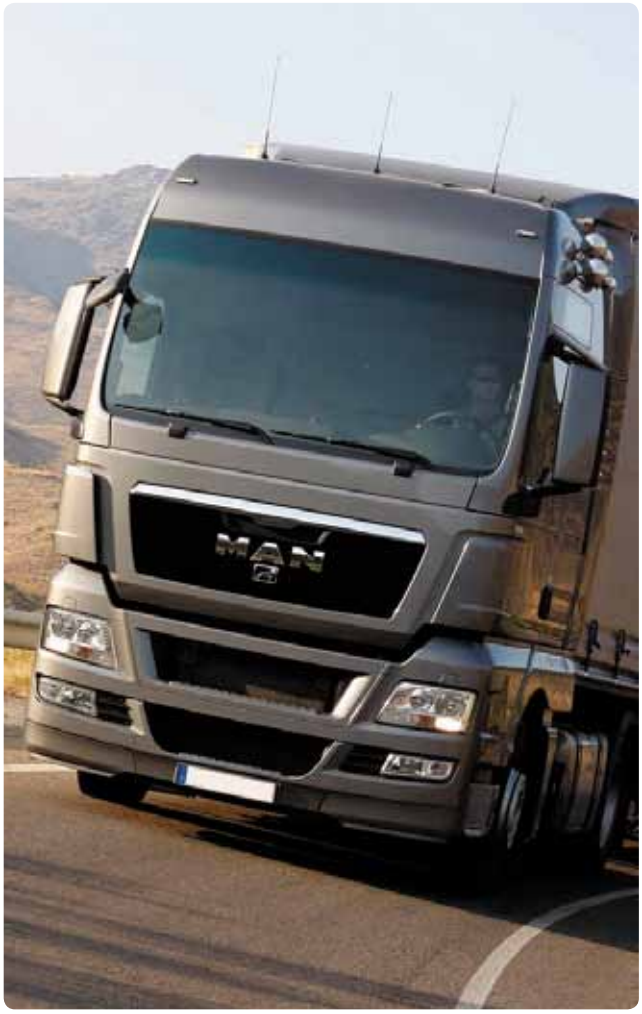
ENGINE OIL SYNTHETIC UHPD 5W-30 is a fuel conserving super high performance “MID SAPS” oil based on 100% synthetic technology designed for high loaded diesel engines in light- and heavy commercial vehicles working under severe operating conditions through the whole year and running on low Sulphur Diesel Fuel (max. 50 ppm). Engine Oil Special 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 Particle Filter (DPF).
- Fuel conserving.

Exceeds: API CJ-4, ACEA E6/E9/E7, MB 228.31/228.51, MAN M3677, MAN M3477/3271, Volvo VDS-3/4, Volvo CNG, MTU Type 3.1, Renault RGB/RXD, Renault RLD-2/3, Mack EO-M/EO-N+, JASO DH-2, CAT ECF-3, Deutz DQC IV-10-LA, DDC 93K218, Mack EO-O PP-07

Property:	Test Method:	Typical Values:
SAE Grade	SAE J3000	5W-30
Density@15°C kg/m3	ASTM D4052	861
Kin. Viscosity @40°C mm2/s	ASTM D7042	69.7
Kin. Viscosity @100°C mm2/s	ASTM D7042	11.5
Viscosity Index	ASTM D2270	165
Viscosity CCS @-30°C, max cP	ASTM D2270	6600
Flash Point COC °C	ASTM D92	>201
Pour Point °C	ASTM D97	-36
Total Base Number mgKOH/g	ASTM D2896	10
Sulpated Ash %Wt	ASTM D874	0.98



SNOWMOBILE OIL SYN 2T

Productcode 4291

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

SNOWMOBILE OIL SYN 2T offers very good lubricity against piston scuffing and wear of engine components. The advanced formulation provides exceptional control against engine deposits, exhaust system blocking, extended engine life without power loss, and reduces visible exhaust smoke. Low ash additive technology prevents pre-ignition and spark plug and easy miscibility with gasoline ensure stable homogeneous mixture even at low ambient temperatures.

SNOWMOBILE OIL SYN 2T is recommended for high-powered 2-stroke engines from snowmobiles/scooters operating under different conditions.

SNOWMOBILE OIL SYN 2T is suitable for oil-injection and premix lubrication systems; always follow manufacturer's recommendations for oil-fuel ratio.

SNOWMOBILE OIL SYN 2T is also suitable for 2-stroke engines in all terrain vehicles, motorcycles, lawn mowers and other applications requiring oils of this quality.

Exceeds: API TC, ISO-L-EGD, JASO FD

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	864 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	68 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point	ASTM D92	>90°C
Pour Point	ASTM D97	-45°C
Total Base Number	ASTM D2896	1.6 mgKOH/g
Sulphated Ash	ASTM D874	0.13 wt %

RACING KART 2T

Productcode 4300

RACING KART 2T 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 Karts engines which run under severe conditions..

RACING KART 2T 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.

Exceeds:

Property	Unit	Test Method	Typical Value
Density@15°C	kg/m³	ASTM D4052	920
Kin. Viscosity @40°C	mm²/s	ASTM D7042	172
Kin. Viscosity @100°C	mm²/s	ASTM D7042	20
Viscosity Index		ASTM D2270	135
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D97	-42

OUTBOARD ENGINE OIL 2T

Productcode 4296

OUTBOARD ENGINE OIL 2T is a premium ashless 2-stroke lubricant developed for high powered water-cooled outboard engines fitted with oil-injection or premix systems and is formulated with the latest additive technology that helps in keeping the engine cleaner.

OUTBOARD ENGINE OIL 2T is easy to mix and forms stable mixtures with gasoline also at lower temperatures.

OUTBOARD ENGINE OIL 2T is suited for high powered 2-cycle water cooled outboard engines requiring an NMMA TC-W3® quality specification.

Exceeds: NMMA TC-W3®

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	881 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	46 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.9 mm2/s
Viscosity Index	ASTM D2270	130
Flash Point	ASTM D92	>96°C
Pour Point	ASTM D97	-33°C
Total Base Number	ASTM D2896	3.45 mgKOH/g

MOTORCYCLE OIL 2T

Productcode 4292

MOTORCYCLE OIL 2T is a high quality lubricant suitable for use in air cooled 2-stroke gasoline engines working under a wide variety of conditions and is formulated from highly refined mineral base stocks and fortified with carefully selected additives to provide engine protection and cleanliness in 2-stroke engines.

MOTORCYCLE OIL 2T offers excellent lubricity that protects against piston scuffing and premature wear of engine components. The low ash formulation effectively prevents preignition and spark plug fouling. The excellent miscibility with gasoline ensures stable homogeneous mixtures at low ambient temperatures.

MOTORCYCLE OIL 2T is recommended for 2-stroke motorcycles and scooters requiring API TC and/or JASO FB quality oil and is suitable for both oil-injection and premix lubrication systems. Always follow manufacturer's recommendation regarding oil to fuel ratio.

Exceeds: API TC, JASO FB

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	883 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	70 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	9.2 mm2/s
Viscosity Index	ASTM D2270	110
Flash Point	ASTM D92	>100°C
Pour Point	ASTM D97	-30°C
Total Base Number	ASTM D2896	1.2 mgKOH/g
Sulphated Ash	ASTM D874	0.25 wt %

MOTORCYCLE OIL SYN 2T

Productcode 4295

MOTORCYCLE OIL SYN 2T is a fully synthetic lubricant developed for air & water cooled 2-stroke engines. MOTORCYCLE OIL SYN 2T's special formulation ensures excellent engine protection, cleanliness and low smoke even under extreme operating conditions.

MOTORCYCLE OIL SYN 2T offers very good lubricity against piston scuffing and wear of engine components. The advanced formulation provides exceptional control against engine deposits, exhaust system blocking and extended engine life without power loss, and reduces visible exhaust smoke. Low ash additive technology prevents pre-ignition and spark plug and easy miscibility with gasoline ensure stable homogeneous mixture even at low ambient temperatures.

MOTORCYCLE OIL SYN 2T is recommended for high-powered 2-stroke motorcycles/scooters operating under different conditions.

MOTORCYCLE OIL SYN 2T is suitable for oil-injection and premix lubrication systems; always follow manufacturer's recommendations for oil-fuel ratio.

MOTORCYCLE OIL SYN 2T is also suitable for 2-stroke engines in all-terrain vehicles, snow mobiles, lawn mowers and other applications requiring oils of this quality.

Exceeds: API TC, ISO-L-EGD, JASO FD

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	878 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	68 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11 mm2/s
Viscosity Index	ASTM D2270	150
Flash Point	ASTM D92	>90°C
Pour Point	ASTM D97	-45°C
Total Base Number	ASTM D2896	1.6 mgKOH/g
Sulphated Ash	ASTM D874	0.13 wt %

MOTORCYCLE OIL 2T EXTRA

Productcode 4294

MOTORCYCLE OIL 2T EXTRA is a premium quality semi-synthetic lubricant especially developed for high powered air-cooled 2-stroke gasoline engines fitted with oil-injection or premix systems and is formulated from premium quality mineral and synthetic base stocks and high quality performance additives to provide exceptional engine protection and cleanliness in 2-stroke engines.

MOTORCYCLE OIL 2T EXTRA offers excellent lubricity which protects against piston scuffing and premature wear of engine components. The low ash formulation effectively prevents pre-ignition and spark plug fouling. The excellent miscibility with gasoline ensures stable homogeneous, stable mixtures at low ambient temperatures.

MOTORCYCLE OIL 2T EXTRA exceeds the latest international specifications of JASO FD, ISO-L-EGD and API TC as well as the requirements of leading 2-stroke engine manufacturers.

MOTORCYCLE OIL 2T EXTRA is recommended for a wide range of high-powered 2-stroke motorcycles and scooters running ISO-L-EGD or JASO FD quality oils and is suitable for both oil injection and pre-mix lubrication systems.

Always follow manufacturers recommendations regarding the oil to fuel ratio!

Exceeds: API TC, ISO-L-EGD, JASO FD

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	883 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	46 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	9.2 mm2/s
Viscosity Index	ASTM D2270	110
Flash Point	ASTM D92	>100°C
Pour Point	ASTM D97	-30°C
Total Base Number	ASTM D2896	1.2 mgKOH/g
Sulphated Ash	ASTM D874	0.25 wt %

MOTORCYCLE OIL 4T EXTRA 5W-40

Productcode 4298

MOTORCYCLE OIL 4T EXTRA 5W-40 is a premium quality fully synthetic lubricant especially developed for use in high powered 4-stroke motorcycles and is formulated from premium quality base stocks and high quality performance additives to exceed the most demanding lubrication requirements of modern 4-stroke motorcycles.

MOTORCYCLE OIL 4T EXTRA 5W-40 provides excellent protection towards engine, gearbox and wet clutches used in 4-stroke motorcycles and ensures the highest possible reliability even under the most severe operating conditions.

MOTORCYCLE OIL 4T EXTRA 5W-40 has superior thermo-oxidative stability, minimizing deposits and sludge formation. Exceptional anti-wear properties protect vital engine- and gear components leading to lower maintenance costs. Controlled frictional properties eliminate clutch slippage, effectively improving the driveability of the vehicle. Outstanding low temperature properties enables easy starting at low ambient temperatures and ensures effective lubrication and wear protection at start up.

MOTORCYCLE OIL 4T EXTRA 5W-40 is recommended for a wide range of high powered 4-stroke motorcycles. MOTORCYCLE OIL 4T EXTRA 5W-40 exceeds the specifications of API SL and JASO MA2 in addition to JASO MA as well as the requirements of leading global 4-stroke motorcycle manufacturers.

Exceeds: API SL, JASO MA/MA2

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	5W-40
Density @ 15°C	ASTM D4052	850 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	90 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.2 mm2/s
Low-Temp. Cranking Viscosity @ -30°C	ASTM D5293	<6600 mPa.s
Viscosity Index	ASTM D2270	160
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	-39°C
Total Base Number	ASTM D2896	9.75 mgKOH/g
Sulphated Ash	ASTM D874	1.2 wt %

MOTORCYCLE OIL 4T 10W-40

Productcode 4299

MOTORCYCLE OIL 4T 10W-40 is a high quality lubricant based on synthetic technology especially developed for use in high powered 4-stroke motorcycles. MOTORCYCLE OIL 4T 10W-40 is formulated from premium quality synthetic base stocks and high quality performance additives to satisfy the demanding lubrication requirements of modern 4-stroke motorcycles.

MOTORCYCLE OIL 4T 10W-40 provides excellent protection towards engine, gearbox and wet clutches used in 4-stroke motorcycles and ensures the highest possible reliability even under the most severe operation conditions.

MOTORCYCLE OIL 4T 10W-40 has very good thermo-oxidative stability, minimising deposits and sludge formation. Exceptional anti-wear properties protect vital engine- and gear components leading to lower maintenance costs. Controlled frictional properties eliminate clutch slippage, effectively improving the driveability of the vehicle. The good low temperature properties enable easy starting at low ambient temperatures and ensures effective lubrication and wear protection at start up.

MOTORCYCLE OIL 4T 10W-40 is recommended for a wide range of high powered 4-stroke motorcycles. MOTORCYCLE OIL 4T 10W-40 exceeds the specifications of API SL and JASO MA as well the requirements of many global 4-stroke motorcycle manufacturers.

Exceeds: API SL, JASO MA

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	850 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	96 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.2 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	154
Flash Point	ASTM D92	245°C
Pour Point	ASTM D97	<-33°C
Total Base Number	ASTM D2896	9.7 mgKOH/g
Sulphated Ash	ASTM D874	1.2 wt%

MOTORCYCLE OIL 4T 10W-50

Productcode 4293

MOTORCYCLE OIL 4T 10W-50 is a high quality semi-synthetic lubricant especially developed for use in high powered 4-stroke motorcycles and is formulated from premium quality mineral- and synthetic base stocks and high quality performance additives to satisfy the demanding lubrication requirements of modern 4-stroke motorcycles.

MOTORCYCLE OIL 4T 10W-50 provides excellent protection towards engine, gearbox and wet clutches used in 4-stroke motorcycles and ensures the highest possible reliability even under the most severe operation conditions.

MOTORCYCLE OIL 4T 10W-50 has very good thermo-oxidative stability, minimising deposits and sludge formation. Exceptional anti-wear properties protect vital engine- and gear components leading to lower maintenance costs. Controlled frictional properties eliminate clutch slippage, effectively improving the driveability of the vehicle. The good low temperature properties enable easy starting at low ambient temperatures and ensures effective lubrication and wear protection at start up.

MOTORCYCLE OIL 4T 10W-50 is recommended for a wide range of high powered 4-stroke motorcycles. MOTORCYCLE OIL 4T 10W-50 exceeds the specifications of API SL and JASO MA as well the requirements of many global 4-stroke motorcycle manufacturers.

Exceeds: API SL, JASO MA

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-50
Density @ 15°C	ASTM D4052	870 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	136 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	17.8 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	145
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-30°C
Total Base Number	ASTM D2896	7.8 mgKOH/g
Sulphated Ash	ASTM D874	0.96 wt %

MOTORCYCLE OIL 4T 15W-50

Productcode 4297

MOTORCYCLE OIL 4T 15W-50 is a high quality semi-synthetic lubricant especially developed for use in high powered 4-stroke motorcycles and is formulated from premium quality mineral- and synthetic base stocks and high quality performance additives to satisfy the demanding lubrication requirements of modern 4-stroke motorcycles.

MOTORCYCLE OIL 4T 15W-50 provides excellent protection towards engine, gearbox and wet clutches used in 4-stroke motorcycles and ensures the highest possible reliability even under the most severe operation conditions.

MOTORCYCLE OIL 4T 15W-50 has very good thermo-oxidative stability, minimising deposits and sludge formation. Exceptional anti-wear properties protect vital engine- and gear components leading to lower maintenance costs. Controlled frictional properties eliminate clutch slippage, effectively improving the driveability of the vehicle. The good low temperature properties enable easy starting at low ambient temperatures and ensures effective lubrication and wear protection at start up.

MOTORCYCLE OIL 4T 15W-50 is recommended for a wide range of high powered 4-stroke motorcycles. MOTORCYCLE OIL 4T 15W-50 exceeds the specifications of API SL and JASO MA as well the requirements of many global 4-stroke motorcycle manufacturers.

Exceeds: API SL, JASO MA

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	15W-50
Density @ 15°C	ASTM D4052 8	79 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	134 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	17.3 mm2/s
Low-Temp. Cranking Viscosity @ -20°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	140
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-24°C
Total Base Number	ASTM D2896	7.4 mgKOH/g
Sulphated Ash	ASTM D874	0.89 wt %

AUTOGEAR OIL GL 140

Productcode 4301

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

Specially selected base oils provide good resistance against oxidation and sludge formation and the use of special inhibitors effectively offsets the formation of foam.

AUTOGEAR OIL GL 140 can effectively be used in applications where the manufacturer indicates the use of GL-1 performance or where the use on uninhibited lubricants is prescribed.

Exceeds: API GL-1, US Army MIL-L-2105

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	140
Density @ 15°C	ASTM D4052	904 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	410 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	27.5 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-15°C

AUTOGEAR OIL EP 80W-90

Productcode 4302

AUTOGEAR OIL EP 80W-90 is a high performance gear lubricant designed to provide effective lubrication in a wide range of automotive transmissions and axle drives where API GL-4 quality oils are specified.

AUTOGEAR OIL EP 80W-90 is formulated from carefully selected base stocks and well balanced extreme pressure additives. AUTOGEAR OIL EP 80W-90 gives excellent protection towards gear components against wear and scoring. Furthermore AUTOGEAR OIL EP 80W-90 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

AUTOGEAR OIL EP 80W-90 is recommended for manual transmissions and transaxles requiring oils meeting API GL-4 and for on-road passenger cars, light and heavy duty trucks, buses and vans. AUTOGEAR OIL EP 80W-90 is also recommended for offhighway equipment in construction, mining and agriculture.

AUTOGEAR OIL EP 80W-90 exceeds the specifications of API GL-4 and US MIL-L-2105, as well as the requirements of most “Original Equipment Manufacturers” (OEMs).

Exceeds: API GL-4, US Army MIL-L-2105

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	80W-90
Density @ 15°C	ASTM D4052	896 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	152 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Low-Temp. Brookfield Viscosity @ -26°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	100
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-27°C

AUTOGEAR OIL EP 80W

Productcode 4303

AUTOGEAR OIL EP 80W is a premium performance gear lubricant designed to provide effective lubrication in a wide range of automotive transmissions and is formulated from high quality base stocks and proven performance extreme pressure additives to provide protection to gear components against wear and scoring.

AUTOGEAR OIL EP 80W has excellent extreme pressure and antiwear properties that protects against wear and scoring leading to lower maintenance costs, enhanced equipment durability and potential for long service life. High oxidation stability minimises deposit formation facilitating longer gear and bearing life. Effective rust and corrosion protection reduces wear and extends component life. Better low temperature fluidity reduces wear at start-up and helps in smoother shifting at low ambient temperatures. Good anti-foam properties ensure film strength for effective lubrication.
Excellent seal compatibility helps minimise leakages and reduce chances of contamination

AUTOGEAR OIL EP 80W is suited for heavy duty manual transmissions and axle drives where API GL-4 quality oils are specified. On-road light and heavy duty trucks, buses, vans and passenger cars and off-highway equipment in construction, mining and agriculture. Other applications involving spiral bevel gears operating under moderate to severe speeds and loads and axles with hypoid gears operating under mild to moderate speeds and loads but not suitable for automatic transmissions.

Exceeds: API GL-4, US MIL-L-2105, MB 235.5, MAN 341 Type Z-2, ZF TE-ML 02B / 17A

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	80W
Density @ 15°C	ASTM D4052	891 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	82.2 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	9.9 mm2/s
Low-Temp. Brookfield Viscosity @ -26°C	ASTM D2983	80600 cP
Viscosity Index	ASTM D2270	100
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-30°C

AUTOGEAR OIL EP 85W-140

Productcode 4304

AUTOGEAR OIL EP 85W-140 is a high performance gear lubricant designed to provide effective lubrication in a wide range of automotive transmissions and axle drives where API GL-4 quality oils are specified.

AUTOGEAR OIL EP 85W-140 is formulated from carefully base stocks and well balanced extreme pressure additives. AUTOGEAR OIL EP 80W-90 gives excellent protection towards gear components against wear and scoring. Furthermore AUTOGEAR OIL EP 85W-140 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

AUTOGEAR OIL EP 85W-140 is recommended for manual transmissions and transaxles requiring oils meeting API GL-4 and for on-road passenger cars, light and heavy duty trucks, buses and vans. AUTOGEAR OIL EP 85W-140 is also recommended for offhighway equipment in construction, mining and agriculture.

AUTOGEAR OIL EP 85W-140 exceeds the specifications of API GL-4 and US MIL-L-2105, as well as the requirements of most “Original Equipment Manufacturers” (OEMs).

Exceeds: API GL-4, US Army MIL-L-2105

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	85W-140
Density @ 15°C	ASTM D4052	907 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	410 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	28.9 mm2/s
Low-Temp. Brookfield Viscosity @ -12°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	96
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-15°C

AUTOGEAR OIL MP 80W-90

Productcode 4306

AUTOGEAR OIL MP 80W-90 is a high performance gear lubricant designed to provide excellent lubrication in a wide range of automotive transmissions, axles and final drives were an API GL-5 oil is specified.

AUTOGEAR OIL MP 80W-90 is formulated from carefully selected base stocks and well balanced extreme pressure additives. AUTO GEAR OIL MP 80W-90 gives excellent protection towards gear components regarding wear and scoring. Furthermore AUTO GEAR OIL MP 80W-90 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

AUTOGEAR OIL MP 80W-90 exceeds the specifications of API GL-5 and MIL-L-2105D, as well as the requirements of most “Original Equipment Manufacturers” (OEMs).

AUTO GEAR OIL MP 80W-90 is recommended for certain manual transmissions and final drives requiring oils meeting API GL-5 in on road passenger cars, light- and heavy duty trucks, buses and vans. AUTO GEAR OIL MP 80W-90 is also recommended for off highway equipment, in construction, mining and agriculture.

Exceeds: API GL-5, US Army MIL-L-2105D

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	80W-90
Density @ 15°C	ASTM D4052	902 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	162 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.4 mm2/s
Low-Temp. Brookfield Viscosity @ -26°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	200°C
Pour Point	ASTM D97	-27°C

AUTOGEAR OIL MP 85W-90

Productcode 4307

AUTOGEAR OIL MP 85W-90 is a high performance gear lubricant designed to provide excellent lubrication in a wide range of heavy duty automotive transmissions, axles and final drives where an API GL-5 oil is specified.

AUTOGEAR OIL MP 85W-90 is formulated from carefully selected base stocks and well balanced extreme pressure additives. AUTO GEAR OIL MP 85W-90 gives excellent protection towards gear components regarding wear and scoring. Furthermore AUTO GEAR OIL MP 85W-90 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

AUTOGEAR OIL MP 85W-90 exceeds the specifications of API GL-5 and MIL-L-2105D, as well as the requirements of most “Original Equipment Manufacturers” (OEMs).

AUTO GEAR OIL MP 85W-90 is suitable for heavy duty non-synchronized manual transmissions, axles and final drives requiring oils meeting API GL-5 in on road passenger cars, light- and heavy duty trucks, buses and vans and is also recommended for off highway equipment, in construction, mining and agriculture.

Exceeds: API GL-5, US Army MIL-L-2105D, MB 235.6, ZF TE-ML 05A/16C/17B/19B/21A

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	85W-90
Density @ 15°C	ASTM D4052	905 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	155 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	17.2 mm2/s
Low-Temp. Brookfield Viscosity @ -12°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	205°C
Pour Point	ASTM D97	-21°C

AUTOGEAR OIL MP 85W-140

Productcode 4308

AUTOGEAR OIL MP 85W-140 is a high performance gear lubricant designed to provide excellent lubrication in a wide range of automotive transmissions, axles and final drives were an API GL-5 oil is specified.

AUTOGEAR OIL MP 85W-140 is formulated from carefully selected base stocks and well balanced extreme pressure additives. AUTOGEAR OIL MP 85W-140 gives excellent protection towards gear components regarding wear and scoring. Furthermore AUTOGEAR OIL MP 85W-140 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

AUTOGEAR OIL MP 85W-140 exceeds the specifications of API GL-5 and MIL-L-2105D, as well as the requirements of most “Original Equipment Manufacturers” (OEMs).

AUTOGEAR OIL MP 85W-140 is recommended for certain manual transmissions and final drives requiring oils meeting API GL-5 in on road passenger cars, light- and heavy duty trucks, buses and vans and is also recommended for off highway equipment, in construction, mining and agriculture.

Exceeds: API GL-5, US Army MIL-L-2105D

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	85W-140
Density @ 15°C	ASTM D4052	910 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	421 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	29.1 mm2/s
Low-Temp. Brookfield Viscosity @ -12°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	96
Flash Point	ASTM D92	210°C
Pour Point	ASTM D97	-15°C

AUTOGEAR OIL MP 80W-140

Productcode 4309

AUTOGEAR OIL MP 80W-140 is a high performance gear lubricant designed to provide excellent lubrication in a wide range of automotive transmissions, axles and final drives were an API GL-5 oil is specified.

AUTOGEAR OIL MP 80W-140 is formulated from carefully selected base stocks and well balanced extreme pressure additives. AUTOGEAR OIL MP 80W-140 gives excellent protection towards gear components regarding wear and scoring and provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

AUTOGEAR OIL MP 80W-140 exceeds the specifications of API GL-5 and MIL-L-2105D, as well as the requirements of most “Original Equipment Manufacturers” (OEMs).

AUTOGEAR OIL MP 80W-140 is recommended for certain manual transmissions and final drives requiring oils meeting API GL-5 in on road passenger cars, light- and heavy duty trucks, buses and vans and is also recommended for off highway equipment, in construction, mining and agriculture.

Exceeds: API GL-5, US Army MIL-L-2105D

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	80W-140
Density @ 15°C	ASTM D4052	897 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	275 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	27.3 mm2/s
Low-Temp. Brookfield Viscosity @ -26°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	145
Flash Point	ASTM D92	190°C
Pour Point	ASTM D97	-27°C

AUTOGEAR OIL SYN 75W-90

Productcode 4310

AUTOGEAR OIL SYN 75W-90 is a fully synthetic supreme performance total driveline gear lubricant designed to meet the requirements of European drive trains of light and heavy duty commercial vehicles.

AUTOGEAR OIL SYN 75W-90 is formulated from carefully selected synthetic base stocks and an advanced technology additive system. AUTOGEAR OIL SYN 75W-90 gives unmatched protection towards gear components regarding wear and scoring.
Furthermore AUTOGEAR OIL SYN 75W-90 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

The high viscosity index of AUTOGEAR OIL SYN 75W-90 improves “shift ability”, especially at lower temperatures and reduces wear during warming-up periods. The exceptional shear stability guarantees a long lasting oil film strength and the viscometric of the oil enables improved fuel economy.

AUTOGEAR OIL SYN 75W-90 is recommended for European drive trains requiring oils meeting MAN M 3343 Type S (Formerly MAN M 3343 Type SL). Furthermore AUTOGEAR OIL SYN 75W-90 is recommended in manual transmissions and axel drives requiring GL-4/GL-5 and MT-1 performance.

Exceeds: API GL-4/GL-5/MT-1, MAN 3343 Type M, MAN 341 Type E-2, SAE J2360, MIL-L-PRF-2105E, Scania STO 1:0, Mack GO-J, DAF, IVECO, MB 235.0, ARVIN MERITOR 0-76-N, Renault B0032/2 annex 3, ZF TE-ML 02B/05A/7A/08/12E/16B/C/D/ 17B/19B/21A

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	75W-90
Density @ 15°C	ASTM D4052	876 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	102 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	15.2 mm2/s
Low-Temp. Brookfield Viscosity @ -40°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	140
Flash Point	ASTM D92	190°C
Pour Point	ASTM D97	-36°C

AUTOGEAR OIL XP 80W-90

Productcode 4311

AUTOGEAR OIL XP 80W-90 is a high performance gear lubricant designed to provide excellent lubrication in a wide range of automotive transmissions, axles and final drives were an API GL-4/GL-5/MT-1 oil is specified.

AUTOGEAR OIL XP 80W-90 is formulated from carefully selected base stocks and well balanced extreme pressure additives. AUTOGEAR OIL XP 80W-90 gives excellent protection towards gear components regarding wear and scoring. Furthermore AUTO GEAR OIL XP 80W-90 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam.

AUTOGEAR OIL XP 80W-90 exceeds the specifications of API GL-4/GL-5 and MIL-L-2105E, as well as the requirements of most “Original Equipment Manufacturers” (OEMs).

AUTO GEAR OIL XP 80W-90 is recommended for certain manual transmissions and final drives requiring oils meeting API GL-4/GL-5 in on road passenger cars, light- and heavy duty trucks, buses and vans. AUTO GEAR OIL XP 80W-90 is also recommended for off highway equipment, in construction, mining and agriculture.

Exceeds: API GL-4/GL-5/MT-1, MAN M 3343 Type M, SAE J2360, DAF, MB 235.0 Eaton, Mack GO-J, Renault, MIL-PRF-2105E, Volvo 97310, Iveco, Scania STO 1:0 (Gearbox) ZF TE-ML 02B/05A/07A/08/12E/16B/C/D/17B/19B/21A

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	80W-90
Density @ 15°C	ASTM D4052	902 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	148 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Low-Temp. Brookfield Viscosity @ -26°C	ASTM D2983	<150.000 cP
Viscosity Index	ASTM D2270	96
Flash Point	ASTM D92	200°C
Pour Point	ASTM D97	-27°C

AUTOGEAR OIL LS 80W-90

Productcode 4312

AUTO GEAR OIL LS 80W-90 is an 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 limited slip differentials. AUTO GEAR OIL LS 80W-90 is formulated from carefully selected base stocks and well balanced extreme pressure additives.

AUTO GEAR OIL LS 80W-90 gives excellent protection towards gear components regarding wear and scoring. Furthermore AUTO GEAR OIL LS 80W-90 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam. The special friction modifier AUTO GEAR OIL LS 80W-90 effectively prevents chatter and improves the traction characteristics.

AUTO GEAR OIL LS 80W-90 is recommended for heavy duty non synchronised manual transmissions, axles and final drives requiring “limited slip” oils meeting API GL-5.

Exceeds: API GL-5, US Army MIL-L-2105D, MAN 342 M2 (160.000 km drain) ZF TE-ML: 05A/05C/07A/12C/12E/16B/16C/16D/16E/17B/19B/21A/21C

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	80W-90
Density @ 15°C	ASTM D4052	898 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	162 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.3 mm2/s
Low-Temp. Brookfield Viscosity @ -26°C	ASTM D2983	<150000 cP
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	<-27°C

AUTOGEAR OIL LS 90

Productcode 4313

AUTOGEAR OIL LS 90 is an extra high performance 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 limited slip differentials and is formulated from carefully selected base stocks and well balanced extreme pressure additives.

AUTOGEAR OIL LS 90 gives excellent protection towards gear components regarding wear and scoring. Furthermore AUTOGEAR OIL LS 90 provides very good anti-corrosion protection and has been carefully inhibited against the formation of foam. The special friction modifier AUTOGEAR OIL LS 90 effectively prevents chatter and improves the traction characteristics.

AUTOGEAR OIL LS 90 is recommended for heavy duty non synchronised manual transmissions, axles and final drives requiring “limited slip” oils meeting API GL-5.

Exceeds: API GL-5/MT-1, U.S. Army MIL-PRF-2105D, ZF TE-ML-05C,12C,16E, 21C

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	90
Density @ 15°C	ASTM D4052	906 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	229 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	19.5 mm2/s
Viscosity Index	ASTM D2270	97
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-24°C

AUTOGEAR OIL TX 75W-80 Productcode 4333

AUTOGEAR OIL TX 75W-80 is a semi synthetic lubricating oil for mechanical transmissions, formulated with high quality synthetic and mineral base oils and special EP-additives. AUTOGEAR OIL TX 75W-80 meets the performance requirements of synchromesh manual transmissions which includes synchromesh compatibility, shift feel, thermal stability and low temperature fluidity.

AUTOGEAR OIL TX 75W-80 has the following properties: an excellent thermal stability, a very high activity against wear, corrosion and foam, a low pour point and very high quality EP-properties. AUTOGEAR OIL TX 75W-80 has also good clutch-switch performance at low temperatures, long durability and fuel economy.

AUTOGEAR OIL TX 75W-80 is specially developed for gearboxes under very heavy duty conditions together with high temperatures. AUTOGEAR OIL TX 75W-80 can also be used for extended drain intervals.

Exceeds: API GL-4, MAN 341 Type Z3, Mack GO-J, DAF, Volvo 97305, IVECO Eaton Europe (extended drain 300.000 km or 3 years) Renault (in accordance with Renault Note Technique B0032/2 Annex 3) ZF TE-ML-02D

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	75W-80
Density @ 15°C	ASTM D4052	880 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	60 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	9.0 mm2/s
Low-Temp. Brookfield Viscosity @ -40°C	ASTM D2983	<150.000 cP
Viscosity Index	ASTM D2270	125
Flash Point	ASTM D92	235°C
Pour Point	ASTM D97 -	39°C

AUTOGEAR OIL SYN 75W-85 Productcode 4334

AUTOGEAR OIL SYN 75W-85 is a fully-synthetic, fuel-economy passenger car axle fluid offering increased gearbox efficiency in passenger cars due to low viscosity level. AUTOGEAR OIL SYN 75W-85 reduces fuel consumption and offers best cold start behaviour. AUTOGEAR OIL SYN 75W-85 is blended with a modern, OEM-proven additive technology with multiple application profiles embedded into a shear free fully synthetic base oil matrix. Special Friction Modifiers reduce power losses in gears and bearings due to friction, and hence increase the gearbox efficiency as well as ensuring the performance of limited slip differentials. Oil sump temperature is reduced significantly during constant operation.

AUTOGEAR OIL SYN 75W-85 is miscible and compatible with other branded axle fluids. Full performance can only be achieved when pure, unmixed product is being used. To benefit from the full properties of the product, a full oil drain is recommended when switching to AUTOGEAR OIL SYN 75W-85. Suitable as fill for life fluid according to manufacturer.

AUTOGEAR OIL SYN 75W-85 has fuel economy benefit and the product diversity has several application opportunities, also for limited slip differentials. AUTOGEAR OIL SYN 75W-85 offers reliable operation under high stress (without shear loss of viscosity) in rear axle gears during the whole oil operation interval (Fill-for-life), protects against wear, sludge formation, deposits and corrosion.

AUTOGEAR OIL SYN 75W-85 offers an outstanding viscosity temperature behaviour lying above the performance of many normal service gearbox lubricants, thus ensuring lubrication at very low as well as very high operation temperatures and Is thermally highly stable and does not foam even under highest stress and is compatible with many elastomers and other sealant materials.

Exceeds: API GL-5, MB 235.7, ALFA ROMEO, BMW, FIAT, LANCIA, VW TL 521 45-X (G 052 145 A1)/VW TL 521 90 (G 052 190 A2/G 055 190 A2), ZF TE-ML 18

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J306	75W-85
Density @ 15°C	ASTM D4052	870 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	81.5 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	12.1 mm2/s
Low-Temp. Brookfield Viscosity @ -40°C	ASTM D2983	55000 cP
Viscosity Index	ASTM D2270	144
Flash Point	ASTM D92	190°C
Pour Point	ASTM D97	-51°C
Foaming Tendency Seq.I // II // III	ASTM D892	10/0 // 20/0 //10/0

AUTOGEAR OIL SYN 75W-140 Productcode 4335

AUTOGEAR OIL SYN 75W-140 is a fully synthetic thermally stable 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.

AUTOGEAR OIL SYN 75W-140 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 nonsynchronised 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.

Exceeds: API GL-5, MT-1, MIL-PRF-2105E, MIL-L-2105D, SAE J 2360, MACK GO-J, Scania STO 2:0

Property:	Test Method:	Typical Values:
SAE Grade	SAE J3000	75W-140
Density@15°C kg/m3	ASTM D4052	858
Kin. Viscosity @40°C mm2/s	ASTM D7042	185
Kin. Viscosity @100°C mm2/s	ASTM D7042	25.0
Viscosity Index	ASTM D2270	168
Brookfield @-40°C cP	ASTM D2983	150000
Flash Point COC °C	ASTM D92	160
Pour Point °C	ASTM D97	-45

AUTOGEAR OIL TDL 85W-140 Productcode 4336

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

Exceeds: API GL-5, MT-1, MIL-PRF-2105E, MIL-L-2105D, SAE J 2360, MACK GO-J, Scania STO 1:0, MAN M 3343M, ZF TE ML 05A, 07A, 08, 12E, 16C/D, 19B

Property:	Test Method:	Typical Values:
SAE Grade	SAE J3000	85W-140
Density@15°C kg/m3	ASTM D4052	901
Kin. Viscosity @40°C mm2/s	ASTM D7042	368
Kin. Viscosity @100°C mm2/s	ASTM D7042	27.1
Viscosity Index	ASTM D2270	99
Brookfield @-40°C cP	ASTM D2983	150000
Flash Point COC °C	ASTM D92	211
Pour Point °C	ASTM D97	-21

TO-4 TRANSMISSION FLUID 30 Productcode 4314

TO-4 TRANSMISSION FLUID 30 is specifically designed for power shift 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 blended from high quality base oils and additives to provide wear protection, thermo-oxidative stability, frictional characteristics and rust & corrosion protection. TO-4 TRANSMISSION FLUID 30 is designed to meet the performance requirements of Caterpillar TO-4, Komatsu power shift transmissions, ZF torque converter transmissions and Allison C-4 Automatic Transmissions.

TO-4 TRANSMISSION FLUID 30 has improved thermo-oxidative stability giving protection of metal surfaces against scuffing and wear thus giving longer oil and equipment life. Good control of frictional properties prevents clutch slippage and ensures smoother operation of transmissions and brakes. TO-4 TRANSMISSION FLUID 30 provides good protection against rust and corrosion to precision equipment components when operating in humid conditions. Keeps metal parts free of sludge and varnish leading to reliable operation and excellent foam control ensures effective wet brake and transmission performance and controls brake chatter.

TO-4 TRANSMISSION FLUID 30 is suited for power shift and automatic transmissions, wet brake, torque converters and hydrostatic systems requiring these quality fluids. Also suited for heavy duty manual transmissions, gear boxes, final drives and hydraulic systems used in off highway equipments for earthmoving, agricultural, logging, construction and mining applications requiring fluids meeting the below mentioned specifications.

Exceeds: Caterpillar TO-4, Komatsu KES 07.868.1, Allison C-4, ZF TE-ML- 03C

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	894 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	88.1 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	10.5 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	180°C
Pour Point	ASTM D97	-27°C

TO-4 TRANSMISSION FLUID 10W Productcode 4316

TO-4 TRANSMISSION FLUID 10W is specifically designed for power shift 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 is blended from high quality base oils and additives to provide wear protection, thermo-oxidative stability,
frictional characteristics and rust & corrosion protection. TO-4 TRANSMISSION FLUID 10W is designed to meet the performance requirements of Caterpillar TO-4 & Komatsu power shift transmissions.

TO-4 TRANSMISSION FLUID 10W has improved thermo-oxidative stability giving protection of metal surfaces against scuffing and wear thus giving longer oil and equipment life. Good control of frictional properties prevents clutch slippage and ensures smoother operation of transmissions and brakes. TO-4 TRANSMISSION FLUID 10W provides good protection against rust and corrosion to precision equipment components when operating in humid conditions. Keeps metal parts free of sludge and varnish leading to reliable operation and excellent foam control ensures effective wet brake and transmission performance and controls brake chatter.

TO-4 TRANSMISSION FLUID 10W is suited for power shift and automatic transmissions, wet brake, torque converters and hydrostatic systems requiring these quality fluids. Also suited for heavy duty manual transmissions, gear boxes, final drives and hydraulic systems used in off highway equipments for earthmoving, agricultural, logging, construction and mining applications requiring fluids meeting the below mentioned specifications.

Exceeds: Caterpillar TO-4, Komatsu KES 07.868.1, Allison C-4, ZF TE-ML-03, API CF/CF-2

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W
Density @ 15°C	ASTM D4052	877 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	30.5 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	5.5 mm2/s
Low-Temp. Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	117
Flash Point	ASTM D92	>160°C
Pour Point	ASTM D97	<-36°C

TO-4 TRANSMISSION FLUID 50 Productcode 4315

TO-4 TRANSMISSION FLUID 50 is specifically designed for power shift 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 blended from high quality base oils and additives to provide wear protection, thermo-oxidative stability, frictional characteristics and rust & corrosion protection. TO-4 TRANSMISSION FLUID 50 is designed to meet the performance requirements of Caterpillar TO-4 & Komatsu power shift transmissions.

TO-4 TRANSMISSION FLUID 50 has improved thermo-oxidative stability giving protection of metal surfaces against scuffing and wear thus giving longer oil and equipment life. Good control of frictional properties prevents clutch slippage and ensures smoother operation of transmissions and brakes. TO-4 TRANSMISSION FLUID 50 provides good protection against rust
and corrosion to precision equipment components when operating in humid conditions. Keeps metal parts free of sludge and varnish leading to reliable operation and excellent foam control ensures effective wet brake and transmission performance and controls brake chatter.

TO-4 TRANSMISSION FLUID 50 is suited for power shift and automatic transmissions, wet brake, torque converters and hydrostatic systems requiring these quality fluids. Also suited for heavy duty manual transmissions, gear boxes, final drives and hydraulic systems used in off highway equipments for earthmoving, agricultural, logging, construction and mining applications requiring fluids meeting the below mentioned specifications.

Exceeds: Caterpillar TO-4, Komatsu KES 07.868.1

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	50
Density @ 15°C	ASTM D4052	903 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	208 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	18.1 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	220°C
Pour Point	ASTM D97	-30°C

ATF MBF

Productcode 4318

ATF MBF is an ultra high-performance Automatic Transmission Fluid of latest generation and specially developed to improve shifting comfort for the new generation of Mercedes-Benz NAG2 Automatic Transmissions. ATF MBF is formulated with selected HVI base oils and special additive package and offers outstanding fuel-efficiency potential combined with increased friction stability.

ATF MBF offers excellent low temperature properties, optimised and stable viscosity gives potential for fuel economy and friction performance is constant over lifetime ensuring perfect gearbox operation. ATF MBF resists shudder and vibration even after high mileage, and ensures smooth operation. Additive components ensure aging and oxidation stability and can be used as a problem solver with gearboxes showing reduced shifting comfort.

ATF MBF is factory filled in the latest generation of Mercedes Benz (NAG 2) 7-speed automatic gearboxes (Model designation 722.9) and provides the required anti-wear and friction modifier additive systems to ensure proper function during the full lifetime of the gearbox. ATF MBF is backward compatible to products fulfilling the requirements of MB 236.12 and substitutes them in almost every application (refer to manufacturer filling instruction). ATF MBF is specially recommended for 5-speed transmissions with regulated torque converter lockup clutch for vehicles with rear wheel drive (model designation 722.6) for remarkable improvement of shifting quality. ATF MBF is also suitable for Chrysler Crossfire and other vehicles requiring ATF MBF or a product in compliance with MB 236.14. ATF MBF is also specified for the use in Ssang Yong vehicles equipped with MB-Transmissions.
ATF MBF is miscible and compatible with conventional branded ATFs. However, a complete oil change is recommended when converting to ATF MBF in order to exploit the product's full benefits.

Exceeds: MB 236.14, SSANG YONG (MB-Automatic transmissions)

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	850 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	29.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.5 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	8500 mPa.s
Viscosity Index	ASTM D2270	185
Flash Point (COC)	ASTM D92	200°C
Pour Point	ASTM D97	-51°C
Foaming Tendency Seq.I//II//III	ASTM D892	0/0//10/0//0/0
Colour	Visual	Red

ATF DX II

Productcode 4320

ATF DX II is an oil for automatic transmissions in older vehicles specifying the use of DEXRON® II quality fluids. High quality base oils and special additives provide resistance towards oxidation and improves frictional properties.

ATF DX II exceeds the performance requirements of General Motors DEXRON® IID and provides excellent shifting behaviour under all conditions.

ATF DX II has good thermo-oxidative stability preventing the formation of undesirable deposits. The high viscosity index ensures adequate lubrication under all circumstances, while the excellent foam control leads to a long lasting, smooth shifting.

ATF DX II is recommended for all vehicles of General Motors requiring DEXRON® IID quality fluids and is also recommended for certain power steering units, certain manual transmissions and hydraulic systems where such fluids are required.

Exceeds: General Motors DEXRON® IID

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	863 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	37.3 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	7.0 mm2/s
Dynamic Viscosity @ -40°C	ASTM D2983	<50000 mPa.s
Viscosity Index	ASTM D2270	>140
Flash Point (COC)	ASTM D92	170°C
Pour Point	ASTM D97	<-42°C

ATF DCT FLUID

Productcode 4321

ATF DCT FLUID is a fully synthetic Dual Clutch Transmission (DCT) Fluid for the new generation of BMW dual clutch gear transmissions. ATF DCT FLUID is formulated with a fully synthetic base oil and special additives for safe operation.

ATF DCT FLUID provides exceptional frictional properties for the clutch and superior protection for the gear sets, protects against wear and corrosion while the low viscosity improves fuel economy.

ATF DCT FLUID is suitable for BMW dual clutch transmissions designed by GETRAG, for VW DSG-requirements and for DCTs designed by ZF.

Note: Do NOT mix with other transmission fluids during service!

Exceeds the specifications of: BMW EU: 83 22 2 148 578 / 83 22 2 148 579, BMW USA: 83 22 0 440 214 / 83 22 2 147 477, Porsche 0000 043020 , ZF TE-ML 11, VW TL 521 82

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	852 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	7.5 mm2/s
Kinematic Viscosity @ 40°C	ASTM D7042	36.3 mm2/s
Viscosity Index	ASTM D2270	170
Flash Point	ASTM D92	>160°C
Pour Point	ASTM D97	<-39°C
Colour	Visual	Colourless

ATF DX III

Productcode 4322

ATF DX III is an oil for automatic transmissions in vehicles specifying the use of DEXRON® III quality fluids. High quality base oils and special additives ensure improved resistance to oxidation, possesses better low temperature fluidity and shows improved frictional properties.

ATF DX III exceeds the performance requirements of General Motors DEXRON® III specification and provides excellent shifting behaviour under all conditions.

ATF DX III has excellent thermo-oxidative stability preventing the formation of undesirable deposits.

ATF DX III is recommended for all vehicles of General Motors requiring DEXRON®-IIIG quality fluids as well as in vehicles of Ford requiring so-called MERCON® fluids.

The maximum oil change interval for MAN 339 Type V-1 & Z-1 is 60.000 km! Always consult the Original Equipment Manufacturers (OEM) manual!!

Exceeds: GM DEXRON®III F/G, Ford MERCON®, Allison C-4, Caterpillar TO-2, MB 236.1, MAN 339 Type V-1/MAN 339 Type Z-1, Voith 55.6335.33, Nissan, ZF TE-ML 02F/03D/04D/14A/17C

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	862 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	34.3 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	7.7 mm2/s
Dynamic Viscosity @ -40°C	ASTM D2983	18400 cP
Viscosity Index	ASTM D2270	205
Flash Point (COC)	ASTM D92	>195°C
Pour Point	ASTM D97	-45°C
Colour	Visual	Red

ATF MV

Productcode 4323

ATF MV is a high performance fully synthetic, high quality automatic transmission fluid manufactured for multi-vehicle automatic transmissions. ATF MV is formulated with high quality additives that provide excellent friction durability and anti-shudder performance required by transmission manufacturers and meets the requirements of the major OEM commercial vehicle automatic transmission specifications.

ATF MV has excellent thermo-oxidative stability, wear protection and anti-shudder properties.

ATF MV is suited for automatic transmissions of North-American cars & trucks. Also suited for European and Asian vehicles such as Audi, BMW, Chrysler, Daimler, Ford, Honda, Hyundai, Jaguar, KIA, MAN, Mazda, Mitsubishi, Nissan, Subaru, Suzuki, Toyota, Volkswagen & Volvo and others requiring such quality fluids and for automatic transmission manufactured by Aisin-Warner, Allison, Voith, ZF and others.

Note: Not suitable for use in Continuously Variable Transmissions (CVT), Dual Clutch Transmissions (DCT), Ford Type F/G, Daimler MB 7 speed (NAG 2), ZF 6 Speed.

Exceeds: Aisin Warner JWS 3309, Allison C-4, Audi G 052 025-A2/G-052-162-A1, BMW (AE) LT 71141–ZF 5 Speed/7045E(3 Series), ETL-8072B (BMW 5 Series), LA2634, Chrysler ATF+3/ATF+4, MB 236.1/236.2/236.5/236.6/236.7/236.9/236.10 (NAG-1, MB 5 Speed 1996-2006), MB 236.11 (LT 71141), Ford FNR5, MERCON®/MERCON®V, GM DEXRON®/DEXRON®II/IID/DEXRON®IIIG/H, Honda ATF-Z1, Hyundai SP-II/SP-III, JATCO 3100 PL085 (Idemitsu K17 – Jaguar X Type 2001-2005), JASO 1-A, KIA SP-II/SP-III, Mazda ATF-MIII/MV, MAN 339 V-1/339 V-2/339 Z-1/339 Z-2, Mitsubishi Diamond SP-II/SP-III, Nissan Matic-D/J/K/S N402 (JATCO FWD Daimler in Nissan, Rover 800, VW Polo), Subaru ATF-HP, Toyota T-III/T-IV, Volvo 97340/97341, Voith 55.6335.XX (G607), 55.6336.XX (G1363)VW G 052 025-A2/G-052-162-A1/TL52162 ZF TE-ML 02F/03D/04D/05L/09/11B/14A/14B, 16L, 17C

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	847 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	35 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	7.5 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	10000 cP
Viscosity Index	ASTM D2270	180
Flash Point (COC)	ASTM D92	200°C
Pour Point	ASTM D97	-48°C

ATF DX VI

Productcode 4324

ATF DX VI is a supreme performance long lasting automatic transmission fluid, especially developed for all 2006, and beyond, General Motors vehicles equipped with automatic transmissions.

ATF DX VI is formulated with exceptional quality base fluids and the latest additive technology in order to achieve outstanding oxidation resistance, improved friction characteristics and optimal wear protection.

ATF DX VI has outstanding thermo-oxidative stability, preventing the formation of undesirable deposits. The high viscosity index ensures adequate lubrication in both high operating and low starting temperatures. Enhanced low temperature fluidity assists in good cold shifting performance.

ATF DX VI provides better protection against rust and corrosion while the excellent foam control leads to long lasting, smooth shifting behaviour.

ATF DX VI is recommended for all vehicles of General Motors from 2006 and beyond equipped with Hydramatic transmissions. General Motors vehicles with six speed Hydramatic transmissions requiring DEXRON® VI quality fluids. Being fully backwards compatible, ATF DX VI is also recommended for automatic transmissions requiring DEXRON® III (H), DEXRON® III(G), DEXRON®IIE and DEXRON®IID fluids.

Exceeds: General Motors DEXRON®VI

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	842 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	30 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.1 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	<150000 mPa.s
Viscosity Index	ASTM D2270	150
Flash Point (COC)	ASTM D92	290°C
Pour Point	ASTM D97	-48°C
Colour	Visual	Red

ATF CVT FLUID

Productcode 4325

ATF CVT FLUID is an ultra high performance transmission oil formulated with selected base stocks and specially recommended for use in the latest generations of Continuously Variable Transmission (CVT) - gearboxes which transfer traction via steelmade traction chains or push-belts.

ATF CVT FLUID offers outstanding antiwear protection even under severe operating conditions and meets the most demanding requirements of a CVT transmission. ATF CVT FLUID offers excellent low temperature properties and ensures very stable friction coefficients over the entire service time for reliable power transmission and lowest friction losses. The special additive package ensures best ageing and oxidation stability as well as outstanding protection against foaming which is specially required in CVT transmissions.

ATF CVT FLUID has been tested successfully to be used in many CVT's of various brands such as Audi Multitronic & Mercedes Benz Autotronic. The drain intervals of the Original Equipment Manufacturers (OEMs) are mandatory.

Exceeds: MB 236.20, Ford WSS-M2C928-A, BMW 83 22 0 136 376/BMW 83 22 0 429 154 VW TL 521 80 (G 052 180)w

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	848 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	34 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	7 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	11.900 mPa.s
Viscosity Index	ASTM D2270	173
Flash Point (COC)	ASTM D92	210°C
Pour Point	ASTM D97	-51°C
Foaming Tendency Seq.I/II	ASTM D892	30/0//30/0

ATF L6S

Productcode 4501

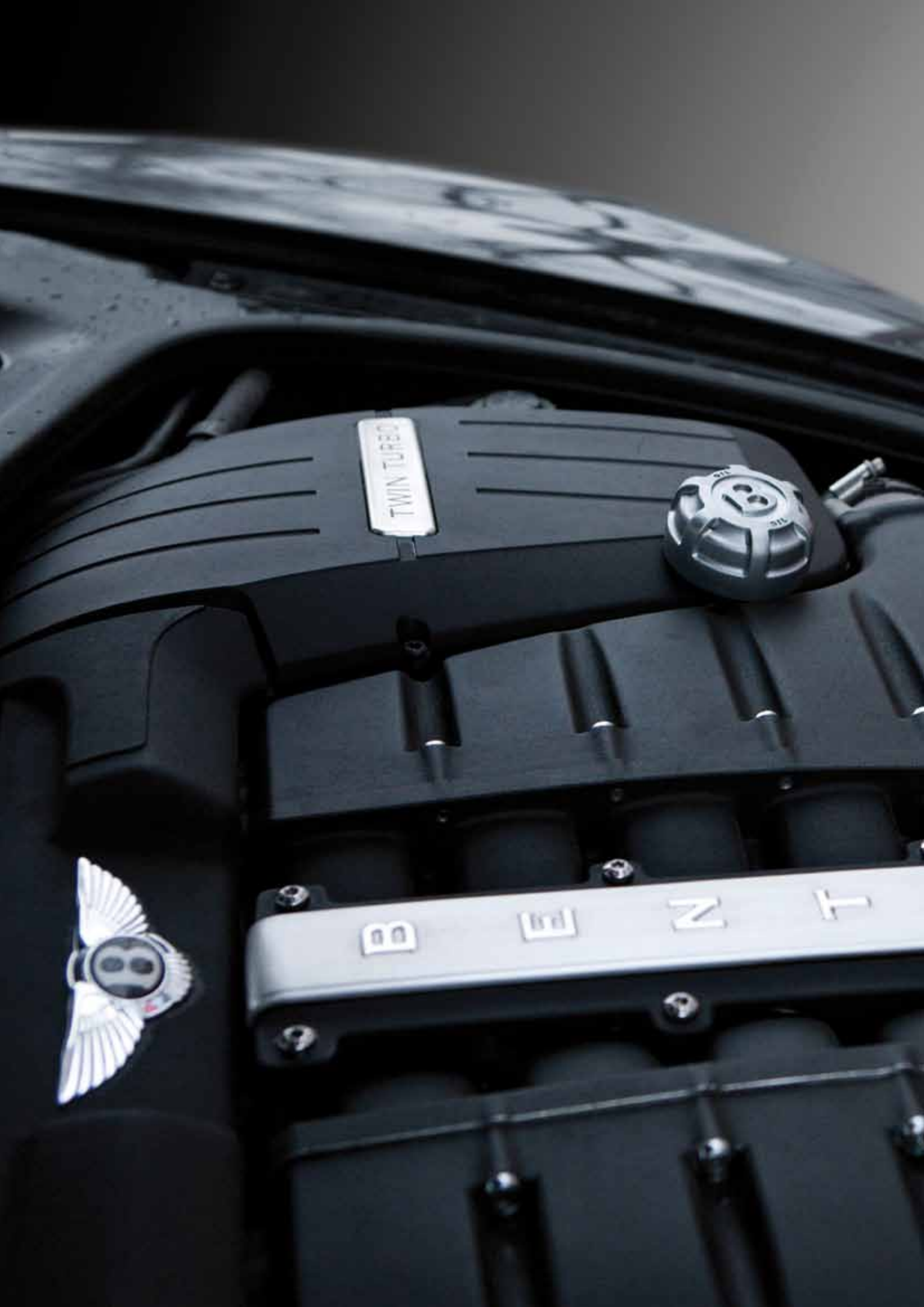
ATF L6S is a high performance full synthetic long life ATF specially designed for all 6-speeds automatic transmissions developed by ZF where a constructor requires a M.1375-4 specification.

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.

Exceeds: M.1375-4, VW G 055 005, Toyota Type WS, Nissan Matic S, Hyundai SP-IV, Mercon LV, Dexron VI

Property:	Test Method:	Typical Values:
Density @15°C kg/m3	ASTM D4052	840
Kin. Viscosity @40°C mm2/s	ASTM D7042	27
Kin. Viscosity @100°C mm2/s	ASTM D7042	5.6
Viscosity Index	ASTM D2270	151
Flash Point COC °C	ASTM D92	>201
Pour Point °C	ASTM D97	-54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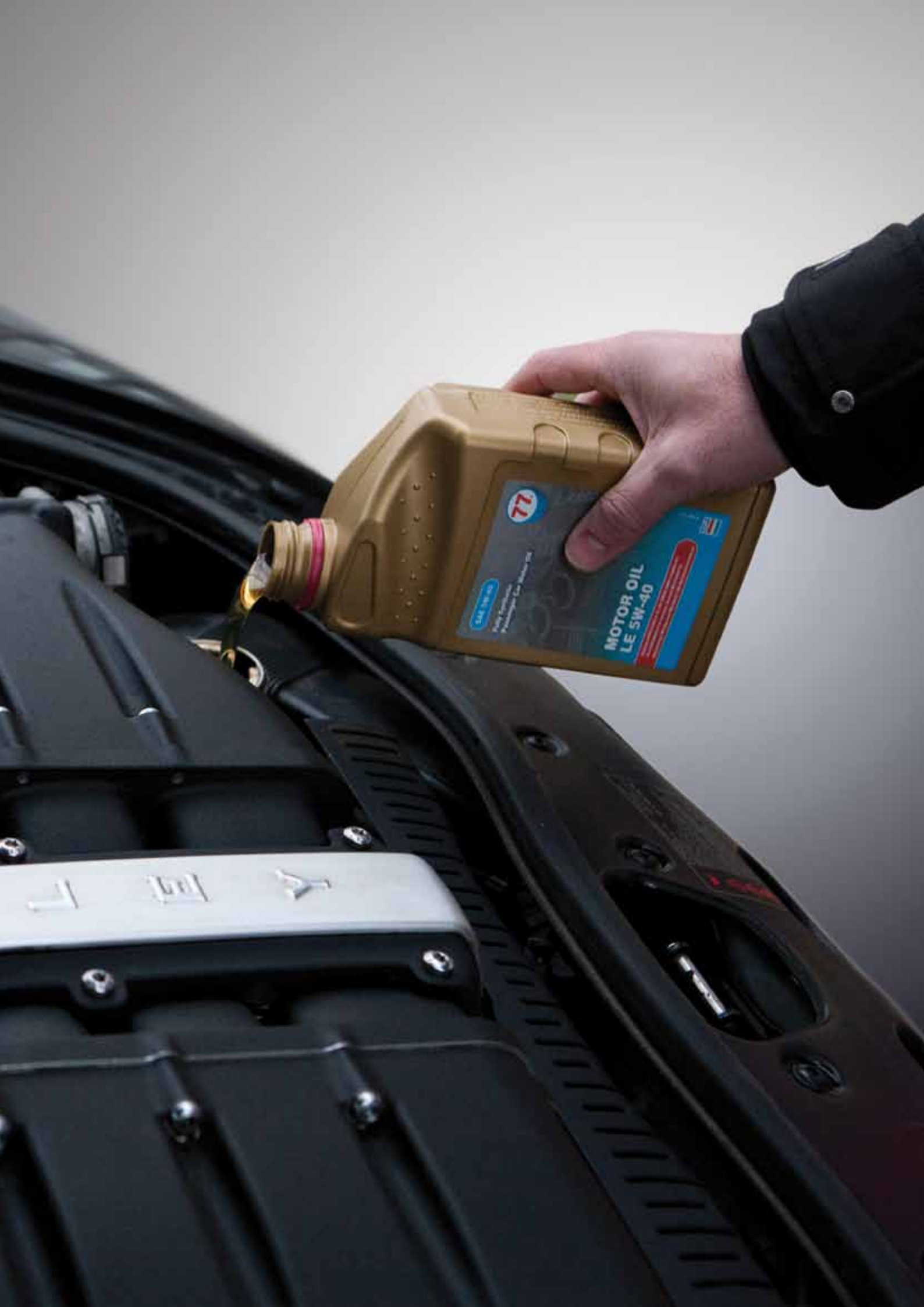

MOTOR OIL
LE SW-40

SUPER TRACTOR OIL 10W-40 Productcode 4326

SUPER TRACTOR OIL 10W-40 is a high quality so-called “Super Tractor Oil Universal”(STOU) lubricant formulated with carefully selected mineral base stocks and modern additives.

SUPER TRACTOR OIL 10W-40 has been developed for use in tractors, combines harvesters and off road machinery with naturally aspirated or turbo charged diesel engines. Furthermore the product has been designed to serve in the hydraulic system, lubricate the transmission and power take off, final drive and oil immersed “wet brakes”.

SUPER TRACTOR OIL 10W-40 possesses viscometric characteristics allowing excellent cold starting in winter time and optimal response of the hydraulics under all conditions.

SUPER TRACTOR OIL 10W-40 ensures optimal protection of the engine, effectively preventing wear and sludge; apart of that the product shows superior performance in transmissions of off road equipment.

Exceeds: API CF-4/CF/SF, API GL-4, John Deere J27C, MF 1139/1144, Ford M2C-159B, Allison C-4, Caterpillar TO-2, ZF TE-ML 06B/07B

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-40
Density @ 15°C	ASTM D4052	879 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	68 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.0 mm2/s
Cranking Viscosity @ -25°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	130
Flash Point (COC)	ASTM D92	205°C
Pour Point	ASTM D97	-30°C
Total Base Number (TBN)	ASTM D2896	10.6 mgKOH/g
Sulphated Ash	ASTM D874	1.4 wt %

SUPER TRACTOR OIL 10W-30 Productcode 4327

SUPER TRACTOR OIL 10W-30 is a high quality so-called “Super Tractor Oil Universal”(STOU) lubricant formulated with carefully selected mineral base stocks and modern additives

SUPER TRACTOR OIL 10W-30 has been developed for use in tractors, combines harvesters and off road machinery with naturally aspirated or turbo charged diesel engines. Furthermore the product has been designed to serve in the hydraulic system, lubricate the transmission and power take off, final drive and oil immersed “wet brakes”.

SUPER TRACTOR OIL 10W-30 possesses viscometric characteristics allowing excellent cold starting in winter time and optimal response of the hydraulics under all conditions.

SUPER TRACTOR OIL 10W-30 ensures optimal protection of the engine, effectively preventing wear and sludge; apart of that the product shows superior performance in transmissions of off road equipment.

Exceeds: General Motors DEXRON® IID

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	10W-30
Density @ 15°C	ASTM D4052	885 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	57 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	9.6 mm2/s
Brookfield Viscosity @ -18°C	ASTM D5293	<4000 mPa.s
Viscosity Index	ASTM D2270	150
Flash Point (COC)	ASTM D92	210°C
Pour Point	ASTM D97	<-30°C
Total Base Number (TBN)	ASTM D2896	9.2 mgKOH/g
Sulphated Ash	ASTM D874	1.3 wt %

SUPER TRACTOR OIL 15W-40 Productcode 4329

SUPER TRACTOR OIL 15W-40 is a high quality so-called “Super Tractor Oil Universal”(STOU) lubricant formulated with carefully selected mineral base stocks and modern additives.

SUPER TRACTOR OIL 15W-40 has been developed for use in tractors, combines harvesters and off road machinery with naturally aspirated or turbo charged diesel engines. Furthermore the product has been designed to serve in the hydraulic system, lubricate the transmission and power take off, final drive and oil immersed “wet brakes”.

SUPER TRACTOR OIL 15W-40 possesses viscometric characteristics allowing excellent cold starting in winter time and optimal response of the hydraulics under all conditions.

SUPER TRACTOR OIL 15W-40 ensures optimal protection of the engine, effectively preventing wear and sludge; apart of that the product shows superior performance in transmissions of off road equipment.

Exceeds: API CF-4/CF/SF, API GL-4, John Deere J27C MF 1139/1144, Ford M2C-159B, Allison C-4, Caterpillar TO-2, ZF TE-ML 06B/06C/07B

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	15W-40
Density @ 15°C	ASTM D4052	887 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	108 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	13.5 mm2/s
Cranking Viscosity @ -20°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	130
Flash Point (COC)	ASTM D92	215°C
Pour Point	ASTM D97	-27°C
Total Base Number (TBN)	ASTM D2896	10.6 mgKOH/g
Sulphated Ash	ASTM D874	1.4 wt %

UNIVERSAL TRACTOR OIL 85W Productcode 4331

UNIVERSAL TRACTOR OIL 85W is a high quality so-called “Universal Tractor Transmission Oil” (UTTO) lubricant formulated with carefully selected mineral base stocks and modern additives.

UNIVERSAL TRACTOR OIL 85W is suitable for modern high performance tractors, requiring one single lubricant for the hydraulic system, transmission, differential, power take off and oil immersed “wet” brakes.

UNIVERSAL TRACTOR OIL 85W is formulated with a shear stable viscosity index improver providing excellent fluidity at low temperatures.

UNIVERSAL TRACTOR OIL 85W contains very sophisticated anti wear and extreme pressure (EP) additives to prevent scuffing and scoring of metal surfaces under high speed, shock load conditions.

UNIVERSAL TRACTOR OIL 85W withstands long-lasting high loads and ensures the proper functioning of the hydraulic system.

Note; this product should not be used for engine lubrication!!

Exceeds: API GL-4, John Deere J20C Ford M2C 134D, MF CMS M1135/1143/1145, Case NH MAT 3525&3526, ZF TE ML 03E/05E

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	85W
Density @ 15°C	ASTM D4052	886 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	66 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.2 mm2/s
Cranking Viscosity @ -18°C	ASTM D5293	<4000 mPa.s
Viscosity Index	ASTM D2270	138
Flash Point (COC)	ASTM D92	210°C
Pour Point	ASTM D97	-30°C
Total Base Number (TBN)	ASTM D2896	9.4 mgKOH/g
Sulphated Ash	ASTM D874	1.3 wt %

UNIVERSAL TRACTOR OIL 80W Productcode 4332

UNIVERSAL TRACTOR OIL 80W is a high quality so-called “Universal Tractor Transmission Oil” (UTTO) lubricant formulated with carefully selected mineral base stocks and modern additives.

UNIVERSAL TRACTOR OIL 80W is suitable for modern high performance tractors, requiring one single lubricant for the hydraulic system, transmission, differential, power take off and oil immersed “wet” brakes.

UNIVERSAL TRACTOR OIL 80W is formulated with a shear stable viscosity index improver providing excellent fluidity at low temperatures.

UNIVERSAL TRACTOR OIL 80W contains very sophisticated anti wear and extreme pressure (EP) additives to prevent scuffing and scoring of metal surfaces under high speed, shock load conditions.

UNIVERSAL TRACTOR OIL 80W withstands long-lasting high loads and ensures the proper functioning of the hydraulic system.

Note; this product should not be used for engine lubrication!!

Exceeds: API GL-4, John Deere J20C, Ford M2C 134D, Massey Ferguson CMS M1135/1143/1145 Case New Holland MAT 3525 & 3526, ZF TE ML 03E/05E, Volvo WB 101

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	847 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	35 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	7.5 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	10000 cP
Viscosity Index	ASTM D2270	180
Flash Point (COC)	ASTM D92	200°C
Pour Point	ASTM D97	-48°C

MILKING MACHINE OIL 68 Productcode 4340

Milking Machine Oil 68 is a high quality oil developed for use in milking machines and formulated from specially selected highly refined mineral oils. Milking Machine Oil 68 is a non-foaming oil for use in all piston and rotary milking machine vacuum pumps.

Milking Machine Oil 68 has good water separation ensuring the oil does not emulsify with moisture or condensation. Excellent filterability ensures that solid contaminants are easily removed from the oil, this way prolonging long pump life and reliability. Low volatility prevents oil constituents evaporating away 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 is suitable for use in a variety of pump designs operating in all temperatures and conditions. Milking Machine Oil 68 is also recommended for the lubrication of associated milk handling hydraulics and equipment.

Milking Machine Oil 68 should NOT be permitted to come into contact with the milk.... i.e. no incidental food contact.

Exceeds: DIN 51524/2 HLP

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	885 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	61.2-74.8 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.7 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>205°C
Pour Point	ASTM D97	-33°C
Air Release Value @ 50°C	DIN 51381	<8 minutes
Demulsibility @ 54°C	DIN 51599	<30 minutes

INDUSTRIAL GEAR OIL SYNTH 100

Productcode 4346

INDUSTRIAL GEAR OIL SYNTH 100 is a premium quality fully synthetic heavy duty gear oil, formulated from Poly Alpha Olefins (PAO) and selected additives and is primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL SYNTH 100 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL SYNTH 100 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL SYNTH 100 is recommended for the lubrication of heavy duty industrial gear boxes working under severe load and high temperatures conditions.

Exceeds: ISO 12925-1 Enclosed Gears of Category CKD, DIN 51517 Part 3 – Lubricating Oils CLP AGMA 9005-E02 – Extreme Pressure Gear Lubricants, AIST (US Steel) Requirements No. 224 Lead Free EP Gear Oil, David Brown S1.53.101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	100
Density @ 15°C	ASTM D4052	839 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	11.4 mm2/s
Viscosity Index	ASTM D2270	145
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	-42°C
FZG Load Stage	DIN 51354-2	12

INDUSTRIAL GEAR OIL SYNTH 150

Productcode 4344

INDUSTRIAL GEAR OIL SYNTH 150 is a premium quality fully synthetic heavy duty gear oil, formulated from Poly Alpha Olefins (PAO) and selected additives and is primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL SYNTH 150 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL SYNTH 150 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL SYNTH 150 is recommended for the lubrication of heavy duty industrial gear boxes working under severe load and high temperatures conditions.

Exceeds: ISO 12925-1 Enclosed Gears of Category CKD, DIN 51517 Part 3 – Lubricating Oils CLP AGMA 9005-E02 – Extreme Pressure Gear Lubricants, AIST (US Steel) Requirements No. 224 Lead Free EP Gear Oil, David Brown S1.53.101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	150
Density @ 15°C	ASTM D4052	842 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	13.6 mm2/s
Viscosity Index	ASTM D2270	>140
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	<-30°C
FZG Load Stage	DIN 51354-2	12

INDUSTRIAL GEAR OIL SYNTH 220

Productcode 4497

INDUSTRIAL GEAR OIL SYNTH 220 is a premium quality fully synthetic heavy duty gear oil, formulated from Poly Alpha Olefins (PAO) and selected additives and is primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL SYNTH 220 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL SYNTH 220 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL SYNTH 220 is recommended for the lubrication of heavy duty industrial gear boxes working under severe load and high temperatures conditions.

Exceeds: ISO 12925-1 Enclosed Gears of Category CKD, DIN 51517 Part 3 – Lubricating Oils CLP AGMA 9005-E02 – Extreme Pressure Gear Lubricants, Flender AG AIST (US Steel) Requirements No. 224 Lead Free EP Gear Oil, David Brown S1.53.101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	220
Density @ 15°C	ASTM D4052	845 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	198-242 mm2/s
Viscosity Index	ASTM D2270	>145
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	<-30°C
FZG Load Stage	DIN 51354-2	12

INDUSTRIAL GEAR OIL SYNTH 320

Productcode 4475

INDUSTRIAL GEAR OIL SYNTH 320 is a premium quality fully synthetic heavy duty gear oil, formulated from Poly Alpha Olefins (PAO) and selected additives and is primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL SYNTH 320 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL SYNTH 320 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL SYNTH 320 is recommended for the lubrication of heavy duty industrial gear boxes working under severe load and high temperatures conditions.

Exceeds: ISO 12925-1 Enclosed Gears of Category CKD, DIN 51517 Part 3 – Lubricating Oils CLP AGMA 9005-E02 – Extreme Pressure Gear Lubricants, Flender AG, AIST (US Steel) Requirements No. 224 Lead Free EP Gear Oil, David Brown S1.53.101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	320
Density @ 15°C	ASTM D4052	849 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	304 – 336 mm2/s
Viscosity Index	ASTM D2270	150
Flash Point (COC)	ASTM D92	250°C
Pour Point	ASTM D97	-30°C
FZG Load Stage	DIN 51354-2	12

INDUSTRIAL GEAR OIL CLP 68

Productcode 4345

INDUSTRIAL GEAR OIL CLP 68 is a premium quality heavy duty gear oil, primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL CLP 68 is formulated from carefully selected base stocks and sulphur/phosphorous extreme pressure (EP) additives.

INDUSTRIAL GEAR OIL CLP 68 provides excellent protection against high loads and prevents damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL CLP 68 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL CLP 68 is recommended for the lubrication of enclosed spur, helical, bevel and worm gears.

Exceeds: DIN 51517-3: CLP, ISO 12925-1: L-CKC, AGMA 9005 E-02, US Steel 224, David Brown S1.53.101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	886 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	68 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.4 mm2/s
Viscosity Index	ASTM D2270	>96
Flash Point (COC)	ASTM D92	210°C
Pour Point	ASTM D97	<-15°C
Total Acid Number (TAN)	ASTM D974	0.5 mgKOH/g
FZG Load Stage	DIN 51354-2	12
Demulsibility @ 54°C	DIN 51599	<30 min.

INDUSTRIAL GEAR OIL CLP 100

Productcode 4370

INDUSTRIAL GEAR OIL CLP 100 is a premium quality heavy duty gear oil, primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL CLP 100 is formulated from carefully selected base stocks and sulphur/phosphorous extreme pressure (EP) additives.

INDUSTRIAL GEAR OIL CLP 100 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL CLP 100 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL CLP 100 is recommended for the lubrication of enclosed spur, helical, bevel and worm gears.

Exceeds: DIN 51517-3: CLP, ISO 12925-1: L-CKC, AGMA 9005 E-02 AIST (US Steel) Req. No 224, David Brown S1.53 101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	100
Density @ 15°C	ASTM D4052	891 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	90-110 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.4 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>210°C
Pour Point	ASTM D97	<-27°C
Total Acid Number (TAN)	ASTM D974	0.5 mgKOH/g
FZG Load Stage	DIN 51354-2	12
Demulsibility @ 82°C	DIN 51599	<30 min.

INDUSTRIAL GEAR OIL CLP 150

Productcode 4372

INDUSTRIAL GEAR OIL CLP 150 is a premium quality heavy duty gear oil, primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL CLP 150 is formulated from carefully selected base stocks and sulphur/phosphorous extreme pressure (EP) additives.

INDUSTRIAL GEAR OIL CLP 150 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL CLP 150 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL CLP 150 is recommended for the lubrication of enclosed spur, helical, bevel and worm gears.

Exceeds: DIN 51517-3: CLP, ISO 12925-1: L-CKC, AGMA 9005 E-02 AIST (US Steel) Req. No 224, David Brown S1.53 101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	150
Density @ 15°C	ASTM D4052	896 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	135-165 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	13.6 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>220°C
Pour Point	ASTM D97	<-15°C
Total Acid Number (TAN)	ASTM D974	0.5 mgKOH/g
FZG Load Stage	DIN 51354-2	12
Demulsibility @ 82°C	DIN 51599	<30 min.

INDUSTRIAL GEAR OIL CLP 220

Productcode 4374

INDUSTRIAL GEAR OIL CLP 220 is a premium quality heavy duty gear oil, primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL CLP 220 is formulated from carefully selected base stocks and sulphur/phosphorous extreme pressure (EP) additives.

INDUSTRIAL GEAR OIL CLP 220 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL CLP 220 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL CLP 220 is recommended for the lubrication of enclosed spur, helical, bevel and worm gears.

Exceeds: DIN 51517-3: CLP, ISO 12925-1: L-CKC, AGMA 9005 E-02
AIST (US Steel) Req. No 224, David Brown S1.53 101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	220
Density @ 15°C	ASTM D4052	900 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	198-242 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	19.7 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>210°C
Pour Point	ASTM D97	<-21°C
Total Acid Number (TAN)	ASTM D974	0.5 mgKOH/g
FZG Load Stage	DIN 51354-2	12
Demulsibility @ 82°C	DIN 51599	<30 min.

INDUSTRIAL GEAR OIL CLP 320

Productcode 4376

INDUSTRIAL GEAR OIL CLP 320 is a premium quality heavy duty gear oil, primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL CLP 320 is formulated from carefully selected base stocks and sulphur/phosphorous extreme pressure (EP) additives.

INDUSTRIAL GEAR OIL CLP 320 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL CLP 320 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL CLP 320 is recommended for the lubrication of enclosed spur, helical, bevel and worm gears.

Exceeds: DIN 51517-3: CLP, ISO 12925-1: L-CKC, AGMA 9005 E-02
AIST (US Steel) Req. No 224, David Brown S1.53 101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	320
Density @ 15°C	ASTM D4052	904 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	288-352 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	22.8 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>220°C
Pour Point	ASTM D97	<-12°C
Total Acid Number (TAN)	ASTM D974	0.5 mgKOH/g
FZG Load Stage	DIN 51354-2	12
Demulsibility @ 82°C	DIN 51599	<30 min.

INDUSTRIAL GEAR OIL CLP 460

Productcode 4378

INDUSTRIAL GEAR OIL CLP 460 is a premium quality heavy duty gear oil, primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL CLP 460 is formulated from carefully selected base stocks and sulphur/phosphorous extreme pressure (EP) additives.

INDUSTRIAL GEAR OIL CLP 460 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL CLP 460 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL CLP 460 is recommended for the lubrication of enclosed spur, helical, bevel and worm gears.

Exceeds: DIN 51517-3: CLP, ISO 12925-1: L-CKC, AGMA 9005 E-02
AIST (US Steel) Req. No 224, David Brown S1.53 101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448 4	60
Density @ 15°C	ASTM D4052	907 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	414-506 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	30.5 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>240°C
Pour Point	ASTM D97	<-15°C
Total Acid Number (TAN)	ASTM D974	0.5 mgKOH/g
FZG Load Stage	DIN 51354-2	12
Demulsibility @ 82°C	DIN 51599	<30 min.

INDUSTRIAL GEAR OIL CLP 680

Productcode 4380

INDUSTRIAL GEAR OIL CLP 680 is a premium quality heavy duty gear oil, primarily recommended for enclosed gear units working under severe shock operating conditions.

INDUSTRIAL GEAR OIL CLP 680 is formulated from carefully selected base stocks and sulphur/phosphorous extreme pressure (EP) additives.

INDUSTRIAL GEAR OIL CLP 680 provides excellent protection against high loads, prevent damage on tooth- and friction surfaces. Furthermore INDUSTRIAL GEAR OIL CLP 680 shows excellent protection against rust and oxidation, while the excellent demulsification of the product allows easy water drain off.

INDUSTRIAL GEAR OIL CLP 680 is recommended for the lubrication of enclosed spur, helical, bevel and worm gears.

Exceeds: DIN 51517-3: CLP, ISO 12925-1: L-CKC, AGMA 9005 E-02
AIST (US Steel) Req. No 224, David Brown S1.53 101(E)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	680
Density @ 15°C	ASTM D4052	906 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	612-748 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	38.2 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>240°C
Pour Point	ASTM D97	<-15°C
Total Acid Number (TAN)	ASTM D974	0.5 mgKOH/g
FZG Load Stage	DIN 51354-2	12
Demulsibility @ 82°C	DIN 51599	<30 min.

INDUSTRIAL SYSTEM OIL CL 1000

Productcode 4493

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.

Exceeds: DIN 51517-3 CLP, ISO 12925-1 CKC, AGMA 9005 E-02, David Brown S1.53.101

Property:	Test Method:	Typical Values:
ISO VG Grade	ISO 3448	1000
Density@15°C kg/m3	ASTM D4052	901
Kin. Viscosity @40°C mm2/s	ASTM D7042	1001
Kin. Viscosity @100°C mm2/s	ASTM D7042	54.2
Viscosity Index	ASTM D2270	90
Flash Point COC °C	ASTM D92	>201
Pour Point °C	ASTM D7346	-3
FZG Fail Load Stage, min	DIN 51354-2	>12
Total Acid Number mgKOH/g	ASTM D664	<0.5

INDUSTRIAL SYSTEM OIL CL 100

Productcode 4487

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 blended with carefully selected additives in mineral oil.

INDUSTRIAL SYSTEM OIL CL 100 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 100 is suited for circulating systems with oil lubricated plain and rolling element bearings and in low or moderately enclosed gears.

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

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	100
Density @ 15°C	ASTM D4052	889 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	10.2 mm2/s
Viscosity Index	ASTM D2270	>97
Flash Point (COC)	ASTM D92	240°C
Pour Point	ASTM D97	<-15°C
Total Acid Number (TAN)	ASTM D974	0.1 mgKOH/g
Foaming Characteristics:	ASTM D892	
Sequence I, max. 150/0 ml		0/0 ml
Sequence II, max. 75/0 ml		0/0 ml
Sequence III, max. 150/0 ml		0/0 ml
Demulsibility @ 82°C	DIN 51599	Pass

INDUSTRIAL SYSTEM OIL CL 150

Productcode 4233

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 blended with carefully selected additives in mineral oil.

INDUSTRIAL SYSTEM OIL CL 150 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 150 is suited for circulating systems with oil lubricated plain and rolling element bearings and in low or moderately enclosed gears.

Exceeds: DIN 51517-2 CL, DIN 51524-1 HL, AFNOR NF E 48-603 HL
Cincinnatti Lamb P-57

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	150
Density @ 15°C	ASTM D4052	889 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	14.8 mm2/s
Viscosity Index	ASTM D2270	>97
Flash Point (COC)	ASTM D92	240°C
Pour Point	ASTM D97	<-15°C
Total Acid Number (TAN)	ASTM D974	0.1 mgKOH/g
Foaming Characteristics:	ASTM D892	
Sequence I, max. 150/0 ml		0/0 ml
Sequence II, max. 75/0 ml		0/0 ml
Sequence III, max. 150/0 ml		0/0 ml
Demulsibility @ 82°C	DIN 51599	Pass

INDUSTRIAL SYSTEM OIL CL 220

Productcode 4489

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 blended with carefully selected additives in mineral oil.

INDUSTRIAL SYSTEM OIL CL 220 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 220 is suited for circulating systems with oil lubricated plain and rolling element bearings and in low or moderately enclosed gears.

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

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	220
Density @ 15°C	ASTM D4052	897 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	19.8 mm2/s
Viscosity Index	ASTM D2270	>97
Flash Point (COC)	ASTM D92	245°C
Pour Point	ASTM D97	<-12°C
Total Acid Number (TAN)	ASTM D974	0.1 mgKOH/g
Foaming Characteristics:	ASTM D892	
Sequence I, max. 150/0 ml		0/0 ml
Sequence II, max. 75/0 ml		0/0 ml
Sequence III, max. 150/0 ml		0/0 ml
Demulsibility @ 82°C	DIN 51599	Pass

INDUSTRIAL SYSTEM OIL CL 32

Productcode 4490

INDUSTRIAL SYSTEM OIL CL 32 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 32 is blended with carefully selected additives in mineral oil.

INDUSTRIAL SYSTEM OIL CL 32 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 32 is suited for circulating systems with oil lubricated plain and rolling element bearings and in low or moderately enclosed gears.

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

Property: Test Method: Typical Values:		
ISO Viscosity Grade	ISO 3448	32
Density @ 15°C	ASTM D4052	870 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	28.8-35.2 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	<-21°C
Total Acid Number	ASTM D974	0.1 mgKOH/g
Foaming Characteristics:	ASTM D892	
Sequence I, max. 150/0 ml		0/0 ml
Sequence II, max. 75/0 ml		0/0 ml
Sequence III, max. 150/0 ml		0/0 ml
Demulsibility @ 54°C	DIN 51599	Pass

INDUSTRIAL SYSTEM OIL CL 46

Productcode 4491

INDUSTRIAL SYSTEM OIL CL 46 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 46 is blended with carefully selected additives in mineral oil.

INDUSTRIAL SYSTEM OIL CL 46 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 46 is suited for circulating systems with oil lubricated plain and rolling element bearings and in low or moderately enclosed gears.

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

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	874 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.4-50.6 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	<-18°C
Total Acid Number	ASTM D974	0.1 mgKOH/g
Foaming Characteristics:	ASTM D892	
Sequence I, max. 150/0 ml		0/0 ml
Sequence II, max. 75/0 ml		0/0 ml
Sequence III, max. 150/0 ml		0/0 ml
Demulsibility @ 54°C	DIN 51599	Pass

INDUSTRIAL SYSTEM OIL CL 68

Productcode 4492

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 blended with carefully selected additives in mineral oil.

INDUSTRIAL SYSTEM OIL CL 68 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 68 is suited for circulating systems with oil lubricated plain and rolling element bearings and in low or moderately enclosed gears.

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

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	884 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	61.2-74.8 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>185°C
Pour Point	ASTM D97	<-15°C
Total Acid Number	ASTM D974	0.1 mgKOH/g
Foaming Characteristics:	ASTM D892	
Sequence I, max. 150/0 ml		0/0 ml
Sequence II, max. 75/0 ml		0/0 ml
Sequence III, max. 150/0 ml		0/0 ml
Demulsibility @ 54°C	DIN 51599	Pass

BRAKE FLUID DOT 4

Productcode 4392

BRAKE FLUID DOT 4 is a 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 exceeds the performance requirements of United States Federal Motor Vehicle Safety Standard (FMVSS) 116 DOT 4. BRAKE FLUID DOT 4 contains oxidation and corrosion inhibitors to resist oxidation at the high temperatures encountered in the disc braking systems and to protect the system against rust and corrosion. The high boiling point of BRAKE FLUID DOT 4 reduces the impact of moisture absorption during service and provides reliable braking performance.

BRAKE FLUID DOT 4 is compatible with all seals and metals used in conventional braking systems. BRAKE FLUID DOT 4 can be used in the hydraulic disc- and drum braking systems including those fitted with ABS as found in passenger cars, motor cycles and commercial vehicles, where a DOT 4 product is prescribed. For improved braking performance it can also be used in hydraulic brake systems of vehicles requiring DOT 3 or SAE J 1703 quality fluids.

WARNING: BRAKE FLUID DOT 4 should never be used in place of or mixed with silicone based brake fluids (DOT 5) nor should be used where DOT 5.1 fluids are prescribed. !!! All brake fluids should be kept clean and dry. Dirt or water contamination can effect the performance of brake fluids and could cause brake system failure. Brake fluids can effect the vehicle's paint work.

Exceeds: FMVSS 116: DOT 4, SAE J 1704, ISO 4925 Class 4

Property:	Test Method:	Typical Values:
Appearance	Visual	Pale straw
Specific Gravity @ 20°C	ASTM D4052	1040 kg/m3
Kinematic Viscosity @ 100°C	SAE J1703	2.1 mm2/s
Kinematic Viscosity @ -40°C	SAE J1703	1400 mm2/s
pH (50% vol.)	ASTM D1121	8.0
Equilibrium Reflux Boiling Point	SAE J1703	265°C
Wet Equilibrium Reflux Boiling Point	SAE J1703	163°C

LHM FLUID

Productcode 4393

LHM FLUID is a high performance hydraulic oil, especially developed for the hydraulic brake-power steering- and suspension systems of Citroën and certain other vehicles.

LHM FLUID complies with the latest demands of Citroën. LHM FLUID has been fortified with additives to withstand oxidation at the high temperatures encountered in the disc braking systems and to protect the system against rust and corrosion.

LHM FLUID shows an extreme fluidity at low temperature, realizing immediate response of the systems under all climatically conditions.

LHM FLUID is a one of a kind hydraulic oil comprising of special base stocks and unique additives to obtain an exceptional high and stable Viscosity Index (VI), and a very low pour point.

WARNING:
LHM FLUID should never be used in brake systems other tha n those described above, where in a BRAKE FLUID DOT 3, 4, 5 or 5.1 is prescribed.

Exceeds: ISO 7308, PSA B71 2710 or PSA Company (Citroën, Peugeot)

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	840 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	6.15 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	1200 mm2/s
Viscosity Index	ASTM D2270	320
Flash Point (COC)	ASTM D92	125°C
Pour Point	ASTM D97	-51°C

PSF SYNTH

Productcode 4319

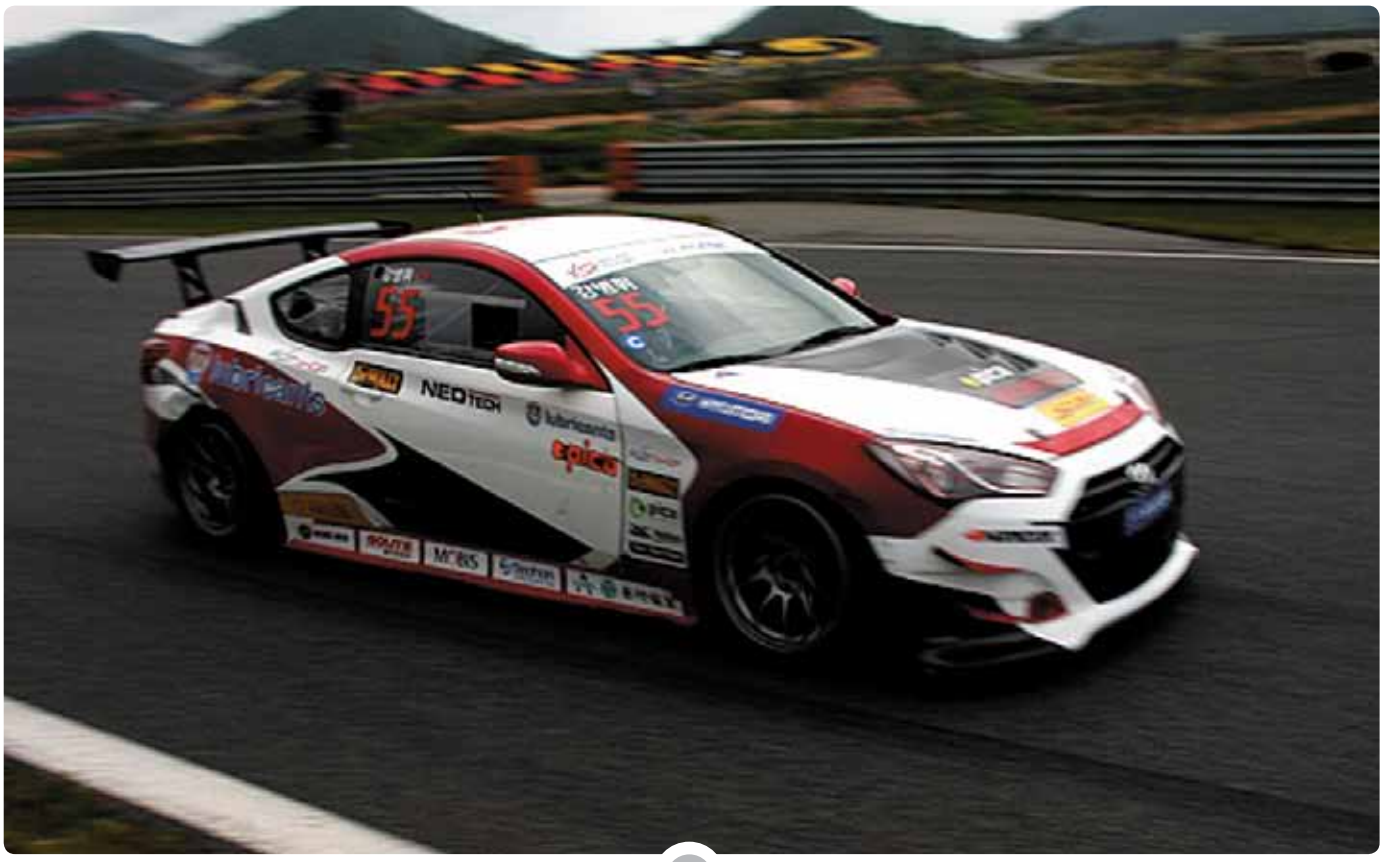
PSF SYNTH is a fully synthetic hydraulic fluid developed for highly stressed centralized hydraulic systems, power steering systems and shock absorbers which can reach oil temperatures up to approximately 140°C. PSF SYNTH shows improved performance regarding viscosity temperature characteristics and simultaneously optimized shear stability. Additionally PSF SYNTH offers improved properties regarding thermal stability due to the use of high quality synthetic base oils.

PSF SYNTH shows optimized temperature- and high oxidation stability and has excellent cold temperature properties and high shear stability. PSF SYNTH has proven OEMtechnology and improvement of efficiency is possible.

PSF SYNTH meets or exceeds the demands of many Original Equipment Manufacturers (OEMs) and is also being used in first-fill-applications.

Exceeds: BMW 81 22 9 407 758/BMW 82 11 1 468 041/ BMW 83 29 0 429 576, Ford M2C204-A, MAN M 3289, Opel 1940 715/ Opel 1940 766, VW TL 521 46 (G 002 000/A7/A8/G 004 000

Property:	Test Method:	Typical Values:
Colour	Visual	Green
Density @ 15°C	ASTM D4052	831 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	18.5 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.3 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	1150 mPa.s
Viscosity Index	ASTM D2270	334
Flash Point (COC)	ASTM D92	160°C
Pour Point	ASTM D97	-60°C
Foaming Tendency Seq. I//II	ASTM D892	30/0//50/0



ANTIFREEZE

Productcode 4394

ANTIFREEZE is a modern British Standard quality anti freeze composed of mono
ethylene glycol and specially selected additives.

ANTIFREEZE 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 anti freeze is one of the highest quality anti freezes in the market.

ANTIFREEZE gives the best protection if it is used in concentrations between 40 and 50% in water.

ANTIFREEZE offers good protection of all metals in the cooling system and engine and is neutral towards seals and flexible hoses.

WARNING:
Keep all anti freezes out of reach of children! Do not drink antifreeze! If swallowed, induce vomiting and immediately call for a doctor!

Exceeds: British Standard: BS 6580, AFNOR 15-601, ASTM D330 6, SAE J 1034 CUNA NC 956-16

Property:	Test Method:	Typical Values:
Appearance	Visual	Pale straw
Specific Gravity @ 20°C	ASTM D4052	1040 kg/m3
Kinematic Viscosity @ 100°C	SAE J1703	2.1 mm2/s
Kinematic Viscosity @ -40°C	SAE J1703	1400 mm2/s
pH (50% vol.)	ASTM D1121	8.0
Equilibrium Reflux Boiling Point	SAE J1703	265°C
Wet Equilibrium Reflux Boiling Point	SAE J1703	163°C

ANTIFREEZE XL

Productcode 4395

ANTIFREEZE XL is a good quality modern antifreeze belonging to a generation silicateholding, nitrite-, amine- and phosphate free cooling fluid composed of mono ethylene glycol and specially selected additives.

ANTIFREEZE XL 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 monoethylene glycol, this standard quality anti freeze is one of the highest quality anti freezes in the market.

ANTIFREEZE XL gives the best protection if it is used in concentrations between 40 and 50% in water.

ANTIFREEZE XL offers good protection of all metals in the cooling system and engine and is neutral towards seals and flexible hoses.

WARNING:
Keep all anti freezes out of reach of children! Do not drink antifreeze! If swallowed, induce vomiting and immediately call for a doctor!

Exceeds: ASTM D3306, MB 325.2, BMW, Behr (Radiators) Deutz/MWM, CUNA NC956-16, GM/Opel ONORM V5123, UNE 26-361, VW TL 774C

Property:	Test Method:	Typical Values:
Density @ 15°C	ASTM D4052	840 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	6.15 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	1200 mm2/s
Viscosity Index	ASTM D2270	320
Flash Point (COC)	ASTM D92	125°C
Pour Point	ASTM D97	-51°C

COOLANT RTU 40

Productcode 4396

COOLANT RTU 40 (Ready To Use) is a modern British Standard quality cooling fluid, composed of mono ethylene glycol and specially selected additives.

COOLANT RTU 40 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 monoethylene glycol, this standard quality cooling fluid is one of the highest quality cooling fluids in the market.

COOLANT RTU 40 should be used undiluted, only then the coolant gives a protection to -26°C.

COOLANT RTU 40 offers good protection of all metals in the cooling system and engine and is neutral towards seals and flexible hoses.

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!

Exceeds: BMW 81 22 9 407 758/BMW 82 11 1 468 041/BMW 83 29 0 429 576, Ford M2C204-A, MAN M 3289, Opel 1940 715/ Opel 1940 766, VW TL 521 46 (G 002 000/A7/ A8/G 004 000

Property:	Test Method:	Typical Values:
Colour	Visual	Green
Density @ 15°C	ASTM D4052	831 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	18.5 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.3 mm2/s
Dynamic Viscosity @ -40°C	ASTM D5293	1150 mPa.s
Viscosity Index	ASTM D2270	334
Flash Point (COC)	ASTM D92	160°C
Pour Point	ASTM D97	-60°C
Foaming Tendency Seq. I//II	ASTM D892	30/0//50/0

ANTIFREEZE G 12 PLUS

Productcode 4385

ANTIFREEZE G 12 PLUS is the latest generation silicate free antifreeze and is because of its high-grade quality already used as a first fill by more than 75% of automobile manufacturers. ANTIFREEZE G 12 PLUS is developed partly due to the demand of a full organic antifreeze. Before use, this special antifreeze needs to be diluted in the recommended proportions. ANTIFREEZE G 12 PLUS is a silicate free antifreeze, based on mono ethylene glycol under addition of special additives to obtain the following properties:

- Extremely powerful organic corrosion inhibitors resulting in an extended life-time of the radiator, pump and pipes.
- A strong protection: up to 650.000km for busses and trucks, 250.000km for passenger vehicles and up to 16.000 for steady-state engines. It is recommended to change the coolant every five years or at above mileages or operating times, whichever comes first.
- High Boiling Point, which decreases the risk of overheating the antifreeze. During hot summers of heavy duty operating circumstances the antifreeze offers extra protection.
- A strong compatibility seals: completely compatible with elastomers used by European constructors.
- Excellent stability with hard water, because this antifreeze doesn't contain silicates nor other mineral salts. ANTIFREEZE G 12 PLUS prevents the formation of deposits and scale and is perfectly mixable with other antifreezes based on mono ethylene glycol.

WARNING:
Keep all anti freezes out of reach of children! Do not drink antifreeze! If swallowed, induce vomiting and immediately call for a doctor! See also Safety Data Sheet of this product!

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

Property:	Test Method:	Typical Values:
Colour		Red
Density @ 15°C	ASTM D1298	1120 kg/m3
Freezing point @ 40% in water	ASTM D1177	-27°C
Freezing point @ 50% in water	ASTM D1177	-40°C
pH (50% in water)	ASTM D1287	7.6

COOLANT RTU G 12 PLUS

Productcode 4397

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!

Exceeds: 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:	Test Method:	Typical Values:
Exceeds:		Red
Density @ 20°C	ASTM D1298	1068 kg/m3
Freezing Point @ 50% in water	ASTM D1177	-40°C
pH (50% in water)	ASTM D1287	8.6

EP GREASE NLGI 00

Productcode 4398

EP GREASE NLGI 00 is a lithium thickened lubricating grease based on mineral oil and contains antioxidants, corrosion inhibitors and EP/AW additives.

EP GREASE NLGI 00 is a state-of-the-art multipurpose EP grease which can be used in various applications within given temperature limits.

EP GREASE NLGI 00 offers good mechanical stability, high load carrying capacity and good corrosion protection and is easy to pump at low temperatures.

EP GREASE NLGI 00 is a high quality multipurpose grease that can be used in both industrial and automotive applications. The consistency of EP GREASE NLGI 00 makes it suitable for use in centralised lubrication systems that require semi-fluid grease.

EP GREASE NLGI 00 is also suitable for use in gearboxes.

Property:	Test Method:	Typical Values:
Classification:	DIN 51502	KP00K-30
	ISO 6743	ISO-L-XCCHB00
NLGI Grade	ASTM D217	00
Base Oil Viscosity @ 40°C	ISO 12058	290 mm²/s
Base Oil Viscosity @ 100°C	ISO 12058	20 mm²/s
Colour	Visual	Dark brown
Dropping Point	IP 396	>160°C
Approximate Density @ 20°C	IPPM-CS/03	890 kg/m³
4-Ball weld load	DIN 51350-4	2600 N
Temperature Range		
Continuous operation:	-	-30°C to +100°C
Maximum short period:	-	+120°C
Penetration 60 strokes:	ISO 2137	400-430
Penetration 100 strokes:	ISO 2137	+35
Shell Roll Stability 50hrs @ 80°C	ASTM D1831mod	+65
Copper Corrosion 24 hrs @ 100°C	ASTM D4048	1b
Water resistance	DIN 51807-1	1-90
4-ball wear scar 1 hr @ 400 N	DIN 51350-5	0.5 mm
Oxidation Stability 100 hrs @ 100°C	ASTM D942	47 kPa

EP GREASE NLGI 2

Productcode 4399

EP GREASE NLGI 2 is a lithium thickened lubricating grease based on mineral oil and contains antioxidants, corrosion inhibitors and EP/AW additives.

EP GREASE NLGI 2 is a typical multipurpose EP grease which can be used in various applications within given temperature limits.

EP GREASE NLGI 2 offers stability, high load carrying capacity and good corrosion protection making it suitable for heavily loaded bearings as well as wet environments.

EP GREASE NLGI 2 is a high quality multipurpose grease that can be used in both industrial and automotive applications and is suitable for use in a wide range of plain and rolling bearings

Property:	Test Method:	Typical Values:
Classification:	DIN 51502	KP2K-30
	ISO 6743	ISO-L-XCCIB2
NLGI Grade	ASTM D217	2
Base Oil Viscosity @ 40°C	ISO 12058	110 mm²/s
Base Oil Viscosity @ 100°C	ISO 12058	12 mm²/s
Colour	Visual	Light yellow
Dropping Point	IP 396	>180°C
Approximate Density @ 20°C	IPPM-CS/03	940 kg/m³
4-Ball weld load	DIN 51350-4	2600 N
Temperature Range		
Continuous operation:	-	-30°C to +120°C
Maximum short period:	-	+130°C
Penetration 60 strokes:	ISO 2137	265-295
Penetration 100 strokes:	ISO 2137	+25
SKF Emcor WWO distilled water	ISO 11007mod	0-1
SKF Emcor WWO salt water	ISO 11007mod	2-3
Copper Corrosion 24 hrs @ 100°C	ASTM D4048	1b
Water resistance	DIN 51807-1	1-90
4-ball wear scar 1 hr @ 400 N	DIN 51350-5	0.5 mm
Flow pressure @ -35°C	DIN 51805	<1400 hPa
Oxidation Stability 100 hrs @ 100°C	ASTM D942	20 kPa

EPBF GREASE NLGI 2

Productcode 4400

EPBF GREASE NLGI 2 is a lithium thickened lubricating grease based on mineral oil and contains additives.

EPBF GREASE NLGI 2 is a general multipurpose grease which can be used in various applications within given temperature limits.

EPBF GREASE NLGI 2 has good mechanical stability, good load carrying capacity & can be used in a wide range of applications.

EPBF GREASE NLGI 2 is a quality multipurpose grease that can be used in both industrial and automotive applications and is suitable for a wide range of plain and rolling bearings.

Property:	Test Method:	Typical Values:
Classification:	DIN 51502	KP2K-30
	ISO 6743	ISO-L-XCCFB2
NLGI Grade	ASTM D217	2
Base Oil Viscosity @ 40°C	ISO 12058	90-120 mm²/s
Base Oil Viscosity @ 100°C	ISO 12058	12 mm²/s
Colour	Visual	Brown
Dropping Point	IP 396	>180°C
Approximate Density @ 20°C	IPPM-CS/03	890 kg/m³
4-Ball weld load	DIN 51350-4	2400 N
Temperature Range		
Continuous operation:	-	-30°C to +120°C
Maximum short period:	-	+130°C
Penetration 60 strokes:	ISO 2137	265-295

EPBF GREASE NLGI 3

Productcode 4401

EPBF GREASE NLGI 3 is a lithium thickened lubricating grease based on mineral oil and contains antioxidants, corrosion inhibitors and EP/AW additives.

EPBF GREASE NLGI 3 is a typical multipurpose EP grease which can be used in various applications within given temperature limits.

EPBF GREASE NLGI 3 offers stability, high load carrying capacity and good corrosion protection making it suitable for heavily loaded bearings as well as wet environments.

EPBF GREASE NLGI 3 is a high quality multipurpose grease that can be used in both industrial and automotive applications and is suitable for use in a wide range of plain and rolling bearings.

Property:	Test Method:	Typical Values:
Classification:	DIN 51502	KP3K-30
	ISO 6743	ISO-L-XBCFB3
NLGI Grade	ASTM D217	3
Base Oil Viscosity @ 40°C	ISO 12058	105 mm²/s
Base Oil Viscosity @ 100°C	ISO 12058	12 mm²/s
Colour	Visual	Brown
Dropping Point	IP 396	>180°C
Approximate Density @ 20°C	IPPM-CS/03	910 kg/m³
4-Ball weld load	DIN 51350-4	2400 N
Temperature Range		
Continuous operation:	-	-30°C to +120°C
Maximum short period:	-	+130°C
Penetration 60 strokes:	ISO 2137	220-250

EPX GREASE NLGI 2

Productcode 4402

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 re-lubrications 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 Values:
Classification:	DIN 51502	KP2N-30
	ISO 6743	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%
Water resistance	DIN 51807-1	1-90
4-ball wear scar 1 hr @ 400 N	DIN 51350-5	0.6 mm
Flow pressure @ -30°C	DIN 51805	<1400 hPa

EPHT GREASE NLGI 2

Productcode 4404

EPHT GREASE NLGI 2 is a bentone clay thickened lubricating grease based on mineral oil.

EPHT GREASE NLGI 2 contains antioxidants and EP/AW additives. The inorganic thickener makes EPHT GREASE NLGI 2 suitable for applications within a very wide temperature range and especially applications at elevated temperatures.

EPHT GREASE NLGI 2 is a high performance product suitable for both industrial and automotive applications.

EPHT GREASE NLGI 2 all-round properties make it suitable for various types of bearing applications, including temperature peaks up to 200°C.

Property:	Test Method:	Typical Values:
Classification:	DIN 51502	KP2N-30
	ISO 6743	ISO-L-XCDAB2
NLGI Grade	ASTM D217	2
Base Oil Viscosity @ 40°C	ISO 12058	475 mm²/s
Base Oil Viscosity @ 100°C	ISO 12058	31 mm²/s
Colour	Visual	Brown
Dropping Point	IP 396	Not applicable
Approximate Density @ 20°C	IPPM-CS/03	920 kg/m³
4-Ball weld load	DIN 51350-4	2600 N
Temperature Range		
Continuous operation:	-	-30°C to +150°C
Maximum short period:	-	+200°C
Penetration 60 strokes:	ISO 2137	265-295
Penetration 100 strokes:	ISO 2137	+55
Copper Corrosion 24 hrs @ 100°C	ASTM D4048	1a
Oil Separation 168 hrs @ 40°C	IP 121	3%
Oxidation Stability 100 hrs @ 100°C	ASTM D942	50 kPa
Flow pressure @ -30°C	DIN 51805	<1400 hPa

EPWR GREASE NLGI 2.5

Productcode 4405

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 wet and dirty conditions.

Property:	Test Method:	Typical Values:
Classification:	DIN 51502	KP2.5K-20
	ISO 6743	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

EP GREASE NLGI 1

Productcode 4406

EP GREASE NLGI 1 is a high quality multipurpose lithium thickened EP-1 grease suited for automotive, agriculture and industrial applications. EP GREASE NLGI 1is 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

Exceeds: DIN 51502, KP1K-30, ISO 6743-9, ISO-L-XCCFB1

Property:	Test Method:	Typical Values:
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	ISO 2137	+30
Strokes 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

CHAIN SAW OIL 68

Productcode 4500

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 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.

!!! CHAIN SAW OIL 68 is NOT suitable to lubricate the engine.

Property:	Test Method:	Typical Values:
ISO VG Class		68
Density @15°C kg/m3	ASTM D4052	883
Kin. Viscosity @40°C mm2/s	ASTM D7042	67.8
Kin. Viscosity @100°C mm2/s	ASTM D7042	9.0
Viscosity Index	ASTM D2270	99
Flash Point COC °C	ASTM D92	>201
Pour Point °C	ASTM D97	-18

CHAIN SAW OIL 100

Productcode 4387

CHAIN SAW OIL 100 is a high quality chain saw oil, CHAIN SAW OIL 100 based on paraffinic base stocks fortified with a special “tackiness agent” to provide an extreme adhesive strength towards the chain, thus minimising oil loss and providing excellent lubricating properties.

CHAIN SAW OIL 100 is especially developed to lubric CHAIN SAW OIL 100 ate the chain of chain saws chain of chain saws to prevent it from breaking or getting jammed.

!!! CHAIN SAW OIL 100 is NOT suitable to lubricate the engine.

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	100
Density @ 15°C	ASTM D4052	889 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	100 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.3 mm2/s
Viscosity Index	ASTM D2270	98
Flash Point (COC)	ASTM D92	230°C
Pour Point	ASTM D97	-18°C

CHAIN SAW OIL 150

Productcode 4388

CHAIN SAW OIL 150 CHAIN SAW OIL 150 is a high quality chain saw oil, based on paraffinic base stocks fortified with a special “tackiness agent” to provide an extreme adhesive strength towards the chain, thus minimising oil loss and providing excellent lubricating properties.

CHAIN SAW OIL 150 CHAIN SAW OIL 150 is especially developed to lubricate the chain of chain of chain saws chain saws to prevent it from breaking or getting jammed.

!!! CHAIN SAW OIL 150 is NOT suitable to lubricate the engine.

Property:	Test Method:	Typical Values:
ISO Viscosity Grade I	SO 3448	150
Density @ 15°C	ASTM D4052	892 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	150 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.8 mm2/s
Viscosity Index	ASTM D2270	98
Flash Point (COC)	ASTM D92	245°C
Pour Point	ASTM D97	-15°C

CHAIN SAW OIL 220

Productcode 4473

CHAIN SAW OIL 220 is a high quality chain saw oil, based on paraffinic base stocks fortified with a special “tackiness agent” to provide an extreme adhesive strength towards the chain, thus minimising oil loss and providing excellent lubricating properties.

CHAIN SAW OIL 220 is especially developed to lubricate the chain of chain saws to prevent it from breaking or getting jammed.

!!! CHAIN SAW OIL 220 is NOT suitable to lubricate the engine.

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	220
Density @ 15°C	ASTM D4052	898 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	220 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point (COC)	ASTM D92	>200°C
Pour Point	ASTM D97	<-15°C

CHAIN SAW OIL 320

Productcode 4474

CHAIN SAW OIL 320 is a high quality chain saw oil, based on paraffinic base stocks fortified with a special “tackiness agent” to provide an extreme adhesive strength towards the chain, thus minimising oil loss and providing excellent lubricating properties.

CHAIN SAW OIL 320 is especially developed to lubricate the chain of chain saws to prevent it from breaking or getting jammed.

!!! CHAIN SAW OIL 320 is NOT suitable to lubricate the engine.

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	320
Density @ 15°C	ASTM D4052	902 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	320 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point (COC)	ASTM D92	>200°C
Pour Point	ASTM D97	<-15°C

COMPRESSOR OIL VDL 32

Productcode 4379

COMPRESSOR POWER 32 is a high performance ashless 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.
- Superior demulsibility reduces oil carryover and corrosion, maintains lubrication efficiency.
- Reduces sludge formation and improves life of coalesces

Exceeds: DIN 51506 VBL/VCL/BDL, ISO 6743 DAA/DAB/DAG/DAH

Property:	Test Method:	Typical Values:
ISO VG Class		32
Density @15°C kg/m3	ASTM D4052	879.2
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 D97	-24
FZG A/8, 3/90°C	DIN 51354-2	12
Demulsibility @54°C, max min	DIN 51999	30

COMPRESSOR OIL VDL 46

Productcode 4381

COMPRESSOR OIL VDL 46 is a premium quality, mineral based compressor oil for use in reciprocating compressors and some rotary air compressors.

COMPRESSOR OIL VDL 46 is formulated with carefully selected base stocks fortified with additives to ensure very high resistance towards oxidation.

COMPRESSOR OIL VDL 46 shows very low carbon deposit forming tendencies reducing the risk of fire or explosion.

COMPRESSOR OIL VDL 46 is recommended for the cylinder and crankcase lubrication of air or inert gas compressors operating with high discharge temperatures.

COMPRESSOR OIL VDL 46 effectively protects against rust and oxidation.

Exceeds: DIN 51506: VBL/VCL/VDL,
ISO 6743-3°: L-DAA/DAB/DAG/DAH

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	876 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	46 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.8 mm2/s
Viscosity Index	ASTM D2270	105
Flash Point (COC)	ASTM D92	220°C
Pour Point	ASTM D97	24°C
FZG, Fail Load Stage, min.	DIN 51354-2	12
Demulsibility @ 54°C	DIN 51599	8 minutes
Air Release Value @ 50°C	DIN 51381	4 minutes

COMPRESSOR OIL VDL 68 Productcode 4382

COMPRESSOR OIL VDL 68 is a premium quality, mineral based compressor oils for use in reciprocating compressors and some rotary air compressors.

COMPRESSOR OIL VDL 68 is formulated with carefully selected base stocks fortified with additives to ensure very high resistance towards oxidation.

COMPRESSOR OIL VDL 68 shows very low carbon deposit forming tendencies reducing the risk of fire or explosion.

COMPRESSOR OIL VDL 68 is recommended for the cylinder and crankcase lubrication of air or inert gas compressors operating with high discharge temperatures.

COMPRESSOR OIL VDL 68 effectively protects against rust and oxidation.

Exceeds: DIN 51506: VBL/VCL/VDL, ISO 6743-3°: L-DAA/DAB/DAG/DAH

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	882 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	68 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.6 mm2/s
Viscosity Index	ASTM D2270	105
Flash Point (COC)	ASTM D92	220°C
Pour Point	ASTM D97	12°C
FZG, Fail Load Stage, min.	DIN 51354-2	12
Demulsibility @ 54°C	DIN 51599	8 minutes
Air Release Value @ 50°C	DIN 51381	5 minutes

COMPRESSOR OIL VDL 100 Productcode 4383

COMPRESSOR OIL VDL 100 is a premium quality, mineral based compressor oils for use in reciprocating compressors and some rotary air compressors.

COMPRESSOR OIL VDL 100 is formulated with carefully selected base stocks fortified with additives to ensure very high resistance towards oxidation.

COMPRESSOR OIL VDL 100 shows very low carbon deposit forming tendencies reducing the risk of fire or explosion.

COMPRESSOR OIL VDL 100 is recommended for the cylinder and crankcase lubrication of air or inert gas compressors operating with high discharge temperatures.

COMPRESSOR OIL VDL 100 effectively protects against rust and oxidation.

Exceeds: DIN 51506: VBL/VCL/VDL, ISO 6743-3°: L-DAA/DAB/DAG/DAH

Property:	Test Method:	Typical Values:
ISO Viscosity Grade ISO	3448	100
Density @ 15°C	ASTM D4052	884 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	100 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.5 mm2/s
Viscosity Index	ASTM D2270	103
Flash Point (COC)	ASTM D92	228°C
Pour Point	ASTM D97	12°C
FZG, Fail Load Stage, min.	DIN 51354-2	11
Demulsibility @ 54°C	DIN 51599	8 minutes
Air Release Value @ 50°C	DIN 51381	5 minutes

COMPRESSOR OIL VDL 150 Productcode 4384

COMPRESSOR OIL VDL 150 is a premium quality, mineral based compressor oils for use in reciprocating compressors and some rotary air compressors.

COMPRESSOR OIL VDL 150 is formulated with carefully selected base stocks fortified with additives to ensure very high resistance towards oxidation.

COMPRESSOR OIL VDL 150 shows very low carbon deposit forming tendencies reducing the risk of fire or explosion.

COMPRESSOR OIL VDL 150 is recommended for the cylinder and crankcase lubrication of air or inert gas compressors operating with high discharge temperatures.

COMPRESSOR OIL VDL 150 effectively protects against rust and oxidation.

Exceeds: DIN 51506: VBL/VCL/VDL, ISO 6743-3°: L-DAA/DAB/DAG/DAH

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	150
Density @ 15°C	ASTM D4052	892 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	150 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	16.9 mm2/s
Viscosity Index	ASTM D2270	105
Flash Point (COC)	ASTM D92	235°C
Pour Point	ASTM D97	12°C
FZG, Fail Load Stage, min.	DIN 51354-2	11
Demulsibility @ 54°C	DIN 51599	15 minutes
Air Release Value @ 50°C	DIN 51381	7 minutes

COMPRESSOR OIL SYNTH 32 Productcode 4412

COMPRESSOR POWER 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 POWER 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 POWER 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.

Exceeds: DIN 51506 VDL; ISO 6743-3-DAB/DAJ

Property:	Test Method:	Typical Values:
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

HYDRAULIC OIL SYNTH 46

Productcode 4347

COMPRESSOR POWER SYNTH 46 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 POWER SYNTH 46 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 POWER 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.

Exceeds: DIN 51506 VDL; ISO 6743-3-DAB/DAJ

Property:	Test Method:	Typical Values:
ISO VG Class		46
Density @15°C kg/m3	ASTM D4052	839
Kin. Viscosity @100°C mm2/s	ASTM D7042	7.9
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

HYDRAULIC OIL HLPD 68

Productcode 4347

HYDRAULIC OIL HLPD 68 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 68 is suitable for use in most modern hydraulic control systems incorporating 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 tot 350 bar. The exceptional quality as a detergent hydraulic oil makes

HYDRAULIC OIL HLPD 68 specially suitable for use in a wide variety of applications where drain of water condensation is difficult.

HYDRAULIC OIL HLPD 68 continues to work in the presence of water (up to 2%) and is suitable for almost all types of pumps, has very high oxidation stability, excellent anti-foaming properties and provides longer life time of oil and hydraulic installation.

HYDRAULIC OIL HLPD 68 is suited for all hydraulic systems into which water, dust and abrasive particles can enter. Check with the pump manufacturer if this type of oil is recommended.

Exceeds: DIN 51524/2 HLPD

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	886 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	61.2-74.8 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.9 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>195°C
Pour Point	ASTM D97	<-12°C
FZG, Fail Load Stage	DIN 51354-2	12
Air Release Value @ 50°C	DIN 51381	<10 min.

HYDRAULIC OIL XHVI 46

Productcode 4350

HYDRAULIC OIL XHVI 46 is a premium quality high-performance anti wear hydraulic oil with a very high viscosity index developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL XHVI 46 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures and provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL XHVI 46 is suited for severely stressed hydraulic systems requiring a high level of anti-wear performance such as in outdoor plants likely to operate in very wide variations of temperatures, such as in machinery subjected to very cold start up conditions and high temperature continuous running. Also for off highway /construction equipment and indoor manufacturing equipment that incorporates control systems requiring a hydraulic fluid whose viscosity change with temperature is minimal and for precision machine tools and copying machines.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV, Denison HF-1, Cincinnati P-70, Eaton (Vickers) M-2950-S/I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	864 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.4-50.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	7.6 mm2/s
Viscosity Index	ASTM D2270	>250
Flash Point (COC)	ASTM D92	>175°C
Pour Point	ASTM D97	-39°C
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<50 minutes

HYDRAULIC OIL HM 22

Productcode 4351

HYDRAULIC OIL HM 22 is a high performance anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under moderate to severe conditions in mobile and industrial services.

HYDRAULIC OIL HM 22 oil is formulated with carefully selected base stocks fortified with additives to provide excellent protection towards wear, rust and oxidation.

HYDRAULIC OIL HM 22 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HM 22 provides excellent water demulsibility as well as de-aeration.

HYDRAULIC OIL HM 22 effectively protects against rust and oxidation.

Exceeds: DIN 51524/2 HLP, ISO 11158 HM, AFNOR NFE 48-603 HM

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	22
Density @ 15°C	ASTM D4052	861 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	19.8-24.2 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	4.3 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>175°C
Pour Point	ASTM D97	-39°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<40 minutes

HYDRAULIC OIL HM 32

Productcode 4352

HYDRAULIC OIL HM 32 is a high performance anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under moderate to severe conditions in mobile and industrial services.

HYDRAULIC OIL HM 32 oil is formulated with carefully selected base stocks fortified with additives to provide excellent protection towards wear, rust and oxidation.

HYDRAULIC OIL HM 32 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HM 32 provides excellent water demulsibility as well as de-aeration.

HYDRAULIC OIL HM 32 effectively protects against rust and oxidation.

Exceeds: ISO 11158 HM, DIN 51524/2 HLP, AFNOR NFE 48-603 HM, Sauer Danfoss 520L0463, Eaton (Vickers) M-2950-S/M 2952-S/I-286-S, Bosch Rexroth 07 075 vane, piston & gear pumps, Denison–TP 30560: HF-0, Cincinnati Machine: P-68

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	32
Density @ 15°C	ASTM D4052	871 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	28.8-35.2 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	5.4 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>195°C
Pour Point	ASTM D97	-39°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<4 minutes
Demulsibility @ 54°C	DIN 51599	<30 minutes

HYDRAULIC OIL HM 46

Productcode 4354

HYDRAULIC OIL HM 46 is a high performance anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under moderate to severe conditions in mobile and industrial services.

HYDRAULIC OIL HM 46 oil is formulated with carefully selected base stocks fortified with additives to provide excellent protection towards wear, rust and oxidation.

HYDRAULIC OIL HM 46 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HM 46 provides excellent water demulsibility as well as de-aeration.

HYDRAULIC OIL HM 46 effectively protects against rust and oxidation.

Exceeds: ISO 11158 HM, DIN 51524/2 HLP, AFNOR NFE 48-603, HM Sauer Danfoss 520L0463, Eaton(Vickers)M-2950 S/M 2952-S/I-286-S, Bosch Rexroth 07 075 vane, piston & gear pumps, Denison–TP 30560: HF-1 Cincinnati Machine: P-70

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	877 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.4-50.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.8 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>205°C
Pour Point	ASTM D97	-36°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<30 minutes

HYDRAULIC OIL HM 68

Productcode 4356

HYDRAULIC OIL HM 68 is a high performance anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under moderate to severe conditions in mobile and industrial services.

HYDRAULIC OIL HM 68 oil is formulated with carefully selected base stocks fortified with additives to provide excellent protection towards wear, rust and oxidation.

HYDRAULIC OIL HM 68 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HM 68 provides excellent water demulsibility as well as de-aeration.

HYDRAULIC OIL HM 68 effectively protects against rust and oxidation.

Exceeds: ISO 11158 HM, DIN 51524/2 HLP, AFNOR NFE 48-603 HM Sauer Danfoss 520L0463, Eaton(Vickers)M-2950-S/M 2952-S/I-286-S, Bosch Rexroth 07 075 vane, piston & gear pumps, Denison–TP 30560: HF-2, Cincinnati Machine: P-69

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	885 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	61.2-74.8 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.7 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>205°C
Pour Point	ASTM D97	-33°C
Air Release Value @ 50°C	DIN 51381	<8 minutes
Demulsibility @ 54°C	DIN 51599	<30 minutes

HYDRAULIC OIL HM 100

Productcode 4357

HYDRAULIC OIL HM 100 is a high performance anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under moderate to severe conditions in mobile and industrial services.

HYDRAULIC OIL HM 100 oil is formulated with carefully selected base stocks fortified with additives to provide excellent protection towards wear, rust and oxidation.

HYDRAULIC OIL HM 100 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HM 100 provides excellent water demulsibility as well as de-aeration.

HYDRAULIC OIL HM 100 effectively protects against rust and oxidation.

Exceeds: DIN 51524/2 HLP, ISO 11158 HM, AFNOR NFE 48-603 HM

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	100
Density @ 15°C	ASTM D4052	889 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	90-110 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.2 mm2/s
Viscosity Index	ASTM D2270	>97
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	-30°C
Air Release Value @ 50°C	DIN 51381	<14 minutes
Demulsibility @ 54°C	DIN 51599	<60 minutes

HYDRAULIC OIL HV 15

Productcode 4349

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 EPadditive 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.

Exceeds: AFNOR NFE-48-603, ISO 11158 HV, DIN 51524/3 HVLP, Eaton Vickers M-2950-S/I-386, Sauer Danfoss 520L0463

Property:	Test Method:	Typical Values:
ISO Grade ISO	3448	15
Density@15°C kg/m3	ASTM D4052	869
Kin. Viscosity @40°C mm2/s	ASTM D7042	14.9
Kin. Viscosity @100°C mm2/s	ASTM D7042	3.9
Viscosity Index	ASTM D2270	167
Flash Point COC °C	ASTM D92	>201
Pour Point °C	ASTM D7346	-42
Water Separability @54°C Minutes	ASTM D1401	Pass
Demulsility @54°C Minutes	ASTM D892	Pass

HYDRAULIC OIL HV 22

Productcode 4359

HYDRAULIC OIL HV 22 is a premium quality anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HV 22 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection against wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HV 22 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HV 22 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HV 22 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	22
Density @ 15°C	ASTM D4052	859 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	19.8-24.2 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	5.6 mm2/s
Viscosity Index	ASTM D2270	>155
Flash Point (COC)	ASTM D92	>175°C
Pour Point	ASTM D97	-39°C
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<40 minutes

HYDRAULIC OIL HV 32

Productcode 4358

HYDRAULIC OIL HV 32 is a premium quality anti wear hydraulic oils developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HV 32 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HV 32 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HV 32 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HV 32 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV, Denison HF-0, Cincinnati P-68, Eaton (Vickers) M-2950-S/I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	32
Density @ 15°C	ASTM D4052	871 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	28.8-35.2 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.3 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point (COC)	ASTM D92	>175°C
Pour Point	ASTM D97	-39°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<20 minutes

HYDRAULIC OIL HV 46

Productcode 4360

HYDRAULIC OIL HV 46 is a premium quality anti wear hydraulic oils developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HV 46 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HV 46 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HV 46 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HV 46 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV, Denison HF-1, Cincinnati P-70, Eaton (Vickers) M-2950-S/I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	875 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.4-50.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	7.7 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point (COC)	ASTM D92	>180°C
Pour Point	ASTM D97	-39°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<10 minutes
Demulsibility @ 54°C	DIN 51599	<30 minutes

HYDRAULIC OIL HV 68

Productcode 4362

HYDRAULIC OIL HV 68 is a premium quality anti wear hydraulic oils developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HV 68 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HV 68 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HV 68 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HV 68 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV, Denison HF-2, Cincinnati P-69, Eaton (Vickers) M-2950-S/I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	882 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	61.2-74.8 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	10.9 mm2/s
Viscosity Index	ASTM D2270	>151
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	-36°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<10 minutes
Demulsibility @ 54°C	DIN 51599	<60 minutes

HYDRAULIC OIL HV 100

Productcode 4355

HYDRAULIC OIL HV 100 is a premium quality anti wear hydraulic oils developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HV 100 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HV 100 is formulated with field proven thermally stable, zinc based anti wear additives.

HYDRAULIC OIL HV 100 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HV 100 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	100
Density @ 15°C	ASTM D4052	882 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	90-110 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Viscosity Index	ASTM D2270	>155
Flash Point (COC)	ASTM D92	>195°C
Pour Point	ASTM D97	-24°C
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<60 minutes

BIO-SYNTH HYDRAULIC OIL 46

Productcode 4361

BIO-SYNTH HYDRAULIC OIL 46 is a biodegradable hydraulic oil based on synthetic oils under addition of additives.

BIO-SYNTH HYDRAULIC OIL 46 has the following properties:
- a very high and stable viscosity index
- excellent anti-wear anti-corrosion properties
- excellent oxidation stability (even at high temperatures)
- very good anti foam properties
- good compatible with seals and gaskets made from synthetic material
- a very low pour point
- good water separation

BIO-SYNTH HYDRAULIC OIL 46 is suitable for heavy duty hydraulic systems of earthmoving equipment and permanent installations, that have to work under high pressures over a wide temperature range.

BIO-SYNTH HYDRAULIC OIL 46 is especially developed for situations where pollution of the environment is expected and where very high operating temperatures can be realised.

Exceeds: DIN 51524/3 HVLP, CEC-L33-T82 > 90% (3 weeks)

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	915 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	46 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	9.35 mm2/s
Viscosity Index	ASTM D2270	182
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	-42°C
FZG Fail Load Stage, minimum	DIN 51354-2	>12
Total Acid Number (TAN)	ASTM D664	3.31 mgKOH/g

HYDRAULIC OIL HVZF 22

Productcode 4373

HYDRAULIC OIL HVZF 22 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HVZF 22 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HVZF 22 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HVZF 22 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HVZF 22 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	22
Density @ 15°C	ASTM D4052	841 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	19.8-24.2 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point	ASTM D92	>175°C
Pour Point	ASTM D97	-36°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<40 minutes

HYDRAULIC OIL HVZF 32

Productcode 4375

HYDRAULIC OIL HVZF 32 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HVZF 32 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HVZF 32 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HVZF 32 provides excellent water demulsibility as well as deaeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HVZF 32 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	32
Density @ 15°C	ASTM D4052	875 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	7.0 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	-36°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<40 minutes

HYDRAULIC OIL HVZF 46

Productcode 4363

HYDRAULIC OIL HVZF 46 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HVZF 46 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HVZF 46 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HVZF 46 provides excellent water demulsibility as well as deaeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HVZF 46 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV, Denison HF-1, Cincinnati P-70, Eaton (Vickers), M-2950-S/ I-286-S, Hitachi

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	875 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.4-50.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	8.8 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point (COC)	ASTM D92	>180°C
Pour Point	ASTM D97	-27°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<10 minutes
Demulsibility @ 54°C	DIN 51599	<40 minutes

HYDRAULIC OIL HVZF 68

Productcode 4377

HYDRAULIC OIL HVZF 68 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HVZF 68 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HVZF 68 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HVZF 68 provides excellent water demulsibility as well as deaeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HVZF 68 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	881 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	12.0 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	-24°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<10 minutes
Demulsibility @ 54°C	DIN 51599	<60 minutes

HYDRAULIC OIL HMZF 22

Productcode 4364

HYDRAULIC OIL HMZF 22 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HMZF 22 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HMZF 22 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HMZF 22 provides excellent water demulsibility as well as deaeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HMZF 22 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/2 HLP, ISO 11158 HM, AFNOR NFE 48-603 HM, Eaton (Vickers), M-2950-S/ I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	22
Density @ 15°C	ASTM D4052	866 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	19.8-24.2 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	4.3 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>185°C
Pour Point	ASTM D97	-24°C
Air Release Value @ 50°C	DIN 51381	<3 minutes
Demulsibility @ 54°C	DIN 51599	<10 minutes

HYDRAULIC OIL HMZF 32

Productcode 4353

HYDRAULIC OIL HMZF 32 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HMZF 32 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HMZF 32 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HMZF 32 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HMZF 32 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/2 HLP, ISO 11158 HM, AFNOR NFE 48-603 HM, Eaton(Vickers) M-2950-S/I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	32
Density @ 15°C	ASTM D4052	871 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	28.8-35.2 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	5.5 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>195°C
Pour Point	ASTM D97	-18°C
Air Release Value @ 50°C	DIN 51381	<10 minutes
Demulsibility @ 54°C	DIN 51599	<40 minutes

HYDRAULIC OIL HMZF 46

Productcode 4365

HYDRAULIC OIL HMZF 46 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HMZF 46 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HMZF 46 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HMZF 46 provides excellent water demulsibility as well as de-aeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HMZF 46 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/2 HLP, ISO 11158 HM, AFNOR NFE 48-603 HM, Eaton(Vickers) M-2950-S/I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	874 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.1-50.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.8 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>200°C
Pour Point	ASTM D97	-24°C
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<30 minutes

HYDRAULIC OIL HMZF 68

Productcode 4371

HYDRAULIC OIL HMZF 68 is a premium quality zinc free anti wear hydraulic oil developed for use in high pressure hydraulic systems operating under varying temperatures where small viscosity changes with fluctuating temperatures are preferred.

HYDRAULIC OIL HMZF 68 oil is formulated with carefully selected base stocks fortified with additives and a very shear stable viscosity index improver to impart excellent protection towards wear, rust and oxidation. The viscosity improver reduces the viscosity decrease with rising temperatures.

HYDRAULIC OIL HMZF 68 is formulated with field proven thermally stable, zinc free based anti wear additives.

HYDRAULIC OIL HMZF 68 provides excellent water demulsibility as well as deaeration and effectively protects against rust and oxidation.

HYDRAULIC OIL HMZF 68 can be used in hydraulic systems in stationary and mobile hydraulic systems, as well as for general machine lubrication.

Exceeds: DIN 51524/2 HLP, ISO 11158 HM, AFNOR NFE 48-603 HM, Eaton (Vickers), M-2950-S/ I-286-S

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	884 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	8.7 mm2/s
Viscosity Index	ASTM D2270	98
Flash Point (COC)	ASTM D92	>195°C
Pour Point	ASTM D97	<-15°C
Air Release Value @ 50°C	ASTM D51381	<10 minutes
Demulsibility @ 54°C	ASTM D51599	<40 minutes

HYDRAULIC OIL HLPD 46

Productcode 4366

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.

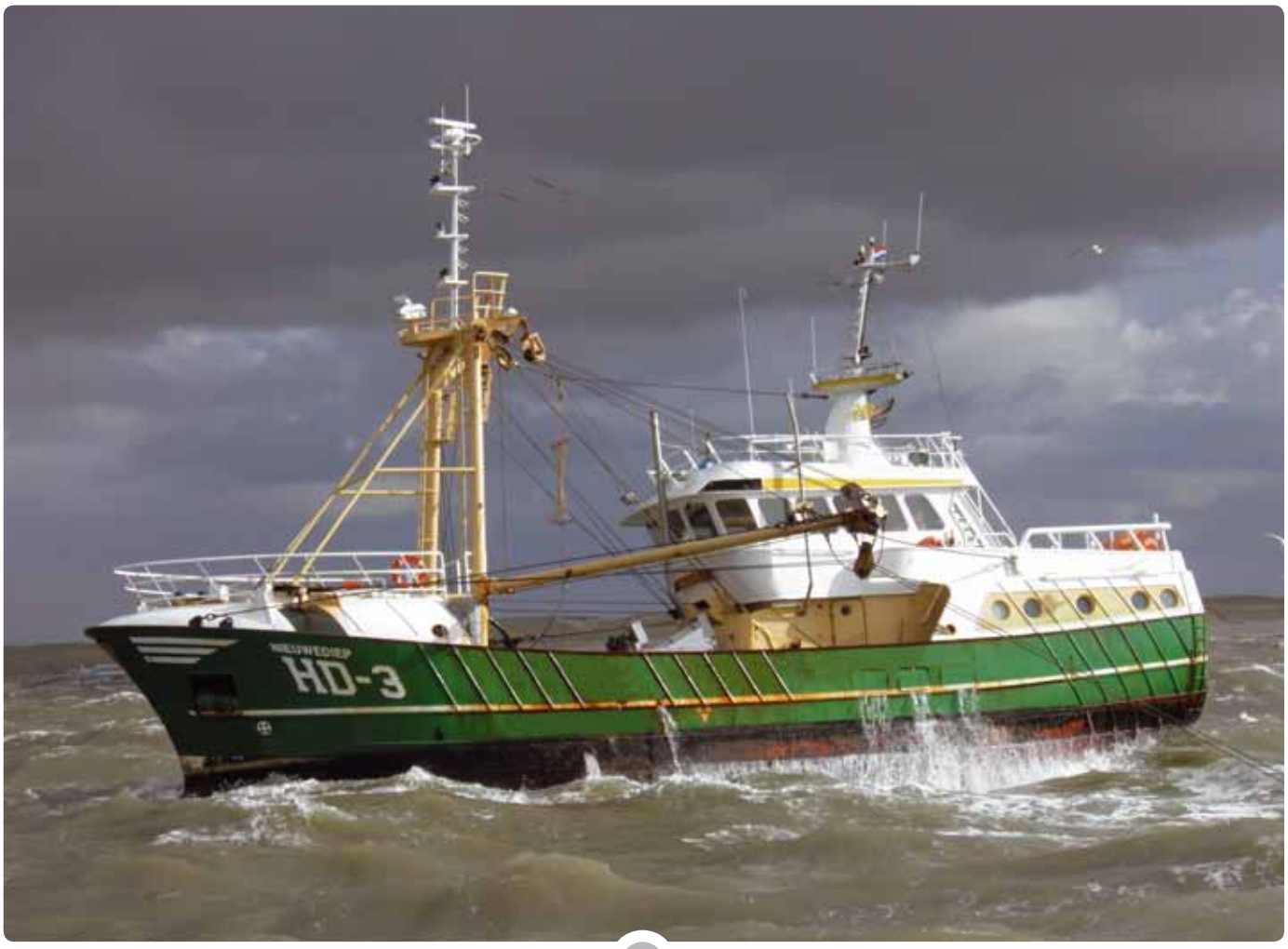
HYDRAULIC OIL HLPD 46 is suitable for use in most modern hydraulic control systems incorporating a wide variety of pump designs (vane type pumps, axial piston, gear and other types of hydraulic pumps and motors) at oil pressures in the range of 70 to 350 bar. The exceptional quality as a detergent hydraulic oil makes 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 continues to work in the presence of water (up to 2%) and is suitable for almost all types of pumps, has very high oxidation stability, excellent antifoaming properties and provides longer life time of oil and hydraulic installation.

HYDRAULIC OIL HLPD 46 is suited for all hydraulic systems into which water, dust and abrasive particles can enter. Check with the pump manufacturer if this type of oil is recommended.

Exceeds: DIN 51524/2 HLPD

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	878 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.4-50.6 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	6.8 mm2/s
Viscosity Index	ASTM D2270	>98
Flash Point (COC)	ASTM D92	>195°C
Pour Point	ASTM D97	-18°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<5 minutes
Demulsibility @ 54°C	DIN 51599	<30 minutes



MARINE CEO 550

Productcode 4449

MARINE CEO 550 is an excellent quality cylinder lubricant designed for modern low speed crosshead diesel engines operating on residual fuels having sulphur content in excess of 1%.

MARINE CEO 550 is developed for diesel engines operating with higher pressures & temperatures and longer strokes. MARINE CEO 570 possesses outstanding acid neutralising capability and provides excellent engine cleanliness and durability.

MARINE CEO 550 has good acid neutralising capability which helps to prolong the life of engine components and superior detergency minimises deposits on critical parts such as pistons, piston rings, ring grooves and cylinder ports. The antiwear property minimises piston ring & cylinder wear leading to reduced maintenance costs and has good compatibility with all normal seal materials.

MARINE CEO 550 is suited for cylinder lubrication of the latest, highly rated low speed cross-head marine diesel engines operating on residual fuels with sulphur contents in excess of 1%. 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.

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	50
Density @ 15°C	ASTM D4052	936 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	212 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	19.5 mm2/s
Viscosity Index	ASTM D2270	90
Flash Point (COC)	ASTM D92	>180°C
Pour Point	ASTM D97	<-12°C
Total Base Number (TBN)	ASTM D2896	70 mgKOH/g
Sulphated Ash	ASTM D874	8.96 wt %

MARINE CEO 570

Productcode 4452

MARINE CEO 570 is an excellent quality cylinder lubricant designed for modern low speed crosshead diesel engines operating on residual fuels having sulphur content in excess of 1%.

MARINE CEO 570 is developed for diesel engines operating with higher pressures & temperatures and longer strokes. MARINE CEO 570 possesses outstanding acid neutralising capability and provides excellent engine cleanliness and durability.

MARINE CEO 570 has good acid neutralising capability which helps to prolong the life of engine components and superior detergency minimises deposits on critical parts such as pistons, piston rings, ring grooves and cylinder ports. The antiwear property minimises piston ring & cylinder wear leading to reduced maintenance costs and has good compatibility with all normal seal materials.

MARINE CEO 570 is suited for cylinder lubrication of the latest, highly rated low speed cross-head marine diesel engines operating on residual fuels with sulphur contents in excess of 1%. 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.

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	50
Density @ 15°C	ASTM D4052	936 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	212 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	19.5 mm2/s
Viscosity Index	ASTM D2270	90
Flash Point (COC)	ASTM D92	>180°C
Pour Point	ASTM D97	<-12°C
Total Base Number (TBN)	ASTM D2896	70 mgKOH/g
Sulphated Ash	ASTM D874	8.96 wt %

MARINE SO 307

Productcode 4457

MARINE SO 307 is a very good quality system oil designed for modern highly rated low speed crosshead marine engines including those employing system oil for piston cooling.

MARINE SO 307 is formulated from good quality base oils with the latest additive technology to provide excellent thermal stability and oxidation resistance. MARINE SO 307 has adequate alkalinity to neutralise any strong acids which may enter into the crankcase resulting from the combustion of fuel sulphur.

MARINE SO 307 has excellent thermo-oxidative stability that retards oil degradation and facilitates piston cooling. Improved detergency keeps crankcase clean and superior water separation characteristics result in trouble free operations. Special rust inhibitors protect critical bearing surfaces from rusting and adequate TBN ensures protection against corrosive combustion products. Good load bearing capabilities reduce wear in heavily loaded bearings.

MARINE SO 307 is recommended for crankcase lubrication in the latest highly rated low speed crosshead marine engines including those employing system oil for piston cooling.

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	892 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	101 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.1 mm2/s
Viscosity Index	ASTM D2270	>90
Flash Point (COC)	ASTM D92	>230°C
Pour Point	ASTM D97	<-24°C
Total Base Number (TBN)	ASTM D2896	7 mgKOH/g
Sulphated Ash	ASTM D874	1 wt %

MARINE SO 407

Productcode 4458

MARINE SO 407 is a very good quality system oil designed for modern highly rated low speed crosshead marine engines including those employing system oil for piston cooling.

MARINE SO 407 is formulated from good quality base oils with latest additive technology to provide excellent thermal stability and oxidation resistance.

MARINE SO 407 has adequate alkalinity to neutralise any strong acids which may enter into the crankcase resulting from the combustion of fuel sulphur.

MARINE SO 407 has excellent thermo-oxidative stability that retards oil degradation and facilitates piston cooling. Improved detergency keeps crankcase clean and superior water separation characteristics result in trouble free operations. Special rust inhibitors protect critical bearing surfaces from rusting and adequate TBN ensures protection against corrosive combustion products. Good load bearing capabilities reduce wear in heavily loaded bearings.

MARINE SO 407 is recommended for crankcase lubrication in the latest highly rated low speed crosshead marine engines including those employing system oil for piston cooling.

Exceeds: DIN 51524/3 HVLP, ISO 11158 HV, AFNOR NFE 48-603 HV

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	881 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	12.0 mm2/s
Viscosity Index	ASTM D2270	>150
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	-24°C
FZG Fail Load Stage, minimum	DIN 51354-2	11
Air Release Value @ 50°C	DIN 51381	<10 minutes
Demulsibility @ 54°C	DIN 51599	<60 minutes

MARINE TPEO 320

Productcode 4459

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 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 320 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 320 offers good anti wear properties, superior demulsibility and protecttion against bearing corrosion, has good anti-foam properties and good protection against 'bore polishing' and lacquering.

MARINE TPEO 320 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	902 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	99.3 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.2 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	20 mgKOH/g
Sulphated Ash	ASTM D874	2.6 wt %

MARINE TPEO 420

Productcode 4460

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 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 420 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 420 offers good anti wear properties, superior demulsibility and protecttion against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 420 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	906 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	145 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.3 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point (COC)	ASTM D92	>230°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	20 mgKOH/g
Sulphated Ash	ASTM D874	2.6 wt %

MARINE TPEO 330

Productcode 4466

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 1.5%.

MARINE TPEO 330 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 330 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 330 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 330 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300 3	0
Density @ 15°C	ASTM D4052	907 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	99 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.5 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	30 mgKOH/g
Sulphated Ash	ASTM D874	3.7 wt %

MARINE DDEO 40

Productcode 4467

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 formulated with quality base stocks and selectively chosen additives to provide excellent wear protection and engine durability and designed to exceed the performance requirements of API CF and are particularly recommended for Detroit Diesel two-cycle diesel engines in marine fleets operating on low sulphur fuels.

MARINE DDEO 40 has excellent 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 and adequate TBN level ensures protection against corrosive combustion products.

MARINE DDEO 40 is recommended for high output, high speed two- and four cycle diesel engines in marine fleets operating on low sulphur fuels.

Exceeds the specifications of: API CF-2/CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	896 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	144 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>220°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	7.5 mgKOH/g
Sulphated Ash	ASTM D874	0.77 wt %

MARINE TPEO 340

Productcode 4477

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 1.5%.

MARINE TPEO 340 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 340 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 340 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore polishing' and lacquering.

MARINE TPEO 340 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	913 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	101 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.3 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>220°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	40 mgKOH/g
Sulphated Ash	ASTM D874	5.1 wt %

MARINE MGEO SP 15W-40

Productcode 4478

MARINE MGEO SP 15W-40 is a mineral based marine engine oil providing good performance in high output , high speed, turbo charged engines operating under severe conditions.

MARINE MGEO SP 15W-40 has been formulated with carefully selected additives in mineral base stocks, to provide excellent detergency, dispersancy and anti wear performance.

MARINE MGEO SP 15W-40 has excellent thermo-oxidative stability, controlling deposits and viscosity increase. Excellent soot handling controls soot induced oil thickening and effectively prevents wear.

MARINE MGEO SP 15W-40 reduces piston deposits, protects against "Bore Polishing", reduces oil consumption and allows extended drain intervals.

MARINE MGEO SP 15W-40 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.

Exceeds the specifications of: API CI-4/CF, ACEA E7, MB 228.3, MTU Type 2, MAN M 3275, Volvo VDS-3 Cummins 20076/20077/20078, Deutz DQC-III, Caterpillar ECF-1a, Allison C4(level)

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	15W-40
Density @ 15°C	ASTM D4052	881 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	106 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.3 mm2/s
Cranking Viscosity @ 20°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	140
Flash Point (COC)	ASTM D92	>215°C
Pour Point	ASTM D97	<-24°C
Total Base Number (TBN)	ASTM D2896	10.5 mgKOH/g
Sulphated Ash	ASTM D874	1.52 wt %

MARINE ALEO 415

Productcode 4479

MARINE ALEO 415 is a high quality marine diesel engine oil, developed to prevent linerlacquering in marine diesel engines operating on distillate fuels. A special additive package is used in MARINE ALEO 415 that prevents not only liner-lacquering but also cleans liners already having this problem and thus helps cleaning engine parts and prevents bore-polishing.

MARINE ALEO 415 has superior detergency preventing liner-lacquering, cleans-up liner lacquer already existing and ensures piston and crankcase cleanliness. Improved antiwear property minimises engine wear and reduces maintenance costs. Excellent thermooxidative stability retards oil degradation and controls its viscosity. Reserve TBN ensures protection of engine parts against corrosive combustion products. Better demulsibility characteristics ensures water separation leading to trouble free operation and special rust & corrosion inhibitors prevent corrosion of engine parts in severe salt water environment.

MARINE ALEO 415 is recommended for medium speed trunk piston engines operating on distillate fuels having sulphur contents up to 1%. Specially recommended for engines that are susceptible to liner-lacquering and associated high lube-oil consumption. Also recommended for certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of:
API CF, Deutz AG for SVBM 628 engines

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	905 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	157 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	15.7 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>230°C
Pour Point	ASTM D97	<-15°C
Total Base Number (TBN)	ASTM D2896	15 mgKOH/g
Sulphated Ash	ASTM D874	2.1 wt %

MARINE ALEO 315

Productcode 4480

MARINE ALEO 315 is a high quality marine diesel engine oil, developed to prevent linerlacquering in marine diesel engines operating on distillate fuels. A special additive package is used in MARINE ALEO 315 that prevents not only liner-lacquering but also cleans liners already having this problem and thus helps cleaning engine parts and prevents bore-polishing.

MARINE ALEO 315 has superior detergency preventing liner-lacquering, cleans-up liner lacquer already existing and ensures piston and crankcase cleanliness. Improved antiwear property minimises engine wear and reduces maintenance costs. Excellent thermooxidative stability retards oil degradation and controls its viscosity. Reserve TBN ensures protection of engine parts against corrosive combustion products. Better demulsibility characteristics ensures water separation leading to trouble free operation and special rust & corrosion inhibitors prevent corrosion of engine parts in severe salt water environment.

MARINE ALEO 315 is recommended for medium speed trunk piston engines operating on distillate fuels having sulphur contents up to 1%. Specially recommended for engines that are susceptible to liner-lacquering and associated high lube-oil consumption. Also recommended for certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	902 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	100 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.2 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	<-15°C
Total Base Number (TBN)	ASTM D2896	15 mgKOH/g
Sulphated Ash	ASTM D874	2.1 wt %

MARINE TPEO 440

Productcode 4282

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 1.5%.

MARINE TPEO 440 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 440 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 440 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 440 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	918 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	145 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	15.0 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>230°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	40 mgKOH/g
Sulphated Ash	ASTM D874	5.1 wt %

MARINE TPEO 412

Productcode 4285

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 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 412 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 412 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 412 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	902 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	145 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	15.5 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>220°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	12 mgKOH/g
Sulphated Ash	ASTM D874	1.6 wt %

MARINE TPEO 415

Productcode 4286

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 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 415 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 415 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 415 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	903 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	145 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	15.5 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>220°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	15 mgKOH/g
Sulphated Ash	ASTM D874	1.9 wt %

MARINE MGEO 15W-40

Productcode 4287

MARINE MGEO 15W-40 is a mineral based marine engine oil providing good performance in high output , high speed, turbo charged engines operating under severe conditions.

MARINE MGEO 15W-40 has been formulated with carefully selected additives in mineral base stocks, to provide excellent detergency, dispersancy and anti wear performance.

MARINE MGEO 15W-40 has excellent thermo-oxidative stability, controlling deposits and viscosity increase. Excellent soot handling controls soot induced oil thickening and effectively prevents wear.

MARINE MGEO 15W-40 reduces piston deposits, protects against "Bore Polishing", reduces oil consumption and allows extended drain intervals.

MARINE MGEO 15W-40 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.

Exceeds the specifications of: API CG-4/CF, MB 228.3, MAN 271, Volvo VDS, MTU Type 2, Mack EO-L

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	15W-40
Density @ 15°C	ASTM D4052	884 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	108 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s
Low-Temperature Cranking Viscosity @ 20°C	ASTM D5293	<7000 mPa.s
Viscosity Index	ASTM D2270	>135
Flash Point	ASTM D92	>230°C
Pour Point	ASTM D97	<-27°C
Total Base Number (TBN)	ASTM D2896	8.7 mgKOH/g
Sulphated Ash	ASTM D874	1.27 wt %

MARINE TPEO 312

Productcode 4288

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 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 312 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 312 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 312 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of: API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	896 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	99 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.5 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	12 mgKOH/g
Sulphated Ash	ASTM D874	1.6 wt %

MARINE TPEO 315

Productcode 4289

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 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 315 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 315 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 315 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of:
API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	30
Density @ 15°C	ASTM D4052	898 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	99 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	11.1 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point (COC)	ASTM D92	>220°C
Pour Point	ASTM D97	<-21°C
Total Base Number (TBN)	ASTM D2896	15 mgKOH/g
Sulphated Ash	ASTM D874	1.9 wt %

MARINE TPEO 430

Productcode 4290

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 1.5%.

MARINE TPEO 430 oil is formulated with high quality paraffinic base stocks and selected additives that provide excellent detergent, dispersant, antiwear and oxidation resistant properties.

MARINE TPEO 430 has very good oxidation stability, excellent dispersant and detergent ability and neutralisation of combustion acids, formed when burning diesel fuel.

MARINE TPEO 430 offers good anti wear properties, superior demulsibility and protection against bearing corrosion, has good anti-foam properties and good protection against 'bore-polishing' and lacquering.

MARINE TPEO 430 is recommended for all high output, medium speed trunk piston marine diesel engines and in certain reduction gear systems where this type of lubricant is specified by the equipment manufacturer.

Exceeds the specifications of:
API CF

Property:	Test Method:	Typical Values:
SAE Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	912 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	145 mm2/s
Kinematic Viscosity @ 100°C	ASTM D7042	15.1 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point (COC)	ASTM D92	>230°C
Pour Point	ASTM D97	<-18°C
Total Base Number (TBN)	ASTM D2896	30 mgKOH/g
Sulphated Ash	ASTM D874	3.7 wt %

SLIDEWAY OIL 32

Productcode 4367

SLIDEWAY OIL 32 is specially formulated for the lubrication of slide ways on machine tools.

SLIDEWAY OIL 32 is formulated with special additives to impart tackiness and adhesiveness.

SLIDEWAY OIL 32 overcomes stick-slip motion associated with slow moving parts.

SLIDEWAY OIL 32 can be used on all horizontal and vertical slide ways where a good quality lubricant is required for protection of the slide ways.

SLIDEWAY OIL 32 has good demulsifying properties and protects slide ways against staining and corrosion.

Exceeds: ISO 19378-L-GA/GB, DIN 51502: CGLP, AFNOR E 60-203 L-G, GM: LS-2: LW-1-04, Light MAG Industrial Automation Systems, LLC (Previously known as Cincinnati Machine): P-53

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	32
Density @ 15°C	ASTM D4052	874 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	7.5 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	180°C
Pour Point	ASTM D97	-21°C
Total Acid Number (TAN)	ASTM D974	0.4 mgKOH/g
Copper Corrosion, 3 hrs @ 100°C	ASTM D130	1b max.

SLIDEWAY OIL 68

Productcode 4368

SLIDEWAY OIL 68 is specially formulated for the lubrication of slide ways on machine tools.

SLIDEWAY OIL 68 is formulated with special additives to impart tackiness and adhesiveness.

SLIDEWAY OIL 68 overcomes stick-slip motion associated with slow moving parts.

SLIDEWAY OIL 68 can be used on all horizontal and vertical slide ways where a good quality lubricant is required for protection of the slide ways.

SLIDEWAY OIL 68 has good demulsifying properties and protects slide ways against staining and corrosion.

Exceeds: ISO 19378-L-GA/GB, DIN 51502: CGLP, AFNOR E 60-203 L-G, GM: LS-2: LW-06-1-04, Medium MAG Industrial Automation Systems, LLC (Previously known as Cincinnati Machine): P-47

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	885 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	8.7 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	180°C
Pour Point	ASTM D97	-15°C
Total Acid Number (TAN)	ASTM D974	0.4 mgKOH/g
Copper Corrosion, 3 hrs @ 100°C	ASTM D130	1b max.

SLIDEWAY OIL 150

Productcode 4495

SLIDEWAY OIL 150 is specially formulated for the lubrication of slide ways on machine tools.

SLIDEWAY OIL 150 is formulated with special additives to impart tackiness and adhesiveness.

SLIDEWAY OIL 150 overcomes stick-slip motion associated with slow moving parts.

SLIDEWAY OIL 150 can be used on all horizontal and vertical slide ways where a good quality lubricant is required for protection of the slide ways.

SLIDEWAY OIL 150 has good demulsifying properties and protects slide ways against staining and corrosion.

Exceeds: ISO 19378-L-GA/GB, DIN 51502: CGLP, AFNOR E 60-203 L-G

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	150
Density @ 15°C	ASTM D4052	894 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	15.3 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>240°C
Pour Point	ASTM D97	<-18°C
Total Acid Number (TAN)	ASTM D974	<0.95 mgKOH/g
Copper Corrosion, 3 hrs @ 100°C	ASTM D130	1b max.

SLIDEWAY OIL 220

Productcode 4369

SLIDEWAY OIL 220 is specially formulated for the lubrication of slide ways on machine tools.

SLIDEWAY OIL 220 is formulated with special additives to impart tackiness and adhesiveness.

SLIDEWAY OIL 220 overcomes stick-slip motion associated with slow moving parts.

SLIDEWAY OIL 220 can be used on all horizontal and vertical slide ways where a good quality lubricant is required for protection of the slide ways.

SLIDEWAY OIL 220 has good demulsifying properties and protects slide ways against staining and corrosion.

Exceeds: ISO 19378-L-GA/GB, DIN 51502: CGLP, AFNOR E 60-203 L-G, GM LS-2: LW-22-1-04, Heavy MAG Industrial Automation Systems, LLC (Previously known as Cincinnati Machine): P-50

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	220
Density @ 15°C	ASTM D4052	898 kg/m3
Kinematic Viscosity @ 100°C	ASTM D7042	18.7 mm2/s
Viscosity Index	ASTM D2270	95
Flash Point	ASTM D92	240°C
Pour Point	ASTM D97	-18°C
Total Acid Number (TAN)	ASTM D974	0.4 mgKOH/g
Copper Corrosion, 3 hrs @ 100°C	ASTM D130	1b max.

FORM OIL 10

Productcode 4390

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:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	10
Density @ 15°C	ASTM D4052	850 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	8-12 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>140°C
Pour Point	ASTM D97	<-24°C

FORM OIL 68

Productcode 4470

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 surfaceactive 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:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	68
Density @ 15°C	ASTM D4052	884 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	61.2-74.8 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>200°C
Pour Point	ASTM D97	<-9°C

FORM OIL 150

Productcode 4391

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 surfaceactive 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:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	150
Density @ 15°C	ASTM D4052	895 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	135-165 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>230°C
Pour Point	ASTM D97	<-9°C

FORM OIL 135

Productcode 4403

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 surfaceactive 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:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	135
Density @ 15°C	ASTM D4052	895 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	122-148 mm2/s
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>230°C
Pour Point	ASTM D97	<-12°C

THERM OIL 32

Productcode 4389

THERM OIL 32 is a premium quality heat transfer oil intended for use in closed indirect heating systems with expansion tank temperatures up to 315°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	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 D97	-15
Initial Boiling Point °C	ISO 3771	>350
Auto Ignition Temperature °C	DIN 51794	>355
Total Acid Number mgKOH/g	ASTM D974	< 0.05

GAS ENGINE OIL MA 40

Productcode 4450

GAS ENGINE OIL MA 40 is a heavy duty, medium ash natural gas engine oil and is formulated from highly refined paraffinic base oils and a medium ash additive package.

GAS ENGINE OIL MA 40 is formulated to provide exceptional control of deposits, wear, valve recession, oxidation and nitration control in natural gas engines requiring an intermediate ash level such as in Superior and “lean burn” Waukesha engines as well as engines running on sour gas or “Dual Fuel”.

GAS ENGINE OIL MA 40 is compatible with the “Non Selective Catalyst Reduction” (NSCR)-type catalysts due to its low phosphorus level.

GAS ENGINE OIL MA 40 is compatible with exhaust catalysts of NSCR-type, has excellent resistance against formation of deposits, maximum protection against corrosion and nitration, protects valves and minimizes corrosive wear.

Exceeds: API CF

Property:	Test Method:	Typical Values:
Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	896 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	143 mm2/s (cSt)
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s (cSt)
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>240°C
Pour Point	ASTM D97	<-15°C
Total Base Number	ASTM D2896	8.4 mgKOH/g
Sulphated Ash	ASTM D874	0.85 wt%

GAS ENGINE OIL LA 40

Productcode 4451

GAS ENGINE OIL LA 40 is a low ash natural gas engine oil, blended with high quality base oils and an additive package that provides detergency, dispersancy, resistance to oxidation and bearing corrosion and low temperature deposit control. These detergents and dispersants effectively reduce sludge and varnish and helps to keep the engine components clean.

GAS ENGINE OIL LA 40 has exceptional deposit, wear, oil oxidation and oil nitration control, meets catalyst manufacturers performance such as Waukesha and has very good detergent and dispersant properties and good resistance against formation of foam and corrosion.

GAS ENGINE OIL LA 40 is suitable for highly rated power engines, with or without turbo charger, such as Caterpillar. GAS ENGINE OIL LA 40 is also suitable for the lubrication of crankcases of gas compressors, driven by gas engines.

Exceeds: CF, Waukesha Cogeneration, Dresser Rand Category III

Property:	Test Method:	Typical Values:
Viscosity Grade	SAE J300	40
Density @ 15°C	ASTM D4052	894 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	144 mm2/s (cSt)
Kinematic Viscosity @ 100°C	ASTM D7042	14.5 mm2/s (cSt)
Viscosity Index	ASTM D2270	>95
Flash Point	ASTM D92	>240°C
Pour Point	ASTM D97	<-15°C
Total Base Number	ASTM D2896	6.0 mgKOH/g
Sulphated Ash	ASTM D874	0.49 wt%

GAS ENGINE OIL ZA 15W-40

Productcode 4456

GAS ENGINE OIL ZA 15W-40 is a premium quality heavy-duty ashless natural gas engine oil specially developed for lubrication of high performance gas engines requiring “ashless” oil. GAS ENGINE OIL ZA 15W-40 is formulated from selected base stocks and a premium additive package to provide good engine cleanliness, thermo-oxidative stability and protection against wear, scuffing and corrosion of engine components. The advanced additive technology of GAS ENGINE OIL ZA 15W-40 is very effective in controlling carbon and ash deposits in combustion chamber and on exhaust and intake ports.

GAS ENGINE OIL ZA 15W-40 controls nitration and oxidation effects to provide extended oil & filter life and clean engines even in severe operating conditions and protects against wear and minimizes ring scuffing during break-in periods. Controls carbon and ash deposits minimizing port plugging in two cycle engines and keeps spark plugs clean.

GAS ENGINE OIL ZA 15W-40 is recommended for naturally aspirated and turbo-charged two-and four-cycle stationary natural gas engines where ashless oils are recommended.

Property:	Test Method:	Typical Values:
Viscosity Grade	SAE J300	15W-40
Density @ 15°C	ASTM D4052	887 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	96.5 mm2/s (cSt)
Kinematic Viscosity @ 100°C	ASTM D7042	13.8 mm2/s (cSt)
Viscosity Index	ASTM D2270	145
Flash Point	ASTM D92	>240°C
Pour Point	ASTM D97	-24°C
Total Base Number	ASTM D2896	1.0 mgKOH/g
Sulphated Ash	ASTM D874	<0.01 wt%

TURBINE OIL 32

Productcode 4455

TURBINE OIL 32 is a very good performance turbine oil specially designed for use in geared and nongeared steam turbines, gas turbines and combined cycle gas turbines (CCGT) including gas turbines operating at high temperatures and possesses outstanding thermal and oxidation stability, good load carrying capacity, excellent water separability, superior rust and corrosion inhibition, low foaming tendency, good air release properties and resistance to chemical degradation to provide excellent equipment protection, reliable operation, with reduced down-time and extended service life. TURBINE OIL 32 exceeds the performance requirements of specifications of major gas and steam turbine manufacturers.

TURBINE OIL 32 has outstanding thermal and oxidation stability that prevents sludge formation, controls deposits and minimises oil degradation leading to reliable operation. 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 and good air release properties and foam control avoid erratic operation and pump cavitation leading to trouble free operation.

TURBINE OIL 32 is recommended for power generation gas turbines, combined cycle gas turbines (CCGT), large heavy-duty industrial gas turbines, power generation and industrial steam turbines and turbines with heavily loaded gears and turbo compressors.

Exceeds the specifications of: DIN 51515-1 L-TD/DIN 51515-2 L-TG, Siemens TLV 9013 04, BS 489, GEK 32568F/28143A MIL-L-17672 D, CEGB 207001, Brown Boveri HTGD 90117, Alstom HTGD 90 117 V0001 S Solar ES 9-224, US Steel 120, Westinghouse Electric Corp. Turbine Oil Spec.

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	32
Density @ 15°C	ASTM D4052	862 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	28.8-35.2 mm2/s
Viscosity Index	ASTM D2270	105
Flash Point	ASTM D92	>185°C
Pour Point	ASTM D97	<-21°C
Total Acid Number (TAN)	ASTM D664	0.1 mgKOH/g
Rust Test	ASTM D665A/B	Pass
Copper Corrosion	ASTM D130	1b
Water Separability @ 54°C	ASTM D1401	Pass
Air Release Value @ 50°C	ASTM D3427	Pass
FZG, fail load stage	DIN 51354-2	>10
Turbine Oil Stability Test	ASTM D943	>10000 hrs
Foam Test (all sequences)	ASTM D892	Pass

TURBINE OIL 46

Productcode 4454

TURBINE OIL 46 is a very good performance turbine oil specially designed for use in geared and nongeared steam turbines, gas turbines and combined cycle gas turbines (CCGT) including gas turbines operating at high temperatures and possesses outstanding thermal and oxidation stability, good load carrying capacity, excellent water separability, superior rust and corrosion inhibition, low foaming tendency, good air release properties and resistance to chemical degradation to provide excellent equipment protection, reliable operation, with reduced down-time and extended service life. TURBINE OIL 46 exceeds the performance requirements of specifications of major gas and steam turbine manufacturers.

TURBINE OIL 46 has outstanding thermal and oxidation stability that prevents sludge formation, controls deposits and minimises oil degradation leading to reliable operation. 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 and good air release properties and foam control avoid erratic operation and pump cavitation leading to trouble free operation.

TURBINE OIL 46 is recommended for power generation gas turbines, combined cycle gas turbines (CCGT), large heavy-duty industrial gas turbines, power generation and industrial steam turbines and turbines with heavily loaded gears and turbo compressors.

Exceeds the specifications of: DIN 51515-1 L-TD/DIN 51515-2 L-TG, Siemens TLV 9013 04, BS 489, GEK 32568F/28143A MIL-L-17672 D, CEGB 207001, Brown Boveri HTGD 90117, Alstom HTGD 90 117 V0001 S Solar ES 9-224, US Steel 120, Westinghouse Electric Corp. Turbine Oil Spec.

Property:	Test Method:	Typical Values:
ISO Viscosity Grade	ISO 3448	46
Density @ 15°C	ASTM D4052	868 kg/m3
Kinematic Viscosity @ 40°C	ASTM D7042	41.4-50.6 mm2/s
Viscosity Index	ASTM D2270	104
Flash Point	ASTM D92	>185°C
Pour Point	ASTM D97	<-21°C
Total Acid Number (TAN)	ASTM D664	0.1 mgKOH/g
Rust Test	ASTM D665A/B	Pass
Copper Corrosion	ASTM D130	1b
Water Separability @ 54°C	ASTM D1401	Pass
Air Release Value @ 50°C	ASTM D3427	Pass
FZG, fail load stage	DIN 51354-2	>10
Turbine Oil Stability Test	ASTM D943	>10000 hrs
Foam Test (all sequences)	ASTM D892	Pass

TURBINE OIL 68

Productcode 4453

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.

Exceeds: ASTM D4304 Type II; DIN,51515 TD/TG, ISO 8086 TSE/TGE/TSA/TGA; ALSTOM HTGD 90117 V; GEK 32568E/32568F/46506D/28143A/107395A/10194 1A; Solar ES 9-224, Class II; Siemens TLV 9013 04; ALSTOM HTGD 90117W

Property	Unit	Test Method	Typical Value
ISO VG Grade		ISO 3448	68
Density@15°C	kg/m3	ASTM D4052	873
Kin. Viscosity @100°C	mm2/s	ASTM D7042	9.8
Viscosity Index		ASTM D2270	98
Flash Point COC	°C	ASTM D92	>201
Pour Point	°C	ASTM D97	-15
FZG A/8, 3 90°C		DIN 51354-2	>10
Demulsibility @54°C		DIN 51599	pass
Total Acid Number	mgKOH/g	ASTM D664	0.1

DEF BLUE

Productcode 4233

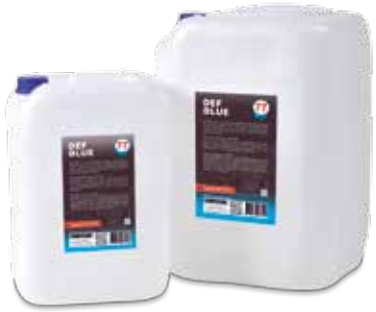
DEF BLUE is an extremely pure solution, especially developed for the diesel engines with a SCR system. DEF BLUE mainly consists of water and urea. It is injected into exhaust gas to reduce harmful NOx emissions and meet the Euro5 and Euro6 emission standards.

Chemical compounds of DEF BLUE

DEF BLUE is a solution of urea in demineralized water. DEF BLUE is produced according to ISO standards. This ensures the highest quality of DEF BLUE. DEF BLUE contains approximately 32,5% urea. It is also known as AUS 32 ((NH2)2CO

DEF BLUE, how does it work?

DEF BLUE reduces harmful emissions through a chemical reaction. This chemical reaction occurs when DEF BLUE is injected into exhaust gas inside the catalyst of the diesel engine. Untreated exhaust gasses contain nitrogen oxides (NOx) which are a major air pollutant. DEF BLUE is especially used to reduce emission of this pollutant



BLUEPOWER exceeds the following performance criteria: DIN 70 070

Properties	Unit	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

HAND CLEANER YELLOW

Productcode 4482

(Hand Cleaning Gel)
HAND CLEANER YELLOW is a premium quality hand cleaning paste based on Orange Terpenes, Aloe Vera extracts, Jojoba Esters and effective abrasives.

HAND CLEANER YELLOW is specially developed for removing extremely stubborn industrial soiling. It's unique product formulation easily removes soils such as lubricants, grease, paint, varnish, ink, tar, bitumen and adhesives.

HAND CLEANER YELLOW cleans, moisturises, protects and is dermatologically tested, pHneutral and biodegradable.

HAND CLEANER 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 onto 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).

Colour:	Yellow
pH:	8.5
Skin Care:	Aloë Vera, Jojoba Oil, Lanolin Derivatives
Cleaning:	Surfactants, Solvents, Orange Terpenes
Abrasive:	PUR & PE Abrasives

HAND CLEANER SPECIAL

Productcode 4483

(Industrial Hand Cleaning Paste)
HAND CLEANER 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 cleans, protects and moisturizes, is dermatologically tested, pH neutral and biodegradable.

HAND CLEANER SPECIAL is very suitable for removing heavy industrial soiling such as lubricants, grease, tar, adhesives and bitumen.

HAND CLEANER SPECIAL moisturises the skin and keeps hands soft and free from irritation.

Directions for use: Rub a small amount of HAND CLEANER SPECIAL onto 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).

Colour:	Beige
pH:	8.0
Skin Care:	Aloë Vera Extracts, Jojoba Oil, Lanolin Derivatives
Cleaning:	Surfactants
Abrasive:	PUR Abrasives

HAND CLEANER RED

Productcode 4481

(Hand Cleaning Gel)
HAND CLEANER RED is a hand cleaning paste based on skin-friendly components, effective cleaning agents and an abrasive. HAND CLEANER RED is extremely suitable for removing stubborn soiling such as lubricants, greases, tars and bitumen.

HAND CLEANER RED cleans, moistures, protects and dermatologically tested, pH neutral and biodegradable.

HAND CLEANER RED is a powerful workshop hand cleaning gel for removing industrial soiling and is formulated with a pleasant fresh fragrance. HAND CLEANER RED is a classic hand cleaning paste for workshops and factories.

Directions for use: Rub a small amount of HAND CLEANER RED 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.

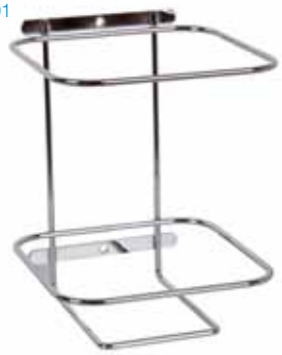
Storage: Keep the package of HAND CLEANER RED well closed and store in a cool but frost-free place.

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).

Colour:	Red
pH:	8.5
Skin Care:	Glycerine
Cleaning:	Surfactants Solvents
Abrasive:	PE Abrasives

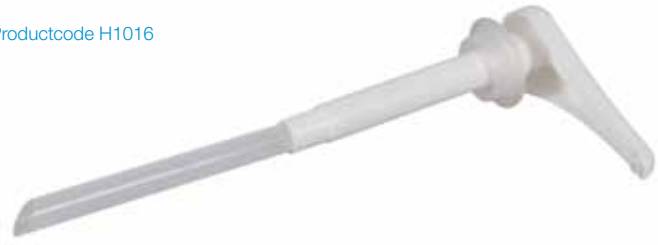
WALL BRACKET FOR HANDCLEANER

Productcode H1001



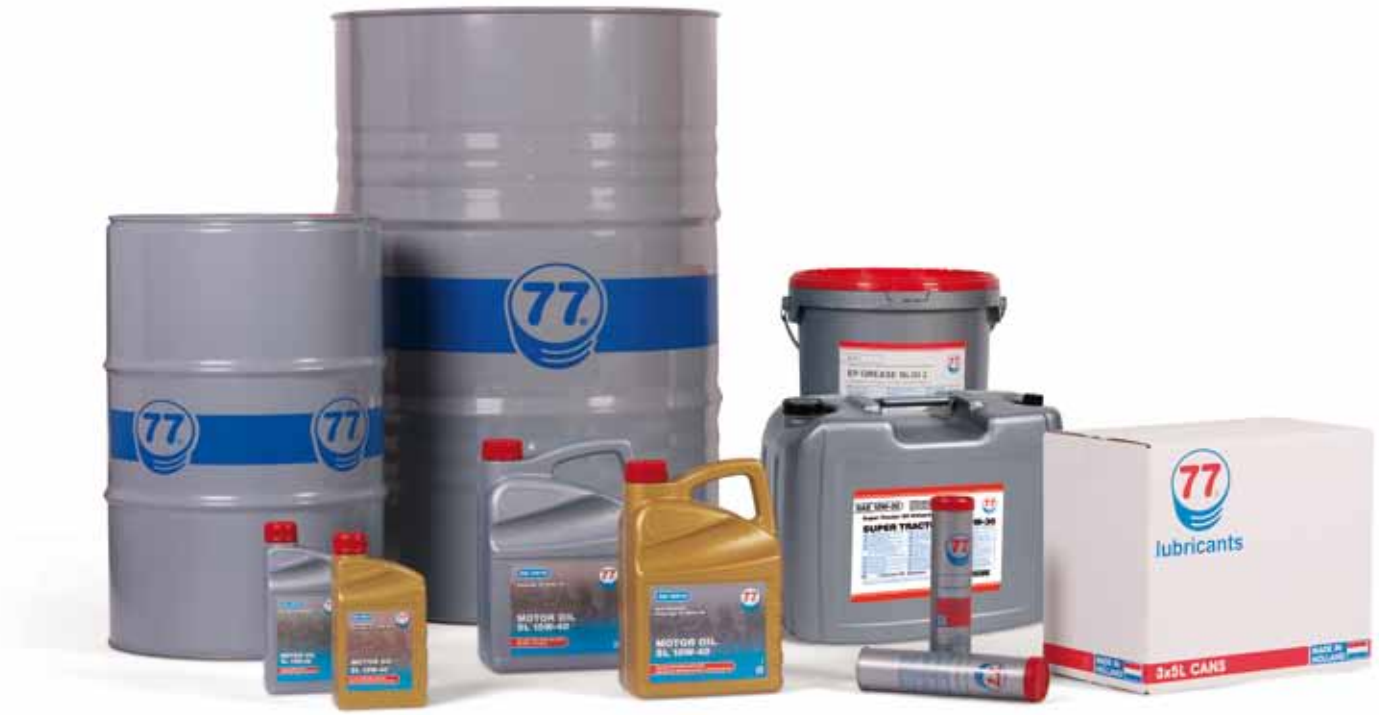
DISPOSABLE DISPENSER PUMP

Productcode H1016



DISPENSER PUMP

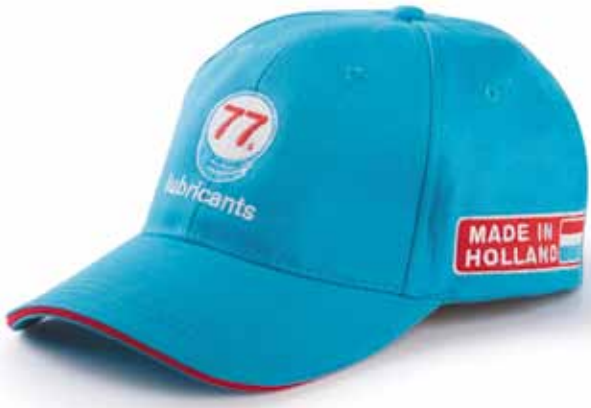
Productcode H1022



RACE CAP

Productcode MERCHA 77002

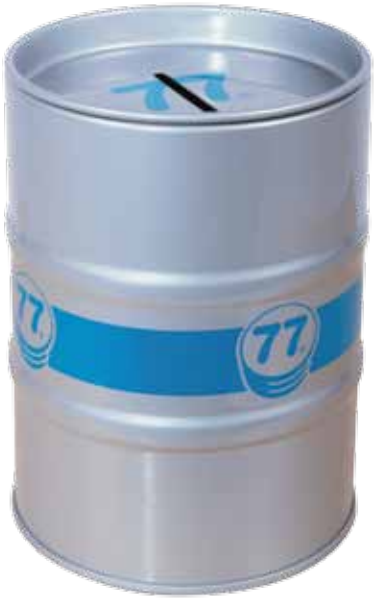
This a high quality Racing Cap fits every number One.



MONEY-DRUM

Productcode MERCHA 77001

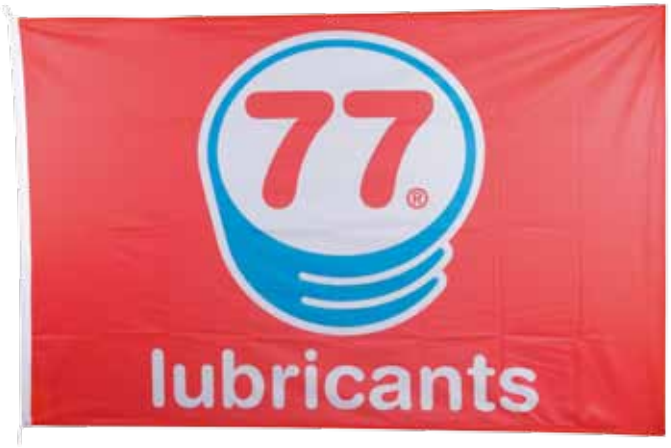
Save money with this 77 lubricants money-drum.



FLAG

Productcode MERCHA 77003

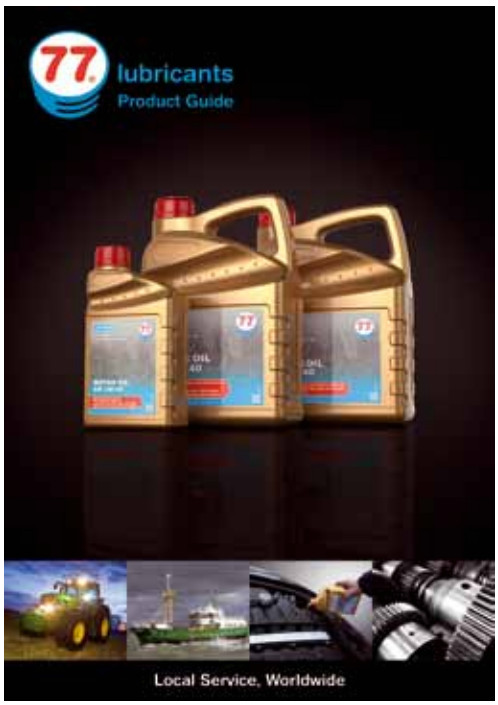
77Lubricants flag. Dimensions: 150x100cm (width x height)



PRODUCT GUIDE

Productcode MERCHA 77004

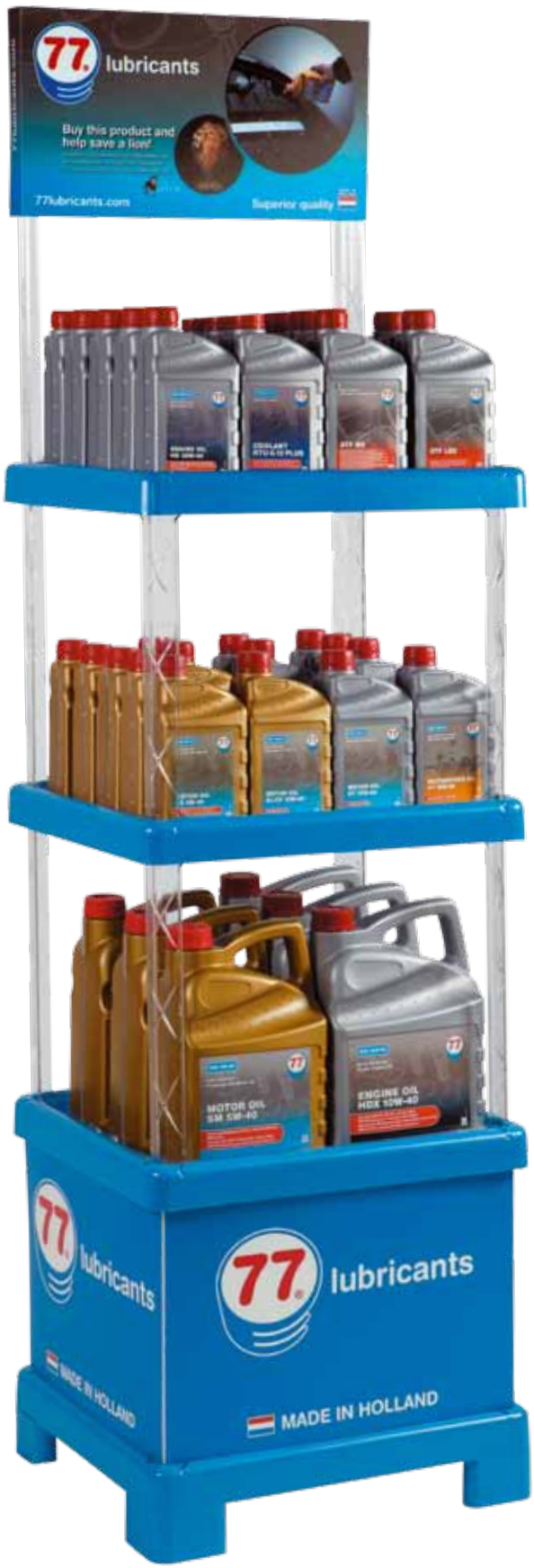
77Lubricants Product Guide. Delivered in a box of 100 pieces.



PRODUCT DISPLAY

Productcode MERCHA 77005

This one is an eye-catcher.
Show the whole range of 77 Lubricants products in your store.



LET THE LIONS ROAR

Few animals are as intriguing and majestic as the mighty lion. Its strength, speed and physique make the lion both mesmerising and intimidating. Unfortunately though, the king of the animal kingdom is in danger. Tigers, lions and other big cats are facing extinction and are being hunted, taken captive and killed all around the world. The Lion Foundation wants to give big cats the future they deserve... and would like to hear lions roar on the African plains now and in the future.

The foundation has a large big cat rescue facility in a rural part of the The Netherlands. The facility is housed on the Hoenderdaell Estate, near the town of Anna Paulowna. This is a temporary home for retired circus animals, animals that had to leave zoos for various reasons and animals rescued from poor living conditions. The Lion Foundation is affiliated with partners in South-Africa and other countries to help create rehabilitation and release options for big cats in the rescue facility. Ultimately pure breed animals that are strong enough to live in the wild will one day be returned to the wild. Older animals, animals with handicaps and mixed breed animals will live in large gated reserves in relative freedom. In preparation for their return to the (semi) wild, the foundation has created a special big cat training area at the rescue facility. The foundation is also building a hunting simulator. Once the hunting simulator is completed it will help improve the physical fitness, hunting instinct and quality of life of all the big cats living in captivity at the Lion Foundation rescue facility. Visitors are always welcome at the rescue facility. The Lion Foundation is located in the heart of the Hoenderdaell Estate in Anna Paulowna, Northern Holland. 77 BV supports this initiative. Therefore, 77 Lubricants donates a part of its sales to the Lion Foundation. Buy 77 and let the lions roar!

FAITES RENTENTIR LE RUGISSEMENT DU LION

Peu d'animaux sont aussi mystérieux, majestueux et puissants que le lion. Sa force, sa vitesse et son physique nous fascinent et nous intimident à la fois. Mais le roi des animaux est en danger. Chassés, capturés puis tués, les tigres, lions et autres grands félins sont en voie de disparition, et ce dans le monde entier. La Fondation du Lion veut rendre à ces nobles félins le futur qu'ils méritent... et entendre à nouveau le lion rugir dans les plaines d'Afrique, aujourd'hui et dans le futur. La fondation dispose d'un grand refuge pour grands félins, situé dans une zone rurale des Pays-Bas, au domaine d'Hoenderdaell, près d'Anna Paulowna. Il s'agit d'un refuge temporaire pour les animaux de cirque à la retraite, les animaux qui ne peuvent rester dans un zoo pour diverses raisons ou des animaux secourus suite à de mauvaises conditions de vie. La Fondation du Lion est affiliée avec des partenaires d'Afrique du Sud et d'autres pays afin de faciliter la réhabilitation et la libération des grands félins du refuge. Au bout du compte, seuls les animaux de race pure et suffisamment forts pour vivre dans la nature y retournent un jour. Les animaux plus âgés, handicapés ou de race mixte vont quant à eux vivre dans de vastes réserves entourées d'un enclos, dans une relative liberté. Pour préparer leur retour vers cette semi-liberté, la fondation a créé dans le refuge une formation spéciale pour félins. La fondation fait actuellement construire un simulateur de chasse. Une fois que le simulateur de chasse sera opérationnel, il aidera à améliorer la santé physique, l'instinct de chasse et la qualité de vie de tous les grands félins vivant en captivité au refuge de la Fondation du Lion. Les visiteurs y sont toujours les bienvenus. La Fondation du Lion est située au cœur du domaine Hoenderdaell d'Anna Paulowna, en Hollande septentrionale. 77 BV soutient cette initiative. C'est pourquoi 77 Lubricants offre une partie de ses bénéfices à la Fondation du Lion. Achetez 77 et faites retentir le rugissement du lion !

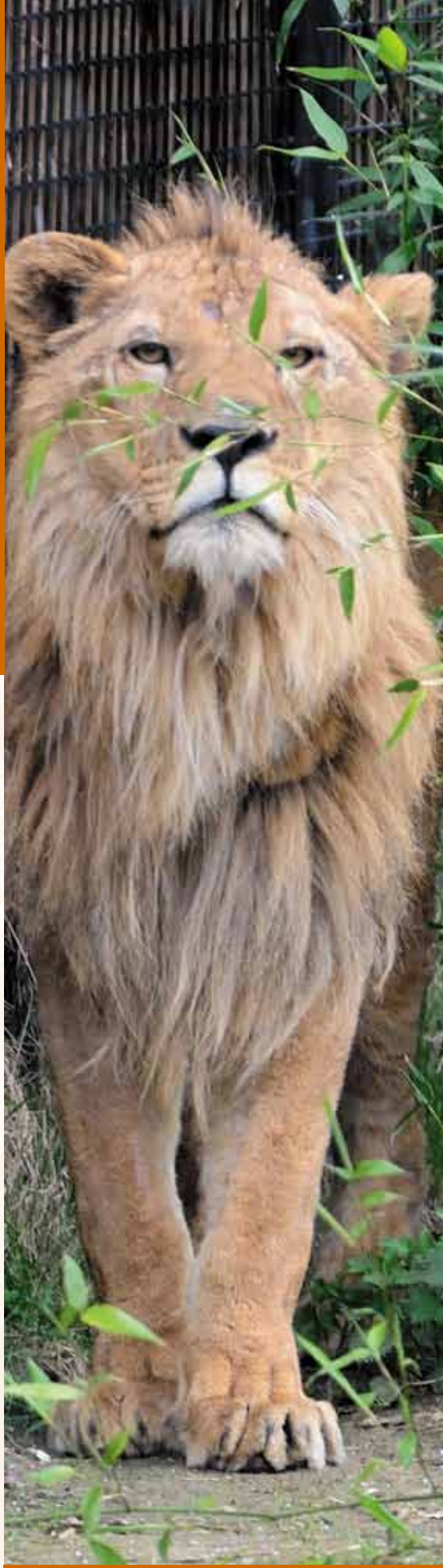
QUE RUJAN LOS LEONES

Existen pocos animales que intrigan y son tan majestuosos como el poderoso león. Con su fuerza, velocidad y físico, el león es fascinante e intimidante. No obstante, el rey del reino animal, lamentablemente, está en peligro. Tigres, leones y otros grandes felinos están en peligro de extinción mientras están siendo perseguidos, capturados y asesinados en todo el mundo. Stichting Leeuw (Fundación León) trabaja para dar a estos grandes felinos el futuro que se merecen y la motivación consiste en el deseo de poder oír a los leones, rugiendo en las sabanas africanas, tanto ahora como en el futuro.

La fundación cuenta con un centro de rescate para grandes felinos en una zona rural de los Países Bajos. El centro está ubicado en la finca Landgoed Hoenderdaell, del pueblo Anna Paulowna. Este es un refugio temporal para animales de circo retirados, animales que tuvieron que abandonar los zoológicos por diversas razones o animales rescatados por encontrarse en malas condiciones de vida. La fundación Stichting Leeuw colabora con socios en Sudáfrica y otros países para facilitar la creación de posibilidades para rehabilitar y liberar los grandes felinos del centro de rescate. A la larga, animales de pura raza serán devueltos a la naturaleza cuando lleguen a ser lo suficientemente fuertes para vivir en libertad. Los animales de edad avanzada, con alguna discapacidad o de raza mixta serán trasladados a grandes reservas cerradas.

En preparación para el retorno a la libertad o semilibertad, la fundación ha creado una zona especial de entrenamiento de felinos grandes en el centro de rescate. La fundación también está construyendo un circuito para la simulación de la caza. Una vez terminado, el simulador de caza ayudará a mejorar condición física, instinto cazador y calidad general de vida de todos los grandes felinos en cautiverio en el centro de rescate de la fundación Stichting Leeuw. Las puertas del centro están siempre abiertas para los visitantes. La fundación Stichting Leeuw está situada en el corazón de la finca Landgoed Hoenderdaell en el pueblo Anna Paulowna de la provincia de Holanda Septentrional. Desde 77 Lubricants apoyamos esta iniciativa donando una parte de las ventas a la fundación Stichting Leeuw. ¡Compre productos 77 y deje que rujan los leones!

STICHTING LEEUW



A portion of the proceeds from every bottle sold will be donated to the Dutch Lion Foundation. For more information visit www.77lubricants.com.

Your distributor

may 2015

www.77lubricants.com