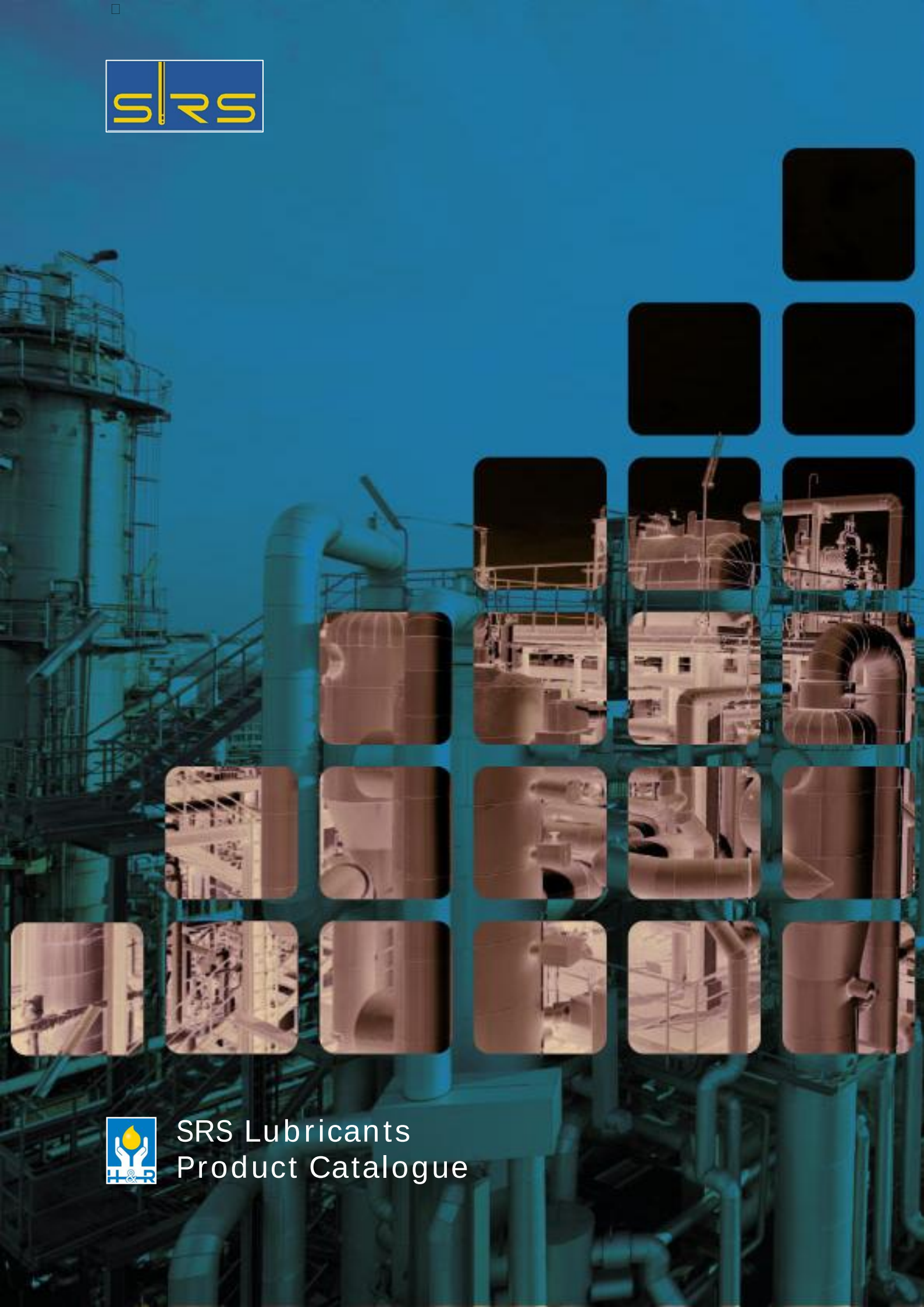

# SRS Lubricants
# Product Catalogue

# SRS LUBRICANTS

# SRS Motor Oils

# Motor Oils

December 2015

| Universal multigrade engine oils | ACEA (CCMC*)<br>API Class | Brand | SAE<br>Grade |
|---|---|---|---|
| Heavy-duty, smooth running engine oil for the mixed vehicle fleet | A3/B4, E7<br>CI-4/SL | SRS Cargolub TFX | 10W-40 |
| Universal multigrade engine oil for diesel and gasoline engines | A2/B2/E2<br>SH/SG/CF-4 | SRS Multi-Rekord | 10W-40 |
| High performance, all purpose engine oil for the mixed vehicle fleet | A3/B4, E2<br>SL/CG-4 | SRS Multi-Rekord Plus | 15W-40 |
| High Performance universal engine oil for mixed vehicle fleets | E7, A3/B3<br>SL/CI-4 | SRS Multi-Rekord Top | 15W-40 |
| Multigrade engine oil for use in diesel and gasoline engines | A2, B2, E2<br>SJ/CF-4 | SRS Rekord 15/40 | 15W-40 |
| Universal multigrade engine oil for diesel and gasoline engines | A3/B4, E2<br>SL/CG-4 | SRS Primalub | 15W-40 |
| Universal multigrade engine oil for gasoline and diesel engines, including turbo versions | A3/B4<br>CG-4/SL | SRS Primalub | 20W-50 |
| Multi-grade multi-purpose oil (STOU) for highest loads. Applicable in motors, transmissions, hydraulics and wet brakes of agricultural machines | E3<br>CG-4/SF (engines)<br>GL4 (gears) | SRS Primanol | 15W-30<br>10W-30<br>10W-40 |
| Universal multigrade engine oil for mixed fleets | A2/B3/E3<br>SJ/CF/CF-4 | SRS Magnum Turbo | 15W-40<br>20W-50 |
| Multigrade engine oil for passenger car gasoline and diesel engines | (G4/D4/PD2*)<br>SG/CF-4 | SRS MAGNUM SL | 15W-40 |
| Multigrade engine oil for passenger car gasoline and diesel engines | A3/B3/E2<br>SJ/CF-4/CF | SRS MAGNUM SL | 10W-40 |
| Multigrade engine oil for passenger car gasoline and diesel engines | SG/CF-4 | SRS MAGNUM SL | 20W-50 |
| Multigrade engine oil for gasoline and diesel engines for commercial and passenger cars | (G4/D4/PD2*)<br>SG/CF-4 | SRS MAGNUM SUPER | 15W-60 |
| Multigrade engine oil | SF/CD | Wiolamit 15W-40 | 15W-40 |
| Multigrade engine oil | SF/CD | Wiolamit 20W-50 | 20W-50 |
| Multigrade engine oil | SF/CC | Wiolamit FC 15W-40 | 15W-40 |
| Multigrade engine oil for gasoline and diesel engines including the turbo versions | SG/CD | Wiolamit GD 15W-40 | 15W-40 |
| Multigrade engine oil for gasoline and diesel engines including the turbo versions | SG/CD | Wiolamit GD 20W-50 | 20W-50 |

| Multigrade engine oils for passenger cars | ACEA (CCMC*)<br>API Class | Brand | SAE<br>Grade |
|---|---|---|---|
| Special smooth running engine oil for motors of the VW group with maintenance interval extension (WIV) | C3 | SRS ViVA 1 SLV plus | 5W-30 |
| Heavy-duty smooth running engine oil with lowered high-temperature viscosity | A5/B5<br>SL/CF | SRS ViVA 1 special F plus | 5W-30 |
| Fuel saving heavy-duty smooth running engine oil | A3/B4<br>SM/CF | SRS ViVA 1 ecosynth | 0W-40 |

# Motor Oils

December 2015

| Multigrade engine oils for passenger cars | ACEA (CCMC*)<br>API Class | Brand | SAE Grade |
|---|---|---|---|
| High-performance low friction engine oil | C1 | SRS ViVA 1 special LS | 5W-30 |
| High-performance low friction engine oil | C2<br>SM/CF | SRS ViVA 1 special MS | 5W-30 |
| High-performance low friction engine oil | C1/C2 | SRS ViVA 1 special LMS | 5W-30 |
| High-performance low friction engine oil | C4 | SRS ViVA 1 special R | 5W-30 |
| High-performance low friction engine oil | A1/B1<br>SN | SRS ViVA 1 special F eco | 5W-20 |
| High performance low friction engine oil | A3/B4<br>SM/CF | SRS ViVA 1 longlife | 5W-30 |
| High-performance multigrade engine oil | A3/B3<br>SL/CF | SRS ViVA 1 synth | 15W-50 |
| Heavy-duty smooth running engine oil | A3/B4<br>SN/CF | SRS ViVA 1 topsynth | 5W-40 |
| High-performance low-friction engine oil | A3/B4<br>SM/SL/CF | SRS ViVA 1 topsynth alpha | 5W-30 |
| Heavy-duty engine oil | C3<br>SN/CF | SRS ViVA 1 topsynth alpha LA | 5W-30 |
| Longlife high-performance engine oil | C3<br>SN/CF | SRS ViVA 1 topsynth alpha LS | 5W-40 |
| Heavy-duty smooth running engine oil | A3/B4<br>SL/CF | SRS ViVA 1 | 10W-40 |
| High performance low-friction engine oil | A3/B3<br>SL/CF | SRS ViVA 1 | 10W-50 |
| Smooth running engine oil | A3/B4<br>SL/CF | SRS Primalub alpha | 10W-40 |
| High performance engine oil | A3/B4<br>SM/CF | SRS ViVA 1 synth racing | 5W-50 |

| Multigrade engine oils for commercial vehicles | ACEA (CCMC*)<br>API Class | Brand | SAE Grade |
|---|---|---|---|
| UHPD-low friction engine oil for commercial vehicles | E4, E7<br>CI-4 | SRS Cargolub TFG | 10W-40 |
| USHPD-smooth running engine oil for commercial vehicles with optimised exhaust-emission | E6, E7<br>CI-4 | SRS Cargolub TLS | 5W-30 |
| USHPD-smooth running engine oil for Euro V und VI motors | E6, E7, E9<br>CJ-4/SN | SRS Cargolub TLS plus | 5W-30 |
| UHPD low friction engine oil for commercial vehicles with Low SAPS additive technology | E6, E7<br>CI-4 | SRS Cargolub Leichtlauf-Motorenöl LA | 10W-40 |
| SHPD-oil for turbo diesel engines with extremely long oil retention times | E7<br>CI-4 | SRS Turbo-Rekord | 15W-40 |
| SHPD-oil for turbo diesel engines with extremely long oil retention times | E9<br>CJ-4/SN | SRS Turbo-Rekord plus | 15W-40 |
| High performance low friction engine oil for commercial vehicles | E4, E7<br>CF | SRS Cargolub TFG ultra | 10W-40 |
| USHPD-smooth running engine oil for longest oil retention times. Applicable year-round | E4, E7<br>CI-4 | SRS Cargolub TFG plus | 10W-40 |

# Motor Oils

December 2015

| Multigrade engine oils for commercial vehicles | ACEA (CCMC*)<br>API Class | Brand | SAE Grade |
|---|---|---|---|
| USHPD-smooth running engine oil for longest oil retention times. High fuel savings | E4, E7<br>CI-4 | SRS Cargolub TFL | 5W-30 |
| UHPD-smooth running engine oil for commercial vehicles with optimised exhaust-emission | E6, E7, E9<br>CI-4 | SRS Cargolub TLA | 10W-40 |

| Monograde engine oils | ACEA (CCMC*)<br>API Class | Brand | SAE Grade |
|---|---|---|---|
| Single-grade engine oil for Diesel- and Otto motors | E2<br>CF/SF | SRS Rekord | 10W to 50 |
| Heavy duty single-grade engine oils also for highly stressed ship engines | E7<br>CI-4 | SRS Rekord plus | 30, 40 |
| Oil for first operation and corrosion protection with numerous possibilities of application | SF/CC | SRS Antikorrol | 10W, 20W-20, 30 and 50 |
| Single-grade engine oil with very high corrosion protection. For emergency generators or for internal conservation | E7<br>CI-4 | SRS Antikorrol M plus | 30 |
| Monograde engine oil for diesel and gasoline engines | SF/CD | SRS Rekord E | 30, 40, 50, 60 |

| Four Stroke engine oils | ACEA (CCMC*)<br>API Class | Brand | SAE Grade |
|---|---|---|---|
| Heavy-duty motor-cycle oil with very good high-temperature stability. JASO MA | SG | SRS Magnum 4T | 20W-50 |
| Heavy-duty motor-cycle oil. JASO MA2 | A3<br>SL | SRS Magnum 4T plus | 10W-40 |

| Two Stroke engine oils | JASO<br>API Class | Brand | SAE Grade |
|---|---|---|---|
| Two-cycle motor oil for blended- and separate lubrication, self-mixing | FB<br>TC | SRS Bitaktol KX | |
| Heavy duty low smoke two-cycle motor oil, self-mixing also for fresh-oil automatic operation | FD<br>TC | SRS Bitaktol KS plus | |
| Heavy duty two-cycle motor oil for outboard motors, self-mixing | NMMA TC-W3<br>TD | SRS Bitaktol Super 3 | |
| Low smoke two-cycle motor oil, self-mixing | FC<br>TC | SRS Bitaktol KS | |

# Motor Oils

December 2015

| Gas Motor Oils | ACEA (CCMC*) API Class | Brand | SAE Grade |
|---|---|---|---|
| Gas engine oils for heavy duty 2-stroke and 4-stroke gas engines. Long Oil drain intervals even with use of bio, landfill and sewage gas | CF | SRS Mihagrun | 30 and 40 |
| Gas engine oil for higher stressed 2-stroke and 4-stroke gas engines, also for gas engines with catalyser operation | CF | SRS Mihagrun LA | 40 |
| High-performance gas engine oil, specifically designed for use in modern low emission high-performance gas engines an extended oil change intervals | CF | SRS Mihagrun LAX | 40 |
| High-performance gas engine oil specifically designed for use with sewage oil, biogas and landfill gas and extended oil change intervals. | | SRS Mihagrun X 40 | 40 |
| High-performance medium ash gas engine oil specifically designed for use with sewage gas, biogas and landfill gas and extended oil change intervals | | SRS Mihagrun XB 40 | 40 |

| German Army Oils | ACEA (CCMC*) API Class | Brand | SAE Grade |
|---|---|---|---|
| Multigrade engine oil with Army release | A3/B3, E3<br>CH-4/SJ | SRS Lubricating Oil, Engine (O-236) | 15W-40 |

# SRS Cargolub TFX

## Universal Fuel-Economy Motor Oil

May 2014

## Properties

SRS Cargolub TFX is high performance low friction 10W-40 engine oil. Base oil components and modern adapted additives for the high service requirements ensure the compliance with the properties listed below.

SRS Cargolub TFX

- applicable throughout the year
- ensures trouble free cold-starts
- reduces cold start wear by short oil supply times
- offers high temperature wear protection
- reduces fuel and oil consumption, thus reduces environmental detrimental emissions
- high dispersancy
- prevents sludge development
- extends service life of engines
- allows extended oil drain intervals

## Application

SRS Cargolub TFX as an universal low friction engine oil is the perfect product for mixed vehicle fleet, e.g. for freight forwarding, urban services and the construction industry. One engine oil for all vehicles excludes the possibility of a mix up of lubricants, and guarantees economic supply inventory. Due to its very high diesel performance SRS Cargolub TFX is applicable in all types of commercial and construction vehicles, including those with turbocharged engines, as well as in passenger car gasoline and diesel engines with and without turbochargers.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | CI-4/SL |
| ACEA | E7, A3/B4 |
| Global | DHD-1 |

## Approvals / Recommendations

Mercedes-Benz sheet 228.3, 229.1 and 235.28
MAN M 3275-1
Volvo VDS-3 (STD 417-0002)
Renault VI RLD/RLD-2
MTU MTL 5044 Type 2 (except BR 8000, 4000-04, 1800, 956 TB 31/32/33)
MTU DDC BR 2000/4000
Caterpillar ECF-1a and ECF-2
Cummins CES 20071, 20072, 20076, 20077, 20078
Deutz DQC III-10
Mack EO-M Plus
Voith Retarder Type B
DAF

| Typical data | | Test method | SRS Cargolub TFX |
|---|---|---|---|
| SAE Grade | | DIN 51 511 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,873 |
| Viscosity at –25°C (CCS) | mPa s | DIN 51 377 | 6.650 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 98,6 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,6 |
| Viscosity Index (VI) | | DIN ISO 2909 | 154 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 36 |
| Total base number | mgKOH/g | DIN ISO 3771 | 10,6 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,5 |

SRS Cargolub TFX is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Multi-Rekord 10W-40

Universal Multigrade Engine Oil

June 2002

## Properties

SRS Multi-Rekord is an universal multigrade engine oil in the SAE 15W-40 viscosity range for use in diesel and gasoline engines. The 10W-40 viscosity range ensures good fluidity and in easy starting in winter and high-temperature stability even at extreme loads. Selected viscosity improver are responsible for the stay-in-grade-characteristic. High-quality base oils together with selected additives will assure properties excellent antiwear and engine cleanliness. The development of black sludge will be avoided.

## Application

SRS Multi-Rekord was developed for universal use suitable for mixed fleets and construction industry. The performance of this multigrade engine oil meets the requirements of commercial and passenger car diesel engines as well as for gasoline engines with or without turbochargers.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | SH/SG/CF-4 |
| ACEA | A2/B2/E2 |

## Approvals / Recommendations

Mercedes-Benz sheet 228.1
MAN spec. 271

| Typical data | | Test method | SRS Multi-Rekord |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,870 |
| Viscosity at –25°C | mPa s | DIN 51 377 | 6600 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 94 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,1 |
| Viscosity Index (VI) | | DIN ISO 2909 | 153 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | -33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 11 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,3 |

SRS Multi-Rekord 10W-40 is a product of the H&R ChemPharm GmbH

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# SRS Multi-Rekord Plus

## High-Performance Universal Engine Oil

November 2011

## Properties

SRS Multi-Rekord plus is a mineral oil based, high performance universal engine oil of SAE 15W-40 viscosity grade. Base oils produced with the most modern refinery techniques, together with innovative, adapted additives, ensure that the today's requirements are met. Its outstanding qualities include its excellent lubrication at high temperatures and the exceptional wear protection under all operating conditions. Cleaning additives prevent the formation of deposits, pistons and valves stay clean, the formation of oil-sludge is averted. Engine cleanliness and low friction reduce both energy losses and maintenance costs.

## Application

SRS Multi-Rekord plus is a top-quality oil for universal, year-round application in mixed fleets. A single engine oil for all vehicles excludes the possibility of confusion, and guarantees economic stock maintenance. SRS Multi-Rekord plus is a high-performance universal engine oil for extended oil-change intervals even under extreme load conditions. The range of application covers the requirements of all commercial vehicle and passenger car diesel engines of many well known manufacturers. The high demands from modern, fuel economy engines for the compliance of the tight EU standards for exhausts are more than satisfied.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | SL/CG-4 |
| ACEA | A3/B4, E2 |

## Approvals / Recommendations

Mercedes Benz sheet 228.3 and 229.1
MAN spec. 3275-1
Volvo VDS
Mack EO-L
MTU MTL 5044 Type 2 (except BR 8000, 4000-04, 1800, 956 TB 31/32/33)
MTU DDC BR 2000/4000
Allison C-4

| Typical data | | Test method | SRS Multi-Rekord Plus |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,883 |
| Viscosity at –20°C (CCS) | mPa s | DIN 51 377 | 6,500 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 98,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 13,6 |
| Viscosity Index (VI) | | DIN ISO 2909 | 137 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 9,1 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,2 |

SRS Multi-Rekord plus is a product of the H&R ChemPharm GmbH

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# SRS Multi-Rekord Top

High Performance Universal Engine Oil

March 2014

## Properties

SRS Multi-Rekord top is a mineral oil based, high performance universal engine oil of SAE 15W-40 viscosity grade. Base oils produced with the most modern refinery techniques, together with innovative, adapted additives, ensure that the today's requirements are met. Its outstanding qualities include its excellent lubrication security at high temperatures and the exceptional wear protection under all operating conditions.

## Application

SRS Multi-Rekord top is a top-quality oil for universal, year-round application in mixed fleets. Single engine oil for all vehicles excludes the possibility of a mix up of lubricants, and guarantees economic supply inventory. SRS Multi-Rekord top is high-performance universal engine oil for extended oil-change intervals. The range of application covers the requirements of all commercial vehicles and passenger car diesel engines of many well known manufacturers. The high demands of modern, fuel economy engines to comply with the tight EU standards for exhaust gases (Euro III) are more than satisfied.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | SL/CI-4 |
| ACEA | E7, A3/B3 |

## Approvals / Recommendations

Mercedes Benz approval 228.3 and 229.1
MAN M 3275-1
Renault VI RLD/RLD-2
MTU MTL 5044 Type 2 (except BR 8000, 4000-04, 1800 and 956 TB 31/32/33)
MTU DDC BR 2000 and 4000
Volvo VDS-3 (STD 417-0002)
Mack EO-N, EO-M Plus
Cummins CES 20071, 20072, 20076, 20077
John Deere JDQ 78A
Caterpillar ECF-1a and ECF-2
ZF TE-ML 07C

| Typical data | | Test method | SRS Multi-Rekord Top |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,887 |
| Viscosity at –20°C (CCS) | mPa s | ASTM D 5293 | 6,800 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 106 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 14,3 |
| Viscosity Index (VI) | | DIN ISO 2909 | 138 |
| Flash point COC | °C | DIN ISO 2592 | 235 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 9,0 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,1 |

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# SRS Rekord 15/40

Multigrade Engine Oil

December 2011

## Properties

SRS Rekord 15/40 is a multigrade engine oil for use in diesel and gasoline engines. The all season 15W-40 viscosity grade provides easy starting in winter high temperature stability even at extreme stress. Shear stable viscosity index improvers are responsible for the stay-in-grade characteristic throughout the entire oil drain interval. High quality base oils together with selected additives will assure excellent antiwear protection and engine cleanliness. The formation of black sludge will be avoided.

## Application

SRS Rekord 15/40 was developed as universal engine oil for mixed vehicle fleets and construction industry. The performance meets the requirements of all commercial and passenger car diesel engines as well as of all gasoline engines with or without turbochargers.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | SJ/CF-4 |
| ACEA | A2, B2, E2 |

## Approvals / Recommendations

Mercedes Benz sheet 228.1
Mercedes Benz sheet 229.1
MAN 271

| Typical data | | Test method | SRS Rekord 15/40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,882 |
| Viscosity at –20°C | mPa s | DIN 51 377 | 6,520 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 105 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,1 |
| Viscosity Index (VI) | | DIN ISO 2909 | 136 |
| Flash point COC | °C | DIN ISO 2592 | 250 |
| Pour point | °C | DIN ISO 3016 | - 24 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,7 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,92 |

SRS Rekord 15/40 is a product of the H&R ChemPharm GmbH

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# SRS Primalub 15W-40

Universal Multigrade Engine Oil

June 2008

## Properties

SRS Primalub 15W-40 is an universal multigrade engine oil for use in diesel and gasoline engines. The 15W-40 viscosity range ensures good fluidity and an easy starting in winter and high-temperature stability even at extreme loads. Selected viscosity improver are responsible for the stay-in-grade-characteristic. High-quality base oils together with selected additives will assure properties excellent anti-wear and engine cleanliness. The development of black sludge will be avoided.

## Application

SRS Primalub 15W-40 was developed for universal use suitable for mixed fleets and construction industry. The performance of this multigrade engine oil meets the requirements of all commercial and passenger car diesel engines as well as for all gasoline engines with or without turbochargers.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | SL/CG-4 |
| ACEA | A3/B4, E2 |

## Approvals / Recommendations

Mercedes-Benz sheet 228.1 and 229.1
MAN spec. 271
MTU Type 1
Volvo VDS

| Typical data | | Test method | SRS Primalub 15W-40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,882 |
| Viscosity at –20°C | mPa s | DIN 51 377 | 6700 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 105 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,0 |
| Viscosity Index (VI) | | DIN ISO 2909 | 136 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 8,9 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,1 |

SRS Primalub 15W-40 is a product of the H&R ChemPharm GmbH

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# SRS Primalub 20W-50

Multigrade Engine Oil

May 2011

## Properties

SRS Primalub 20W-50 is an universal engine oil composed according to the latest state of the art for gasoline and diesel engines, including the turbo versions. The more stringent requirements for new generation engines due to lean mixture and catalytic converter concepts are amply satisfied, even when unleaded fuels are used.

## Application

SRS Primalub 20W-50 satisfies the SAE Grade 20W-50 requirements. This viscosity setting ensures a proper oil film even at high ambient temperature. This viscosity setting is particularly suitable for engines with high operating loads.

## Performance / Specifications

SRS Primalub 20W-50 can be used in engines with the requirements ACEA A2/B2/E2. It corresponds to the requirements for engine oils in accordance with

| | |
|---|---|
| SAE Grade | 20W-50 |
| ACEA | A3/B4 |
| API | CG-4/SL |

## Approvals / Recommendations

Mercedes-Benz sheet 228.3
MAN M 3275-1
Volvo VDS

| Typical data | | Test method | SRS Primalub 20W-50 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 20W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,889 |
| Viscosity at –15°C (CCS) | mPa s | DIN 51 377 | 9,070 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 157 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 17,5 |
| Viscosity Index (VI) | | DIN ISO 2909 | 122 |
| Flash point COC | °C | DIN ISO 2592 | 240 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 8,8 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,15 |

SRS Primalub 20W-50 is a product of the H&R ChemPharm GmbH

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# SRS Primanol

## Super Tractor Oil Universal (STOU)

September 2014

## Properties

SRS Primanol are Super Tractor Oils Universal (STOU) for uniform supply of agricultural equipments like tractors and construction engines. The viscosity grades SAE 15W-30, 10W-30 and SAE 10W-40 allow all-year operation, ensure good cold engine starting and an instant response in the hydraulic systems. SRS Primanol 15W-30 and 10W-30 correspond to viscosity grades SAE 80W-85 and Primanol 10W-40 to the grade 80W-90 for gear oils and covers ISO VG 46, 68 and 100 for hydraulic oils.

## Application

SRS Primanol is applicable in diesel and gasoline engines, including turbocharged diesel engines, in hydraulic systems and transmissions with combined oil systems. SRS Primanol is also used in axle drives where API GL-5 oil is not prescribed. The particular additives in SRS Primanol prevent noises and “stick-slip” phenomena in oil immersed power shift clutches and wet brakes.

## Performance / Specifications

| | |
|---|---|
| STOU | |
| SAE Grade | 15W-30, 10W-30 and 10W-40 |
| SAE | 80W-85 and 80W-90 |
| ISO VG | 46 to 100 |
| API | CG-4/SF (engines) |
| API | GL 4 (gears) |
| MIL | L-2104 D |

HLP, HLPD, HVLP (hydraulics)

## Approvals / Recommendations

ACEA E3-Performance
ZF TE-ML 06B, 07B* (includes 06C/06R), 07B[1)]
John Deere JDM J20C, J20D, J27
Ford M2C 86 B/C, 134 D, 159 B/C
Ford New Holland 82009201, 2, 3
Case MS 1204, 1206, 1207, 1209
CNH MAT 3525, 3526
Massey Ferguson MF CMS M 1135, 1139, 1143, 1144, 1145[1)]
Allison C-4
Caterpillar TO-2
Sperry Vickers Eaton I-280-S, Eaton M2950S
Sauer Sunstrand Danfoss Hydrostatic Trans Fluid

* Except for transmissions T7000 from September 2011to autumn 2014

[1)] Only for 10W-30 and 10W-40

| Typical data | | Test method | SRS Primanol 15W-30 | SRS Primanol 10W-30 | SRS Primanol 10W-40 |
|---|---|---|---|---|---|
| SAE Grade (engine) | | SAE J 300 | 15W-30 | 10W-30 | 10W-40 |
| SAE Grade (gear) | | SAE J 306 | 80W-85 | 80W-85 | 80W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,886 | 0,867 | 0,867 |
| Viscosity at –25°C (CCS) | mPa s | ASTM D5293 | 6590 | 6770 | 6310 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 75,8 | 76,8 | 86,4 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 10,3 | 11,7 | 13,2 |
| Viscosity Index (VI) | | DIN ISO 2909 | 120 | 146 | 153 |
| Flash point COC | °C | DIN ISO 2592 | 234 | 230 | 234 |
| Pour point | °C | DIN ISO 3016 | - 42 | - 42 | - 42 |
| Total base number | mgKOH/g | DIN ISO 3771 | 11 | 10,8 | 11 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,4 | 1,4 | 1,4 |

SRS Primanol is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Magnum-Turbo 15W-40

Universal Multigrade Engine Oil

September 2005

## Properties

SRS Magnum Turbo is a high performance engine oil in the all-year viscosity class SAE 15W-40, the preferred recommendation for Central Europe.

The performance range covers the requirements for heavy duty gasoline and diesel engines including all engines with turbocharger, even when unleaded fuels are used. The extreme operating conditions of the new generation engines due to the lean mixture and catalytic converter concept are safely controlled.

SRS Magnum Turbo still features performance reserves if the very long – oil residence times allowed by the vehicle manufacturers are fully utilized under unfavourable conditions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | SJ/CF/CF-4 |
| ACEA | A2/B3/E3 |

## Approvals / Recommendations

Mercedes-Benz sheet 228.1
MAN factory standard 271

| Typical data | | Test method | SRS Magnum Turbo 15W-40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,883 |
| Viscosity at –20°C | mPa s | DIN 51 377 | 6800 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 107 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,0 |
| Viscosity Index (VI) | | DIN ISO 2909 | 132 |
| Flash point COC | °C | DIN ISO 2592 | 236 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 8 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,0 |

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# SRS Magnum-Turbo 20W-50

SHPD Engine Oil for Diesel Engines

November 2012

## Properties

SRS Magnum Turbo 20W-50 is a SHPD (Super High Performance Diesel) engine oil in the all-year viscosity class SAE 20W-50. The performance level meets the requirements for heavy duty diesel engines including the engines with turbocharger and Exhaust Gas Recirculation (EGR). SRS Magnum Turbo 20W-50 reduces piston deposits, reduces oil consumption, protects against bore polishing and allows extended drain intervals.

## Application

SRS Magnum Turbo 20W-50 still features performance reserves if the – very long - oil residence times allowed by the vehicle manufacturers are fully utilized under unfavourable conditions. SRS Magnum Turbo 20W-50 can be used in conformity with manufacturer's instructions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 20W-50 |
| API | CI-4/SL |
| ACEA | E7, A3/B3 |
| Global | DHD-1 |
| Jaso | DH-1 |

## Approvals / Recommendations

Mercedes-Benz sheet 228.3 and 229.1
MAN 3275-1
Volvo VDS-3
Deutz DQC III-10
MTU MTL 5044 Type 2
Cummins CES 20076, 20077, 20078
Mack EO-M Plus
Caterpillar ECF-1a

| Typical data | | Test method | SRS Magnum Turbo 20W-50 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 20W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,891 |
| Viscosity at – 15 °C (CCS) | mPa s | DIN 51 377 | 8750 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 154 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 17,6 |
| Viscosity Index (VI) | | DIN ISO 2909 | 126 |
| Flash point COC | °C | DIN ISO 2592 | 248 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 11,0 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,4 |

SRS Magnum-Turbo 20W-50 is a product of the H&R ChemPharm GmbH

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# SRS Magnum-Turbo 15W-50

Universal Multigrade Engine Oil

May 2004

## Properties

SRS Magnum Turbo is a high performance engine oil in the all-year viscosity class SAE 15W-50.

The performance range covers the requirements for heavy duty gasoline and diesel engines including all engines with turbocharger, even when unleaded fuels are used. The extreme operating conditions of the new generation engines due to the lean mixture and catalytic converter concept are safely controlled.

SRS Magnum Turbo still features performance reserves if the very long – oil residence times allowed by the vehicle manufacturers are fully utilized under unfavourable conditions.

SRS Magnum Turbo can be used in conformity with manufacturer's instructions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-50 |
| API | SG/CF-4 |
| CCMC*) | G4/D4/PD2 |

*) according to the operating instruction for engines up to 12/96

| Typical data | | Test method | SRS Magnum Turbo 15W-50 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,881 |
| Viscosity at –20°C | mPa s | DIN 51 377 | 6750 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 123 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 16,5 |
| Viscosity Index (VI) | | DIN ISO 2909 | 145 |
| Flash point COC | °C | DIN ISO 2592 | 250 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,6 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,03 |

SRS Magnum-Turbo 15W-50 is a product of the H&R ChemPharm GmbH

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# SRS Magnum SL 15W-40

Multigrade Engine Oil

May 2004

## Properties

SRS Magnum SL is a multigrade engine oil composed according to the latest state of the art for passenger car gasoline and diesel engines, including the turbo versions.

The more stringent requirements for new generation engines due to lean mixture and catalytic converter concepts are amply satisfied, even when unleaded fuels are used.

SRS Magnum SL satisfies the SAE Grade 15W-40 requirements. This viscosity setting ensures both good cold starting and reliable lubrication safety at high operating and ambient temperatures in moderate climatic areas such as Central Europe.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | SG/CF-4 |
| CCMC*) | G4/D4/PD2 |

* According to operating instructions for aggregates until 12/96

## Approvals / Recommendations

Mercedes-Benz sheet 227.1

| Typical data | | Test method | SRS Magnum SL 15W-40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,882 |
| Viscosity at –20°C | mPa s | DIN 51 377 | 6700 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 96 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 12,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 130 |
| Flash point COC | °C | DIN ISO 2592 | 228 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,7 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,03 |

SRS Magnum SL 15W-40 is a product of the H&R ChemPharm GmbH

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# SRS Magnum SL 10W-40

Multigrade Engine Oil

April 2005

## Properties

SRS Magnum SL is a multigrade engine oil composed according to the latest state of the art for passenger car gasoline and diesel engines, including the turbo versions.

The more stringent requirements for new generation engines due to lean mixture and catalytic converter concepts are amply satisfied, even when unleaded fuels are used.

SRS Magnum SL satisfies the SAE Class 10W-40 requirements. This viscosity setting ensures both good cold starting and reliable lubrication safety at high operating and ambient temperatures in moderate climatic areas, such as Central Europe.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | SJ/CF-4/CF |
| ACEA | A3/B3/E2 |

| Typical data | | Test method | SRS Magnum SL 10W-40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,867 |
| Viscosity at –25°C | mPa s | DIN 51 377 | 6750 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 91 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 13,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 155 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 8,2 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,0 |

SRS Magnum SL 10W-40 is a product of the H&R ChemPharm GmbH

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# SRS Magnum SL 20W-50

Multigrade Engine Oil

October 2009

## Properties

SRS Magnum SL 20W-50 is a multigrade engine oil composed according to the latest state of the art for passenger car gasoline and diesel engines, including the turbo versions. The more stringent requirements for new generation engines due to lean mixture and catalytic converter concepts are amply satisfied, even when unleaded fuels are used.

## Application

SRS Magnum SL 20W-50 satisfies the SAE Class 10W-40 requirements. This viscosity setting ensures both good cold starting and reliable lubrication safety at high operating and ambient temperatures in moderate climatic areas, such as Central Europe.

## Performance / Specifications

SAE Grade 20W-50
API SG/CF-4

## Approvals / Recommendations

MIL-L-46152
Mercedes Benz sheet 227.1

| Typical data | | Test method | SRS Magnum SL 20W-50 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 20W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,887 |
| Viscosity at – 20°C | mPa s | DIN 51 377 | 9170 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 151 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 16,5 |
| Viscosity Index (VI) | | DIN ISO 2909 | 116 |
| Flash point COC | °C | DIN ISO 2592 | 240 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 1,0 |
| Sulphated ash | g/100 g | DIN 51 575 | 6,8 |

SRS Magnum SL 20W-50 is a product of the H&R ChemPharm GmbH

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# SRS Magnum Super 15W-60

Multigrade Engine Oil

November 1999

## Properties

SRS Magnum Super 15W-60 is a multigrade engine oil for gasoline and diesel engines, including the turbo versions.

The more stringent requirements for new generation engines due to lean mixture and catalytic converter concepts are amply satisfied, even when unleaded fuels are used. SRS Magnum Super 15W-60 satisfies the SAE Class 15W-60 requirements. This viscosity setting ensures reliable lubrication safety at high operating and ambient temperatures in warm climatic areas.

SRS Magnum Super 15W-60 can be used in conformity with manufacturer's instructions.

## Performance / Specifications

| | |
|---|---|
| API | SG/CF-4 |
| CCMC*) | G4/D4/PD2 |

## Approvals / Recommendations

MIL-L-21 04 E

* According to the operating instructions for aggregates until 12/96

| Typical data | | Test method | SRS Magnum Super 15W-60 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-60 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,873 |
| Viscosity at –15°C | mPa s | DIN 51 377 | 3200 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 175 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 23 |
| Viscosity Index (VI) | | DIN ISO 2909 | 158 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 27 |
| Total base number | mgKOH/g | DIN ISO 3771 | 10,6 |
| Sulphate ash | g/100 g | DIN 51 575 | 1,3 |

SRS Magnum Super 15W-60 is a product of the H&R ChemPharm GmbH

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# SRS Wiolamit 15W-40

Multigrade Engine Oil

July 2013

## Properties

SRS Wiolamit 15W-40 is a multigrade engine oil with high wear and corrosion protection characteristics.

## Application

SRS Wiolamit 15W-40 is suitable for diesel and gasoline engines in accordance with the manufacturer's instructions.

The SAE Grade 15W-40 guarantees all-year use in Central Europe.

## Performance / Specifications

SAE Grade 15W-40
API SF/CD

| Typical data | | Test method | SRS Wiolamit 15W-40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,880 |
| Viscosity at –20°C | mPa s | DIN 51 377 | 5.460 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 96 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 13,3 |
| Viscosity index (VI) | | DIN ISO 2909 | 144 |
| Flash point COC | °C | DIN ISO 2592 | 232 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6.0 |

SRS Wiolamit 15W-40 is a product of the H&R ChemPharm GmbH

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# SRS Wiolamit 20W-50

Multigrade Engine Oil

February 2009

## Properties

SRS Wiolamit 20W-50 is a multigrade engine oil with high wear and corrosion protection characteristics.

## Application

SRS Wiolamit 20W-50 is suitable for diesel and gasoline engines in accordance with the manufacturer's instructions.

## Performance / Specifications

SAE Grade 20W-50
API SF/CD

| Typical data | | Test method | SRS Wiolamit 20W-50 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 20W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,886 |
| Viscosity at –15°C | mPa s | DIN 51 377 | 8600 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 154 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 17,1 |
| Flash point COC | °C | DIN ISO 2592 | 245 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,0 |

SRS Wiolamit 20W-50 is a product of the H&R ChemPharm GmbH

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# SRS Wiolamit FC 15W-40

Multigrade Engine Oil

May 2004

## Properties

SRS Wiolamit FC 15W-40 is a multigrade engine oil with high wear and corrosion protection characteristics. Base oils of the SRS and matched additives prevent the formation of deposits and guarantee engine cleanliness.

## Application

SRS Wiolamit FC 15W-40 is suitable for diesel and gasoline engines in accordance with the manufacturer's instructions. The SAE Grade 15W-40 guarantees all-year use.

## Performance / Specifications

SAE Grade 15W-40
API SF/CC

| Typical data | | Test method | SRS Wiolamit FC 15W-40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,881 |
| Viscosity at - 20°C | mPa s | DIN 51 377 | 6800 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 97 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 12,7 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 27 |
| Total base number | mgKOH/g | DIN ISO 3771 | 5,8 |

SRS Wiolamit FC 15W-40 is a product of the H&R ChemPharm GmbH

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# SRS Wiolamit GD 15W-40

Multigrade Engine Oil

May 2004

## Properties

SRS Wiolamit GD 15W-40 is a multigrade engine oil for gasoline and diesel engines, including the turbo versions.

The more stringent requirements for new generation engines due to lean mixture and catalytic converter concepts are amply satisfied, even when unleaded fuels are used.

SRS Wiolamit GD 15W-40 satisfies the SAE Grade 15W-40 requirements. This viscosity setting ensures both good cold starting and reliable lubrication safety at high operating and ambient temperatures in moderate climatic areas such as Central Europe.

SRS Wiolamit GD 15W-40 can be used in conformity with manufacturer´s instructions.

## Performance / Specifications

API SG/CD

| Typical data | | Test method | SRS Wiolamit GD 15W-40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,882 |
| Viscosity at –20°C | mPa s | DIN 51 377 | 6800 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 95 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 12,6 |
| Viscosity Index | | DIN ISO 2909 | 131 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,6 |
| Sulphated ash | g/100 g | DIN 51 571 | 1,1 |

SRS Wiolamit GD 15W-40 is a product of the H&R ChemPharm GmbH

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# SRS Wiolamit GD 20W-50

Multigrade Engine Oil

May 2004

## Properties

SRS Wiolamit GD 20W-50 is a multigrade engine oil for gasoline and diesel engines, including the turbo versions.

The more stringent requirements for new generation engines due to lean mixture and catalytic converter concepts are amply satisfied, even when unleaded fuels are used.

SRS Wiolamit GD 20W-50 satisfies the SAE Grade 15W-40 requirements. This viscosity setting ensures both good cold starting and reliable lubrication safety at high operating and ambient temperatures in moderate climatic areas such as Central Europe.

SRS Wiolamit GD 20W-50 can be used in conformity with manufacturer´s instructions.

## Performance / Specifications

API SG/CD

| Typical data | | Test method | SRS Wiolamit GD 20W-50 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 20W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,887 |
| Viscosity at –15°C | mPa s | DIN 51 377 | 9200 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 150 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 16,5 |
| Viscosity Index | | DIN ISO 2909 | 118 |
| Flash point COC | °C | DIN ISO 2592 | 240 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,8 |
| Sulphated ash | g/100 g | DIN 51 571 | 1,1 |

SRS Wiolamit GD 20W-50 is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS ViVA 1 SLV Plus

High Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 SLV plus is a high performance low friction engine oil for passenger cars of the newest technology.

Excellent low temperature flow characteristics protect optimal the engine during the cold starting. Extreme loads and high temperatures are safely handled under all operating conditions. SRS ViVA 1 SLV plus contributes through its high fuel economy and reduction of emissions to protect the environment.

## Application

SRS ViVA 1 SLV plus has been especially developed for engines on Longlife service (WIV) of the Volkswagen group. It can be used in earlier models of VW. The service manual of the OEM must be followed. Oil change intervals up to 50.000 km or 2 years are possible.

SRS ViVA 1 SLV plus can also be used in gasoline and diesel engines of other passenger car manufacturers. This particular low emission engine oil keeps clean the emission reduction system of diesel engines during a long service time.

SRS ViVA 1 SLV plus can be used in gasoline and diesel engines which require motor oils according to ACEA A3/B4.

## Performance / Specifications

SAE Grade 5W-30
ACEA C3

## Approvals / Recommendations

VW-Norm 504 00 and 507 00
Mercedes Benz sheet 229.51
BMW Longlife-04
Porsche C30

| Typical data | | Test method | SRS ViVA 1 SLV plus |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,853 |
| Viscosity at - 30°C (CCS) | mPa/s | DIN 51 377 | 5,910 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 66,5 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 11,6 |
| Viscosity Index (VI) | | DIN ISO 2909 | 171 |
| Flash point COC | °C | DIN ISO 2592 | 240 |
| Pour point | °C | DIN ISO 3016 | - 45 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,2 |
| Sulfated ash | g/100 g | DIN 51 575 | 0,64 |

SRS ViVA 1 SLV plus is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS ViVA 1 special F plus

Special High Performance Low Friction Engine Oil

November 2014

## Properties

SRS ViVA 1 special F plus is a modern high performance low friction 5W-30 engine oil based on synthetic technology.

Excellent low temperature flow characteristics protect optimal the engine during the cold starting. Extreme loads and high temperatures are safely handled under all operating conditions. SRS ViVA 1 special F plus ensures very high wear protection and lower friction losses (HTHS < 3.5 mPa s). SRS ViVA 1 special F plus contributes through its high fuel economy and reduction of emissions to protect the environment.

## Application

SRS ViVA 1 special F plus is a top quality for Ford passenger car gasoline and diesel engines of the newest generation, where engine oils to Ford WSS-M2C913 C and D are required. SRS ViVA 1 special F plus is backwards compatible to Ford WSS-M2C913 A and B and can also be used in engines, where ACEA A1/B1 is required.

## Performance / Specifications

SAE Grade 5W-30
ACEA A5/B5

## Approvals / Recommendations

Ford WSS-M2C913-D
WSS-M2C913-C
Renault RN 0700
Jaguar
Land Rover

| Typical data | | Test method | SRS ViVA 1 special F plus |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,854 |
| Viscosity at –30 °C (CCS) | mPa s | ASTM D 5293 | 4,480 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 50,8 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 9,39 |
| Viscosity Index (VI) | | DIN ISO 2909 | 171 |
| Flash point COC | °C | DIN ISO 2592 | 236 |
| Pour point | °C | DIN ISO 3016 | - 42 |
| Total base number | mgKOH/g | DIN ISO 3771 | 11 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,2 |

SRS ViVA 1 special F plus is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 ecosynth

High Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 ecosynth is a high performance SAE 0W-40 low-friction engine oil. The extreme multigrade adjustment combines the advantages of a very low subzero-temperature viscosity with a high oil film at high operating temperatures. The low temperature viscosity of SAE 0W guarantees both excellent cold startingand a high fuel saving up to 10% in the cold running phase. During cold start the oil is pumped quickly to the farthest lubrication points. Extreme loads and high temperatures are safely handled by the high-temperature viscosity of SAE 40.

A tailored combination of additives of newest technology, specially tuned to the synthetic components used, ensures very high wear protection, protection from deposits and oil-sludge, as well as high engine cleanliness. SRS ViVA 1 ecosynth contributes through its high fuel saving and the consequent reduction in emissions to protection of the environment.

## Application

SRS ViVA 1 ecosynth is a top quality for modern passenger car gasoline and diesel engines, including the turbocharger versions.

## Performance / Specifications

SAE Grade 0W-40
API SM/CF
ACEA A3/B4

SRS ViVA 1 ecosynth is in compliance with the requirements of the following approvals:

Mercedes-Benz sheet 229.3
VW-Norm 502 00, 505 00
BMW Longlife-01

| Typical data | | Test method | SRS ViVA 1 ecosynth |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 0W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,841 |
| Viscosity at –35°C (CCS) | mm²/s | DIN 51 562 | 5.350 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 79,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,1 |
| Viscosity Index | | DIN ISO 2909 | 183 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 45 |
| Total base number | mgKOH/g | DIN ISO 3771 | 9 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,9 |

SRS ViVA 1 ecosynth is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 special LS

High-Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 special LS is a high-performance low friction SAE 5W-30 engine oil with Low SAPS additive technology (low levels of Sulphated Ash, Phosphorus, Sulphur).

Excellent low temperature characteristics protect the engine optimal during the cold starting. Extreme loads and high temperatures are safely handled under all operating conditions. It ensures very high wear protection and less friction losses (HTHS < 3,5 mPa s).

SRS ViVA 1 special LS contributes through its high fuel economy and reduction of emissions to protect the environment.

## Application

SRS ViVA 1 special LS is a top quality product for the latest generation of passenger car gasoline and diesel engines.

SRS ViVA 1 special LS has been especially developed for vehicles with diesel particle filters which require ACEA C1-engine oil. It is highly recommended for modern Mazda engines, however it is also suitable for older Mazda vehicles due to its backward compatibility. The lifetime and effectiveness of the diesel particle filter is influenced in a positive way (lower levels of Sulphated Ash, Phosphorus and Sulphur).

SRS ViVA 1 special LS can be used in gasoline and diesel engines with or without particle filters, which require motor oils according to ACEA A1/B1 or A5/B5.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| ACEA | C1 |
| JASO | DL-1 |

## Recommendations

Mazda
Mitsubishi

The manufacturers' recommendations must be followed.

| Typical data | | Test method | SRS ViVA 1 special LS |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,847 |
| Viscosity at –30 °C (CCS) | mPa s | DIN 51 377 | 3.780 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 49,5 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 9,4 |
| Viscosity Index (VI) | | DIN ISO 2909 | 177 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 5,9 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,5 |

SRS ViVA 1 special LS is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 special MS

High-Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 special MS is a high-performance low friction SAE 5W-30 engine oil with Mid SAPS additive technology (mid levels of Sulphated Ash, Phosphorus, Sulphur).

Excellent low temperature characteristics protect the engine optimal during the cold starting. Extreme loads and high temperatures are safely handled under all operating conditions. It ensures very high wear protection and less friction losses (HTHS < 3,5 mPa s).

SRS ViVA 1 special MS contributes through its high fuel economy and reduction of emissions to protect the environment.

## Application

SRS ViVA 1 special MS is a top quality product for the latest generation of passenger car gasoline and diesel engines.

SRS ViVA 1 special MS has been especially developed for vehicles with diesel particle filters which require ACEA C2- engine oil. It is highly recommended for modern Peugeot and Citroen engines (PSA Group), however it is also suitable for a number of Japanese vehicles. The lifetime and effectiveness of the diesel particle filter is influenced in a positive way (lower levels of Sulphated Ash, Phosphorus and Sulphur).

SRS ViVA 1 special MS can be used in gasoline and diesel engines with or without particle filters, which require motor oils according to ACEA A1/B1 or A5/B5.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| API | SM/CF |
| ACEA | C2 |

## Recommendations

| | |
|---|---|
| Peugot | Honda |
| Citroen | MItsubishi |
| Flat | Toyota |

The manufacturers' recommendations must be followed.

| Typical data | | Test method | SRS ViVA 1 special MS |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,851 |
| Viscosity at –30°C (CCS) | mPa s | DIN 51 377 | 5.000 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 53,7 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 9,63 |
| Viscosity Index (VI) | | DIN ISO 2909 | 166 |
| Flash point COC | °C | DIN ISO 2592 | 235 |
| Pour point | °C | DIN ISO 3016 | - 42 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,4 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,79 |

SRS ViVA 1 special MS is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 special LMS

High-Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 special LMS is a high performance low friction SAE 5W-30 engine oil with Low SAPS additive technology (low levels of Sulphated Ash, Phosphorus, Sulphur).

Excellent low temperature characteristics protect the engine optimal during the cold starting. Extreme loads and high temperatures are safely handled under all operating conditions. It ensures very high wear protection and less friction losses (HTHS <3.5 mPa s).

SRS ViVA 1 special LMS contributes through its high fuel economy (>3% fuel saving against a reference oil) and reduction of emissions to protect the environment.

## Application

SRS ViVA 1 special LMS is a top quality product for the latest generation of passenger car gasoline and diesel engines.

SRS ViVA 1 special LMS has been especially developed for vehicles with diesel particle filters which require ACEA C1 or C2 engine oil. It is highly recommended for modern Mazda-, Peugeot-, Citroen (PSA B71 2290) and Ford engines, however it is also suitable for older vehicles due to its backward compatibility. The lifetime and effectiveness of the diesel particle filter is influenced in a positive way (lower levels of Sulphated Ash, Phosphorus and Sulphur).

SRS ViVA 1 special LMS can be used in gasoline and diesel engines with or without particle filters, which also require motor oils according to ACEA A1/B1 or A5/B5.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| ACEA | C1/C2 |

## Recommendations

| | |
|---|---|
| Mazda | Peugot |
| Mitsubishi | Citroen |
| Toyota | Fiat |
| Honda | Ford WSS M2C934-B |

The manufacturers' recommendations must be followed.

| Typical data | | Test method | SRS ViVA 1 special LMS |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,849 |
| Viscosity at –30°C (CCS) | mPa s | ASTM D 5293 | 4.200 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 51,9 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 9,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 177 |
| Flash point COC | °C | DIN ISO 2592 | 236 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,4 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,5 |

SRS ViVA 1 special LMS is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 special R

High-Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 special R is a high performance low friction 5W-30 engine oil.

Excellent low temperature flow characteristics protect optimal the engine during the cold starting. Extreme loads and high temperatures are safely handled under all operating conditions. It ensures very high wear protection and lower friction losses. SRS ViVA 1 special R contributes through its high fuel economy and reduction of emissions to protect the environment.

## Application

SRS ViVA 1 special R is a top quality especially for use in passenger car diesel engines, where the Renault specification RN 0720 and the Mercedes-Benz specification MB 226.51 is required. It can also be used in gasoline and diesel engines where the manufacturer recommends ACEA C4 engine oils and where engine oils according to ACEA A3/B4 are required.

## Performance / Specifications

SAE Grade 5W-30
ACEA C4

## Recommendations

Renault RN 0720
MB-Sheet 226.51

| Typical data | | Test method | SRS ViVA 1 special R |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,851 |
| Viscosity at –30C (CCS) | mPa s | DIN 51 377 | 5,990 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 69 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 12,1 |
| Viscosity Index (VI) | | DIN ISO 2909 | 174 |
| Flash point COC | °C | DIN ISO 2592 | 232 |
| Pour point | °C | DIN ISO 3016 | - 42 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,1 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,48 |

SRS ViVA 1 special R is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 special F eco

High-Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 special F eco is a high performance low friction 5W-20 engine oil.

Excellent low temperature flow characteristics protect optimal the engine during the cold starting. Extreme loads and high temperatures are safely handled under all operating conditions. It ensures very high wear protection and lower friction losses (HTHS < 3.5 mPa s). SRS ViVA 1 special F eco contributes through its high fuel economy and reduction of emissions to protect the environment.

## Application

SRS ViVA 1 special F eco is a top quality for passenger car gasoline Ford EcoBoost engines of the Ford specification WSS-M2C948-B.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-20 |
| API | SN |
| ACEA | A1/B1 |

## Recommendations

Ford WSS-M2C948-B

| Typical data | | Test method | SRS ViVA 1 special F eco |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-20 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,851 |
| Viscosity at –30C (CCS) | mPa s | ASTM D 5293 | 3.980 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 40,7 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 7,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 166 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 36 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,7 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,8 |

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# SRS ViVA 1 longlife

High Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 Longlife is a high performance low friction engine oil of viscosity grade SAE 5W-30. Base oils and innovative additives matched to them ensure that the demands of today's practice are met. Excellent cold starting ensures optimal security of lubrication in the cold running phase. Extreme loads and high temperatures are safely handled under all operating conditions. SRS ViVA 1 Longlife contributes to the protection of the environment through its high fuel saving and the consequent reduction in emissions.

## Application

SRS ViVA 1 Longlife is a top quality for passenger car gasoline and diesel engines of the new generation. The highest demands currently made on automobile engine oils are satisfied with more than enough reserve even after extended oil change intervals.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| API | SM/CF |
| ACEA | A3/B4 |

## Approvals / Recommendations

Mercedes-Benz sheet 229.5
BMW Longlife-01
VW spec. 502 00 and 505 00
Renault RN 0700
Opel GM-LL-A 025
Opel GM-LL-B 025

| Typical data | | Test method | SRS ViVA 1 longlife |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,858 |
| Viscosity at –30°C | mm²/s | DIN 51 562 | 6,550 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 69,5 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 12,0 |
| Viscosity Index (VI) | | DIN ISO 2909 | 171 |
| Flash point COC | °C | DIN ISO 2592 | 228 |
| Pour point | °C | DIN ISO 3016 | - 42 |
| Total base number | mgKOH/g | DIN ISO 3771 | 11,3 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,2 |

SRS ViVA 1 longlife is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 synth 15W-50

Multigrade Engine Oil

May 2014

## Properties

SRS ViVA 1 synth 15W-50 is a high-performance multigrade engine oil for all modern car engines in any operating conditions and is preferred in Southern European countries.

The great performance reserve of SRS ViVA 1 synth 15W-50 is achieved by a specific combination of chemicals specially matched to the components used.

The use of these additives effectively prevents sludge development, wear and corrosion. The low-evaporation base oils and good compatibility with seals clearly reduce oil consumption.

SRS ViVA 1 synth 15W-50 is recommended for all passenger car gasoline and diesel engines.

## Performance / Specifications

| | |
|---|---|
| API | SL/CF |
| ACEA | A3/B3 |

| Typical data | | Test method | SRS ViVA 1 synth 15W-50 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,869 |
| Viscosity at –20°C | mm²/s | DIN 51 562 | 6000 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 146 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 18,9 |
| Viscosity Index | | DIN ISO 2909 | 146 |
| Flash point COC | °C | DIN ISO 2592 | 245 |
| Pour point | °C | DIN ISO 3016 | - 42 |
| Total base number | mgKOH/g | DIN ISO 3771 | 9,2 |

SRS ViVA 1 synth 15W-50 is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 topsynth

High Performance Low Friction Engine Oil

June 2013

## Properties

SRS ViVA 1 topsynth is a high performance low friction SAE 5W-40 engine oil. Base oils components and adapted innovative additives ensure that the demands of today's practice are met. The distinct improved quality of SRS ViVA 1 topsynth is particularly a result of further improved anti-wear protection and engine cleanliness, even at extended oil drain intervals. The extreme low viscosity at low temperature combined with a reliable high temperature viscosity assures a high fuel economy capacity.

## Application

SRS ViVA 1 topsynth is suitable as a high performance low friction engine oil for use in sophisticated new generation engines. It is recommended for all passenger car gasoline and diesel engines, including the turbocharged and direct injected engines under all operating conditions.

SRS ViVA 1 topsynth fulfils additionally the actual requirements of VW-Norm 501 01.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-40 |
| API | SN/CF |
| ACEA | A3/B4 |
| JASO | MA2 |

## Approvals / Recommendations

Mercedes-Benz sheet 226.5
Mercedes-Benz sheet 229.3
VW spec. 502 00 and 505 00
Porsche A40
BMW Longlife-01
BMW Longlife -98
Opel GM-LL-B-025
Renault RN 0700 and RN 0710
PSA B71 2296

| Typical data | | Test method | SRS ViVA 1 topsynth |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,856 |
| Viscosity at –30°C (CCS) | mPa s | DIN 51 377 | 6,500 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 85,3 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,1 |
| Viscosity Index | | DIN ISO 2909 | 171 |
| Flash point COC | °C | DIN ISO 2592 | 228 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 10,1 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,2 |

SRS ViVA 1 topsynth is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 topsynth alpha

High Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 topsynth alpha is a high-performance low-friction motor oil of viscosity grade SAE 5W-30. Base oil components and innovative additives matched to them ensure that the demands of today's practice are met.

Excellent cold starting ensures optimal security of lubrication in the cold-running phase. SRS ViVA 1 topsynth alpha contributes through its high fuel saving and the consequent reduction in emissions to protection of the environment.

## Application

SRS ViVA 1 topsynth alpha is suitable as a high-performance low-friction engine oil for use in discerning new generation engines. It is recommended for all passenger car gasoline and diesel engines, including the turbocharger and direct injected engines under all operating conditions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| API | SM/SL/CF |
| ACEA | A3/B4 |

## Approvals / Recommendations

BMW Longlife-01
Mercedes-Benz sheet 229.3
Opel GM-LL-A-025
Opel GM-LL-B-025
VW spec. 502 00 and 505 00

| Typical data | | Test method | SRS ViVA 1 topsynth alpha |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,856 |
| Viscosity at –30°C | mm²/s | DIN 51 562 | 6150 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 70 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 11,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 165 |
| Flash point COC | °C | DIN ISO 2592 | 238 |
| Pour point | °C | DIN ISO 3016 | - 42 |
| Total base number | mgKOH/g | DIN ISO 3771 | 10,4 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,4 |

SRS ViVA 1 topsynth alpha is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS ViVA 1 topsynth alpha LA 5W-30

High Performance Low Friction Engine Oil

February 2015

## Properties

SRS ViVA 1 topsynth alpha LA is a high performance low friction SAE 5W-30 engine oil with Low SAPS additive technology (low levels of Sulphated Ash, Phosphorus, Sulphur).
Selected base oils using synthetic technology and adapted innovative additives with reduced sulphated ash fulfil the demands of today's practice. Excellent cold start behaviour assures an optimal lubricant supply and high fuel economy at low temperatures.

SRS ViVA 1 topsynth alpha LA contributes to environmental protection through reduction of detrimental emissions. Extreme loads and high temperatures are controlled at all operating conditions.

## Application

SRS ViVA 1 topsynth alpha LA is especially recommended for diesel engines with emission reduction systems to fulfil the emission standards Euro IV. This engine oil adheres to the extended effectiveness of emission reduction systems. SRS ViVA 1 topsynth alpha LA is suitable for diesel as well as gasoline engines.

We recommend SRS ViVA 1 topsynth alpha LA for cars, too, where following specifications are required: Opel GM-LL-A-025 and Opel GM-LL-B-025. SRS ViVA 1 topsynth alpha LA meets Opel GM dexos2. SRS ViVA 1 topsynth alpha LA can be used in gasoline and diesel engines, which require motor oils according to ACEA A3/B4.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| API | SN/CF |
| ACEA | C3 |

## Approvals / Recommendations

BMW Longlife-04
MB-Approval 229.31, 229.51, 229.52
VW norm 502 00 and 505 00
VW norm 501 01
Opel GM dexos2
Ford WSS-M2C917-A

| Typical data | | Test method | SRS ViVA 1 topsynth alpha LA |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,853 |
| Viscosity at – 30°C (CCS) | mPas | ASTM D 5293 | 6,160 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 68,8 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 12,0 |
| Viscosity Index (VI) | | DIN ISO 2909 | 172 |
| Flash point COC | °C | DIN ISO 2592 | 240 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,2 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,75 |

SRS ViVA 1 topsynth alpha LA is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS ViVA 1 topsynth alpha LS

Longlife High Performance Engine Oil

December 2015

## Properties

SRS ViVA 1 topsynth alpha LS is a high performance low friction SAE 5W-40 engine oil with Low SAPS additive technology (low levels of Sulphated Ash, Phosphorus, Sulphur).
Selected base oils using synthetic technology and adapted innovative additives with reduced sulphated ash fulfil the demands of today's practice. Excellent cold start behaviour assures an optimal lubricant supply and high fuel economy at low temperatures.

SRS ViVA 1 topsynth alpha LS contributes to environmental protection through reduction of detrimental emissions. Extreme loads and high temperatures are controlled at all operating conditions.

## Application

SRS ViVA 1 topsynth alpha LS is especially recommended for diesel engines with emission reduction systems to fulfil the emission standards Euro IV. This engine oil adheres to the extended effectiveness of emission reduction systems.
SRS ViVA 1 topsynth alpha LA is suitable for diesel as well as gasoline engines.

We recommend SRS ViVA 1 topsynth alpha LS for cars, too, where following specifications are required: Opel GM-LL-A-025 and Opel GM-LL-B-025. SRS ViVA 1 topsynth alpha LS meets Opel GM dexos2.

SRS ViVA 1 topsynth alpha LS can be used in gasoline and diesel engines, which require motor oils according to ACEA A3/B4.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-40 |
| API | SN/CF |
| ACEA | C3 |

## Approvals / Recommendations

BMW Longlife-04
MB-Approval 229.51
VW-Norm 502 00 and 505 00
VW-Norm 505 01
Porsche A 40
Opel GM dexos2
Ford WSS-M2C917-A

| Typical data | | Test method | SRS ViVA 1 topsynth alpha LS |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,853 |
| Viscosity at –30°C (CCS) | mPa s | ASTM D 5293 | 5,900 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 75,0 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 13,0 |
| Viscosity Index (VI) | | DIN ISO 2909 | 176 |
| Flash point COC | °C | DIN ISO 2592 | 236 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,2 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,75 |

SRS ViVA 1 topsynth alpha LA 5W-40 is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 10W-40

## High Performance Low Friction Engine Oil

May 2014

## Properties

SRS ViVA 1 is a SAE 10W-40 high-performance low-friction engine oil, combining the advantages of mineral oils from modern refinery technology and synthetic components. Base oil composition and high shearstable viscosity index improvers keep the oil throughout the entire oil drain interval in its viscosity grade (stay-ingrade). The oxidation process is well controlled at the maximum allowable oil residence time. Antioxidants and cleaning additives prevent deposits, pistons and valves remain clean and the development of cold sludge is prevented. Low friction losses in the engine produce remarkable fuel savings and thus less environmental detrimental emissions. Low evaporation losses prevent valve deposits and varnish and provide clean pistons and piston ring grooves.

## Application

SRS ViVA 1 is recommended for all passenger car gasoline and diesel engines, even for turbo-charged diesel and catalytic converter versions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | SL/CF |
| ACEA | A3/B4 |

## Approvals / Recommendations

Mercedes-Benz sheet 229.1
VW spec. 501 01 and 505 00

| Typical data | | Test method | SRS ViVA 1 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,873 |
| Viscosity at –30°C (CCS) | mm²/s | DIN 51 562 | 6,320 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 91,1 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 13,8 |
| Viscosity Index | | DIN ISO 2909 | 155 |
| Flash point COC | °C | DIN ISO 2592 | 228 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 8,4 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,96 |

SRS ViVA 1 10W-40 is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 10W-50

Multigrade Engine Oil

April 2003

## Properties

SRS ViVA 1 is a viscosity class SAE 10W-50 high-performance low-friction engine oil, the basic oil composition of which combines the advan-tages of modern refinery technology base oils with synthetic components.

Base oil composition and highly shear-stable VI improvers ensure that the specified viscosity class is maintained throughout the entire oil service life.

The ageing process of this engine oil is properly controlled at the maximum allowable oil residence times. Antioxidants and cleaning agents prevent deposits, pistons and valves remain clean and cold sludge development is prevented.

Distinct fuel savings and thus lower environmental loads are achieved due to low friction losses in the engine. Low evaporation rates prevent valve deposits and sludging and ensure clean pistons and piston ring grooves.

SRS ViVA 1 is recommended for all gasoline and diesel engines, including turbocharged diesel and catalytic converter versions.

## Application

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-50 |
| API | SL/CF |
| ACEA | A3/B3 |

| Typical data | | Test method | SRS ViVA 1 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,867 |
| Viscosity at –25°C | mm²/s | DIN 51 562 | 6400 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 131 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 18,6 |
| Viscosity Index (VI) | | DIN ISO 2909 | 159 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 9,5 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,1 |

SRS ViVA 1 10W-50 is a product of the H&R ChemPharm GmbH

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# SRS Primalub Alpha

Low Friction Engine Oil

May 2014

## Properties

SRS Primalub Alpha is a low friction engine oil. The base oils from modern refinery technology in combination with components and very shear stable viscosity index improvers, result in a stay-in-grade engine oil throughout the entire oil drain interval. Reliable cold starting even at low temperatures and high temperature resistance at extreme loads are guaranteed. Dispersant additives prevent deposits, pistons and valves remain clean and ensure a maximum allowable oil drain interval. Selected additives permanently neutralize the acidic combustion products, protect the engine effectively against corrosion and wear.

## Application

SRS Primalub Alpha is recommended for all passenger car gasoline and diesel engines, even for turbocharged diesel and catalytic converter versions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | SL/CF |
| ACEA | A3/B4 |

## Approvals / Recommendations

Mercedes-Benz Sheet 229.1
VW specs. 505 00 / 505 00 Performance

| Typical data | | Test method | SRS Primalub Alpha |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,874 |
| Viscosity at –25°C (CCS) | mPa s | DIN 51 377 | 6,660 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 94,3 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,0 |
| Viscosity Index (VI) | | DIN ISO 2909 | 152 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total Base Number | mg/KOH/ | DIN ISO 3771 | 8,1 |
| Sulphate Ash | g/100 g | DIN 51 575 | 0,96 |

SRS Primalub Alpha is a product of the H&R ChemPharm GmbH

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# SRS ViVA 1 synth racing, SAE 5W-50

High Performance Engine Oil

May 2014

## Properties

SRS ViVA 1 synth Racing is a high-performance motor oil of viscosity grade SAE 5W-50.

Synthetic components and innovative additives matched to them ensure that the demands of today's practice are met.

The improved quality of SRS ViVA 1 synth Racing is specially a result of further improved anti-wear and engine cleanliness, even with extended oil drain intervals.

The low cold-viscosity combined with an extreme high-temperature viscosity provide unsurpassed protection for the engines.

## Application

SRS ViVA 1 synth Racing is suitable as a high-performance engine oil for use in discerning new generation engines.

It is recommended for passenger car gasoline and diesel engines, including the multivalved and for turbocharger and direct injected engines under all operating conditions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-50 |
| API | SM/CF |
| ACEA | A3/B4 |

| Typical data | | Test method | SRS VIVA 1 synth racing |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,857 |
| Viscosity at – 30°C | mPa s | DIN 51 377 | 6.300 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 102 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 16,5 |
| Viscosity Index (VI) | | DIN ISO 2909 | 176 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total Base Number | mg/KOH/ | DIN ISO 3771 | 10,1 |
| Sulphate Ash | g/100 g | DIN 51 575 | 1,2 |

SRS VIVA 1 synth racing, SAE 5W-50 is a product of the H&R ChemPharm GmbH

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# SRS Cargolub TFG

UHPD Low Friction Engine Oil

September 2014

## Properties

SRS Cargolub TFG is a UHPD UHPD low friction engine oil perfectly tailored for the wide range of applications in commercial vehicles.OEMs preferred viscosity range of SAE 10W-40 is met with unconventional base oils. SAE 10W guarantees both excellent cold starting (low cold start wear) and quickest possible oil supply of all engine lubricating points. Extreme conditions are safely controlled by SAE 40 high-temperature viscosity. Friction loss and wear are reduced. The economy is improved due to lower oil and fuel consumption as well as through higher engine reliability.

## Application

SRS Cargolub TFG was developed for the economic service of diesel engines of commercial vehicles even under extreme running conditions. SRS Cargolub TFG surpasses the requirements for a high performance engine oil for vehicles of different design in truck and construction fleets. SRS Cargolub TFG is a year-round high performance diesel engine oil for use in commercial vehicles and is recommended for use in Euro V and Euro VI Diesel engines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | CI-4 |
| ACEA | E4, E7 |
| Global | DHD-1 |

## Approvals / Recommendations

MB-Approval 228.5
MAN M 3277, 3377
Volvo VDS-3 (STD 417-0002)
MTU MTL 5044 Type 3
MTU DDC BR 2000/4000
Renault VI RXD/RLD-2
Deutz DQC IV-10
Mack EO-N, EO-M Plus
Cummins CES 20078
Caterpillar ECF-2
Detroit Diesel 93K215

| Typical data | | Test method | SRS Cargolub TFG |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,865 |
| Viscosity at –25°C (CCS) | mPa s | ASTM D 5293 | 6230 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 100 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 14,7 |
| Viscosity Index (VI) | | DIN ISO 2909 | 152 |
| Flash point COC | °C | DIN ISO 2592 | 244 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total Base Number | mg/KOH/ | DIN ISO 3771 | 13,7 |
| Sulphate Ash | g/100 g | DIN 51 575 | 1,4 |

SRS Cargolub TFG is a product of the H&R ChemPharm GmbH

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# SRS Cargolub TLS

High Performance Low Friction Engine Oil for Commercial Vehicles

May 2014

## Properties

SRS Cargolub TLS is a highly additivated USHPD low friction engine oil for commercial vehicles.

SRS Cargolub TLS is characterised by an innovative, low SAPS additive technology (Low SAPS = low Sulphated Ash, Phosphorus and Sulphur). Engine manufacturers prefer SAE 5W-30 as year-round viscosity grade which is achieved through the use of selected base oils. At low temperature SAE 5W assures excellent cold starting (low cold start wear) and quickest possible oil supply of all engine lubricating points. Extreme conditions are safely controlled by SAE 30 high-temperature viscosity. Friction losses and wear are reduced. The cost effectiveness is improved notedly due to lower lubricant and fuel consumption as well as longer engine endurance.

## Application

SRS Cargolub TLS is especially designed for economic use in low emission controlled engines even under extreme service conditions.

SRS Cargolub TLS is year-round high-performance engine oil for use in commercial vehicles adapted to the new EU emission standards for Euro IV and V engines. Use in CNG engines of MAN busses and Daimler CNG engines is possible without any problems. This engine oil maintains the effectiveness of the exhaust gas after-treatment systems for a long time. Oil change intervals become longer. Power losses due to blocked diesel particle filter are prevented.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| API | CI-4 |
| ACEA | E6 / E7 |

## Approvals / Recommendations

ACEA E4 Performance
MB Approval 228.51
MAN M 3477 and MAN M 3271-1
MTU MTL 5044 Type 3.1
MTU DDC BR 2000 / 4000
Renault VI RXD/RLD-2
Volvo VDS-3 (STD 417-0002) and Volvo CNG
Deutz DQC IV-10 LA
Mack EO-N, EO-M Plus
DAF

| Typical data | | Test method | SRS Cargolub TLS |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,855 |
| Viscosity at – 30°C (CCS) | mPa s | DIN 51 377 | 6,150 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 66,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 11,3 |
| Viscosity Index (VI) | | DIN ISO 2909 | 164 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 48 |
| Total Base Number | mg/KOH/ | DIN ISO 3771 | 9,6 |
| Sulphated Ash | g/100 g | DIN 51 575 | 0,98 |

SRS Cargolub TLS is a product of the H&R ChemPharm GmbH

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# SRS Cargolub TLS plus

USHPD Low Friction Engine Oil for Commercial Vehicles

May 2014

## Properties

SRS Cargolub TLS plus is a highly additivated USHPD low friction engine oil for commercial vehicles with or without diesel particle filter (DPF).

SRS Cargolub TLS plus is characterised by an innovative, low SAPS additive technology (Low SAPS = low Sulphated Ash, Phosphorus and Sulphur). Engine manufacturers prefer SAE 5W-30 as year-round viscosity grade which is achieved through the use of selected base oils. Because of the low SAPS additive technology friction losses are reduced and lower fuel consumption by optimized wear protection is achieved. The cost effectiveness is improved notedly due to lower lubricant and fuel consumption as well as longer engine endurance.

## Application

SRS Cargolub TLS plus is especially designed for economic use in low emission controlled engines even under extreme service conditions.

SRS Cargolub TLS plus is year-round high-performance engine oil for use in commercial vehicles adapted to the new EU emission standards for Euro V and VI engines and allows extreme oil change intervals. This engine oil maintains the effectiveness of the exhaust gas after-treatment systems for a long time. Power losses due to blocked diesel particle filter are prevented by lower particle emissions.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| API | CJ-4 / SN |
| ACEA | E6 / E7 / E9 |
| Jaso | DH-2 |

## Approvals / Recommendations

MB Approval 228.31 and 228.51
MAN M 3477, 3677 and MAN M 3271-1
MTU MTL 5044 Type 3.1
Renault VI RLD-3 / RLD-2 / RXD / RGD
Deutz DQC IV-10 LA
Volvo VDS-3 (STD 417-0002)
Volvo VDS-4 (STD 417-0001)
Volvo CNG
Mack EO-O Premium Plus/EO-N/EO-M Plus
Caterpillar ECF-3/ECF-2/ECF-1a
Cummins CES 20081

| Typical data | | Test method | SRS Cargolub TLS Plus |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,855 |
| Viscosity at – 30°C (CCS) | mPa s | DIN 51 377 | 6,170 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 67,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 11,5 |
| Viscosity Index (VI) | | DIN ISO 2909 | 164 |
| Flash point COC | °C | DIN ISO 2592 | 232 |
| Pour point | °C | DIN ISO 3016 | - 48 |
| Total Base Number | mg/KOH/ | DIN ISO 3771 | 10,0 |
| Sulphated Ash | g/100 g | DIN 51 575 | 0,95 |

SRS Cargolub TLS Plus is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Cargolub Leichtlauf-Motorenöl LA

Low Friction Engine Oil for Commercial Vehicles

November 2015

## Properties

SRS Cargolub Leichtlauf-Motorenöl LA is a low SAPS UHPD low friction engine oil for commercial vehicles with Low SAPS additive technology (low levels of Sulphated Ash, Phosphorus, Sulphur). Engine manufacturers prefer SAE 10W-40 as year-round grade which is achieved through the use of selected base oils. At low temperature SAE 10W assures excellent cold starting (low cold start wear) and quickest possible oil supply of all engine lubricating points. Extreme conditions are safely controlled by SAE 40 high-temperature viscosity. SRS Cargolub Leichtlauf-Motorenöl LA assures excellent oxidation and wear protection as well as excellent aging and shear stability and engine cleanliness.
The economy is improved through low oil and fuel consumption as well as through higher engine reliability.

## Application

SRS Cargolub Leichtlauf-Motorenöl LA is a year-round high-performance engine oil for use in commercial vehicles, adapted to the new EU exhaust standards for Euro IV, V and VI engines. SRS Cargolub Leichtlauf-Motorenöl LA is backward compatible. This engine oil maintains the effectiveness of the exhaust after treatment systems for a long time.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | CI-4 |
| ACEA | E6 / E7 |
| JASO | DH-2 |

## Approvals / Recommendations

MB Approval 228.51
MAN 3271-1
MAN M 3477
MTU MTL 5044 Type 3.1
MTU DDC BR 2000/4000
Volvo VDS-3 (STD 417-0002)
Deutz DQC III-10 LA
Caterpillar ECF-1a
DAF
Mack EO-N
Cummins CES 20076, 20077
Renault VI RLD-2/RXD/RGD

| Typical data | | Test method | SRS Cargolub Leichtlauf-Motorenöl LA |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,859 |
| Viscosity at – 25°C | mPa s | DIN 51 757 | 6,500 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 102 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 15,0 |
| Viscosity Index (VI) | | DIN ISO 2909 | 154 |
| Flash point COC | °C | DIN ISO 2592 | 242 |
| Pour point | °C | DIN ISO 3016 | - 36 |
| Total base number | mgKOH/g | DIN ISO 3771 | 10,4 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,96 |

SRS Cargolub Leichtlauf-Motorenöl LA is a product of the H&R ChemPharm GmbH

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# SRS Turbo-Rekord 15W-40

SHPD Engine Oil for Turbocharged Diesel Engines

June 2012

## Properties

SRS Turbo Rekord is all season multigrade engine oil. Turbocharger and intercooler set much higher mechanical and thermal requirements for engine oils. These tighter operating conditions are also easily covered by SRS Turbo-Rekord even for extended oil life. The SAE 15W-40 viscosity range ensures reliable cold starting at low ambient temperatures and full lubricity at high operating temperatures. The use of shearstable additives guarantees that the SAE Grade 15W-40 is maintained throughout the entire oil change interval. SRS Turbo-Rekord is a SHPD (Super High Performance Diesel) oil.

## Application

SRS Turbo-Rekord is used in extremely heavy duty commercial vehicle diesel engines. The engine manufacturers recommend SRS Turbo-Rekord for extended oil drain intervals as SAE 15W-40 multigrade engine oil. Engine oil of this performance category is the preferred recommendation by many vehicle and engine manufacturers, for extended oil life in turbo charged diesel engines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | CI-4 |
| ACEA | E7 |

## Approvals / Recommendations

Mercedes Benz sheet 228.3
MAN M 3275-1
MTU MTL 5044 Type 2 (except BR 8000, 4000-04, 1800, 956 TB 31/32/33)
MTU DDC BR 2000/4000
Volvo VDS-3 (STD 417-0002)
Deutz DQC III-10
Renault VI RLD/RLD-2
Mack EO-N, EO-M Plus
Caterpillar ECF-1a and ECF-2
Cummins CES 20071, 20072, 20076, 20077
DAF

| Typical data | | Test method | SRS Turbo-Rekord |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,886 |
| Viscosity at – 20°C (CCS) | mm²/s | DIN 51 562 | 6,690 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 103 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 13,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 136 |
| Flash point COC | °C | DIN ISO 2592 | 232 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Total base number | mgKOH/g | DIN ISO 3771 | 9,3 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,1 |

SRS Turbo-Rekord 15W-40 is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Turbo-Rekord plus

SHPD Engine Oil for Turbocharged Diesel Engines

July 2013

## Properties

SRS Turbo-Rekord plus is a year-round multigrade engine oil. Turbocharger and intercooler set much higher mechanical and thermal requirements for engine oils. These tighter operating conditions are also easily covered by SRS Turbo-Rekord plus even for extended oil life. The SAE 15W-40 viscosity range ensures reliable cold starting at low ambient temperatures and full lubricity at high operating temperatures. The use of shearstable additives guarantees that the SAE grade 15W-40 is maintained throughout the entire oil change interval. SRS Turbo-Rekord plus is a SHPD (Super High Performance Diesel) engine oil.

## Application

SRS Turbo-Rekord plus is used in extremely heavy duty commercial vehicle diesel engines. The engine manufacturers recommend SRS Turbo-Rekord plus for extended oil drain intervals as SAE 15W-40 multigrade engine oil. Engine oil of this performance category is the preferred recommendation by vehicle and engine manufacturers who do not specify approvals by name, for extended oil life in turbo charged diesel engines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 15W-40 |
| API | CJ-4/SN |
| ACEA | E9 |

## Approvals / Recommendations

MB-Approval 228.31
MAN M 3275-1
MTU MTL 5044 Type 2 (except BR 8000, 4000-04, 1800, 1600, 956 TB 31/32/33)
MTU DDC BR 2000 / 4000
Deutz DQC III-10 LA
Volvo VDS-4 (STD 417-0001)
Renault VI RLD-3
Caterpillar ECF-1a, ECF-2 and ECF-3
Cummins CES 20081
John Deere JDQ 78X
Mack EO-O Premium Plus
Detroit Diesel 93K218

| Typical data | | Test method | SRS Turbo-Rekord |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,875 |
| Viscosity at – 20°C (CCS) | mPa s | DIN 51 377 | 6300 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 108 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,3 |
| Viscosity Index | | DIN ISO 2909 | 135 |
| Flash point COC | °C | DIN ISO 2592 | 240 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 8,0 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,98 |

SRS Turbo-Rekord plus is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Cargolub TF ultra

High Performance Low Friction Engine Oil for Commercial Vehicles

March 2015

## Properties

SRS Cargolub TFG ultra is a highly additivated low friction engine oil for commercial vehicles. Engine manufacturers prefer SAE 10W-40as year-round viscosity grade which is achieved through the use of selected base oils using synthetictechnology and innovative additives. At low temperature SAE 10W assures excellent cold starting (low coldstart wear) and quickest possible oil supply of all engine lubricating points. Extreme conditions are safely controlled by SAE 40 high-temperature viscosity. Friction losses and wear are reduced. The cost effectiveness is improved notedly due to lower lubricant and fuel consumption as well as longer engine endurance.

## Application

SRS Cargolub TFG ultra is especially designed for economic use in diesel engines of commercial vehicles and stationary diesel engines, even under extreme conditions. SRS Cargolub ultra exceeds all requirements on modern high-performance engine oils of all types of vehicles.
SRS Cargolub TFG ultra is year-round high-performance engine oil for use in commercial vehicles adapted to the EU emission standards for Euro IV and V diesel engines and for Euro VI Scania engines, where Scania LDF-3 is required.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | CF |
| ACEA | E4 / E7 |

## Approvals / Recommendations

Scania LDF-3, LDF-2
MB-Approval 228.5
MAN M 3277
Volvo VDS-3 (STD 417-0002)
MTU MTL 5044 Type 3
MTU DDC BR 2000/4000
Renault VI RLD-2/RLD/RXD
Deutz DQC III-10
DAF Extended Drain
Cummins CES 20072
Mack EO-N, EO-M Plus

| Typical data | | Test method | SRS Cargolub TFG ultra |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,867 |
| Viscosity at – 30°C (CCS) | mPa s | ASTM D 5293 | 6300 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 86,7 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 13,1 |
| Viscosity Index (VI) | | DIN ISO 2909 | 152 |
| Flash point COC | °C | DIN ISO 2592 | 246 |
| Pour point | °C | DIN ISO 3016 | - 36 |
| Total base number | mgKOH/g | DIN ISO 3771 | 16,2 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,83 |

SRS Cargolub TFG ultra is a product of the H&R ChemPharm GmbH

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# SRS Cargolub TFG plus

High Performance Low Friction Engine Oil for Utility Vehicles

July 2012

## Properties

SRS Cargolub TFG plus is a highly additivated UHPD low friction engine oil for commercial vehicles. Engine manufacturers prefer SAE 10W-40 as year-round grade which is achieved through the use of selected base oils. At low temperature SAE 10W assures excellent cold starting (low cold start wear) and quickest possible oil supply of all engine lubricating points. Extreme conditions are safely controlled by SAE 40 high-temperature viscosity. Friction losses and wear are reduced. The economy is improved through low oil and fuel consumption as well as through higher engine reliability.

## Application

SRS Cargolub TFG plus is especially designed for economic supply of exhaust-optimized engines, even under extreme conditions. SRS Cargolub TFG plus assures excellent oxidation and rust protection and stability at high temperatures through the use of special additive systems. High dispersion capacity and piston cleanliness prevent deposits in the engine compartment which may eventually cause a power drop.

SRS Cargolub TFG plus is a year-round high-performance engine oil for use in commercial vehicles, adapted to the EU exhaust standards. It is also in full compliance with all standards for older naturally aspirated and stationary diesel engines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | CI-4 |
| ACEA | E4, E7 |

## Approvals / Recommendations

Mercedes Benz sheet 228.5
MAN M 3277
Scania LDF-2
Volvo VDS-3 (STD 417-0002)
Deutz DQC III-10
Renault VI RLD-2/RXD
MTU MTL 5044 Type 3
MTU DDC BR 2000/4000
DAF
Mack

Oil change intervals according to manufacturer's instructions over 100.000 km.

| Typical data | | Test method | SRS Cargolub TFG plus |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,873 |
| Viscosity at –25°C | mm²/s | DIN 51 562 | 6675 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 96,8 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,4 |
| Viscosity Index | | DIN ISO 2909 | 154 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 12,6 |
| Sulphat ash | g/100 g | DIN 51 575 | 1,6 |

SRS Cargolub TFG plus is a product of the H&R ChemPharm GmbH. Made in Germany.

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Cargolub TFL

## High Performance Low Friction Engine Oil

November 2015

## Properties

SRS Cargolub TFL is a highly additivated USHPD low friction engine oil for commercial vehicles. Engine manufacturers prefer SAE 5W-30 as year-round grade which is achieved through the use of selected base oils. At low temperature SAE 5W assures excellent cold starting (low cold start wear) and quickest possible oil supply of all engine lubricating points. Extreme conditions are safely controlled by SAE 30 high-temperature viscosity. Friction losses and wear are reduced.

## Application

SRS Cargolub TFL is especially designed for economic use in exhaust-optimized engines, even under extreme conditions. SRS Cargolub TFL assures excellent oxidation protection and stability at high temperatures through the use of special additive systems. It clearly improves economy through lower fuel consumption.

SRS Cargolub TFL is a year-round high performance engine oil for use in commercial vehicles, fitted with SCR (selective catalytic reduction) and EGR (exhaust gas re-circulation) for the new Euro V and Euro VI standards.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 5W-30 |
| ACEA | E4, E7 |
| API | CI-4 |
| Global | DHD 1 |
| Jaso | DH 1 |

## Approvals / Recommendations

Mercedes Benz sheet 228.5
MAN M 3277, 3377
MTU MTL 5044 Type 3 (except BR 8000, 4000 R64/R74/R84, 1800 and 956 TB 31/32/33)
MTU DDC BR 2000/4000
Renault VI RXD, RLD-2
Deutz DQC IV-10
Volvo VDS-3 (STD 417-0002)
Scania LDF
MACK EO-N,EO-M Plus
Caterpillar ECF-2
DAF

Oil change intervals according to manufacturer's instructions over 100.000 km.

| Typical data | | Test method | SRS Cargolub TFL |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 5W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,856 |
| Viscosity at –30°C (CCS) | mPa s | DIN 51 377 | 6,550 |
| Viscosity at 40°C | mm²/s | DIN ISO 3104 | 72,1 |
| Viscosity at 100°C | mm²/s | DIN ISO 3104 | 12,1 |
| Viscosity Index (VI) | | DIN ISO 2909 | 141 |
| Flash point COC | °C | DIN ISO 2592 | 232 |
| Pour point | °C | DIN ISO 3016 | - 45 |
| Total base number | mgKOH/g | DIN ISO 3771 | 12,4 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,32 |

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# SRS Cargolub TLA

High Performace Low Friction Engine Oil for Utility Vehicles

November 2015

## Properties

SRS Cargolub TLA is a highly additivated UHPD low friction engine oil for commercial vehicles with Low SAPS additive technology (low levels of Sulphated Ash, Phosphorus, Sulphur). Engine manufacturers prefer SAE 10W-40 as year-round grade which is achieved through the use of selected base oils. At low temperature SAE 10W assures excellent cold starting (low cold start wear) and quickest possible oil supply of all engine lubricating points. Extreme conditions are safely controlled by SAE 40 high-temperature viscosity. Friction losses and wear are reduced. The economy is improved through low oil and fuel consumption as well as through higher engine reliability.

## Application

SRS Cargolub TLA is especially designed for economic use in exhaust-optimized engines with exhaust after-treatment systems. SRS Cargolub TLA is year-round high-performance engine oil for use in commercial vehicles, adapted to the new EU exhaust standards for Euro IV, V and VI engines. This engine oil maintains the effectiveness of the exhaust after treatment systems for a long time.
SRS Cargolub TLA is qualified, too, for the application in commercial vehicles, which run on natural gas (CNG). See corresponding approvals by MAN, Renault and Volvo.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| ACEA | E6 / E7 / E9 |
| API | CI-4 |
| JASO | DH-2 |

## Approvals / Recommendations

MB-Approval 228.51, 235.28
MAN M 3477, M 3271-1
MTU MTL 5044 Type 3.1 (exception BR 8000, 1800, 956 TB 31/32/33)
MTU DDC BR 2000/4000
Renault VI RLD-2 / RGD / RXD
Volvo VDS-3 (STD 417-0002)
Volvo CNG
Deutz DQC IV-10 LA
Caterpillar ECF-1a
Voith Retarder Type B
MACK EO-N, EO-M Plus
Cummins CES 20076, 20077
MB-Blatt 226.9
Scania Low Ash
DAF

| Typical data | | Test method | SRS Cargolub TLA |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,862 |
| Dyn. viscosity at –25°C | mPas | ASTM D 5293 | 6.600 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 90,4 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 13,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 156 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | - 39 |
| Total base number | mgKOH/g | DIN ISO 3771 | 10,2 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,97 |

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# SRS Rekord

## Monograde Engine Oils

June 2014

## Properties

SRS Rekord are universal applicable high performance monograde engine oils. The performance covers the requirements of diesel engines with or without turbochargers. Base oils from H&R Refineries and selected additives keep the engine clean and provide a maximum protection against wear even under extreme load conditions.

## Application

SRS Rekord engine oils are suitable for use in diesel engines of commercial and agricultural vehicles as well as construction vehicles. It can also be used as hydraulic oil and in hydraulic clutches, manual transmissions, converter transmissions and retarders. SRS Rekord engine oils are also recommended for use in heavy-duty marine and stationary industrial diesel engines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W to 50 |
| API | CF/CF-2/SF |
| ACEA | E2-Performance |

## Approvals / Recommendations

Mercedes Benz sheet 228.0
MAN 270
MTU MTL 5044 Type 1, MTU DDC (except BR 8000, 4000-3 M, 4000-04, 1800, 1600, BR 2000 M84/M94, 956, commercial ferries from the series 595 and 1163)
ZF TE-ML 04B
Caterpillar TO-2
Allison C-4
Renk Doromat (SRS Rekord 10W)

| Typical data | | Test method | SRS Rekord | | | | |
|---|---|---|---|---|---|---|---|
| | | | 10 | 20W-20 | 30 | 40 | 50 |
| SAE Grade | | SAE J 300 | 10W | 20W- | 30 | 40 | 50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,881 | 0,887 | 0,891 | 0,898 | 0,903 |
| Viscosity at – 25 °C (CCS) | mPas | DIN 51 377 | 6,440 | - | - | - | - |
| Viscosity at – 15 °C (CCS) | mPas | DIN 51 377 | - | 4530 | - | - | - |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 37,3 | 69,5 | 106 | 167 | 239 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 6,2 | 9,0 | 11,7 | 15,6 | 19,5 |
| Viscosity Index (VI) | | DIN ISO 2909 | 111 | 103 | 99 | 95 | 93 |
| Flash point COC | °C | DIN ISO 2592 | 222 | 245 | 264 | 280 | 290 |
| Pour point | °C | DIN ISO 3016 | - 39 | - 30 | - 24 | - 24 | - 21 |
| Total base number | mgKOH/g | DIN ISO 3771 | 11,5 | 11,5 | 11,7 | 11,7 | 11,8 |
| Sulphated ash | g/100g | DIN 51 575 | 1,6 | 1,6 | 1,6 | 1,6 | 1,6 |

SRS Rekord engine oil series are products of the H&R ChemPharm GmbH

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# SRS Rekord plus

## High Performance Monograde Engine Oils

November 2011

## Properties

SRS Rekord plus are special high performance monograde engine oils. The performance covers the requirements of MTU oil category 2, MAN M 3275-2 and MB-Sheet 228.2 for monograde engine oils.

## Application

SRS Rekord plus is recommended for use in heavy duty marine engines with extended oil drain intervals. It is also suitable for use in diesel engines of agricultural and construction vehicles as well as of stationary industrial installations.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 30 and 40 |
| API | CI-4 |
| ACEA | E7 |

## Approvals / Recommendations

MTU MTL 5044 Type 2
MTU MTL 5051
MTU DDC BR 2000 / 4000
Mercedes-Benz sheet 228.2
MAN M 3275-2
Allison C-4

| Typical data | | Test method | SRS Rekord Plus 30 | SRS Rekord Plus 40 |
|---|---|---|---|---|
| SAE Grade | | SAE J 300 | 30 | 40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,892 | 0,893 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 101 | 129 |
| Viscosity at 100°C | Mm²/s | DIN 51 562 | 11,8 | 13,9 |
| Viscosity index (VI) | | DIN ISO 2909 | 107 | 105 |
| Flash point COC | °C | DIN ISO 2592 | 250 | 270 |
| Pourpoint | °C | DIN ISO 3016 | - 30 | - 27 |
| Total base number | mgKOH/g | DIN ISO 2771 | 10,8 | 10,8 |
| Sulphated ash | g/100 g | DIN 51 575 | 1,4 | 1,4 |

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# SRS Antikorrol

## Initial Operation and Corrosion Protection Oil

January 2013

## Properties

SRS Antikorrol is an initial operation and corrosion protection oil with numerous uses. Apart from distinctive corrosion protection for internal preservation of combustion engines, gears and auxiliary equipment with closed systems, its special engine oil properties ensure controlled running in and full-load protection up to the first specified oil change during initial operation or reuse after extended transport or storage periods.

## Application

SRS Antikorrol is particularly suitable for the preservation of both seasonally operated machinery and equipment in construction, forestry and agriculture and municipal car fleets. Its unusually high neutralization capacity also ensures reliable corrosion protection in the vicinity of aggressive media. The SRS Antikorrol oil range is also suitable for the intermediate preservation of semi finished and finished products up to further processing and installation. Application may be by dipping or spraying.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W, 20W-20, 30 and 50 |
| API | SF/CC |
| MIL | L-21260C |

## Approvals / Recommendations

SRS Antikorrol satisfies the corrosion test in accordance with

DIN 51 358 Seawater immersion test

| Typical data | | Test method | SRS Antikorrol | | | |
|---|---|---|---|---|---|---|
| | | | 10W | 20W-20 | 30 | 50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,879 | 0,890 | 0,891 | 0,900 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 38,2 | 66,4 | 104 | 206 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 6,34 | 8,82 | 11,7 | 18,1 |
| Viscosity Index (VI) | | DIN ISO 2909 | 115 | 106 | 100 | 96 |
| Flash point COC | °C | DIN ISO 2592 | 230 | 250 | 245 | 255 |
| Pour point | °C | DIN ISO 3016 | - 36 | - 33 | - 33 | - 24 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,9 | 8,0 | 8,1 | 8,8 |
| Sulphated ash | wt. % | DIN 51 575 | 1,04 | 1,04 | 1,04 | 1,04 |

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# SRS Antikorrol M plus

High Performance Monograde Engine Oil

September 2011

## Properties

SRS Antikorrol M plus is a high performance monograde engine oil with very high corrosion protection properties. A balanced additive package guarantees wear protection and cleanliness in diesel engine operation as well as a high corrosion protection in long shutdown periods.

## Application

Due to its properties SRS Antikorrol M plus is particularly suitable for engines subjected to longer times of shutdown periods. SRS Antikorrol M plus is a full load durable engine oil of MTU oil category 2 with additional corrosion protection properties as an anti-corrosion oil for internal conservation.

SRS Antikorrol M plus can also be used for emergency power generators.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 30 |
| API | CI-4 |
| ACEA | E7 |

## Approvals / Recommendations

MTU MTL 5044, oil category 1 with special corrosion protection
MTU MTL 5051, corrosion protection oil for internal conservation
MTU DDC BR 2000 and 4000

| Typical data | | Test method | SRS Antikorrol M plus |
|---|---|---|---|
| SAE Grade | | SAE J300 | 30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,892 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 99,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 11,7 |
| Viscosity Index (VI) | | DIN ISO 2909 | 106 |
| Flash point COC | °C | DIN ISO 2592 | 245 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Seawater Immersion Test | Grade | DIN 51 358 | 0 |
| Total Base Number | mg/KOH/ | DIN ISO 3771 | 10,9 |
| Sulphate Ash | g/100 g | DIN 51 575 | 1,4 |

SRS Antikorrol M plus is a product of the H&R ChemPharm GmbH

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# SRS Rekord E

## Monograde Engine Oils

May 2004

## Properties

SRS Rekord E are monograde engine oils with high wear and corrosion protection characteristics.

## Application

SRS Rekord E is suitable for diesel and gasoline engines in accordance with the manufacturer's instructions.

## Performance / Specifications

SAE Grades 30, 40, 50 and 60
API SF/CD

| Typical data | | Test method | SRS Rekord E 30 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|
| Density at 15°C | g/cm³ | DIN 51 757 | 0,889 | 0,892 | 0,897 | 0,900 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 84 | 124 | 238 | 301 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 10,0 | 12,8 | 19,7 | 22,4 |
| Flash point COC | °C | DIN ISO 2592 | 240 | 240 | 240 | 245 |
| Pour point | °C | DIN ISO 3016 | - 21 | - 18 | - 18 | - 21 |
| Total base number | mgKOH/g | DIN ISO 3771 | 6,1 | 6,1 | 6,1 | 6,1 |

SRS Rekord E is a product of the H&R ChemPharm GmbH

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# SRS Magnum 4T

4 Stroke Motorcycle Engine Oil

May 2014

## Properties

SRS Magnum 4T is an engine oil specially developed for use in four-stroke motorcycle engines. It satisfies the technical demands of all motorcycle manufacturers, and is suitable for all air-cooled and water-cooled 4-stroke motorcycle engines. High engine cleanliness and wear protection increase the life of the engine. It is suitable for wet clutches. Grabbing and slipping clutches after a cold start are prevented.

## Application

SRS Magnum 4T is a mineral oil based high performance engine oil in the SAE 20W-50 viscosity range. Very good high temperature stability and high wear protection guarantee optimal lubrication even under unfavourable conditions. The engine is protected from deposits and oil-sludge, oil consumption is reduced significantly.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 20W-50 |
| API | SG |
| JASO | MA |

| Typical data | | Test method | SRS Magnum 4 T |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 20W-50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,888 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 150 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 16,7 |
| Viscosity Index | | DIN ISO 2909 | 119 |
| Flash point COC | °C | DIN ISO 2592 | 235 |
| Pour point | °C | DIN ISO 3016 | - 30 |

SRS Magnum 4T is a product of the H&R ChemPharm GmbH

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# SRS Magnum 4T plus

High Performance 4-Stroke Motorcycle Engine Oil

November 2011

## Properties

SRS Magnum 4T plus is an engine oil specially developed for use in four-stroke motorcycle engines. It satisfies the technical demands of all motorcycle manufacturers, and is suitable for all air-cooled and water-cooled 4-stroke motorcycle engines. High engine cleanliness and wear protection increase the life of the engine. It is suitable for wet clutches. Grabbing and slipping clutches after a cold start are prevented.

## Application

SRS Magnum 4T plus is a SAE 10W-40 high performance engine oil with synthetic technology. Optimal lubrication at high temperatures and high engine revolutions guarantee best engine protection even under the most extreme conditions. Deposits on pistons and valves are reliably prevented, exceptional engine cleanliness is promoted. The low viscosity at low temperatures helps the oil to penetrate quickly the engine, to start without cold start wear.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 10W-40 |
| API | SL |
| ACEA | A3-Performance |
| JASO | MA2 |

| Typical data | | Test method | SRS Magnum 4 T Plus |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 10W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,873 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 95 |
| Viscosity at 100°C | Mm²/s | DIN 51 562 | 14,2 |
| Viscosity Index | | DIN ISO 2909 | 155 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | - 33 |

SRS Magnum 4T plus is a product of the H&R ChemPharm GmbH

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# SRS Bitaktol KX

Two Stroke Engine Oil

November 2012

## Properties

SRS Bitaktol KX is self-mixing mineral oil based high performance two-stroke engine oil. The requirements for piston cleanliness, corrosion protection, ring sticking, piston seizure and pre-ignition are clearly fulfilled.

SRS Bitaktol KX is recommended in accordance with manufacturer's recommendations for mixing ratios up to 1:50 and for separate lubrication (autolube systems).

## Performance / Specifications

| | |
|---|---|
| ISO | L-EGB |
| API | TC |
| JASO | FB |

| Typical data | | Test method | SRS Bitaktol KX |
|---|---|---|---|
| Density at 15°C | g/cm³ | DIN 51 757 | 0,878 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 63,6 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 8,6 |
| Viscosity index (VI) | | DIN ISO 2909 | 108 |
| Flash point PM | °C | DIN EN 22 719 | 141 |
| Pour point | °C | DIN ISO 3016 | - 24 |
| Sulphated ash | wt. % | DIN 51 575 | 0,05 |
| Total base number | mg KOH/g | DIN ISO 3771 | 1,25 |

SRS Bitaktol KX is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Bitaktol KS plus

Fully Synthetic Two Stroke Engine Oil

November 2012

## Properties

SRS Bitaktol KS plus is a fully synthetic high performance self-mixing two-stroke engine oil. The requirements for piston cleanliness, corrosion protection, ring sticking, piston seizure and pre-ignition are fulfilled by far using synthetic components.

## Application

SRS Bitaktol KS plus is a low ash engine oil for heavy-duty two-stroke engines (low-smoke). Mixing ratios up to 1:100 according to manufacturer's recommendations are possible.

## Performance / Specifications

| | |
|---|---|
| ISO | L-EGD |
| JASO | FD |
| API | TC |
| TICI | |

## Approvals / Recommendations

Husqvarna Chainsaw
Piaggio
Rotax Snowmobile

| Typical data | | Test method | SRS Bitaktol KS plus |
|---|---|---|---|
| Density at 15°C | g/cm³ | DIN 51 757 | 0,894 |
| Viscosity at 40 °C | Mm²/s | DIN 51 562 | 56,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 9,02 |
| Viscosity index (VI) | | DIN ISO 2909 | 137 |
| Flash point PM | °C | DIN EN 22 719 | 115 |
| Pour point | °C | DIN ISO 3016 | < - 42 |
| Sulphated ash | wt. % | DIN 51 575 | 0,18 |
| Total base number | mg KOH/g | DIN ISO 3771 | 2,0 |

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# SRS Bitaktol Super 3

Two Stroke Engine Oil for Water Cooled Outboard Motors

November 2012

## Properties

SRS Bitaktol Super 3 is a self-mixing engine oil meeting the specific requirements of water-cooled outboard engines with high power density. Selected additives assure low-ash combustion and related high motor cleanliness, in both the intake and exhaust compartments, even under extreme loads. Mixing ratios of up to 1 : 100 are possible, depending upon manufacturer specifications.

## Performance / Specifications

| | |
|---|---|
| NMMA | TC-W 3 |
| API | TD |

## Approvals / Recommendations

These specifications include recognition by the following engine manufacturers:

Archimedes-Penta
Chrysler
Evinrude
Garniti
Johnson
Mercury
Monark-Crescent
Suzuki
Terhi (Tern)

| Typical data | | Test method | SRS Bitaktol Super 3 |
|---|---|---|---|
| Density at 15°C | g/cm³ | DIN 51 757 | 0,870 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 38,1 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 6,22 |
| Viscosity index (VI) | | DIN ISO 2909 | 122 |
| Flash point PM | °C | DIN EN 22 719 | 108 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Sulphated ash | wt. % | DIN 51 575 | < 0,01 |
| Total base number | mg KOH/g | DIN ISO 3771 | 3,7 |

SRS Bitaktol Super 3 is a product of the H&R ChemPharm GmbH

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# SRS Bitaktol KS

Two-Stroke Engine Oil

May 2014

## Properties

SRS Bitaktol KS is a low smoke two-stroke engine oil.

Mineral oils produced with the most modern refinery techniques, synthetic components and special additives guarantee optimal lubrication and a high degree of engine cleanliness. Deposits in the combustion chamber and the exhaust system are prevented, smoke development is clearly reduced.

## Application

SRS Bitaktol KS is self-mixing and can be used in blend ratios up to 1:50 and for separate lubrication (autolube systems).

SRS Bitaktol KS two-stroke engine oil meets the highest specifications for the Asian and European markets.

## Performance / Specifications

| | |
|---|---|
| ISO | L-EGD |
| JASO | FC |
| API | TC |
| TICI | |

## Approvals / Recommendations

Husqvarna Chainsaw

| Typical data | | Test method | SRS Bitaktol KS |
|---|---|---|---|
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,872 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 67,5 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 9,53 |
| Viscosity index (VI) | | DIN ISO 2909 | 121 |
| Flash point PM | °C | DIN ISO 2592 | 123 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| Sulphated ash | wt. % | DIN 51 575 | 0,05 |
| Total base number | mg KOH/g | DIN ISO 3771 | 1,1 |

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# SRS Mihagrun

## Gas Engine Oils

February 2015

## Properties

SRS Mihagrun gas engine oils have been developed for application in highly stressed gasoline and diesel gas engines, including turbo charged units. High neutralisation potential guarantees reliable protection against corrosion and wear in operation with combustion gases containing large amounts of sulphur and hydrogen sulphides, such as sewer, bio gases and untreated natural gases. Ash-containing well-balanced detergent and dispersant additives prevent undesirable buildup of sludge and varnish in the crankcase and combustion chambers. SRS Mihagrun corresponds to the requirements of leading gas engine manufacturers and is also suitable for operation with catalytic converters.

## Application

SRS Mihagrun is approved by Jenbacher for the series 2 and 3 and by MAN for the operation with special gases. In addition to this SRS Mihagrun corresponds to the requirements of leading gas engine manufacturers and is suitable for the operation of gas engines with catalytic converters, too.

## Performance / Specifications

API CF

## Approvals / Recommendations

MAN Approval 3271-4
GE Jenbacher Approval 1000-1109 Gas Class B (Biogas)
MWM/Caterpillar
Waukesha
Wärtsilä
Perkins
Ruston
MDE Dezentralenergiesyteme

| Typical data | | Test method | SRS Mihagrun 30 | SRS Mihagrun 40 |
|---|---|---|---|---|
| SAE Grade | | SAE J 300 | 30 | 40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,889 | 0,892 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 103 | 135 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 11,5 | 13,5 |
| Viscosity index (VI) | | DIN ISO 2909 | 99 | 97 |
| Flash point COC | °C | DIN ISO 2592 | 272 | 272 |
| Pour point | °C | DIN ISO 3016 | - 24 | - 21 |
| Total base number | mgKOH/g | DIN ISO 3771 | 8,7 | 9,0 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,85 | 0,86 |

SRS Mihagrun 30 and Mihagrun 40 are products of the H&R ChemPharm GmbH

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# SRS Mihagrun LA

Gas Engine Oil

February 2015

## Properties

SRS Mihagrun LA 40 gas engine oil is manufactured for use in gas-power ed spark ignition engines. It is recommended for gas engines which are subject to higher thermal stresses and which can not be dealt with by ash-free gas engine oils.
It is also qualified for use in gas engines operating on low sulphur natural and refinery gases, propane, butane, and propane / butane blends.

## Application

SRS Mihagrun LA 40 corresponds to the requirements of leading gas engine manufacturers and is also suitable for operation with catalytic converters.

## Performance / Specifications

SAE Grade 40
API CF

## Approvals / Recommendations

MWM/Caterpillar Approval TR 0199-99-2105
Deutz Approval TR 0199-99-01213/1 DE
MTU Approval MTL 5074 gas engines
MAN M 3271-2
GE Jenbacher
Waukesha

| Typical data | | Test method | SRS Mihagrun LA 40 |
|---|---|---|---|
| SAE Grade | | | 40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,891 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 147 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,3 |
| Flash point COC | °C | DIN ISO 2592 | 280 |
| Pour point | °C | DIN ISO 3016 | - 21 |
| Total base number | mgKOH/g | DIN ISO 3771 | 5,6 |
| Sulphated ash | wt. % | DIN 51 575 | 0,48 |

SRS Mihagrun LA 40 is a product of the H&R ChemPharm GmbH

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# SRS Mihagrun LAX 40

High-Performance Gas Engine Oil

February 2015

## Properties

SRS Mihagrun LAX 40 SRS Mihagrun LAX 40 is a high-performance gas engine oil, specifically designed for use in modern low emission highperformance gas engines. High quality unconventional base oils and advanced additive technology provide extended oil change intervals, a high wear protection, high neutralization capacity and a high thermal stability.

With the low sulphate ash content, SRS Mihagrun LAX 40 is suitable for natural gas and special gases (e.g. biogas), if a low-ash gas engine oil is required. It is also preferred in engines with modern exhaust after-treatment systems.
The excellent detergent and dispersant properties reduce sludge, deposits in the combustion chamber and the exhaust system are avoided.

Due to the latest additive technology, SRS Mihagrun LAX 40 contributes to engine cleanliness, extended drain intervals, lower oil consumption and therefore a higher efficiency because of the reduced oil changes and less downtime is reached. Due to the excellent wear protection, less wear of the engine components and therefore higher component life and lower maintenance costs is ensured.

## Application

SRS Mihagrun LAX 40 is approved for all MWM TCG and Caterpillar CG gas engines and corresponds to the requirements of leading gas engine manufacturers.

## Performance / Specifications

SAE Grade 40
API CF

## Approvals / Recommendations

MWM/Caterpillar Approval TR 0199-99-(1) 2105)
Deutz Approval TR 01999-99-01213/1 DE
GE Jenbacher type 2, 3, 4 and 6, Gas class B (Biogas) and C (landfill gas)
Waukesha

| Typical data | | Test method | SRS Mihagrun LAX 40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,875 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 123 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 13,6 |
| Viscosity index (VI) | | DIN ISO 2909 | 107 |
| Flash point COC | °C | DIN ISO 2592 | 276 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 5,2 |
| Sulphated ash | wt. % | DIN 51 575 | 0,5 |

SRS Mihagrun LAX 40 is a product of the H&R ChemPharm GmbH

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# SRS Mihagrun X 40

High-Performance Gas Engine Oil

February 2015

## Properties

SRS Mihagrun X 40 is a gas engine oil, specifically designed for use in modern high-performance gas engines. High quality base oils and advanced additive technology provide extended oil change intervals, a high wear protection, high neutralization capacity and a high thermal stability.

SRS Mihagrun X 40 is suitable for use with sewage gas, biogas and landfill gas and can also be used in engines with modern exhaust aftertreatment systems.

Due to the latest additive technology, SRS Mihagrun X 40 contributes to engine cleanliness, extended drain intervals, lower oil consumption and therefore a higher efficiency because of the reduced oil changes and less downtime is reached. The excellent detergent and dispersant properties reduce sludge, deposits in the combustion chamber and the exhaust system are avoided.

## Application

SRS Mihagrun X 40 specially designed for modern gas engines with the use of aggressive gases such as sewage gases, biogases and landfill gases.

SRS Mihagrun X 40 can be filled in Jenbacher gas engines of the series 2, 3, 4 and 6, gas class B (Biogas) and C (Landfill gas).
The increased MWM / Caterpillar 20 engine approval (TR0199-99-(1)2105) has already been issued.

## Performance / Specifications

SAE Grade 40

## Approvals / Recommendations

MWM/Caterpillar TR 0199-99-(1) 2105
GE Jenbacher type 2, 3, 4 and 6, Gas class B (Biogas) and C (Landfill gas).

| Typical data | | Test method | SRS Mihagrun X 40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,874 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 120 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 13,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 107 |
| Flash point COC | °C | DIN ISO 2592 | 288 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 4,8 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,55 |

SRS Mihagrun X 40 is a product of the H&R ChemPharm GmbH

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# SRS Mihagrun XB 40

High-Performance Gas Engine Oil

August 2015

## Properties

SRS Mihagrun XB 40 is a medium ash gas engine oil, specifically designed for use in modern high- performance gas engines. High quality base oils and advanced additive technology provide extended oil change intervals, a high wear protection, high neutralization capacity and a high thermal stability.

SRS Mihagrun XB 40 is suitable for use with sewage gas, biogas and landfill gas and can also be used in engines with modern exhaust aftertreatment systems.

Due to the latest additive technology, SRS Mihagrun XB 40 contributes to engine cleanliness, extended drain intervals, lower oil consumption and therefore a higher efficiency because of the reduced oil changes and less downtime is reached. The excellent detergent and dispersant properties reduce sludge, deposits in the combustion chamber and the exhaust system are avoided.

## Application

SRS Mihagrun XB 40 is specially designed for modern gas engines with the use of aggressive gases such as sewage gases, biogases and landfill gases. The ash content corresponds to the requirements of the latest engine technology.
Through a trial run in MAN biogas engines best results were confirmed in terms of change intervals.

## Performance / Specifications

SAE Grade 40

## Approvals / Recommendations

MAN Biogas
MWM/Caterpillar high Ash
GE Jenbacher type 2 and 3, Gas class B (Biogas) and C (Landfill gas).

| Typical data | | Test method | SRS Mihagrun XB 40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,87( |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 12§ |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 14,1 |
| Viscosity index (VI) | | DIN ISO 2909 | 113 |
| Flash point COC | °C | DIN ISO 2592 | 279 |
| Pour point | °C | DIN ISO 3016 | - 27 |
| Total base number | mgKOH/g | DIN ISO 3771 | 7,5 |
| Sulphated ash | g/100 g | DIN 51 575 | 0,9 |

SRS Mihagrun XB 40 is a product of the H&R ChemPharm GmbH

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# SRS Lubricating Oil, Engine (O-236)

Multigrade Engine Oil

September 2011

## Properties

SRS Motorenöl O-236 is composed of premium base oils produced with the most modern refinery techniques and accurately adapted additives. Excellent lubrication at all temperatures and exceptional wear protection under all operating conditions are outstanding properties of SRS Motorenöl O-236.

## Application

SRS Motorenöl O-236 is a multigrade engine oil for the lubrication of all kind of combustion engines in land and see vehicles and stationary equipment. Hydraulic systems, torque converter and clutches can be serviced by this lubricant just as well as gear boxes and steering gears of wheel vehicles and tracked vehicles at high ambient temperatures.

SRS Motorenöl O-236 is designed for use in temperature ranges of – 20 °C up to 40 °C.

SRS Motorenöl O-236 is a full load durable engine oil of MTU oil category 2 with additional corrosion protection properties as anti-corrosion oil for internal conservation.

## Performance / Specifications

SRS Motorenöl O-236 is approved by the German Army against specification TL 9150-0063/6 with the qualification certificate B-0380.

| | |
|---|---|
| NATO-Code | O-236 |
| SAE Grade | 15W-40 |
| API | CH-4/SJ |
| ACEA | A3/B3/E3-Performance |

## Approvals / Recommendations

MTU Type 2 (except BR 8000, 4000-04, 1800, 956 TB 31/32/33)
MTU DDC BR 2000/4000
MTU MTL 5044, Type 2 with special corrosion protection
MTU MTL 5051, corrosion protection oil for internal conservation
Bundeswehr: TL 9150 – 0063/6

| Typical data | | Test method | Wintershal Lubricating Oil, Engine (O-236) |
|---|---|---|---|
| SAE-Grade | | SAE J 300 | 15W-40 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,878 |
| Viscosity at –20°C | mPas | DIN 51 377 | 6800 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 103 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 13,9 |
| Viscosity Index | | DIN ISO 2909 | 137 |
| Flash point COC | °C | DIN ISO 2592 | 224 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Total base number | mgKOH/g | DIN ISO 3771 | 10,4 |
| Sulphated ash | wt. % | DIN 51 575 | 1,3 |

SRS Lubricating Oil Engine (O-236) is a product of the H&R ChemPharm GmbH

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# SRS Gear Oils

# Gear Oils

October 2015

| Multi-purpose gear oils | API | Brand | SAE Grade |
|---|---|---|---|
| Multi-purpose transmission oil for standard transmissions, transaxle systems and conventionally stressed drive axles | GL 4 | SRS Wiolin Mehrzweck-Getriebeöl 80 | 80W-85 |
| Multi-purpose transmission oil for standard transmissions, transaxle systems and conventionally stressed drive axles | GL 4 | SRS Wiolin Mehrzweck-Getriebeöl 90 | 85W-90 |
| Multi-purpose transmission oil for standard transmissions, transaxle systems and conventionally stressed drive axles | GL 4 | SRS Wiolin Mehrzweck-Getriebeöl 80W-90 | 80W-90 |
| Multi-purpose transmission oil for standard transmissions, transaxle systems and conventionally stressed drive axles | GL 4 | SRS Wiolin Mehrzweck-Getriebeöl 85W-140 | 85W-140 |
| EP-multi purpose transmission oils for supplying standard transmissions | GL-4 | SRS Wiolin ML 4 | 80W-85<br>85W-90<br>80W-90 |
| EP-multi purpose transmission oils for supplying standard transmissions | GL-4 | SRS Wiolin ML 4 Plus | 80W<br>80W-90<br>85W-90 |

| Hypoid gear oils | API | Brand | SAE Grade |
|---|---|---|---|
| Hypoid-transmission oil for heavy-duty drive axles in utility vehicles and passenger cars | GL 5 | SRS Wiolin Hypoid-Getriebeöl 80 | 80W-85 |
| Hypoid-transmission oil for heavy-duty drive axles in utility vehicles and passenger cars | GL 5 | SRS Wiolin Hypoid-Getriebeöl 90 | 85W-90 |
| Hypoid-transmission oil for heavy-duty drive axles in utility vehicles and passenger cars | GL 5 | SRS Wiolin Hypoid-Getriebeöl 80W-90 | 80W-90 |
| Hypoid-transmission oil for heavy-duty drive axles in utility vehicles and passenger cars | GL 5 | SRS Wiolin Hypoid-Getriebeöl 85W-140 | 85W-140 |

| Special gear oils | API | Brand | SAE Grade |
|---|---|---|---|
| Standard transmission oil for VW/Audi passenger cars and other transaxle systems with longitudinally built in motors | GL4 Plus | SRS Getriebefluid 5L | 75W-90 |
| Fully synthetic multi purpose gear oil | GL4, GL5 MT-1 | SRS Getriebefluid SXL | 75W-90 |
| Rear axle transmission oil for prolonged oil change intervals | GL5 | SRS Getriebefluid BOS | 75W-90 |
| Special-hypoid transmission oil for drive axles with limited-slip differential | GL5/LS | SRS Getriebefluid BMS Plus | 75W-90 |
| Smooth running transmission oil for heavy duty differential- and standard transmissions – extreme oil change intervals | GL5 | SRS Getriebefluid AFS | 75W-90 |
| Heavy-duty standard transmission oil for prolonged oil change intervals | GL4 | SRS Wiolin RSG 80 | 80W |
| Special hypoid transmission oil for drive axles with limited-slip differential | GL5/ LS | SRS Wiolin RSH | 85W-90 |

# Gear Oils

October 2015

| Special gear oils | API | Brand | SAE Grade |
|---|---|---|---|
| Multipurpose gear oil | GL4, GL5, MT-1 | SRS Getriebefluid SML 75W-90 | 75W-90 |
| High-performance multi-function gear oil | GL4, GL5, MT-1 | SRS Getriebefluid SML 80W-90 | 80W-90 |
| Smooth running standard transmission oil for extreme oil change intervals | GL4 | SRS Getriebefluid MTS | 75W-80W |
| Hypoid-transmission oil | GL5 | SRS Getriebefluid HGS | 75W-90 |
| Multipurpose transmission oil for heavily loaded manual transmissions | GL4 | SRS Getriebefluid MGS Plus | 75W-90 |
| Heavy-duty power transmission oils for construction vehicles. For application in highly stressed transmissions, propel drives, wet brakes and clutches | CF/CF-2 | SRS Wiolin 410<br>SRS Wiolin 430<br>SRS Wiolin 450 | 10W<br>30<br>50 |
| Transmission oils for very highly stressed hypoid-teethed drive axles | GL5 | SRS Wiolin HL 5 | 80W-90<br>85W-90 |
| Heavy-duty power transmission oil for agricultural vehicles | | SRS ZFC | |

| ATF oils | Specification | Brand |
|---|---|---|
| Hydraulic transmission oil for automatic- and manual transmissions as well as power steering | Type A, Suffix A | SRS Wiolin ATF 2543 A |
| Automatic transmission fluid (ATF) | Dexron II D<br>Ford Mercon | SRS Wiolin ATF D |
| Automatic transmission fluid (ATF) | Dexron III H<br>Ford Mercon | SRS Wiolin ATF III |
| Automatic transmission fluid (ATD) | Dexron II E<br>Ford Mercon | SRS Wiolin ATF Dexron S |

| Hydraulic gear oils | Type | API | Brand | ISO-VG |
|---|---|---|---|---|
| Hydraulic-transmission fluid (UTTO) for supplying tractors and construction vehicles. Applicable in transmissions and hydraulics | UTTO | GL4, GL5 | SRS Hydrofluid N | 46 to 100 |
| Hydraulic-transmission fluid (UTTO) for supplying tractors and construction vehicles. Applicable in transmissions and hydraulics | UTTO | GL4 | SRS Hydrofluid NB | 46 to 100, 80W-85 |

| German Army oils | BW Code | API | Brand | SAE Grade |
|---|---|---|---|---|
| Hypoid gear oil with special corrosion protection for the preservation of gears | | GL 5 | Lubricating oil, Gear, (corrosion preventive), SAE 85W-90 | 85W-90 |

# SRS Wiolin Mehrzweck-Getriebeöl 80

Multipurpose Gear Oil for Manual Transmissions

November 2011

## Properties

SRS Wiolin Mehrzweck-Getriebeöl 80 multi-purpose gear oil is made of selected base oils with specially selected additives. Its viscosity is chosen to ensure no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Mehrzweck-Getriebeöl 80 is an EP multi-purpose gear oil which can be used for all gear boxes (with and without synchromesh), transfer gear boxes, various steering gears and normally loaded drive axles – particularly passenger car transaxle systems – insofar as hypoid gear oils in accordance with MIL-L-2105 B/C or API GL-5 are not stringently prescribed.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 80W-85 |
| API | GL-4 |
| MIL | L-2105 |

## Approvals / Recommendations

MB-Approval 235.1
MAN 341 Type E1
MAN 341 Type Z2
Ford SQM-2C-9008 A
ZF TE-ML 02B, 17A

| Typical data | | Test method | SRS Mehrzweck-Getriebeöl 80 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 80 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,897 |
| Viscosity at – 26 °C | mPa s | DIN 51 398 | 129,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 114 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 11,9 |
| Viscosity index (VI) | | DIN ISO 2909 | 92 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Mehrzweck-Getriebeöl 80 is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Wiolin Mehrzweck-Getriebeöl 90

Multipurpose Gear Oil for Manual Transmissions

January 2013

## Properties

SRS Wiolin Mehrzweck-Getriebeöl 90 multi-purpose gear oil is made of selected base oils with specially selected additives. Its viscosity is chosen to ensure no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Mehrzweck-Getriebeöl 90 is an EP multi-purpose gear oil which can be used for all gear boxes (with and without synchromesh), transfer gear boxes, various steering gears and normally loaded drive axles – particularly passenger car transaxle systems – insofar as hypoid gear oils in accordance with MIL-L-2105 B/C or API GL-5 are not stringently prescribed.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 85W-90 |
| API | GL-4 |
| MIL | L-2105 |

## Approvals / Recommendations

MB-Approval 235.1
MAN 341 Type E1
MAN 341 Type Z2
ZF TE-ML 02B, 17A, 19[a]

| Typical data | Test method | | SRS Mehrzweck-Getriebeöl 90 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 85W-90 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,896 |
| Viscosity at – 12 °C | mPa s | DIN 51 398 | < 150,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 207 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 17,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 90 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 21 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Mehrzweck-Getriebeöl 90 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin Mehrzweck-Getriebeöl 80W-90

Multipurpose Gear Oil for Manual Transmissions

January 2013

## Properties

SRS Wiolin Mehrzweck-Getriebeöl 80W-90 multi-purpose gear oil is made of selected base oils with specially selected additives. Its viscosity is chosen to ensure no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Mehrzweck-Getriebeöl 80W-90 is an EP multi-purpose gear oil which can be used for all gear boxes (with and without synchromesh), transfer gear boxes, various steering gears and normally loaded drive axles – particularly passenger car transaxle systems – insofar as hypoid gear oils in accordance with MIL-L-2105 B/C or API GL-5 are not stringently prescribed.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 80W-90 |
| API | GL-4 |
| MIL | L-2105 |

## Approvals / Recommendations

MAN 341 Type E1
MAN 341 Type Z2
ZF TE-ML 02B, 16A, 17A, 19A

| Typical data | | Test method | SRS Mehrzweck-Getriebeöl 80W-90 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 80W-90 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,891 |
| Viscosity at – 26 °C | mPa s | DIN 51 398 | 137,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 141 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 14 |
| Viscosity index (VI) | | DIN ISO 2909 | 99 |
| Flash point COC | °C | DIN ISO 2592 | 224 |
| Pour point | °C | DIN ISO 3016 | - 27 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Mehrzweck-Getriebeöl 80W-90 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin Mehrzweck-Getriebeöl 85W-140

Multipurpose Gear Oil for Manual Transmissions

January 2013

## Properties

SRS Wiolin Mehrzweck-Getriebeöl 85W-140 multi-purpose gear oil is made of selected base oils with specially selected additives. Its viscosity is chosen to ensure no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Mehrzweck-Getriebeöl 85W-140 is an EP multi-purpose gear oil which can be used for all gear boxes (with and without synchromesh), transfer gear boxes, various steering gears and normally loaded drive axles – particularly passenger car transaxle systems – insofar as hypoid gear oils in accordance with MIL-L-2105 B/C or API GL-5 are not stringently prescribed.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 85W-140 |
| API | GL-4 |
| MIL | L-2105 |

| Typical data | | Test method | SRS Mehrzweck-Getriebeöl 85W-140 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 85W-140 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,902 |
| Viscosity at – 12 °C | mPa s | DIN 51 398 | 118,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 399 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 26,6 |
| Viscosity index (VI) | | DIN ISO 2909 | 90 |
| Flash point COC | °C | DIN ISO 2592 | 285 |
| Pour point | °C | DIN ISO 3016 | - 18 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Mehrzweck-Getriebeöl 85W-140 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin ML 4

EP Multipurpose Gear Oils

February 2015

## Properties

SRS Wiolin ML 4 gear oils are blends of selected base oils with lo ad carrying additives and oxidation inhibitors. Multigrade characteristics of Wiolin ML 4 ensure good low temperature fluidity and high wear protection at high temperature.

## Application

SRS Wiolin ML 4 are EP multipurpose gear oils which can be used for a ll gear boxes (with and without synchronization, transfer gearboxes, various steering gears and norm al loaded drive axles – as far as API GL 5 hypoid gear oils are not mandatory required.

## Performance / Specifications

SAE Grade 80W-85, 80W-90 and 85W-90
API GL-4

| Typical data | | Test method | SRS WIOLIN ML 4 | | |
|---|---|---|---|---|---|
| | | | SAE 80W-85 | SAE 80W-90 | SAE 85W-90 |
| SAE Grade | | SAE J 306 | 80W-85 | 80W-90 | 85W-90 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,892 | 0,890 | 0,894 |
| Viscosity at – 26 °C | mPa s | DIN 51 398 | < 150.000 | 140.000 | - |
| Viscosity at – 12 °C | mPa s | DIN 51 398 | - | - | < 150.000 |
| Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 113 | 140 | 206 |
| Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 12,2 | 14,1 | 17,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 98 | 98 | 90 |
| Flash point COC | °C | DIN ISO 2592 | 230 | 230 | 230 |
| Pour point | °C | DIN ISO 3016 | - 30 | - 30 | - 21 |

SRS Wiolin ML 4 multipurpose gear oils are products of the H&R ChemPharm GmbH

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# SRS Wiolin ML 4 plus

EP Multipurpose Gear Oils

February 2015

## Properties

SRS Wiolin ML 4 plus gear oils are blends of selected base oils with load carrying additives and oxidation inhibitors. Multigrade characteristics of SRS Wiolin ML 4 plus ensure good low temperature fluidity and high wear protection at high temperature.

## Application

SRS Wiolin ML 4 plus are EP multipurpose gear oils which can be used for all gear boxes (with and without synchronization, transfer gearboxes, various steering gears and normal loaded drive axles – as far as API GL 5 hypoid gear oils are not mandatory required. SRS Wiolin ML 4 plus gear oils are suitable according to MAN 341 Z2 for extended drain intervals up to 160.000 km.

## Performance / Specifications

SAE Grade 80W, 80W-90 and 85W-90
API GL-4

## Approvals / Recommendations

MAN 341 Type Z2/E2
ZF TE-ML 02B, 17A

| Typical data | | Test method | SRS WIOLIN ML 4 plus | | |
|---|---|---|---|---|---|
| | | | SAE 80W | SAE 80W-90 | SAE 90 |
| SAE Grade | | SAE J 306 | 80W-85 | 80W-90 | 85W-90 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,881 | 0,888 | 0,899 |
| Viscosity at – 26 °C | mPa s | DIN 51 398 | < 150.000 | 130.000 | - |
| Viscosity at – 12 °C | mPa s | DIN 51 398 | - | - | < 150.000 |
| Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 68,0 | 138 | 165 |
| Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 8,76 | 14,2 | 15,5 |
| Viscosity index (VI) | | DIN ISO 2909 | 101 | 100 | 95 |
| Flash point COC | °C | DIN ISO 2592 | 224 | 254 | 228 |
| Pour point | °C | DIN ISO 3016 | - 30 | - 30 | - 21 |

SRS Wiolin ML 4 multipurpose gear oils are products of the H&R ChemPharm GmbH

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# SRS Wiolin Hypoid-Getriebeöl 80

Gear Oil for Drive Axles

November 2011

## Properties

SRS Wiolin Hypoid-Getriebeöl 80 is blended from selected base oils with carefully adapted additives. Its viscosity is chosen to ensure both no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Hypoid-Getriebeöl 80 is intended for very high loaded hypoid meshed axles, bevel and spur gears, steering gears and not synchronized gear boxes in vehicles and machines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 80W-85 |
| API | GL-5 |
| MIL | L-2105 C/D |

## Approvals / Recommendations

MAN 342 Type E1
Volvo 97310

| Typical data | | Test method | SRS Hypoid-Getriebeöl 80 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 80W-85 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,897 |
| Viscosity at – 26 °C | mPa s | DIN 51 398 | 130,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 117 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 12,3 |
| Viscosity index (VI) | | DIN ISO 2909 | 95 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 27 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Hypoid-Getriebeöl 80 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin Hypoid-Getriebeöl 90

Gear Oil for Drive Axles

November 2011

## Properties

SRS Wiolin Hypoid-Getriebeöl 90 is blended from selected base oils with carefully adapted additives. Its viscosity is chosen to ensure both no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Hypoid-Getriebeöl 90 is intended for very high loaded hypoid meshed axles, bevel and spur gears, steering gears and not synchronized gear boxes in vehicles and machines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 85W-90 |
| API | GL-5 |
| MIL | L-2105 C/D |

## Approvals / Recommendations

MB-Approval 235.0
Ford SQM-2C-9002 AA
MAN 342 Type E1
ZF TE-ML 16C, 17B, 19B, 21A
Voith 3.325 – 339
Volvo 97310
DAF

| Typical data | | Test method | SRS Hypoid-Getriebeöl 90 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 85W-90 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,902 |
| Viscosity at – 12 °C | mPa s | DIN 51 398 | 20,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 198 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 17,6 |
| Viscosity index (VI) | | DIN ISO 2909 | 95 |
| Flash point COC | °C | DIN ISO 2592 | 216 |
| Pour point | °C | DIN ISO 3016 | - 24 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Hypoid-Getriebeöl 90 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin Hypoid-Getriebeöl 80W-90

Gear Oil for Drive Axles

November 2011

## Properties

SRS Wiolin Hypoid-Getriebeöl 80W-90 is blended from selected base oils with carefully adapted additives. Its viscosity is chosen to ensure both no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Hypoid-Getriebeöl 80W-90 is intended for very high loaded hypoid meshed axles, bevel and spur gears, steering gears and not synchronized gear boxes in vehicles and machines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 80W-90 |
| API | GL-5 |
| MIL | L-2105 C/D |

## Approvals / Recommendations

MAN 342 Type E1
ZF TE-ML 16B, 17B, 19B, 21A
DAF
Renault

| Typical data | | Test method | SRS Hypoid-Getriebeöl 80W-90 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 80W-90 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,897 |
| Viscosity at – 26 °C | mPa s | DIN 51 398 | 130,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 140 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 13,9 |
| Viscosity index (VI) | | DIN ISO 2909 | 98 |
| Flash point COC | °C | DIN ISO 2592 | 210 |
| Pour point | °C | DIN ISO 3016 | - 33 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Hypoid-Getriebeöl 80W-90 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin Hypoid-Getriebeöl 85W-140

Gear Oil for Drive Axles

November 2011

## Properties

SRS Wiolin Hypoid-Getriebeöl 85W-140 is blended from selected base oils with carefully adapted additives. Its viscosity is chosen to ensure both no channelling at low temperatures and high lubrication safety at high temperatures.

## Application

SRS Wiolin Hypoid-Getriebeöl 85W-140 is intended for very high loaded hypoid meshed axles, bevel and spur gears, steering gears and not synchronized gear boxes in vehicles and machines.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 85W-140 |
| API | GL-5 |
| MIL | L-2105 C/C |

## Approvals / Recommendations

ZF TE-ML 16D, 21A
Volvo 97310
DAF

| Typical data | | Test method | SRS Hypoid-Getriebeöl 85W-140 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 85W-140 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,906 |
| Viscosity at – 12 °C | mPa s | DIN 51 398 | 89,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 337 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 24,7 |
| Viscosity index (VI) | | DIN ISO 2909 | 95 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 21 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolin Hypoid-Getriebeöl 85W-140 is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Getriebefluid 5L

Fully Synthetic Manual Transmission Oil

June 2010

## Properties

SRS Getriebefluid 5 L is fully synthetic gear oil with tailor made additives to fulfil the requirements of manual transmissions. It is designed for both perfect synchronisation function and high wear protection. The viscosity of SAE 75W-90 reduces stiffness at low temperatures, particularly in 5-speed gear boxes. At the same time its distinctive high temperature viscosity prevents noise at high operating temperatures.

## Application

SRS Getriebefluid 5 L is suitable for use in all passenger car transaxle blocks with longitudinally mounted gear boxes. The hypoid gears with minor axle offsets which are usually used in these gear boxes are also effectively protected through its high wear protection.

## Performance / Specifications

SAE Grade 75W-90
API GL-4 plus
Meets VW-Norm 501 50

| Typical data | | Test method | SRS Getriebefluid 5 L |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,890 |
| Dyn. viscosity at - 15°C (CCS) | mm²/s | DIN 51 562 | 1.000 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 71 |
| Visoosity at 100°C | mm²/s | DIN 51 562 | 15,3 |
| Viscosity Index (VI) | | DIN ISO 2909 | 230 |
| Flash point COC | °C | DIN ISO 2592 | 170 |
| Pour point | °C | DIN ISO 3016 | - 36 |

SRS Getriebefluid 5L is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid SXL 75W-90

Fully Synthetic Multi Purpose Gear Oil

March 2014

## Properties

SRS Getriebefluid SXL 75W-90 is based on fully synthetic base oils and carefully adapted additives. The viscosity adjustment SAE 75W-90 guarantees both good low temperatures fluidity and a strong lubricating film at high temperatures. A high fuel saving is achieved by the special low friction properties of SRS Getriebefluid SXL 75W-90.

## Application

SRS Getriebefluid SXL 75W-90 is a fully synthetic multi purpose gear oil for universal application in gearboxes, auxiliary drives and rear axles, including heavily loaded hypoid meshed drive axles. The requirements of API GL-4 and GL-5 are met with great reserve; oil changing intervals up to 500.000 km depending on the manufacturer `s specifications are possible.

SRS Getriebefluid SXL 75W-90 can be used in commercial vehicles, agricultural machinery, construction machinery and passenger cars.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 75W-90 |
| API | GL-4, GL-5 |
| API | MT-1 |
| SAE | J 2360 (MIL-PRF-2105 D/E) |

## Approvals / Recommendations

MB-Sheet 235.8
MAN 341 Type Z3/E3
MAN 342 Type M3
Scania STO 1:0
Volvo Transmission Oil 97 312
Mack GO-J

ZF TE-ML 02B, 05B, 12L, 12N, 16F, 17B, 19C, 21B
Arvin Meritor 076-N
Eaton Tranmissions (Europe)
DAF
Iveco
Renault

| Typical data | | Test method | SRS Getriebefluid SXL |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,869 |
| Dyn. viscosity at - 40°C | mPa s | DIN 51 398 | 77.000 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 107 |
| Visoosity at 100°C | mm²/s | DIN EN ISO 3104 | 15,7 |
| Viscosity Index (VI) | | DIN ISO 2909 | 157 |
| Flash point COC | °C | DIN ISO 2592 | 200 |
| Pour point | °C | DIN ISO 3016 | < - 51 |

SRS Getriebefluid SXL 75W-90 is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid BOS

Fully Synthetic Special Hypoid Gear Oil

March 2012

## Properties

SRS Getriebefluid BOS is a fully synthetic hypoid gear oil for heavy duty axle drives. The additives are tailor made for the increased load conditions of axle drive oils. SRS Getriebefluid BOS has excellent thermal and oxidation stability and high load carrying capacity. Synthetic base fluids have inherently excellent low-temperature fluidity, low pour point with an optimal viscosity at high temperature (high VI).

## Application

SRS Getriebefluid BOS assists in product rationalisation because it can be used as API GL-5 first fill and service top-up lubricant in all drive axles of mixed vehicle fleets. SRS Getriebefluid BOS is namely approved for use in BMW axle drives without multi disk self-locking differentials or with viscous locking differentials.

## Performance / Specifications

SAE Grade 75W-90
API GL-5

## Approvals / Recommendations

BMW
MAN 342 Type S1 + oil drain intervals up to 500.000 km
ZF TE-ML 05B, 12B, 17B, 19C, 21B
Scania STO 1:0

| Typical data | | Test method | SRS Getriebefluid BOS |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,858 |
| Viscosity at – 40 °C | mPa s | DIN 51 398 | 50.400 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 101 |
| Visoosity at 100°C | mm²/s | DIN 51 562 | 15,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 161 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | - 57 |

SRS Getriebefluids BOS is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid BMS plus

Fully Synthetic Special Hypoid Gear Oil

March 2012

## Properties

SRS Getriebefluid BMS Plus is a fully synthetic hypoid gear oil for heavy duty axle drives. The additives are adapted for increased loads of axle drive oils. SRS Getriebefluid BMS Plus has excellent oxidation stability, extremely high load carrying capacity (EP behaviour) and high shear stability. Synthetic base fluids have inherently excellent low-temperature fluidity, low pour points with an optimal viscosity at high temperature (high VI).

## Application

SRS Getriebefluid BMS Plus facilitates product rationalization because it can be used as API GL-5 first fill and service top-up lubricant in all drive axles of mixed vehicle fleets. SRS Getriebefluid BMS Plus isas a “limited slip oil” namely approved by BMW for all limited-slip differentials. Due to its excellent antiwear properties and noise reduction in limited slip differentials the use in off-road vehicles (SUV) is recommended.

## Performance / Specifications

SAE Grade 75W-140
API GL 5/LS

## Approvals / Recommendations

MB-Sheet 235.61
BMW
ZF TE-ML 05D, 12D, 16G, 21D

| Typical data | | Test method | SRS Getriebefluid BMS plus |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-140 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,857 |
| Viscosity at – 40 ° | mPa s | DIN 51 398 | 120,000 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 179 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 24,7 |
| Viscosity index (VI) | | DIN ISO 2909 | 170 |
| Flash point COC | °C | DIN ISO 2592 | 228 |
| Pour point | °C | DIN ISO 3016 | - 54 |

SRS Getriebefluids BMS plus is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid AFS

Fully Synthetic Special Hypoid Gear Oil

July 2012

## Properties

SRS Getriebefluid AFS is a fully synthetic fuel-economy gear oil especially for heavily loaded axle drives and manual transmissions. Synthetic base oils and tailor made additives surpass requirements of today's practice. SRS Getriebefluid AFS provides exceptional protection against mechanical and thermal loads even at extended oil drain intervals.

## Application

SRS Getriebefluid AFS is a high performance gear oil suitable for commercial vehicle rear axles as well as final drives, manual transmissions and steering gears. Extreme oil drain intervals (up to 500,000 km) reduce maintenance costs and increase the economy.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 75W-90 |
| API | GL-5 |
| MIL | PRF-2105F |

## Approvals / Recommendations

MB-Approval 235.8
MAN 342 Type S1
Scania STO 1:0
ZF TE-ML, 05B, 12B, 16F, 17B
Volvo 97312

Oil change intervals according to manufacturer's instructions up to 500.000 km.

| Typical data | | Test method | SRS Getriebefluid AFS |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 75W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,867 |
| Viscosity at –40°C | mm²/s | DIN 51 562 | 115.000 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 115 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 16,8 |
| Viscosity Index (VI) | | DIN ISO 2909 | 160 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 54 |
| FZG-Test A/8,3/90 | Fail stage | DIN ISO 14635 | > 12 |

SRS Getriebefluid AFS is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Wiolin RSG 80

High Performance Transmission oil

November 2011

## Properties

SRS Wiolin RSG 80 is a high performance transmission oil for gear boxes for extended oil drain intervals. It is blended from a tailored combination of base oils and selected additives. Their viscosities are chosen to ensure both no channelling at low temperatures and a high lubricant film at high temperatures.

## Application

SRS Wiolin RSG 80 is a EP multi-purpose gear oil which can be used for all gear boxes (with and without synchromesh), transfer gear boxes, various steering gears and normal duty drive axles – particularly passenger car transaxle systems. SRS Wiolin RSG 80 is also used in wheel set gearboxes of Deutsche Bahn.

## Performance / Specifications

SAE Grade 80W
API GL-4

## Approvals / Recommendations

MAN spec. 341 Type E2
MAN spec. 341 Type Z2
ZF TE-ML 02B, 17A
MB-S 235.5

| Typical data | | Test method | SRS Wiolin RSG 80 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 80W |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,884 |
| Viscosity at –26°C | mm²/s | DIN 51 398 | 70.000 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 71,7 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 9,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 100 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 27 |

SRS Wiolin RSG 80 is a product of the H&R ChemPharm Gmb

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# SRS Wiolin RSH

## Hypoid Gear Oil LS

January 2013

### Properties

SRS Wiolin RSH is prescribed for highly loaded drive axles with hypoid meshed gears and limited slip differentials (selflocking). SRS Wiolin RSH contains specially adapted additives to limit slip (Limited Slip = LS) and to prevent noise development during cornering.

### Application

SRS Wiolin RSH satisfies all performance requirements set for hypoid gears with multi disk locking differentials. Combined gear boxes and axle drives can be lubricated as well as vehicles with transfer gear boxes, preferably used in agriculture. SRS Wiolin RSH can also be used in mixed fleets in all drive axles with API GL-5 requirements for product rationalization.

### Performance / Specifications

| | |
|---|---|
| API | GL-5 / LS |
| MIL | L-2105B/C/D |

### Approvals / Recommendations

ZF TE-ML 05C, 12C, 16E, 21C
Ford M2C 104 A Performance

| Typical data | | Test method | SRS Wiolin RSH |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 85W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,902 |
| Viscosity at –12°C | mm²/s | DIN 51 562 | 27,000 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 215 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 17,9 |
| Viscosity index (VI) | | DIN ISO 2909 | 90 |
| Flash point COC | °C | DIN ISO 2592 | 205 |
| Pour point | °C | DIN ISO 3016 | - 21 |
| FZG-Test A/8,3/90 (damaged load | SKS | DIN 51 354 | > 12 |

SRS Wiolin RSH is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid SML 75W-90

Hypoid Gear Oil LS

April 2014

## Properties

SRS Getriebefluid SML 75W-90 is based on fully synthetic base oils and carefully adapted additives. The viscosity adjustment SAE 75W-90 guarantees both good low temperatures fluidity and a strong lubricating film at high temperatures. A high fuel saving is achieved by the special low friction properties of SRS Getriebefluid SML 75W-90.

## Application

SRS Getriebefluid SML 75W-90 is a fully synthetic multi purpose gear oil for universal application in gearboxes, auxiliary drives and rear axles, including heavily loaded hypoid meshed drive axles. The requirements of API GL-4 and GL-5 are met with great reserve; oil changing intervals up to 500.000 km depending on the manufacturer `s specifications are possible.

SRS Getriebefluid SML 75W-90 can be used in commercial vehicles, agricultural machinery, construction machinery and passenger cars.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 75W-90 |
| API | GL-4 / GL-5 / MT-1 |
| SAE | J 2360 (MIL-PRF-2105 D/E) |

## Approvals / Recommendations

MB-Sheet 235.8
MAN 341 Type Z2/E3
MAN 432 Type M3
Scania STO 1:0
ZF TE-ML 02B, 05B, 07A, 08, 16F, 17B, 19C, 21B
Mack GO-J
Arvin Meritor 076-N
Eaton Transmissions (Europe)
DAF
Iveco
Renault

| Typical data | | Test method | SRS Getriebefluid SML |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0.869 |
| Viscosity at –26°C | mPas | DIN 51 398 | 77,000 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 107 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 15.7 |
| Viscosity index (VI) | | DIN ISO 2909 | 157 |
| Flash point COC | °C | DIN ISO 2592 | 200 |
| Pour point | °C | DIN ISO 3016 | < - 51 |

SRS Getriebefluid SML 75W-90 is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid SML 80W-90

High Performance Multi-Function Gear Oil

September 2012

## Properties

SRS Getriebefluid SML 80W-90 is blended with selected mineral oils and carefully adapted additives. The viscosity adjustment SAE 80W-90 guarantees both good low temperatures fluidity and a strong lubricating film at high temperatures.

## Application

SRS Getriebefluid SML 80W-90 is a high performance multi purpose gear oil for universal application in commercial vehicle gearboxes, auxiliary drives and rear axles, including heavily loaded hypoid meshed drive axles.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 80W-90 |
| API | GL-4 and GL-5 |
| API | MT-1 |
| SAE | J 2360 (MIL-PRF-2105 D/E) |

## Approvals / Recommendations

MAN 341 Type Z2/E2
MAN 342 Type M2
MB-Approval 235.0
Scania STO 1:0
ZF TE-ML 02B, 05A, 12L, 12M, 16B, 17B, 19B, 21A
Mack GO-J
Arvin Meritor Transmission 076-A and 076-D
DAF
Iveco
Renault

| Typical data | | Test method | SRS Getriebefluid SML |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 80W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,898 |
| Viscosity at –26°C | mPa s | DIN 51 398 | 130.000 |
| Viscosity at 40°C | mms/s | DIN 51 562 | 139 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 14,1 |
| Viscosity index (VI) | | DIN ISO 2909 | 98 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | - 27 |
| FZG-Test A/8,3/90 (damaged load | | DIN 51 354 | > 12 |

SRS Getriebefluid SML 80W-90 is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid MTS

Fully Synthetic Manual Transmission Oil

June 2012

## Properties

SRS Getriebefluid MTS is a fully synthetic fuel economy gear oil especially for heavily loaded manual transmissions. Synthetic base oils and tailor made innovative additives are used to satisfy the requirements of today's practice. SRS Getriebefluid MTS provides exceptional protection against mechanical and thermal loads even at extended oil drain intervals.

## Application

SRS Getriebefluid MTS is a high performance gear oil suitable for synchronized manual transmissions (with intarder / retarder) of commercial vehicles. The shift comfort is clearly increased. Extremely long oil drain intervals reduce maintenance costs and increase economy.

SRS Getriebefluid MTS can be used as service oil for manual transmissions in commercial vehicles and busses, equipped with ZF Ecomid or ZF Ecosplit with or without Intarder. Oil change intervals according to manufacturer's instructions up to 500,000 km.

## Performance / Specifications

SAE Grade 75W-80
API GL-4

## Approvals / Recommendations

MB-Sheet 235.29
MAN 341 Type E4
MAN 341 Type VR
DAF (Eaton transmissions)
Eaton PS - 164
Voith Retarder Type C
Volvo Transmission Oil 97307

| Typical data | | Test method | SRS Getriebefluid MTS |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-80 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,856 |
| Viscosity at –40°C | mm²/s | DIN 51 562 | 31.700 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 65,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 10,5 |
| Viscosity Index (VI) | | DIN ISO 2909 | 147 |
| Flash point COC | °C | DIN ISO 2592 | 235 |
| Pour point | °C | DIN ISO 3016 | - 55 |

SRS Getriebefluid MTS is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid HGS

Hypoid Gear Oil

February 2015

## Properties

SRS Getriebefluid HGS 75W-90 is a hypoid gear oil especially for heavily loaded axle drives. Selected base oils using synthetic technology and innovative additives are adapted to fulfil the increased load conditions of modern gear oils. SRS Getriebefluid HGS 75W-90 provides exceptional oxidation stability, particularly high load capacity, optimal viscositytemperature behaviour with good low temperature fluidity and high shear stability.

## Application

SRS Getriebefluid HGS 75W-90 are intended for very high loaded hypoid meshed axles, bevel and spur gears, steering gears and not synchronized gear boxes in vehicles and machines.

## Performance / Specifications

SAE Grade 75W-90
API GL-5

## Approvals / Recommendations

MAN 342 type M1/M2
ZF TE-ML 05B, 16B, 17B, 21A

| Typical data | | Test method | SRS Getriebeflluid HGS 75W-90 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,879 |
| Viscosity at –40°C | mPas | DIN 51 398 | 92.000 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 75,8 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 13,9 |
| Viscosity Index (VI) | | DIN ISO 2909 | 190 |
| Flash point COC | °C | DIN ISO 2592 | 210 |
| Pour point | °C | DIN ISO 3016 | - 48 |

SRS Getriebefluid HGS 75W-90 is a product of the H&R ChemPharm GmbH

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# SRS Getriebefluid MGS plus 75W-90

Multipurpose Gear Oil

August 2015

## Properties

SRS Getriebefluid MGS Plus 75W-90 is a transmission oil for heavily loaded manual transmissions. Selected base oils using synthetic technology and innovative additives are balanced for the specific requirements of manual transmissions.

SRS Getriebefluid MGS Plus 75W-90 provides excellent oxidation stability particularly high load capacity, optimal viscosity-temperature behavior with very good low temperature fluidity and high shear stability. Excellent cold start behavior ensures optimum lubrication safety during the cold start phase. Extreme demands can be safely controlled under all temperatures and conditions.

## Application

SRS Getriebefluid MGS 75W-90 is intended for high loaded manual transmissions (with and without synchronizing) transfer box gears and steering gears in vehicles and engines. It can be used as initial and service fills of manual transmissions and automatic transmissions in commercial vehicles according to ZF TE-ML 02B. In addition, the SRS Getriebefluid MGS plus 75W-90 can be used in transmissions and axles for lift trucks, where gear oils according to ZF TE-ML 17A are required.

## Performance / Specifications

SAE Grade 75W-90
API GL-4

## Approvals / Recommendations

MAN 341 Z2/E2
ZF TE-ML 02B, 17A

| Typical data | | Test method | SRS Getriebeflluid MGS plus 75W-90 |
|---|---|---|---|
| SAE Grade | | SAE J 306 | 75W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,877 |
| Viscosity at –40°C | mPas | DIN 51 398 | 97.300 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 78,7 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 14,6 |
| Viscosity Index (VI) | | DIN ISO 2909 | 195 |
| Flash point COC | °C | DIN ISO 2592 | 206 |
| Pour point | °C | DIN ISO 3016 | - 42 |

SRS Getriebefluid MGS plus 75W-90 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin 410, 430 and 450

Power Transmission Oils

October 2015

## Properties

SRS Wiolin 410, 430 and 450 are special power transmission oils for agricultural equipments and construction engines.

SRS Wiolin 410, 430 and 450 fulfil the increased requirements of Caterpillar TO-4 specification and are suitable for use in transmissions, final drives, hydraulic systems, wet brakes and clutches requiring Caterpillar TO-4.

## Application

SRS Wiolin 410, 430 and 450 guarantee highest wear protection in different transmissions as lateral drives and differentials, optimise the friction coefficient in power shift gear boxes, wet brakes and clutches and maximize the lifetime of engines and equipment.

## Performance / Specifications

SAE Grade 10W, 30 and 50
API CF, GL-4

## Approvals / Recommendations

Caterpillar TO-4
Caterpillar TO-2
ZF TE-ML 03C, 07F
Allison C-4
Komatsu KES 07.868.1
Sperry Vickers / Eaton M2950S
Sperra Vickers / Eaton I-280-S

| Typical data | | Test method | SRS Wiolin | | |
|---|---|---|---|---|---|
| | | | 410 | 430 | 450 |
| SAE Grade | | SAE J 300 | 10W | 30 | 50 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,887 | 0,892 | 0,897 |
| Dyn. Viscosity at – 35 °C | mPa s | DIN 51 398 | 79,400 | - | - |
| Dyn. Viscosity at – 26 °C | mPa s | DIN 51 398 | - | 126.000 | - |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 36,8 | 97,7 | 220 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 6,26 | 10,8 | 18,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 119 | 94 | 92 |
| Flash point COC | °C | DIN ISO 2592 | 228 | 247 | 282 |
| Pour point | °C | DIN ISO 3016 | - 33 | - 30 | - 24 |

SRS Wiolin 410, 430 and 450 are products of the H&R ChemPharm GmbH

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# SRS Wiolin HL 5

## Gear Oils for Drive Axles

February 2015

## Properties

SRS Wiolin HL 5 gear oils are blends of selected base oils with load carrying additives and oxidation inhibitors. Multigrade characteristics of Wiolin HL 5 ensure good low temperature fluidity and high wear protection at high temperature.

## Application

SRS Wiolin HL 5 gear oils are suitable for highly loaded hypoid drive axles, as well as for bevel and spur gears, steering gears and for not synchronized gearboxes of motor vehicles and working machines without synchromesh, insofar as gear oils in accordance with API GL-5 are prescribed.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 80W-90 and 85W-90 |
| API | GL-5 |
| MIL | PRF-2105 D |

## Approvals / Recommendations

MAN 342 type M1/M2
ZF TE-ML 05A, 16B, 16C, 17B, 19B, 21A

| Typical data | | Test method | SRS Wiolin HL 5 | |
|---|---|---|---|---|
| | | | SAE 80W-90 | SAE 85W-90 |
| SAE Grade | | SAE J 306 | 80W-90 | 85W-90 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,892 | 0,898 |
| Dyn. Viscosity at – 26 °C | mPa s | DIN 51 398 | 14.000 | - |
| Dyn. Viscosity at – 12 °C | mPa s | DIN 51 398 | - | 21.000 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 140 | 198 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 14,1 | 17,6 |
| Viscosity index (VI) | | DIN ISO 2909 | 98 | 96 |
| Flash point COC | °C | DIN ISO 2592 | 230 | 230 |
| Pour point | °C | DIN ISO 3016 | - 30 | - 21 |
| FZG-Test A/8,3/90 | SKS | DIN ISO 14 635 | > 12 | > 12 |

SRS Wiolin HL 5 gear oils are products of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Getriebefluid ZFC

Transmission and Axle Drive Oil

July 2012

## Properties

SRS Getriebefluid ZFC is a high performance power transmission oil especially for agricultural machinery and equipment as well as for construction engines. Selected molecular converted mineral base oils are blended carefully with adapted additives to control the mechanical and thermal loads even at long oil drain intervals. It fulfils the strict requirement of ZF TE-ML 06H and is namely recommended by ZF as initial fill and service oil for tractor engines of the series ECCOM 3.5 and S-Matic without installed rear axle and without front wheel drive. Comprehensive bench and field tests were conducted.

## Approvals / Recommendations

SAE Grade 10W-30
ZF TE-ML 03C, 06H, 06M
CLAAS Eccom 3.5 (CSE)
Komatsu KES 07.868.1
Caterpillar TO-4
Allison C-4

| Typical data | | Test method | SRS Getriebefluid ZFC |
|---|---|---|---|
| Density at 15°C | g/cm³ | SAE J 300 | 0,873 |
| Din. Viscosity at 25 °C (ccs) | mPa s | DIN 51 377 | 6.800 |
| Din. Viscosity at – 10°C | mPa s | DIN 51 398 | 1400 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 68 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 11,6 |
| Viscosity index (VI) | | DIN ISO 2909 | 164 |
| Pour point | °C | DIN ISO 3016 | - 45 |
| FZG-Test A/8, 3/90 | °C load state fail | DIN 51 354 | > 12 |

SRS Getriebefluid ZFC is a product of the H&R ChemPharm GmbH

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# SRS Wiolin ATF 2543 A

Automatic Transmission Fluid

January 2014

## Properties

SRS Wiolin ATF 2543 A corresponds to the former General Motors Specification ATF Type A Suffix A (TASA).

## Application

SRS Wiolin ATF 2543 A is used in automatic and manual transmissions, power shift, torque converters and power assisted steering gears. For all these applications different coefficients of friction are prescribed, wherefore different ATF are used. The OEM manuals have to be followed.
SRS Wiolin ATF 2543 A possesses all typical characteristics of ATF: low viscosity, excellent low temperature viscosity, high viscosity index, EP-performance, high oxidation stability, and special properties of friction. It prevents scratching at low ambient temperatures.

## Approvals / Recommendations

General Motors ATF Type A Suffix A (TASA)
MB-Approval 236.2
MAN 339 Type A
Renk Doromat
Alllison C-4

| Typical data | | Test method | SRS Wiolin ATF 2543 A |
|---|---|---|---|
| Colour | | | red |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,866 |
| Viscosity at – 40 °C (CCS) | mPa s | DIN 51 398 | 42.600 |
| Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 34,1 |
| Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 7,2 |
| Viscosity index (VI) | | DIN ISO 2909 | 182 |
| Flash point COC | °C | DIN ISO 2592 | 210 |
| Pour point | °C | DIN ISO 3016 | - 45 |

SRS Wiolin ATF 2543 is a product of the H&R ChemPharm GmbH

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# SRS Wiolin ATF D

## Automatic Transmission Oil

August 2012

## Properties

SRS Wiolin ATF D is intended for automatic gears and is used also as hydraulic fluid in different applications. High shifting comfort is given by tailor made special additives for friction linings of gears.

SRS Wiolin ATF D corresponds to the former GM specification Dexron II D and is specified by all major car manufacturers who install automatic transmissions designed to operate with Dexron II D fluids. It can also be used without problems in automatic transmissions requiring MB-Approval 236.5, 236.6 and 236.7.

## Application

Automatic transmissions, power shift transmissions and torque converters need different ATF due to different requirements for the coefficient of friction. The OEM manuals have to be followed.

## Performance / Specifications

General Motors Dexron II D
Ford Mercon

## Approvals / Recommendations

MB-Approval 236.1
MAN 339 Type V1
MAN 339 Type Z1
Voith H55.633540 (G 607)

ZF TE-ML 04D, 14A
Caterpillar TO-2
Allison C-4

| Typical data | | Test method | SRS Wiolin ATF D |
|---|---|---|---|
| Colour | | | red |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,871 |
| Dyn. Viscosity at – 40 °C (CCS) | mPa s | DIN 51 398 | 48.000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 36,1 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 7,20 |
| Viscosity index (VI) | | DIN ISO 2909 | 168 |
| Flash point COC | °C | DIN ISO 2592 | 210 |
| Pour point | °C | DIN ISO 3016 | - 48 |

SRS Wiolin ATF oils are products of the H&R ChemPharm GmbH

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# SRS Wiolin ATF III

Automatic Transmission Oil

August 2012

## Properties

SRS Wiolin ATF III is an automatic transmission fluid according to the current General Motors specification Dexron III H. It is recommended for automatic and manual transmissions, auxiliary transmissions, clutch-, steering- and hydraulic systems. SRS Wiolin ATF III can be also used in automatic gearboxes which require the MB-specifications MB 236.5, MB 236.6 or MB 236.7.

## Approvals / Recommendations

MB-Approval 236.1
General Motors ATF Dexron III H
Ford Mercon
MAN Norm 339 Type Z1
MAN Norm 339 Type V1
ZF TE-ML 04D, 14A
Voith H55.633540 (G 607)
Volvo 97341
Caterpillar TO-2
Allison C-4
Allison TES 389

| Typical data | | Test method | SRS Wiolin ATF III |
|---|---|---|---|
| Colour | | | red |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,860 |
| Viscosity at –40°C | mm²/s | DIN 51 398 | 18.500 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 35,7 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 7,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 180 |
| Flash point COC | °C | DIN ISO 2592 | 215 |
| Pour point | °C | DIN ISO 3016 | < - 50 |

SRS Wiolin ATF III is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Wiolin ATF Dexron S

Fully Synthetic Automatic Transmission Oil

November 2011

## Properties

SRS Wiolin ATF Dexron S is a fully synthetic automatic transmission fluid.
It is formulated with high quality synthetic base oils and tailor made additives for the different gear components. It corresponds to the specification GM Dexron II E.

## Application

Due to the different requirements for the coefficient of friction various ATF types are specified for servicing the automatic transmissions, torque converters and power shift gear boxes fitted in motor vehicles. The manufacturer's instructions must therefore be followed.

## Performance / Specifications

GM Dexron II E
Ford Mercon

## Approvals / Recommendations

MB-Approval 236.8
MAN 339 type Z2
MAN 339 type V2
Voith H55.633640 (G 1363)
ZF TE-ML 04D, 09X, 14B, 16L
Allison C-4

| Typical data | | Test method | SRS Wiolin ATF Dexron S |
|---|---|---|---|
| Colour | | | red |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,835 |
| Viscosity at – 40 °C (CCS) | mPa s | DIN 51 398 | 40,000 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 32 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 7,5 |
| Viscosity index (VI) | | DIN ISO 2909 | 214 |
| Flash point COC | °C | DIN ISO 2592 | 200 |
| Pour point | °C | DIN ISO 3016 | - 51 |

SRS Wiolin ATF Dexron S is a product of the H&R ChemPharm GmbH

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# SRS Hydrofluid N

## Hydraulic Transmission Fluid (UTTO)

January 2013

## Properties

SRS Hydrofluid N is a Universal Tractor Transmission Oil (UTTO) for farm tractors and construction vehicles with common oil circuits for gear boxes / axle drives and hydraulic systems. With SRS Hydrofluid N hydraulic systems instantly respond at low ambient temperatures and power transmission systems are lubricated for sure even at extreme loads. The coefficient of friction has been adapted to the special requirements of wet brakes, particularly with asbestos free brake pads and power shift clutches for auxiliary drives.

## Application

SRS Hydrofluid N satisfies the requirements of major tractor manufacturers (CLAAS / Renault, Deutz-Fahr, Fendt, Landini, Same, etc). In applications with the requirement NH 410 B the product can be used without any problem. The use of this product is also recommended if the specifications listed below are prescribed or recommended. SRS Hydrofluid N features excellent cold flow. Its excellent viscosity index makes it extremely suitable for HLP hydraulic oil applications where ISO VG 46, 68 or 100 are required. When used for transmissions SRS Hydrofluid N exceeds the requirements according to API GL-4 and can be used in manual transmissions and hypoid gear assemblies of agricultural equipment with the specification API GL-5.

## Performance / Specifications

| | |
|---|---|
| UTTO | |
| SAE Grade | 80W-85 |
| SAE Grade | 10W-30 |
| ISO VG | 46 to 100 |
| API | GL-4 |
| API | GL-5 in agricultural equipment |

## Approvals / Recommendations

Case MS 1206, 1207, 1209, 1210, 1230, 1317
Case New Holland CNHA MAT 3505, 3506, 3509, 3510, 3525, 3526
John Deere JDM J 20 C, J 20 D
SAME – Deutz – Fahr

## Approvals / Recommendations

CLAAS / Renault
Massey Ferguson MF CMS M 1135, 1141, 1143, 1145
New Holland FNHA 2-C-200.00, 201.00
Ford M2C 86 B/C, 134-D
Caterpillar TO-2
AGCO Q-186 (White farm)
AGCO Powerfluid 821 XL
Allison C-4
ZF TE-ML 03E, 05F, 17E, 21F
Fendt (non Vario)
Komatsu (Wet Brake Axle)
Kubota UDT
Volvo WB 101

| Typical data | | Test method | SRS Hydrofluid N |
|---|---|---|---|
| SAE Class | | SAE J 306 / J 300 | 80W-85 / 10W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,880 |
| Viscosity at –20°C (CCS) | mPa s | DIN 51 377 | 3200 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 68 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 11,4 |
| Viscosity index (VI) | | DIN ISO 2909 | 161 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 36 |
| FZG-Test A/8,3/90 (damaged load | SKS | DIN ISO 14 635 | > 12 |

SRS Hydrofluid, Hydrofluid N is a product of the H&R ChemPharm GmbH

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# SRS Hydrofluid NB

Hydraulic Transmission Fluid (UTTO)

February 2015

## Properties

SRS Hydrofluid NB is a Universal Tractor Transmission Oil (UTTO) for farm tractors and construction vehicles with common oil circuits for gear boxes/axle drives and hydraulic systems.

SRS Hydrofluid NB instantly responds to hydraulic systems at low ambient temperatures and guarantees the lubrication of power transmission systems even at extreme loads. The fluid exceeds the strengthened requirements of constructors of wet brakes, regarding the reduction and prevention of squawks.

## Application

SRS Hydrofluid NB satisfies the requirements of major tractor manufacturers (Claas, Deutz, Fendt, Fiat, Landini, Renault, Same, etc). The application is also recommended if the specifications given below are prescribed or recommended.

SRS Hydrofluid NB features excellent cold flowing characteristics and its high viscosity index makes it extremely suitable for HLP hydraulic oil applications where ISO VG 46, 68 or 100 is required. SRS Hydrofluid NB exceeds the requirements according to API GL-4.

## Performance / Specifications

| | |
|---|---|
| UTTO | |
| SAE Grade | 80W-85 |
| SAE | 10W-30 |
| API | GL-4 |
| ISO VG | 46 to 100 |

## Approvals / Recommendations

Case MS 1206, 1207, 1209, 1210, 1230, 1317
Case New Holland CNHA MAT 3505, 3506, 3509, 3150, 3525, 3526
John Deere JDM J 20 C, J 20 D
SAME- Deutz – Fahr
Fendt (non Vario)
Caterpillar TO-2
Massey Ferguson MF CMS M 1135, 114
Ford M2C 86 B/C
New Holland FNHA 2-C-200.00, 201.00
CLAAS / Renault
Allison C-4

| Typical data | | Test method | SRS Hydrofluid NB |
|---|---|---|---|
| SAE Grade (gear) | | SAE J 306 | 80W-85 |
| SAE Grade (engine) | | SAE J 300 | 10W-30 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,879 |
| Viscosity at –20°C (CCS) | mPa s | ASTM D 5293 | 3,850 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 77 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 11,5 |
| Viscosity index (VI) | | DIN ISO 2909 | 141 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 36 |
| FZG-Test A/8,3/90 | Fail stage | DIN ISO 14 635 | > 12 |

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# Lubricating Oil, Gear, SAE 85W-90

Lubricating Oils (Corrosion Preventive)

February 1998

## Properties

Schmieröl, Getriebe-, (Korrosionsschutz), SAE 85W-90 (O-226 K) is a hypoid gear oil, with special corrosion protection for the preservation of gears. It can stay in the machinery when operation is restarted.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 85W-90 |
| API | GL-5 |
| TK BA | 16-9150-027 |

| Typical data | | Test method | Lubricating Oil, Gear, SAE 85W-90 (corrosion preventive) |
|---|---|---|---|
| Colour | | DIN ISO 2049 | 3,0 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0.9000 |
| Viscosity at –12°C | mm²/s | DIN 51 562 | 17.600 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 190 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 17.3 |
| Flash point COC | °C | DIN ISO 2592 | 214 |
| Pour point | °C | DIN ISO 3016 | -24 |
| Testing of corrosion protection: | | | |
| Hydrobromic acid immersion | result | DIN 51 357 | 6 x 0 |
| Seawater immersion test | result | DIN 51 358 | 6 x 0 |
| Humidity cabinet test | result | DIN 51 359 | 6 x 0 |
| FZG-test A/8.3/90 (damaged load | | DIN 51 354 | > 12 |

SRS Lubricating Oil, Gear (Corrosion Preventive) is a product of the H&R ChemPharm GmbH

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# SRS Industrial Oils

# Industrial Oils

Juni 2015

| Industrial gear oils | DIN 51 502 | Brand | ISO-VG |
|---|---|---|---|
| Industrial transmission oils with corrosion and oxidation protection | CL | SRS Wiolan CN | 5 to 680 |
| Transmission/circulating oils, according to Morgoil specification | CL | SRS Wiolan CM | 150 to 680 |
| Heavy duty EP industry transmission oils | CLP | SRS Ersolan | 68 to 460 |
| High performance synthetic gear oils for use in thermal high loaded industrial gear boxes | CLP | SRS Ersolan synth GF | 68 to 460 |
| EP industrial transmission oils blended with MoS2 | CLPF | SRS Wiolan MO | 46, 100 and 220 to 1200 |
| Power transmission fluid for hydrodynamic transmissions e.g. in locomotives and railway applications | CLP/HLP | SRS Wiolan HF 32 DB | 32 |
| Fully-synthetic hydrodynamic transmission oil for hydrodynamic power transmissions | CLP/HLP | SRS Wiolan HF 32 synth | 32 |

| Hydraulic fluids | DIN 51 502 | Brand | ISO-VG |
|---|---|---|---|
| Zinkc-free Hydraulic oils with good corrosion and oxidation protection | HL | SRS Wiolan HN | 5 to 100 |
| EP-hydraulic oils with wear protection and high ageing resistance | HLP | SRS Wiolan HS | 5 to 150 |
| Zinc-free heavy duty EP hydraulic oils with good demulsifying performance | HLP | SRS Wiolan HX | 22 to 100 |
| High-VI-EP hydraulic oils with good viscosity temperature performance (multi-grade characteristics) | HVLP | SRS Wiolan HV | 15 to 68 |
| Zinc-free EP-hydraulic oils with deterging and dispersing characteristics | HLPD | SRS Wiolan HG | 10 to 100 |
| High-VI-EP hydraulic oil with good viscosity-temperature performance and deterging, dispersing characteristics | HVLPD | SRS Wiolan HVG | 46 |
| Hydraulic fluid approved namely by German Army | HVLP | SRS Wiolan H-540 | |
| Environmentally friendly hydraulic fluid, biologically degradable, fully synthetic | HEES | SRS Wiolgan HE 46 | 46 |

| Turbine, circulating and compressor oils | DIN 51 502 | Brand | ISO-VG |
|---|---|---|---|
| Turbine oils for gas- and steam-turbines with excellent ageing-resistance and good corrosion protection | L-TD/L-TG | SRS Wiolan GT | 32, 46 and 68 |
| Cycle oils, paraffinic solvates, good air- and water separation ability. Also suitable for vacuum pumps and as hardening oil | C/VB/VC | SRS Wiolan CA | 46 to 460 |
| Compressor oils, especially for screw compressors | VCL | SRS Wiolan WT | 32 to 68 |

# Industrial Oils

Juni 2015

| Turbine, circulating and compressor oils | DIN 51 502 | Brand | ISO-VG |
|---|---|---|---|
| Compressor oils with very low residue accumulation for high compression end-temperatures | VDL | SRS Wiolan CD | 22 to 320 |
| Especially ageing resistant refrigeration machine oils of high purity grade | KAA/KC | SRS Wiolan KF | 22 to 68 |
| High-performance ethylene compressor oil for lubrication of ethylene hyper compressors | | SRS Wiolan CE | 220 |

| Metal Working Oils | DIN 51 502 | Brand | ISO-VG |
|---|---|---|---|
| All purpose oils for light and medium heavy working processes | S/HLP/CLP | SRS Wintal UG | 22 to 46 |

| Slide way, transformer, heat transfer and moulding oils | DIN 51 502 | Brand | ISO-VG |
|---|---|---|---|
| Slideway oils with good sliding characteristics and low adhesion loss value | CGLP | SRS Wiolan TH | 32 to 100 and 220 |
| Heat-transfer oils with excellent thermal stability and low viscosity with high seething | Q | SRS Mihatherm WU | 10 to 46 |
| Transformer- respectively insulation oil, oxidation stable | J | SRS Wiolan IF 10 | 10 |
| Moulding release oils for different materials and construction materials | FS | SRS Mihagran FO 2320 3 KOR | 10 |

| Specialities, others | DIN 51 502 | Brand | ISO-VG |
|---|---|---|---|
| Testing oil for calibrating Diesel injection pumps | | SRS Calibration fluid | |
| Calibration fluid for diesel injectors | | SRS Calibration fluid CV | |
| Chainsaw oil | | SRS Wiolit Sägekettenhaftöl | |
| Spray- and corrosion protection oil for different applications | R | SRS Wiolan BF 10 | 10 |

# SRS Wiolan CN

## Industrial Gear Oils

October 2011

## Properties

SRS Wiolan CN series are highly solvent refined paraffinic neutral mineral oils, which respond very effective to selected antioxidants and corrosion inhibitors to surpass the requirements for circulating oils.

## Application

In practice, SRS Wiolan CN circulating oils are used wherever the application of CLP oils is not necessarily required, but where high thermal stresses can occur.

## Performance / Specifications

The requirements prescribed by DIN 51 517 Part 2 CL (ISO VG 32 – 680), DIN 51 524 Part 1 HL (ISO VG 10 – 150) and DIN 51 506 VB/VBL (ISO VG 22 – 460) are met and outperformed in many important data.

| Typical data | | Test method | SRS Wiolan CN | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 5 | 10 | 22 | 32 | 46 | 68 |
| Designation | | DIN 51 502 | CL 5 | CL 10 | CL 22 | CL 32 | CL 46 | CL 68 |
| Colour | | DIN ISO 9049 | 0,5 | 0,5 | 1,0 | 1,0 | 2,0 | 2,5 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,838 | 0,855 | 0,870 | 0,875 | 0,880 | 0,883 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 4,98 | 10,1 | 22,1 | 30,0 | 46,4 | 68,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 1,82 | 2,64 | 4,29 | 5,38 | 6,75 | 8,61 |
| Flash point COC | °C | DIN ISO 2592 | 125 | 165 | 190 | 200 | 215 | 225 |
| Pour point | °C | DIN ISO 3016 | - 33 | - 24 | - 21 | - 21 | - 21 | - 21 |
| Steet corrosion | Grade | DIN 51 585 | 0-B | 0-B | 0-B | 0-B | 0-B | 0-B |

| Typical data | | Test method | SRS Wiolan CN | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 100 | 150 | 220 | 320 | 460 | 680 |
| Designation | | DIN 51 502 | CL 100 | CL 150 | CL 220 | CL 320 | CL 460 | CL 680 |
| Colour | | DIN ISO 9049 | 2,0 | 2,5 | 3,0 | 3,0 | 3,5 | 4,0 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,883 | 0,888 | 0,890 | 0,896 | 0,901 | 0,901 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 99,5 | 153 | 219 | 321 | 459 | 667 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 10,8 | 14,4 | 17,9 | 23,0 | 29,3 | 37,3 |
| Flash point COC | °C | DIN ISO 2592 | 250 | 260 | 270 | 290 | 275 | 300 |
| Pour point | °C | DIN ISO 3016 | - 12 | - 12 | - 12 | - 12 | - 12 | - 12 |
| Steel corrosion | Grade | DIN 51 585 | 0-B | 0-B | 0-B | 0-B | 0-B | 0-B |

SRS Wiolan CN oils are products of the H&R ChemPharm GmbH

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# SRS Wiolan CM

Gear Oils

January 2012

## Properties

SRS Wiolan CM series are developed to meet the special requirements of the steel industry. Only highly solvent refined paraffinic neutral base oils are blended with well-balanced additives.

The outstanding exceptional properties of SRS Wiolan CM oils are:

- excellent demulsibility
- very high resistance to oxidation (oxidation stability)

## Application

SRS Wiolan CM oils are primarily used in steel rolling mills with Morgan bearings. Ingressed water is not emulsified and can be continuously removed from the system at suitable points.

## Performance / Specifications

The requirements for Morgoils, SEB 181 225 C and CL as well as DIN 51 517 Part 1 and 2, are met. Many of the data are outperformed by far.

## Approvals

VDEh-Approval SEB 181 225

| Typical data | | Test method | SRS Wiolan CM | | | | |
|---|---|---|---|---|---|---|---|
| | | | 150 | 220 | 320 | 460 | 680 |
| Designation | | DIN 51 502 | CL 150 | CL 220 | CL 320 | CL 460 | CL 680 |
| Colour | | DIN ISO 9049 | 2,5 | 3,0 | L 3,5 | 3,5 | 4,0 |
| Density at 15 C | g/cm³ | DIN 51 757 | 0,888 | 0,890 | 0,896 | 0,901 | 0,901 |
| Viscosity at 40 C | mm²/s | DIN 51 562 | 153 | 220 | 310 | 460 | 667 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 14,4 | 17,9 | 22,4 | 29,3 | 37,3 |
| Flash point COC | °C | DIN ISO 2592 | 260 | 270 | 270 | 275 | 300 |
| Pour point | °C | DIN ISO 3016 | -12 | -12 | -12 | -12 | -12 |
| Demulsibility at 82°C | min | ASTM D 1401 | 10 | 15 | 20 | 20 | 25 |

SRS Wiolan CM oils are products of the H&R ChemPharm GmbH

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# SRS Ersolan

## Industrial Gear Oils

March 2012

## Properties

SRS Ersolan are zinc-free, industrial gear oils blended exclusively from highly solvent refined paraffinic base oils from Salzbergen and Hamburg refineries. SRS Ersolan industrial gear oils ensure maximum wear protection, oxidation stability, protection against corrosion, good thermal stability, prevention of pitting, excellent demulsibility, compatibility with seals and non-ferrous metals, negligible foam tendency.

## Application

SRS Ersolan gear oils, available in different viscosity grades, are recommended for a wide variety of industrial gear drives. They have proven themselves in operation in numerous transmissions from many different manufacturers. SRS Ersolan industrial gear oils have shown their excellent performance characteristics in a particularly impressive manner in thermally-stressed gear drives and under difficult operating conditions in mining and steel industry.

## Performance / Specifications

The requirements for CLP gear oils as described in DIN 51 517 Part 3 and SEB 181 226 are met. Many of the requirements of these two standards are outperformed by far. SRS Ersolan is approved by VDEh. SRS Ersolan industrial gear oils meet the requirements of ISO 12925 part 1 CKC. Key Accounts have more stringent requirements than those defined by DIN and SEB. These demands like FE 8-test are also met.

## Approvals / Recommendations

VDEh-Approval SEB 181 226

| Typical data | | Test method | SRS Ersolan | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 68 | 100 | 150 | 220 | 320 | 460 | 680 |
| Designation | | DIN 51 502 | CLP68 | CLP100 | CLP150 | CLP220 | CLP320 | CLP460 | CLP680 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,879 | 0,883 | 0,887 | 0,892 | 0,896 | 0,898 | 0,901 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 69 | 102 | 154 | 223 | 321 | 449 | 686 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 8,5 | 11,2 | 14,3 | 18,8 | 23,7 | 29,2 | 39 |
| Flash point COC | °C | DIN ISO 2592 | 235 | 245 | 250 | 285 | 290 | 295 | 300 |
| Pour point | °C | DIN ISO 3016 | - 24 | - 21 | - 21 | - 21 | - 18 | - 15 | - 15 |
| FZG-Test A/16,6/140 | Fail stage | DIN ISO 14635 | > 12 | > 12 | > 12 | > 12 | > 12 | > 12 | > 12 |

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# SRS Ersolan synth GF

Synthetic Industrial Gear Oils

October 2014

## Properties

SRS Ersolan synth GF industrial gear oils are high performance synthetic gear oils.
Synthetic base oils (PAO) and exclusive tailored additives ensure the use in thermal high loaded industrial gear boxes with extended drain intervals and in wind turbine gear boxes.
SRS Ersolan synth GF gear oils ensure maximum wear protection, oxidation stability, protection against corrosion, good thermal stability, prevention of pitting, excellent demulsibility, compatibility with seals and non-ferrous metals.

## Application

SRS Ersolan synth GF gear oils, available in different viscosity grades, are recommended for a wide variety of industrial gear drives. They SRS Ersolan synth GF industrial gear oils have shown their excellent performance characteristics in a particularly impressive manner in thermally-stressed gear drives and under difficult operating conditions in mining and steel industry.

## Performance / Specifications

FZG pitting test > level 10.

SRS Ersolan synth GF industrial gear oils meet the requirements for CLP gear oils as described in DIN 51 517 Part 3. They meet the requirements of ISO 12925 Part 1 CKC – CKD and the Flender gear revision 13.

| Typical data | | Test method | SRS Ersolan | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 68 | 100 | 150 | 220 | 320 | 460 |
| Designation | | DIN 51 502 | CLP68 | CLP100 | CLP150 | CLP220 | CLP320 | CLP460 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,849 | 0,850 | 0,853 | 0,855 | 0,857 | 0,859 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 67,6 | 106 | 156 | 219 | 321 | 466 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 11,1 | 16,2 | 22,8 | 30,3 | 42,5 | 57,9 |
| Viscosity index (VI) | | DIN ISO 2909 | 157 | 165 | 173 | 180 | 189 | 194 |
| Flash point COC | °C | DIN ISO 2592 | 250 | 257 | 260 | 262 | 267 | 278 |
| Pour point | °C | DIN ISO 3016 | - 54 | - 51 | - 47 | - 45 | - 42 | - 39 |

SRS Ersolan synth GF oils are products of the H&R ChemPharm GmbH

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# SRS Wiolan MO

## Industrial Gear Oils

November 2011

## Properties

SRS Wiolan MO are gear oils blended with solid additives. They contain neutral EP additives and also extremely fine molybdenum disulfide (MoS2) in stable suspension. SRS Wiolan MO gear oils have good viscosity temperature behaviour and good low temperature fluidity. SRS Wiolan MO do not affect metals and seals.

## Application

EP additives and MoS2 retard and hinder pitting; the surfaces of the tooth flanks of the gears are smoothed. Rupture of the lubricating film is prevented, even at start-up or lubricant starvation, due to the high surface adhesion of the additives, which causes metal-metal separation of the contact asperities. SRS Wiolan MO gear oils are used as break-in and long term operation lubricants in heavily loaded industrial gears of every size. With particular success they are applied in cement and steel industry facilities and in mining operations.

## Performance / Specifications

SRS Wiolan MO gear oils are designated CLPF gear oils in accordance with DIN 51 502. The fail stage in FZG-test A/8.3/90 exceeds 12 for all viscosity grades.

| Typical data | | Test method | SRS Wiolan MO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 46 | 100 | 220 | 320 | 460 | 680 | 1200 |
| Designation | | DIN 51 502 | CLPF46 | CLPF100 | CLPF220 | CLPF320 | CLPF460 | CLPF680 | - |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,878 | 0,887 | 0,892 | 0,895 | 0,900 | 0,903 | 0,917 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 46 | 98 | 215 | 323 | 466 | 692 | 1240 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 6,9 | 10,9 | 19 | 23,8 | 30 | 38 | 59 |
| Flash point COC | °C | DIN ISO 2592 | 205 | 225 | 230 | 265 | 270 | 285 | 260 |
| Pour point | °C | DIN ISO 3016 | - 33 | - 27 | - 24 | - 12 | - 9 | - 6 | - 9 |
| FZG-Test A/8, 3/90 | Fail stage | DIN ISO 14635 | < 12 | < 12 | < 12 | < 12 | < 12 | < 12 | < 12 |

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# SRS Wiolan HF 32 DB

Hydrodynamic Transmission Oil

March 2012

## Properties

SRS Wiolan HF 32 DB was specifically developed for hydrodynamic power transmissions in high loaded hydrodynamic railway gearboxes. Due to optimal formulation of high refined base oils and specific additives, SRS Wiolan HF 32 DB shows superior anti-wear-characteristics, even more essential than standard hydraulic fluids. SRS Wiolan HF 32 DB is also characterized by good foaming characteristics, optimal air release properties, high oxidation stability, effective corrosion protection, enhanced compatibility with non-ferrous metals and a higher thermic-oxidative resistance.

## Application

SRS Wiolan HF 32 DB is a special power transmission fluid used for high loaded hydrodynamic transmissions, amongst others in locomotives and specific applications e. g. hydrodynamic clutches, torque converters, electronic regulated turbo transmissions and other industrial plants. SRS Wiolan HF 32 DB is recommended by well-known manufacturers of hydrodynamic transmissions.

## Performance / Specifications

CLP 32
HLP 32

## Approvals

German Railways
Voith Turbo
Voith Turbo 120.00059010, Index 1

| Typical data | | Test method | SRS Wiolan HF 32 DB |
|---|---|---|---|
| Designation | | DIN 51 502 | CLP / HLP 32 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,870 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 31,6 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 5,5 |
| Viscosity index (VI) | | DIN ISO 2909 | 109 |
| Flash point | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 3016 | - 42 |
| Air release property at 50 °C | min | DIN 51 381 | 3 |
| FZG-Test A/8,3/90 | Fail stage | DIN ISO 14 635 | > 12 |

SRS Wiolan HF 32 DB is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Wiolan HF 32 synth

Hydrodynamic Transmission Oil

March 2014

## Properties

SRS Wiolan HF 32 synth is a fully-synthetic hydrodynamic transmission oil for hydrodynamic power transmissions in high loaded hydrodynamic railway gearboxes with a high oxidation stability, optimal air release properties and effective corrosion protection. Specially selected additives improve the load carrying capacity and ensure an optimum wear protection.

SRS Wiolan HF 32 synth is particularly characterized by the low temperature properties down to - 40°C. The efficiency of transmission is significantly improved by the fully synthetic transmission oil.

## Application

SRS Wiolan HF 32 synth is a fully-synthetic hydrodynamic transmission oil with very high thermal and oxidative stability used for high loaded hydrodynamic transmissions, amongst others in locomotives and other rail-specific applications. SRS Wiolan HF 32 synth is particularly used for operating at extended oil change intervals (up to 20.000 h) and is officially approved for use in Voith turbo transmissions.

## Performance / Specifications

CLP 32
HLP 32

## Approvals

Voith Turbo 120.00059010, Index 3

| Typical data | | Test method | SRS Wiolan HF 32 synth |
|---|---|---|---|
| Designation | | DIN 51 502 | CLP / HLP 32 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,841 |
| Dyn. Viscosity at – 35 °C | mPas | DIN 51 398 | 3,950 |
| Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 29,8 |
| Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 5,67 |
| Viscosity index (VI) | | DIN ISO 2909 | 133 |
| Flash point | °C | DIN ISO 2592 | 245 |
| Pour point | °C | DIN ISO 3016 | < - 60 |
| Air release property at 50 °C | min | DIN 51 381 | 1 |
| FZG-Test A/8,3/90 | Fail stage | DIN ISO 14 635 | > 12 |

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# SRS Wiolan HN

HL - Hydraulic Fluids – zinc free

Januar 2014

## Properties

SRS Wiolan HN hydraulic fluids are blended with highly solvent refined paraffinic base oils offering excellent corrosion and oxidation protection. They withstand substantial thermal stresses and possess excellent air release properties and good low temperature fluidity.

## Application

SRS Wiolan HN hydraulic fluids have impressively demonstrated their suitability in applications where EP properties are not permitted due to the requirements for the coefficient of friction. In addition, the use of SRS HN hydraulic fluids is recommended for all small manual hydraulic systems with only moderate wear protection demands like clamping, straightening, bending tools, lifting cylinders, hydraulic vehicle jacks etc.

## Performance / Specifications

The requirements for HL hydraulic fluids prescribed by DIN 51 524, Part 1 and ISO 11158 are met and even outperformed in many quality characteristics.

## Approvals

Hydraulic oil HL according to DIN 51524 Part 1
Hydraulic oil HL acoording to ISO 11158

| Typical data | | Test method | SRS Wiolan HN | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 5 | 10 | 22 | 32 | 46 | 68 | 100 |
| Designation | | DIN 51 502<br>DIN EN ISO 6743/4 | - | HL 10 | HL 22 | HL 32 | HL 46 | HL 68 | HL 100 |
| Density at 15°C | g/cm³ | DIN 51 575 | 0,838 | 0,854 | 0,870 | 0,875 | 0,880 | 0,883 | 0,883 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 5 | 10 | 22 | 32 | 46 | 68 | 100 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 1,8 | 2,7 | 4,3 | 5,4 | 6,8 | 8,6 | 10,8 |
| Flash point COC | °C | DIN ISO 2592 | 130 | 222 | 185 | 200 | 235 | 225 | 250 |
| Pour point | °C | DIN ISO 3016 | -30 | -30 | -21 | -21 | -18 | -18 | -12 |

SRS Wiolan HN oils are products of the H&R ChemPharm GmbH

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# SRS Wiolan HS

HLP Hydraulic Fluids

January 2014

## Properties

SRS Wiolan HS hydraulic fluids are based on highly solvent refined paraffinic neutral mineral oils from Salzbergen refinery blended with high performance additives. The additives are specially selected to optimize the performance with these base oils.

SRS Wiolan HS offers the optimum in wear and corrosion protection even under maximum mechanical loads. The oxidation inhibitors provide the greatest possible oxidation stability and enable longer oil retention periods and thus lower maintenance costs. Easy filterability of SRS Wiolan HS hydraulic fluids is required condition for current hydraulic units, filter clogging is prevented.

## Application

SRS Wiolan HS hydraulic fluids can be used universally in all hydraulic systems. Verification of suitability in numerous facilities and hydraulic systems is demonstrated.
SRS Wiolan HS is recommended for thermally stressed high pressure pumps of all design, for sensitive governor systems, for the supply of small transmission units and for application in circulating systems.

## Performance / Specifications

The requirements for HLP hydraulic fluids prescribed by DIN 51 524, Part 2 are met and even outperformed in many quality characteristics.

## Approvals

Hydraulic oil HLP acc. DIN 51524 Part 2.
Hydraulic oil HM acc. ISO 11158
Arburg[1]

[1] for SRS Wiolan HS 46

| Typical data | | Test method | SRS Wiolan HS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5 | 10 | 22 | 32 | 46 | 68 | 100 | 150 |
| Designation | | DIN 51 502 | - | HLP 10 | HLP 22 | HLP 32 | HLP 46 | HLP 68 | HLP 100 | HLP 150 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,846 | 0,855 | 0,870 | 0,875 | 0,878 | 0,882 | 0,885 | 0,891 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 4,69 | 9,6 | 21,7 | 32,7 | 46 | 68 | 101 | 149 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 1,7 | 1,9 | 4,29 | 5,4 | 6,7 | 8,7 | 11,1 | 14,3 |
| Flash point COC | °C | DIN ISO 2592 | 120 | 180 | 215 | 220 | 240 | 250 | 255 | 270 |
| Pour point | °C | DIN ISO 3016 | - 39 | - 27 | - 27 | - 24 | - 24 | - 24 | - 21 | - 21 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14635 | | | | 12 | 12 | 12 | 12 | 12 |

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# SRS Wiolan HX

HLP Hydraulic Fluids – zinc-free

January 2014

## Properties

SRS Wiolan HX hydraulic fluids are based on highly solvent refined paraffinic neutral mineral oils from Salzbergen refinery. The EP additives used are free of zinc. SRS Wiolan HX hydraulic fluids protect excellent against wear and corrosion even at high mechanical stress and have exceptionally good demulsibility. Oxidation inhibitors give high oxidation stability, thereby reducing maintenance costs through longer oil change intervals.

## Application

SRS Wiolan HX hydraulic fluids have impressively demonstrated their suitability in the hydraulic systems of rolling mills. Thanks to the good demulsibility of SRS Wiolan HX fluids, ingressed water can continuously be drawn off at suitable points within the system. SRS Wiolan HX fluids are universally applicable in all hydraulic equipment, wherever a high level of protection against wear and oxidation is required.
Easy filterability of SRS Wiolan HX hydraulic fluids is required condition for current hydraulic units, filter clogging is prevented.

## Performance / Specifications

The requirements for HLP hydraulic fluids described in DIN 51 524, Part 2, ISO 11158 (HM), SEB 181 222 and DBL 6713 are met. Many of the requirements are outperformed by far. SRS Wiolan HX oils meet the steel industry's requirements for HLP hydraulic oils.

## Approvals / Recommendations

Hydraulic oil HLP acc. DIN 51524 Part 2
Hydraulic oil HM acc. DIN 11158
VDEh-approval according to SEB 181 222
Voith 3625-006058[1]
Voith 3625-006072[1]
Voith 3625-006073[1]
Voith 3625-008426[1]
Airburg[2]
ENGEL[2]
KraussMaffei[2]

[1] for SRS Wiolan HX 32
[2] for SRS Wiolan HX 46

| Typical data | Test method | SRS Wiolan HX | | | | |
|---|---|---|---|---|---|---|
| | | HX 22 | HX 32 | HX 46 | HX 68 | HX |
| Designation | DIN 51 502<br>DIN EN ISO 6743/4 | HLP 22<br>HM22 | HLP 32<br>HM32 | HLP 46<br>HM46 | HLP 68<br>HM68 | HLP 100<br>HM100 |
| Density at 15°C | g/cm³ DIN 51 757 | 0,873 | 0,877 | 0,881 | 0,883 | 0,882 |
| Viscosity at 40°C | mm²/s DIN EN ISO 3104 | 22,1 | 32,4 | 46,4 | 70,7 | 104 |
| Viscosity at 100°C | mm²/s DIN EN ISO 3104 | 4,3 | 5,3 | 6,6 | 8,8 | 11,2 |
| Flash point COC | °C DIN ISO 2592 | 200 | 210 | 225 | 230 | 250 |
| Pour point | °C DIN ISO 3016 | - 30 | - 27 | - 24 | - 24 | - 24 |
| FZG-Test A/16,6/140 | Fail stage DIN ISO 14 635 | 11 | 12 | >12 | >12 | >12 |

SRS Wiolan HX is a product of the H&R ChemPharm GmbH

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# SRS Wiolan HV

HVLP - Hydraulic Fluids

Marc h 2014

## Properties

SRS Wiolan HV are mineral oil based high-VI hydraulic fluids with particularly good viscosity temperature behaviour. Highly solvent refined paraffinic neutral base stocks are used exclusively. SRS Wiolan HV provides maximum efficiency and smooth hydraulic system operation, even with extreme temperature fluctuations or starts at sub-zero temperatures. Optimal wear, corrosion and oxidation protection properties ensure a maximum in operating reliability of hydraulic systems along with increased oil retention times and reduced maintenance costs.
Easy filterability of SRS Wiolan HV hydraulic fluids is required condition for current hydraulic units, filter clogging is prevented.

## Application

SRS Wiolan HV is especially appropriate to use in hydraulic systems which are exposed to extreme temperature fluctuations. This includes the entire range of mobile hydraulics as well as all outdoor stationary units (scrap metal presses, lock gates, loading equipment, marine hydraulics etc.). The multigrade character of SRS Wiolan HV allow for an extensive product rationalization, to prevent confusion and incorrect use. Ordering and storage within the operation are simplified. SRS Wiolan HV can be used everywhere where HLP or HVLP hydraulic fluids are prescribed.

## Performance / Specifications

SRS Wiolan HV hydraulic fluids are shear stable and outperform the requirements for HVLP hydraulic fluids described in DIN 51 524 Part 3 and by ISO 11158 HV.

## Approvals

Hydraulic oil HVLP acc. DIN 51524 Part 3
Hydraulic oil HV acc. ISO 11158

| Typical data | | Test method | SRS Wiolan HV | | | | |
|---|---|---|---|---|---|---|---|
| | | | HV 15 | HV 22 | HV 32 | HV 46 | HV 68 |
| Designation | | DIN 51 502<br>DIN ISO 6743/4 | HVLP 15<br>HV 15 | HVLP 22<br>HV 22 | HVLP 32<br>HV 32 | HVLP 46<br>HV 46 | HVLP 68<br>HV 68 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,854 | 0,864 | 0,870 | 0,874 | 0,878 |
| Viscosity at 40°C | mm²/s | DIN EN ISO 3104 | 15,3 | 22,0 | 30,0 | 47,6 | 72,0 |
| Viscosity at 100°C | mm²/s | DIN EN ISO 3104 | 3,84 | 4,86 | 5,97 | 8,36 | 11,4 |
| Viscosity Index (VI) | | DIN ISO 2909 | 150 | 150 | 149 | 152 | 151 |
| Flash point COC | °C | DIN ISO 2592 | 180 | 195 | 220 | 230 | 240 |
| Pour point | °C | DIN ISO 3016 | - 42 | - 39 | - 36 | - 36 | - 33 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14635 | - | - | 12 | 12 | 12 |

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# SRS Wiolan HG

Detergent HLPD-Hydraulic Fluids – zinc free

April 2014

## Properties

SRS Wiolan HG are mineral oil based hydraulic fluids with detergent and dispersant additives. Adhering particles and deposits are removed (detergent) and held intentionally in suspension (dispersant), along with contaminants which may have entered the system. SRS Wiolan HG emulsifies water and water based cutting fluids without any substantial adverse effects on the excellent lubrication and anticorrosion properties. Polar additives in SRS Wiolan HG improve friction behaviour and prevent stick slip, even under extremely unfavourable operating conditions.

## Application

SRS Wiolan HG is suitable for all hydraulic systems for which normal HLP fluids are prescribed. The main field of application are mobile hydraulics (excavators, bulldozers, wheel loaders, truck hydraulic systems, especially F.X. Meiller) From experience SRS Wiolan HG has shown its qualification in hydraulic control units and precision hydraulic systems.
SRS Wiolan HG is also particularly well suited for use in hydraulic systems of machine tools with integrated slide way lubrication, and maintenance units of pneumatic compressors for the lubrication of air tools. Operating problems in hydraulic systems caused by contamination and wear can be largely avoided by using SRS Wiolan HG.

## Performance / Specifications

The requirements for HLP hydraulic fluids prescribed by DIN 51 524, Part 2 and the requirements for HM hydraulic fluids prescribed by ISO 11158 (except demulsibility) are met and even outperformed in many quality characteristics.

The filterability test Abex Denison TP-02/100 is fulfilled. It is also applicable where lead containing bearings are fitted.

## Approvals / Recommendations

Hydraulic oil HLP acc. DIN 51524 Part 2
Hydraulic oil HM acc. ISO 11158

| Typical data | | Test method | SRS Wiolan HG | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | HG 10 | HG 22 | HG 32 | HG 46 | HG 68 | HG100 |
| Designation | | DIN 51 502<br>DIN EN ISO 6743/4 | HLPD10<br>HM 10 | HLPD22<br>HM 22 | HLPD32<br>HM 32 | HLPD46<br>HM 46 | HLPD68<br>HM 68 | HLPD100<br>HM100 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,855 | 0,865 | 0,873 | 0,880 | 0,882 | 0,887 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 10 | 22 | 32 | 45 | 68 | 102,4 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 2,7 | 4,3 | 5,4 | 6,7 | 8,6 | 10,9 |
| Flash point COC | °C | DIN ISO 2592 | 165 | 195 | 205 | 210 | 225 | 264 |
| Pour point | °C | DIN ISO 3016 | - 30 | - 30 | - 27 | - 27 | - 24 | - 27 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14635 | 12 | > 12 | > 12 | > 12 | > 12 | > 12 |
| Load Carrying Capacity (Brugger) | n/mm² | DIN 51 347 | 37 | 37 | 44 | 44 | 47 | 47 |

SRS Wiolan HG oils are products of the H&R ChemPharm

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# SRS Wiolan HVG 46

## HVLPD - Detergent Hydraulic Fluid

January 2014

## Properties

SRS Wiolan HVG 46 is a detergent and dispersant containing hydraulic fluid with extremely good viscosity temperature behaviour (high VI and multigrade hydraulic fluids) SRS Wiolan HVG 46 emulsifies water and water soluble cutting fluids without any real adverse effect on the excellent lubrication and anticorrosion properties. Sticky residues and deposits in the system are mobilized (detergent), transported to filters and removed from the system when the filter is changed. Contaminates entering the system are held in suspension (dispersion) and filtered off. Oil change intervals are increased substantially without the risk of malfunction or increasing wear.

## Application

SRS Wiolan HVG 46 can be universally employed in all mobile hydraulic equipment (excavators, wheel loaders, bulldozers, truck hydraulic systems etc.) and in stationary machine tools and production machinery. SRS Wiolan HVG 46 provides substantial advantages over conventional hydraulic fluids in all applications where maximum operating reliability, lowest wear, high system cleanliness and steady motion at varying working temperatures are required. In actual practice, SRS Wiolan HVG 46 is a problem solver for minimizing slip stick phenomena, even at extremely unfavourable starting and stopping feed and finest feed.

## Performance / Specifications

SRS Wiolan HVG 46 exceeds the requirements for hydraulic fluids as described in DIN 51 524 Part 3 and the requirements for HV hydraulic fluids prescribed by ISO 11158 (except demulsibility) in important quality characteristics.

## Approvals / Recommendations

Hydraulic oil HV acc. DIN 51524 Part 3
Hydraulic oil HV acc. ISO 11158

| Typical data | | Test method | SRS Wiolan HVG 46 |
|---|---|---|---|
| Designation | | DIN 51 502 | HVLPD 46 |
| | | DIN ISO 6743/4 | HV 46 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,874 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 46,8 |
| Viscosity at 100°C | Mm²/s | DIN 51 562 | 8,3 |
| Viscosity Index (VI) | | DIN ISO 2909 | 154 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 36 |
| FZG-Test A/8.3/90 | Fail stage | DIN ISO 14635 | 12 |

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# SRS Wiolan H-540

HVLP-Hydraulic Oil

October 2011

## Properties

SRS Wiolan H-540 is a standard hydraulic fluid for military equipment, i. e. rescue tanks, tanks for launching bridges bridge laying tanks, flail tanks mine clearing tanks/vehicles, cranes with power steering, hydraulic actuators lifting hydraulics and similar applications.

It guarantees very good wear- and corrosion protection even at high mechanical loads and offers extremely good demulsibility. The excellent viscosity index of more than 270 keeps the operational characteristics steady even under extreme temperature fluctuations.

## Application

SRS Wiolan H 540 is intended for use in hydraulic equipment such as power assisted steering, lifting hydraulics for loading and salvage devices and similar applications. SRS Wiolan H 540 can be used in an operating temperature range from – 30°C to + 100°C.

## Performance / Specifications

NATO-Code H 540
BW-Code HY5025

## Approvals / Recommendations

SRS Wiolan H-540 is approved namely by Bundeswehr with quality certificate B-0279 according to the specification
TL 9150-0035/6.

| Typical data | | Test method | SRS Wiolan Hydraulic Fluid H 540 |
|---|---|---|---|
| Designation | | DIN 51 502 | HVLP |
| Colour | | DIN ISO 2049 | L 2,0 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,891 |
| Viscosity at –40°C | mm²/s | DIN 51 562 | 7.100 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 36,9 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 10,0 |
| Viscosity index (VI) | | DIN ISO 2909 | 272 |
| Flash point COC | °C | DIN ISO 2592 | 130 |
| Pour point | °C | DIN ISO 3016 | - 57 |
| FZG-Test A/8,3/90 | Fail stage | DIN ISO 14635 | 11 |
| Corrosion protection: | | | |
| - Seawater immersion test | result | DIN 51 358 | Note: 0 |

SRS Wiolan Hydraulic Fluid H 450 is a product of the H&R ChemPharm GmbH

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# SRS Wiolgan HE 46

Environmentally Friendly HEES-Hydraulic Fluid

May 2012

## Properties

SRS Wiolgan HE 46 is a fully synthetic, rapidly biodegradable hydraulic fluid on TMP ester with additives for maximum performance. SRS Wiolgan HE 46 is miscible with conventional mineral oil based hydraulic fluids in all ratios and at all temperatures with no adverse effects for an oil change to this eco-friendly product. The outstanding high temperature stability, together with very good low temperature fluidity, prevents deposits and sticky residuals caused by oxidation products.

## Application

SRS Wiolgan HE 46 contains highly effective additives to protect against the corrosion and wear of all materials present in hydraulic systems. It is especially recommended for use in all hydraulic systems of the construction, agriculture and forestry equipment, for example, excavators, bulldozers, wheel loaders, forestry machinery, lock hydraulics, etc. as well as wherever the risk of leakage into the environment can not be excluded. SRS Wiolgan HE 46 is essentially compatible with varnishes, paints, gaskets and seals.

## Performance / Specifications

SRS Wiolgan HE 46 exceeds the requirements of type HEES hydraulic oils described in VDMA 24 568. According to OECD 301 B, SRS Wiolgan HE 46 has a biodegradability of greater than 80 %.

SRS Wiolgan HE 46 is listed as hydraulic oil in the current FNR positive list (manufacturer and product directory for lubricants and hydraulic fluids based on renewable raw materials).

| Typical data | | Test method | SRS Wiolgan HE 46 |
|---|---|---|---|
| Designation | | DIN EN ISO 6743/4 | HEES 46 |
| Colour | | DIN ISO 2049 | L 1,0 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,921 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 46 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 9,2 |
| Viscosity index (VI) | | DIN ISO 2909 | 185 |
| Flash point COC | °C | DIN ISO 2592 | 265 |
| Pour point | °C | DIN ISO 3016 | - 45 |
| LAV at 50 °C | | DIN 51 381 | 1 |
| Steel corrosion | Grade | DIN ISO 7120 | 0-B |
| Copper corrosion | Grade | DIN EN ISO 2160 | 1-125 A 3 |
| FZG-test A/8, 3/90 | Fail stage | DIN ISO 14635 | 12 |

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# SRS Wiolan GT

## Turbine Oils

February 2012

## Properties

SRS Wiolan GT gas turbine oils are manufactured on a basis of highly solvent refined, hydrogenated technical white oils. Their out-standing properties are the exceptional thermal and oxidation stability, very good air release properties, low foaming tendency and excellent corrosion protection. The well-balanced combination of additives allows SRS Wiolan GT turbine oils to meet all requirements from manufacturers of steam and gas turbines and turbo-compressors with substantial reserves.

## Application

SRS Wiolan GT turbine oils are specially developed for the operation of highly loaded industrial gas turbines and turbo compressors with connected gears and common oil circuit. Selected additives ensure maximum oil retention times even at unfavourable oxidative and thermal conditions. SRS Wiolan GT oils are also used for lubrication in transmissions as well as in hydraulic and recirculating systems in cases where the manufacturer has specified turbine oils properties.

## Performance / Specifications

DIN 51 515 part 1 L-TD
DIN 51 515 part 2 L-TG
ISO/CD 8068: L-TSA
L-TGA
L-TGB
L-TGSB

## Approvals

Siemens TLV 901305
MAN Turbomaschinen

## Recommendations

The following specifications of major turbine manufacturers are exceeded:

ABB / Alstom HTGD 90117
General Electric GEK 32568, GEK 28143

| Typical data | | Test method | SRS Wiolan | | |
|---|---|---|---|---|---|
| | | | GT 32 | GT 46 | GT 68 |
| Designation | | DIN 51 502 | L-TD/L-TG | L-TD/L-TG | L-TD/L-TG |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,867 | 0,873 | 0,875 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 32 | 46,6 | 67 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 5,4 | 6,8 | 8,8 |
| Flash point COC | °C | DIN ISO 2592 | 226 | 238 | 256 |
| Pour point | °C | DIN ISO 3016 | - 9 | - 12 | - 9 |
| Neutralization number | mgKOH/g | DIN 51 558/2 | 0,08 | 0,06 | 0,04 |
| Air release property at 50°C | min | DIN 51 381 | 3 | 4 | 5 |
| Water separation ability | s | DIN 51 389 | 70 | 90 | 60 |
| RPVOT | min | ASTM D 2272 | > 1500 | > 1500 | > 1500 |

SRS Wiolan GT is a product of the H&R ChemPharm GmbH

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# SRS Wiolan CA

## Circulation Oils

March 2012

## Properties

SRS Wiolan CA circulation oils are paraffinic solvent neutrals base oils with a high natural viscosity index. They possess excellent air release and water separation properties, good oxidation and corrosion resistance and a high flash point.

## Application

SRS Wiolan CA circulation oils are used by industry as universal lubricating oils. SRS Wiolan CA oils are suitable as bearing lubricants and in gearboxes and hydraulic systems with low or moderate loads without EP requirements. SRS Wiolan CA oils are successfully used in variable ratio gearboxes (observe manufacturer's specifications) and are well suited for vacuum pumps and compressors. Low viscous SRS Wiolan CA oils are applicable for bright annealing.

## Performance / Specifications

SRS Wiolan CA meets the requirements for C Class lubricating oils according to DIN 51 517, Part 1, as well as DIN 51 506, Groups VB and VC.

SRS Wiolan CA circulation oils meet the requirements of ISO 6743 part 3 DVA and DVC.

| Typical data | | Test method | SRS Wiolan CA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 46 | 68 | 100 | 150 | 220 | 320 | 460 |
| Designation | | DIN 51 502 | C 46<br>VB 46<br>VC 46 | C 68<br>VB 68<br>VC 68 | C 100<br>VB 100<br>VC 100 | C 150<br>VB 150<br>VC 150 | C 220<br>VB 200<br>- | C 320<br>VB 320<br>- | C 460<br>VB 460<br>- |
| Colour | | DIN ISO 2049 | 1,0 | 1,5 | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,872 | 0,878 | 0,880 | 0,887 | 0,887 | 0,895 | 0,898 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 46 | 68 | 100 | 150 | 220 | 320 | 460 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 6,7 | 8,7 | 11 | 14,5 | 18,5 | 23,5 | 30 |
| Viscosity Index (VI) | | DIN ISO 2909 | 95 | 95 | 95 | 95 | 93 | >90 | >90 |
| Flash point COC | °C | DIN ISO 2592 | 225 | 235 | 245 | 255 | 260 | 270 | 285 |
| Pour point | °C | DIN ISO 3016 | -12 | -12 | -12 | -12 | -9 | -9 | -9 |

SRS Wiolan CA oils are products of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Wiolan WT

## Compressor Oils

January 2013

## Properties

SRS Wiolan WT compressor oils are blended with high VI highly solvent refined paraffinic base oils and specially selected additives. High thermal loads and continuous close contact with air require the best possible protection against oxidation. The inevitable condensation of water during the cooling of compressed air implies a danger of corrosion. Sliding parts in contact with each other are subject to friction and resulting wear. Dirt in the oil circulation system affects the operational condition of the compressor and the oil filling. The additive content of SRS Wiolan WT oils is specifically designed to control these difficult service conditions for the best operating results in practice.

## Application

SRS Wiolan WT oils are suitable for all compressors for which VCL oils are prescribed by the manufacturer. SRS Wiolan WT oils are especially recommended for oil flooded screw compressors. Compressors must be operated in compliance with UVV (accident prevention regulation) VBG 16.

## Performance / Specifications

SRS Wiolan WT compressor oils are in compliance with all standards for VCL compressor oils according to DIN 51 506. The requirements of this standard are even exceeded in certain major characteristics.

As VCL quality SRS Wiolan WT oils also exceed the standards for the VBL group. SRS Wiolan WT is recommended by well-known compressor manufacturers for best operating results when used in their systems.

SRS Wiolan WT compressor oils meet the requirements of ISO 6743 part 3 DAA.

| Typical data | | Test method | SRS Wiolan | | |
|---|---|---|---|---|---|
| | | | WT 32 | WT 46 | WT 68 |
| Designation | | DIN 51 506 | VCL 32 | VCL 46 | VCL 68 |
| Colour Index | | DIN ISO 2049 | 1,0 | 1,5 | L 2,0 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,875 | 0,878 | 0,881 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 32 | 46 | 69 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 5,5 | 6,8 | 8,8 |
| Flash point COC | °C | DIN ISO 2592 | 222 | 245 | 250 |
| Pour point | °C | DIN ISO 3016 | - 27 | - 27 | - 24 |
| Conradson carbon residue | wt.% | DIN 51 551 | 0,07 | 0,08 | 0,17 |
| Ageing characterist. Delta CCT | wt.% | DIN 51 352/1 | 0,43 | 0,5 | 0,97 |

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# SRS Wiolan CD

## Air Compressor Oils

January 2013

## Properties

SRS Wiolan CD compressor oils are manufactured from highly solvent refined paraffinic base oils with high natural VI and flash point. Due to the high thermal load found in many compressors, excellent oxidation stability and minimal residue formation are indispensable requirements, which are met from SRS Wiolan CD. Its good temperature viscosity characteristics, ensures good lubrication at high and low temperature. This contributes substantially to prevent wear. Excellent demulsibility and low foaming tendency are further outstanding characteristics of SRS Wiolan CD.

## Application

SRS Wiolan CD compressor oils have proven themselves particularly well in thermally-stressed reciprocating and rotary compressors. Further potential applications are thermally-stressed plain and roller bearings in circulating oil systems, e.g., plastics and rubber calenders, paper machinery, rotary kilns, etc. The Unfallverhütungsvorschrift (accident prevention regulation) VBG 16 should be observed for compressor operation.

## Performance / Specifications

SRS Wiolan CD compressor oils conform to the most stringent requirements of DIN 51 506. Because they fulfil the requirements of Group VDL, they meet also the requirements for Group VBL and VCL. SRS Wiolan CD is certified for use as a Type VDL lubricant as per DIN 51 506, by the TÜV (technical inspection association), Essen.

SRS Wiolan CD compressor oils meet the requirements of ISO 6743 part 3 DAA, DAG and DAH.

| Typical data | | Test method | SRS Wiolan CD | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 32 | 46 | 68 | 100 | 150 | 220 | 320 |
| Designation | | DIN 51 502 | VDL32 | VDL46 | VDL68 | VDL100 | VDL150 | - | - |
| Colour | | DIN ISO 2049 | L 1,0 | 1,0 | L 1,5 | L 2,0 | 2,5 | L 3,0 | 3,5 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,872 | 0,873 | 0,877 | 0,881 | 0,886 | 0,892 | 0,894 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 32 | 45 | 68 | 99 | 150 | 222 | 322 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 5,5 | 6,6 | 8,7 | 11,1 | 14,3 | 18,3 | 23,5 |
| Viscosity index (VI) | | DIN ISO 2909 | 107 | 97 | 99 | 97 | 92 | 90 | 92 |
| Flash point COC | °C | DIN ISO 2592 | 210 | 235 | 250 | 260 | 265 | 280 | 290 |
| Pour point | °C | DIN ISO 3016 | -12 | -12 | -12 | -12 | -12 | -12 | -9 |

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# SRS Wiolan KF

Refrigerator Oils

October 2011

## Properties

SRS Wiolan KF refrigerator oils are highly refined naphthenic base oils, resistant against oxidation with a high purity. Thedistinctive low temperature fluidity guarantees a trouble free operation. Precipitations and the risk of clogging of governor systems as well as deposits in the evaporator are avoided. The excellent thermal stability prevents residue formation and associated malfunctions even at high compression temperatures.

## Application

SRS Wiolan KF refrigerator oils can be used in refrigerator equipments operating with refrigerants of Group KAA (NH3 or CO2) or Group KC (halogenated hydrocarbons). SRS Wiolan KF refrigerator oils have favourable miscibility characteristics with halogenated refrigerants as well as excellent stability against refrigerants.

## Performance / Specifications

SRS Wiolan KF refrigerator oils exceed the requirements of DIN 51 503 as well as of the groups KAA and KC.

| Typical data | | Test method | SRS Wiolan KF | | | |
|---|---|---|---|---|---|---|
| | | | KF 22 | KF 32 | KF 46 | KF 68 |
| Designation | | | KAA/KC | KAA/KC | KAA/KC | KAA/KC |
| Colour | | DIN ISO 2049 | 0,5 | L 1,0 | L 1,0 | L 1,5 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,902 | 0,906 | 0,910 | 0,914 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 22 | 32 | 46 | 68 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 3,7 | 4,8 | 5,8 | 7,3 |
| Flash point COC | °C | DIN ISO 2592 | 175 | 180 | 190 | 215 |
| Pour point | °C | DIN ISO 3016 | - 51 | - 45 | - 42 | - 39 |
| Neutralization number | mgKOH/g | DIN 51 558/2 | 0,01 | 0,01 | 0,01 | 0,01 |
| Refrigerant resistance | h | DIN 51 593 | > 96 | > 96 | > 96 | > 96 |
| R12-insoluble | % | DIN 51 590/1 | 0,02 | 0,02 | 0,02 | 0,03 |

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# SRS Wiolan CE

Special Ethylene Gas Compressor Oil

May 2014

## Properties

SRS Wiolan CE 220 is a high-performance ethylene compressor oil of ISO viscosity grade 220. It is specially developed for the lubrication of ethylene hyper compressors.

SRS Wiolan CE 220 compressor oil is manufactured using medicinal white oil components and polymer thickener. Selected additives ensure good lubrication of the compressor cylinders. The out-standing properties are the excellent thermal and chemical stability. The compressor oil is compatible with the polyethylene process.

## Application

SRS Wiolan CE 220 is suitable for applications where incidental food contact is possible.

| Typical data | | Test method | SRS Wiolan CE 220 |
|---|---|---|---|
| Colour ASTM | | DIN ISO 2049 | < 0,5 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,876 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 220 |
| Viscosity at 100°C | mm²/s | DIN 51 562 | 20,4 |
| Flash point COC | °C | DIN ISO 2592 | 262 |
| Pour point | °C | ASTM D 5985 | - 15 |
| Neutralization number | mgKOH/g | DIN 51 558/2 | 0,64 |
| Viscosity index (VI) | - | DIN ISO 2909 | 100 |

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# SRS Wintal UG

Metal Processing Oils

October 2011

## Properties

SRS Wintal UG oils are chlorine-free, low mist multipurpose lubricants with polar and extreme pressure additives. In their preferred application as a cooling lubricant, the additives react with the materials of tool and chip during machining operations, as a result friction is reduced. The tendency of the tool and the chip to weld together is minimized where SRS Wintal UG Oils are used. In general the following advantages result from the use of SRS Wintal UG oils:
Longer tool life with high dimensional accuracy, high surface quality and high machining performance.

SRS Wintal UG oils are not copper corrosive, non-ferrous (yellow) metals and steel of up to middle hardness can be processed. In addition to their application in metal chipping, SRS Wintal UG oils are very suitable as gear and hydraulic oils. They can be successfully applied wherever HLP or CLP oils are prescribed, including in hydraulic equipment with attached slideways.

## Application Areas - Cutting Oil

### Working Processes
Turning, drilling, milling, automatic works, threading, gear shaping, thread milling.

### Working Materials
Carbon steels, free cutting steel, structural steel, grey and malleable iron, yellow and light metals.

| Typical data | | Test method | SRS Wintal UG 22 | SRS Wintal UG 32 | SRS Wintal UG 46 |
|---|---|---|---|---|---|
| Designation | | DIN 51 502 | S/HLP/CLP | S/HLP/CLP | S/HLP/CLP |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,869 | 0,877 | 0,881 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 21,9 | 32,8 | 45,6 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 4,9 | 5,49 | 6,65 |
| Viscosity index (VI) | | DIN ISO 2909 | 109 | 102 | 97 |
| Flash point COC | °C | DIN ISO 2592 | 210 | 225 | 235 |
| Neutralization number | mgKOH/g | DIN 51 558 | 0,3 | 0,3 | 0,3 |
| Pour point | °C | DIN ISO 3016 | - 12 | - 9 | - 12 |
| Copper corrosion test | | DIN ISO 2160 | 1 | 1 | 1 |

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# SRS Wiolan TH

Slide Way Oils

March 2012

## Properties

SRS Wiolan TH slide way oils provide a low coefficient of friction associated with a constant sliding performance without stick slip even at fine feed with lowest feed motions. Highest dimensional accuracy is the effect. Good demulsibility gives highest functionality also at use of low-maintenance cooling lubricants. During long downtime the most-feared formation of sticky deposits from the reaction of cooling lubricants and slide way oils is prevented. SRS Wiolan TH slide way oils offer high corrosion protection. Fretting corrosion is avoided even in narrow fit clearances. Yellow metals are not attacked.

Highest film strength and excellent tackiness are guaranteed - an essential prerequisite for the lubrication of vertical slide ways. Additivation is well-tuned with modern water-soluble cooling lubricants to enable best surface quality and dimensional accuracy of the work pieces even at the most difficult production conditions.

## Application

SRS Wiolan TH oils are designed mostly to lubricate slide ways of different material combinations in machine tools including plastic coatings like epoxy resins and Teflon, and for machine tool slide ways where contamination with watersoluble cooling lubricants are unavoidable. SRS Wiolan TH oils have also given outstanding performance in the textile, paper and packaging industries.

## Performance / Specifications

The requirements for CGLP lubricants are fulfilled and surpassed in essential points. Examinations of SRS Wiolan TH oils, carried out by SKC Gleittechnik GmbH, Rödental, passed off with excellent results.

SRS Wiolan TH slide way oils meet the requirements of ISO 6743 part 13 GA and GB.

| Typical data | | Test method | SRS Wiolan TH | | | | |
|---|---|---|---|---|---|---|---|
| | | | TH 32 | TH 48 | TH 68 | TH 100 | TH 220 |
| Designation | | DIN 51 502 | CGLP 32 | CGLP 46 | CGLP 68 | CGLP 100 | CGLP 220 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,874 | 0,878 | 0,880 | 0,884 | 0,894 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 32,1 | 45,8 | 67,1 | 102 | 214 |
| Viscosity at 100 °C | mm²/s | DIN 51 562 | 5,3 | 6,7 | 8,5 | 11,1 | 17,9 |
| Flash point COC | °C | DIN ISO 2592 | 215 | 240 | 245 | 265 | 270 |
| Pour point | °C | DIN ISO 3016 | - 24 | - 12 | - 27 | - 9 | - 15 |
| Copper corrosion (3h/100 °C) | Grade | DIN ISO 2160 | 1 | 1 | 1 | 1 | 1 |
| Steel corrosion | Grade | DIN 51 355 | 0 - B | 0 - B | 0 - B | 0 - B | 0 – B |
| FZG-Test A/8,3/90 | SKS | DIN ISO 14635 | 12 | 12 | 12 | 12 | 12 |

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# SRS Mihatherm WU 10

Heat Transfer Oil

September 2013

## Properties

SRS Mihatherm WU 10 is a heat transfer oil with excellent thermal and oxidation stability in a viscosity range, ideal for heat transfer operations. A low viscosity product in a high boiling range guarantees turbulent flow associated with good heat transfer at relatively low flow velocity. Operations safety and reliability result from compliance with DIN 4754, UVV (accident prevention regulation), VGB 17 and VDI Richtlinie (Guideline) 3033.

The SRS base oils allow the development of heat transfer oils in a convenient viscosity grade with excellent thermal stability and good oxidation stability. A low viscosity in a high boiling range guarantees turbulent flow associated with good heat transfer at relatively low flow velocity.

## Application

SRS Mihatherm WU 10 as low viscous product allows operation in plants with film wall temperature in the range between -30°C and 270°C. Good low temperature fluidity provides trouble free start –ups even at low temperatures.

Contact between oil and air should be avoided, because air (oxygen) can cause accelerated oxidation of hydrocarbon products.

SRS Mihatherm WU 10 is a heat transfer oil with designation Q, DIN 51 502 and is in compliance with the DIN 51 522. The requirements of this standard are even exceeded in certain major characteristics.

| Typical data | | Test method | SRS Mihatherm WU 10 |
|---|---|---|---|
| Designation | | DIN 51 502 | Q |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,889 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 10,2 |
| Flash point COC | °C | DIN ISO 2592 | 154 |
| Pour point | °C | DIN ISO 3016 | < - 50 |
| Carbon residue | wt.% | DIN 51 551 | < 0,01 |
| Initial boiling point | °C | DIN 51 751/ASTM 1160 | > 280 |
| Flow temperature | °C | | up to 250 |

| Temperature °C | Viscosity mm²/s | Density g/cm³ | Specific heat capacity kJ/kg K | Thermal conductivity w/m K | Prandtl number |
|---|---|---|---|---|---|
| SRS Mihatherm WU 10 | | | | | |
| -20 | 298 | 0,915 | 1.716 | 0,134 | 3493 |
| 0 | 65 | 0,902 | 1.787 | 0,132 | 789 |
| 20 | 22,3 | 0,889 | 1.859 | 0,131 | 281 |
| 50 | 7,45 | 0,869 | 1.966 | 0,128 | 99 |
| 100 | 2,44 | 0,837 | 2.145 | 0,124 | 35 |
| 200 | 0,76 | 0,771 | 2.502 | 0,116 | 12,7 |
| 250 | 0,55 | 0,739 | 2.681 | 0,112 | 9,5 |

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# SRS Mihatherm WU 32

Heat Transfer Oil

September 2013

## Properties

SRS Mihatherm WU 32 is a heat transfer oil with excellent thermal and oxidation stability in a viscosity range, ideal for heat transfer operations. A low viscosity product in a high boiling range guarantees turbulent flow associated with good heat transfer at relatively low flow velocity. Operations safety and reliability result from compliance with DIN 4754, UVV (accident prevention regulation), VGB 17 and VDI Richtlinie (Guideline) 3033.

The SRS base oils allow the development of heat transfer oils in a convenient viscosity grade with excellent thermal stability and good oxidation stability. A low viscosity in a high boiling range guarantees turbulent flow associated with good heat transfer at relatively low flow velocity.

## Application

SRS Mihatherm WU 32 is recommended for plants with film wall temperature in the range between -10°C and 320°C.

Contact between oil and air should be avoided, because air (oxygen) can cause accelerated oxidation of hydrocarbon products.

SRS Mihatherm WU 32 is a heat transfer oil with designation Q, DIN 51 502.

| Typical data | | Test method | SRS Mihatherm WU 32 |
|---|---|---|---|
| Designation | | DIN 51 502 | Q |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,86 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 30 |
| Flash point COC | °C | DIN ISO 2592 | 230 |
| Pour point | °C | DIN ISO 3016 | - 15 |
| Carbon residue | wt.% | DIN 51 551 | 0,01 |
| Initial boiling point | °C | DIN 51 751/ASTM 1160 | 350 |
| Flow temperature | °C | | up to 300 |

| Temperature °C | Viscosity mm²/s | Density g/cm³ | Specific heat capacity kJ/kg K | Thermal conductivity w/m K | Prandtl number |
|---|---|---|---|---|---|
| SRS Mihatherm WU 32 | | | | | |
| 0 | 297 | 0,876 | 1,.812 | 0,136 | 3462 |
| 50 | 20,0 | 0,844 | 1,994 | 0,133 | 254 |
| 100 | 5,05 | 0,812 | 2,176 | 0,129 | 69 |
| 200 | 1,27 | 0,749 | 2,541 | 0,122 | 19 |
| 300 | 0,63 | 0,685 | 2,906 | 0,115 | 10 |

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# SRS Mihatherm WU 46

Heat Transfer Oil

September 2013

## Properties

SRS Mihatherm WU 46 is a heat transfer oil with excellent thermal and oxidation stability in a viscosity range, ideal for heat transfer operations. A low viscosity product in a high boiling range guarantees turbulent flow associated with good heat transfer at relatively low flow velocity. Operations safety and reliability result from compliance with DIN 4754, UVV (accident prevention regulation), VGB 17 and VDI Richtlinie (Guideline) 3033.

The SRS base oils allow the development of heat transfer oils in a convenient viscosity grade with excellent thermal stability and good oxidation stability. A low viscosity in a high boiling range guarantees turbulent flow associated with good heat transfer at relatively low flow velocity.

## Application

SRS Mihatherm WU 46 is recommended for plants with film wall temperature in the range between -10°C and 350°C.

Contact between oil and air should be avoided, because air (oxygen) can cause accelerated oxidation of hydrocarbon products.

SRS Mihatherm WU 46 is a heat transfer oil with designation Q, DIN 51 502 and is in compliance with the DIN 51 522. The requirements of this standard are even exceeded in certain major characteristics.

| Typical data | | Test method | SRS Mihatherm WU 46 |
|---|---|---|---|
| Designation | | DIN 51 502 | Q |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,870 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 43,7 |
| Flash point COC | °C | DIN ISO 2592 | 225 |
| Pour point | °C | DIN ISO 3016 | - 12 |
| Carbon residue | wt.% | DIN 51 551 | 0,01 |
| Initial boiling point | °C | DIN 51 751/ASTM 1160 | - / 390 |
| Flow temperature | °C | | up to 320 |

| Temperature °C | Viscosity mm²/s | Density g/cm³ | Specific heat capacity kJ/kg K | Thermal conductivity w/m K | Prandtl number |
|---|---|---|---|---|---|
| SRS Mihatherm WU 46 | | | | | |
| 0 | 535 | 0,879 | 1.864 | 0,134 | 6543 |
| 50 | 28.6 | 0,848 | 2.078 | 0,131 | 385 |
| 100 | 6.5 | 0,816 | 2.293 | 0,127 | 96 |
| 200 | 1.5 | 0,750 | 2.721 | 0,120 | 26 |
| 300 | 0.7 | 0,685 | 3.151 | 0,113 | 13.4 |
| 320 | 0.6 | 0,672 | 3.236 | 0,111 | 11.8 |

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# SRS Wiolan IF 10

Transformer Oil

October 2013

## Properties

SRS Wiolan IF 10 has excellent oxidation stability due to its high purity. This means longer life for the oil filling. The low viscosity allows rapid oil circulation and ensures good cooling. The extremely low dielectric loss factor qualifies it for application as insulating or dielectric oil.

## Application

SRS Wiolan IF 10 is insulating oil which has been specially developed for use in transformers and switches. It has been proving itself under extreme operating conditions for a number of years. Due to its excellent low temperature behaviour, it is as trouble free at very low temperatures as it is at the high operating temperatures as a result of overload.

## Performance / Specifications

SRS Wiolan IF 10 fulfils the stringent requirements for transformer oils as described in the following specifications:

IEC 60296 edition 4.0
VDE 0370-1
DIN 51 535
IEC 62535
ASTM D 1275-B

SRS Wiolan IF 10 meets the requirements of major transformer manufacturer's.

| Typical data | | Test method | SRS Wiolan IF 10 |
|---|---|---|---|
| Designation | | DIN 51 502 | J 10 |
| Colour | | DIN ISO 2049 | L 0,5 |
| Density at 15°C | g/cm³ | DIN 51 757 | 0,870 |
| Viscosity at –30°C | mm²/s | DIN EN ISO 3104 | 1.000 |
| Viscosity at 20°C | mm²/s | DIN EN ISO 3104 | 22,4 |
| Viscosity at 40°C | mm²/s | DIN 51 562 | 10,0 |
| Flash point PM | °C | DIN ISO 2719 | 152 |
| Pour point | °C | DIN ISO 3016 | - 48 |
| Neutralization number | mgKOH/h | DIN 51 558/2 | < 0,01 |
| Corrosive sulphur | g/100g | DIN 51 353 | none |
| Water content | mg/kg | IEC 60814 | < 20 |
| Breakdown voltage | kV | IEC 60156 | 40-60 |
| | kV | IEC 60156 | > 70 |
| Dielectric loss factor at 90 °C | | IEC 60247 | < 0,001 |
| Oxidation stability at 164h/120 °C | | IEC 61125 C | |
| Neutralization number | mgKOH/g | | 0,50 |
| Sludge content | wWt. % | | 0,15 |
| Dielectric loss factor at 90 °C | | | 0,080 |

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# SRS Mihagran FO 2320 3 K

Mould Release Oil

October 2011

## Properties

Mould release oils can vary in their composition greatly. Various requirements in practice demand different levels of viscosity. The addition of active ingredients can vary also with regard to chemistry and concentration.

Mihagran FO 2320 / 3 KOR is a low viscous mould release oil with additives to improve the release effect and corrosion protection. It is suitable for use in steel and plastic moulds with smooth surfaces. The product can be applied with a brush,manually or by spraying in a very thin release oil film.

| Typical data | | Test method | SRS Mihagran FO 2320 3 KOR |
|---|---|---|---|
| Designation | | DIN 51 502 | FS |
| Colour | | DIN ISO 2049 | L 1,0 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,870 |
| Viscosity at 20 °C | mm²/s | DIN 51 562 | 18,5 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 8,6 |
| Flash point COC | °C | DIN ISO 2592 | 150 |
| Pour Point | °C | DIN ISO 3016 | - 15 |
| Neutralization number | mgKOH/g | DIN 51 558 | 8,9 |
| Ash (oxide) | wt. % | DIN EN 6245 | 0,03 |
| Steel corrosion | Grade | DIN 51 585 | 0-A |

SRS Mihagran FO 2320 3 KOR is a product of the H&R ChemPharm GmbH

The above values may vary within the commercial limits (mm²/s = cSt)



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# SRS Calibration Fluid

Calibration Fluid

March 2013

## Properties

SRS Calibration Fluid is a test oil for the calibration of diesel injection pumps. It is characterized by its high antiwear capability, corrosion protection and low foaming tendency.

## Performance / Specifications

SRS Calibration Fluid meets ISO standard 4113.
Furthermore it is approved by MTU as a corrosion protection oil for inside preservation or conservation of fuel systems.

## Approvals / Recommendations

Bosch Norm VS 15665-OL
ISO standard 4113
MTU Approval as a corrosion protection oil for inside preservation or conservation of fuel systems

| Typical data | | Test method | SRS Calibration Fluid |
|---|---|---|---|
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,824 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 2,48 |
| Flash point PM | °C | DIN EN 22 719 | 105 |
| Cloud point | °C | ASTM D 2500 | - 28 |
| Initial boiling point | °C | DIN 51 751 | 232 |
| Final boiling point | °C | DIN 51 751 | 265 |
| Steel corrosion test | Grade | DIN 51 585 | 0-A |
| Copper corrosion test | Grade | DIN 51 ISO 2160 | 1 |
| Corrosion protection: | | | |
| Humidity cabinet test | Grade | DIN 51 359 | 6 x 0 |

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# SRS Calibration Fluid CV

Calibration fluid for diesel injectors

November 2014

## Properties

SRS Calibration Fluid CV is a low viscosity test-oil for the calibration of diesel injection pumps with a very close viscosity tolerance. It is noted for its excellent wear-, corrosion-protection and low foaming tendency.

## Performance / Specifications

SRS Calibration Fluid CV meets the ISO standard 4113-CV-AW. SRS Calibration fluid CV is recommended by Bosch (VS 15665-OL), MTU, MAN and Volkswagen. Further it is approved by MTU as a corrosion preventive oil for internal preservation of fuel systems.

## Approvals / Recommendations

ISO-standard 4113-CV-AW
Bosch-standard VS 15665-OL-CV
Bosch-Approval
MTU-Approval as a corrosion protection oil for inside preservation or conservation of fuel systems
MAN-Approval

| Typical data | | Test method | SRS Calibration Fluid CV |
|---|---|---|---|
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,824 |
| Viscosity at 20 °C | mm²/s | DIN EN ISO 3104 | 3,85 |
| Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 2,52 |
| Flash point PM | °C | DIN EN 22 719 | 115 |
| Cloud point | °C | ASTM D 2500 | - 28 |
| Initial boiling point | °C | DIN 51 751 | 232 |
| Final boiling point | °C | DIN 51 751 | 265 |
| Steel corrosion test | Grade | DIN ISO 7120 | 0-A |
| Copper corrosion test | Grade | DIN 51 ISO 2160 | 1 |
| Corrosion protection: | | | |
| Humidity cabinet test | Grade | ASTM D 1748 | 6 x 0 |

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# SRS WIOLIT Sägekettenhaftöl

Chainsaw oil

April 2013

## Properties

SRS Wiolit Sägekettenhaftöl is a mineral oil based chainsaw oil. Excellent adhesion and lubricating characteristics and antiwear additives guarantee an optimal lubrication of the chain, the rail and the chain wheel.

## Performance / Specifications

SRS Wiolit Sägekettenhaftöl is versatile usable for all types of chainsaws, even at low temperatures in winter.

| Typical data | | Test method | SRS Wiolit Sägekettenhaftöl |
|---|---|---|---|
| ISO Viscosity grade | | DIN 51 519 | 100 |
| Colour | | DIN ISO 2049 | > 8,0 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,893 |
| Kin. Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 110 |
| Kin. Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 11,5 |
| Flash point COC | °C | DIN ISO 2592 | 220 |
| Pour point | °C | DIN ISO 30116 | - 24 |
| Neutralization number | mgKOH/g | DIN 51 558 | 0,4 |

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# SRS Wiolan BF 10

## Corrosion Protection Oil

October 2011

## Properties

SRS Wiolan BF 10 is a spray and corrosion protection oil for spraying onto truck chassis and underbodies, and for the preservation of seasonally operated vehicles such as machines for winter road maintenance and agricultural equipment.

SRS Wiolan BF 10 shows, in addition to the good wet ability resulting from polar active materials, an outstanding capacity to prevent chemical corrosion. Reliable protection against corrosion and rust is offered even under exposure to aggressive atmospheric humidity moisture and salty road waste water. Paints are not attacked.

SRS Wiolan BF 10 is also suitable for the preservation and temporary storage of sheets of metal and semi-finished products over a number of weeks.

| Typical data | | Test method | SRS Wiolan BF 10 |
|---|---|---|---|
| Designation | | DIN 51 502 | R |
| Colour | | DIN ISO 2049 | L 1,0 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,870 |
| Viscosity at 20 °C | mm²/s | DIN 51 562 | 18,5 |
| Viscosity at 40 °C | mm²/s | DIN 51 562 | 8,6 |
| Flash point COC | °C | DIN ISO 2592 | 14 |
| Pour point | °C | DIN ISO 3016 | - 15 |
| Steel corrosion | Grade | DIN ISO 7120 | 0-A |

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# SRS Marine Oils

| Marine oils | ACEA (CCMC*)<br>API Class | Brand | SAE<br>Grade |
|---|---|---|---|
| Marine diesel engine lubricant (TBN 40) for plunger motors with operating sulphurous heavy oil and middle speed | | SRS MA-HDS-40 | 40 |
| Marine diesel engine oil (TBN 16) for plunger motors with middle speed | | SRS MA-MDO 40 | 40 |
| Motor oil (TBN 11) for lubrication of combustion engines of naval vessels and equipment<br>German army code: TL 9150-0031/4 | E7<br>CI-4 | SRS Motor Oil O-278 | 40 |
| Single-grade engine oil for Diesel- and Otto motors | CF / CF-2 / SF | SRS Rekord<br>*Please see page 56)* | 10W to 50 |
| Heavy duty single-grade engine oils also for highly stressed ship engines | E7<br>CI-4 | SRS Rekord plus<br>*(Please see page 57)* | 30, 40 |
| SHPD-oil for turbo diesel engines with extremely long oil retention times | E7<br>CI-4 | SRS Turbo-Rekord<br>*(Please see page 50)* | 15W-40 |
| Gear oil for lubrication of highly-stressed gear drives<br>German army code: TL 9150-0105/3 | | SRS Wiolan O-262 | 80W<br>ISO VG-100 |

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# SRS MA-HDS 40

Marine diesel engine lubricant

September 2013

## Properties

SRS MA-HDS 40 is a medium alkaline motor oil for all medium-speed trunk piston engines that are operating with heavy fuel and a high sulfur content (up to 3.5%).

High quality base oils and optimally adapted additives ensure an excellent neutralizing capacity, high wear protection, a high anti-oxidation-stability and an excellent engine cleanliness.

## Application

SRS MA-HDS 40 can be used in 4-stroke medium-speed trunk piston engines, where high engine cleanliness is required.

SRS MA-HDS 40 is also used as circulating oil for auxiliary diesel engines.

| Typical data | | Test method | SRS MA-HDS 40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 40 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,911 |
| Kin. Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 14,0 |
| Flash point COC | °C | DIN ISO 2592 | 255 |
| Pour point | °C | DIN ISO 3016 | - 9 |
| Base number | mgKOH/g | DIN ISO 3771 | 40,0 |

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# SRS MA-MDO 40

Marine-diesel engine oil

October 2014

## Properties

SRS MA-MDO 40 is a marine diesel engine oil for medium-speed trunk piston engines. High quality base oils and optimally adapted additives ensure high wear and oxidation protection and a high thermal stability. Detergents provide a excellent engine cleanliness. Laking of cylinder liners is avoided.

## Application

SRS MA-MDO 40 can be used in 4-stroke medium-speed trunk piston engines, where high engine cleanliness is required.

## Application

MWM Deutz
Wärtsilä (Sulzer)

| Typical data | | Test method | SRS MA-MDO 40 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 40 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,898 |
| Kin. Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 14 |
| Flash point COC | °C | DIN ISO 2592 | 276 |
| Pour point | °C | DIN ISO 3016 | - 18 |
| Base number | mgKOH/g | DIN ISO 3771 | 16 |

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# SRS Motor Oil O-278

Motor oil

April 2014

## Properties

SRS Motorenöl O-278 is designed for the lubrication of all types of combustion engine in marine vehicles and machinery. The lubrication oil is also suitable for hydraulic converters and main couplings, shift gear boxes and other gearing in marine vehicles.

## Application

SRS Motorenöl O-278 with the viscosity grade SAE 40 is determined for use in a temperature range from +5° to +50°C. It can be used in aggregates, where an engine oil with the specification MTU type 2 is required.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 40 |
| API | CI-4 |
| ACEA | E7 |
| NATO Code | O-278 |

## Approvals / Recommendations

SRS Motorenöl O-278 is approved by the German Army against specification TL 9150-0031/4 with the qualification certificate B-0431.

| Typical data | | Test method | SRS Motor Oil O-278 |
|---|---|---|---|
| SAE Grade | | SAE J 300 | 40 |
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,893 |
| Kin. Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 128 |
| Kin. Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 13,9 |
| Flash point COC | °C | DIN ISO 2592 | 270 |
| Pour point | °C | DIN ISO 3016 | - 27 |
| Base number | mgKOH/g | DIN ISO 3771 | 10,9 |
| Sulphat ash | g/100 g | DIN 51 575 | 1,4 |

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# SRS WIOLAN O-262

Gear oil

December 2014

## Properties

SRS Wiolan O-262 gear oil is used for the lubrication of highly loaded gear drives, especially for gearing with high susceptibility to seizure due to high sliding speed and high Hertzian stress, such as in marine propulsion systems (circulating lubrication) used.

## Performance / Specifications

| | |
|---|---|
| SAE Grade | 80W |
| Nato Code | O-262 |
| German army Code | OY1155 |
| ISO VG | 100 |

## Approvals / Recommendations

SRS Wiolan O-262 corresponds to the viscosity class ISO VG 100 to ISO 3448 and SAE Viscosity Grade 80W to SAE J 306. It can be used in an operating temperature range of - 20 ° C to + 100 ° C.

| Typical data | | Test method | SRS Motor Oil O-262 |
|---|---|---|---|
| Density at 15 °C | g/cm³ | DIN 51 757 | 0,882 |
| Kin. Viscosity at 0 °C | mm²/s | DIN EN ISO 3104 | 1570 |
| Kin. Viscosity at 40 °C | mm²/s | DIN EN ISO 3104 | 93,5 |
| Kin. Viscosity at 100 °C | mm²/s | DIN EN ISO 3104 | 10,7 |
| Viscosity index (VI) | | DIN ISO 2909 | 982 |
| Flash point COC | °C | DIN ISO 2592 | 250 |
| Pour point | °C | DIN ISO 3016 | - 30 |
| Steel corrosion | Note | DIN ISO 7120 | 0-B |
| Cooper corrosion | Note | DIN EN ISO 2160 | 1a |
| FZG-Test A/16, 6/90 | SKS | DIN ISO 14 635 | > 12 |

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# Packaging Information

November 2015

## Available Packages

SRS Lubricants are available in the following packages*:

| | |
|---|---|
| Drum, new | 208 Liters |
| Drum, new | 60 Liters |
| Pail | 20 Liters |
| 5 Liter bottle | 4 x 5 L in cardboard box |
| 4 Liter bottle | 4 x 4 L in cardboard box |
| 1 Liter bottle | 12 x 1 L in cardboard box |

* Not all products are available in every package.
Please ask for availability.

## Packing scheme – Truck

| Package | Package / Pallet | Layers / Pallet |
|---|---|---|
| 208 L | 4 drums / Pallet | 1 layer à 4 drums |
| 60 L | 6 drums / Pallet | |
| 20 L | 26 pails / EUR-Pallet | 2 layers à 13 pails |
| 4 x 5 L | 28 cardboard boxes / EUR-Pallet | 4 layers à 7 cardboard boxes |
| 4 x 4 L | 40 cardboard boxes / EUR-Pallet | 4 layers à 10 cardboard boxes |
| 12 x 1 L | 32 cardboard boxes / EUR-Pallet | 4 layers à 8 cardboard boxes |

## Packing scheme – FCL 20'

| Package | Package/FCL | Weight (KG) | Weight (Total KG/FCL) |
|---|---|---|---|
| 208 L | 80 drums | 197,00 / drum | 15.760 |
| 60 L | 270 drums | 53,80 / drum | 14.526 |
| 20 L | 960 pails | 19,10 / pail | 18.336 |
| 4 x 5 L | 721 boxes | 19,35 / box | 13.951 |
| 4 x 4 L | 940 boxes | 15,65 / box | 14.711 |
| 12 x 1 L | 1.278 boxes | 11,94 / box | 15.259 |

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