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HEAVY DUTY DIESEL ENGINE OILS



GUARDOL FLEET EC® DIESEL ENGINE OIL (15W-40)

Guardol Fleet EC Diesel Engine Oil is designed for use in mixed fleets with both on-highway and off-road equipment operating in varying climates and under varying loads and service conditions. It has excellent soot dispersancy to protect against soot-induced oil thickening and abrasive wear, and excellent oxidation resistance to help minimize deposit formation. The low-ash formulation protects exhaust catalysts on low-emission engines and helps prolong DPf life.

**LICENSED OR
OEM-CERTIFIED FOR:**

- API Service CK-4, CJ-4, CI-4 PLUS, SN (SAE 15W-40 only)
- Cummins CES 20086
- Detroit Diesel DFS 93K222
- Mack EOS 4.5
- Mercedes-Benz Sheet 228.31 (SAE 15W-40)
- MTU MTL 5044 Type 2.1 (SAE 15W-40)
- Renault VI RLD-4
- Volvo VDS-4.5
- Ford WSS-M2C171-F1

**MEETS OR EXCEEDS
THE REQUIREMENTS OF:**

- ACEA E9
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Chrysler MS-10902 (SAE 15W-40)
- Diesel engines manufactured by OEMs not listed above, where the OEM specifies API CK-4 engine oil

APPLICATIONS:

- On-highway diesel trucks equipped with EGR and exhaust after treatment systems to meet 2007/2010 emissions standards
- Older diesel equipment with conventional, non-EGR engines, or ACERT engines
- Off-highway construction, earth moving, and mining equipment

FEATURES/BENEFITS:

- Excellent protection for newer low-emission diesel engines and older diesel engines
- Specially formulated to protect exhaust aftertreatment systems
- Protects against particulate filter plugging
- Excellent soot control for protection against abrasive wear and soot-induced oil thickening
- Excellent resistance to viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Protects against rust, bearing corrosion and wear
- Good resistance to foaming and aeration

GUARDOL ECT® SYNTHETIC BLEND DIESEL ENGINE OIL (10W-30, 15W-40)

Guardol ECT (Emission Compatible Technology) Synthetic Blend Diesel Engine Oil is a premium quality, part-synthetic API CK-4 engine oil developed for use in four-stroke cycle diesel engines designed to meet 2007 and later EPA on-highway exhaust emissions standards. It is specially formulated for compatibility with exhaust aftertreatment systems using diesel particulate filters (DPF), diesel oxidation catalysts (DOC) and/or selective catalytic reduction (SCR). It is backward serviceable for use in pre-2007 diesel engines.

**LICENSED OR
OEM-CERTIFIED FOR:**

- ACEA E9
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Chrysler MS-10902 (SAE 15W-40)
- Ford WSS-M2C171-E
- JASO DH-2 (SAE 15W-40)
- Diesel engines manufactured by OEMs not listed above, where the OEM specifies API CK-4 engine oil

**MEETS OR EXCEEDS THE
REQUIREMENTS OF:**

- API Service CK-4, CJ-4, CI-4 PLUS
- Cummins CES 20086
- Detroit Diesel DFS 93K222
- Mack EOS-4.5
- Mercedes-Benz Sheet 228.31 (SAE 15W-40)
- MTU MTL 5044 Type 2.1 (SAE 15W-40)
- Renault VI RLD-4 (SAE 15W-40)
- Volvo VDS-4.5
- Ford WSS-M2C171-F1

APPLICATIONS:

- On-highway diesel trucks equipped with EGR and exhaust aftertreatment systems to meet 2007/2010 emissions standards
- Older diesel equipment with conventional, non-EGR engines, or ACERT engines
- Off-highway construction, earth moving, and mining equipment

FEATURES/BENEFITS:

- Excellent protection for newer low-emission diesel engines and older diesel engines
- Specially formulated to protect exhaust aftertreatment systems
- Exclusive Liquid Titanium protection additive provides enhanced oxidation resistance and protection against engine wear
- Outstanding soot control for protection against abrasive wear and soot-induced oil thickening
- Outstanding resistance to viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Protects against rust and bearing corrosion
- Excellent low-temperature pumpability with soot-laden oil
- High shear stability
- Good resistance to foaming and aeration

GUARDOL XT™ FULL SYNTHETIC DIESEL ENGINE OIL (0W-40, 5W-40)

Guardol XT Full Synthetic Diesel Engine Oil is a premium quality, full-synthetic engine oil developed for use in 4-stroke cycle diesel engines operating under severe duty service or extreme temperature conditions. It meets API CK-4 performance requirements for use in modern low-emission engines designed to meet 2007 and later EPA on-highway exhaust emissions standards, and is backward serviceable for use in older diesel engines. It is specially formulated for compatibility with exhaust aftertreatment systems using diesel particulate filters (DPF), diesel oxidation catalysts (DOC), and/or selective catalytic reduction (SCR). The full-synthetic formulation provides excellent low-temperature properties for better performance in harsh winter climates.

**MEETS OR EXCEEDS
THE REQUIREMENTS OF:**

- API Service CK-4 CJ-4, CI-4 PLUS, SN
- Cummins CES 20086
- Detroit Diesel DFS 93K222
- Deutz DQC III-10
- Mack EOS 4.5, Volvo VDS 4.5
- Mercedes-Benz Sheet 228.31
- Renault VI RLD-4
- Ford WSS-M2C171-F1
- ACEA E9-08, E7-08
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Diesel engines manufactured by OEMs not listed above, where the OEM specifies API CK-4 engine oil

APPLICATIONS:

- On- and off-highway diesel equipment operating at low ambient temperatures
- On-highway diesel trucks equipped with EGR and exhaust aftertreatment systems to meet 2007/2010 emissions standards
- Older diesel equipment with conventional, non-EGR engines or ACERT engines
- Off-highway construction, earth moving and mining equipment
- Mixed fleets with diesel and gasoline-fueled vehicles

FEATURES/BENEFITS:

- Excellent protection for newer low-emission diesel engines and older diesel engines
- Specially formulated to protect exhaust aftertreatment systems
- Outstanding soot control for protection against abrasive wear and soot-induced oil thickening
- Outstanding resistance to viscosity and thermal breakdown at high temperatures
- Exclusive Liquid Titanium additive provides enhanced oxidation and wear control
- Protects against rust, bearing corrosion and wear
- Excellent low-temperature pumpability for easier starting and less wear during cold starts
- High shear stability
- High resistance to foaming and aeration



GEAR OILS



MP GEAR LUBE (80W-90, 85W-140)

MP Gear Lube is formulated to provide long service life and extended gear life in automotive differentials operating under varying conditions of speed, load, temperature and torque. The carefully balanced formulation is designed to minimize oxidative sludge and varnish formation, reduce wear, prevent scoring damage, and protect against metal fatigue and spalling damage under shockload conditions.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service GL-5, MT-1
- Meritor O76-A (SAE 85W-140), O76-D (SAE 80W-90), O76-E (SAE 75W-90)
- MIL-PRF-2105E

REGISTERED OR APPROVED FOR:

- Mack GO-J (SAE 80W-90, 85W-140)
- MAN 342 Type M2 (SAE 75W-90, SAE 80W-90)
- MAN 342 Type M1 (SAE 85W-140)
- SAE J2360 (SAE 80W-90, 85W-140)

APPLICATIONS:

- Service fill of conventional differentials in passenger cars and trucks
- Top-off only of limited-slip differentials in passenger cars and light trucks¹

¹ Note: For complete drain and refill, many limited-slip differentials may require the manufacturer's specified gear lubricant or supplemental additive. Refer to the owner's manual for specific requirements.

- Service fill of differentials, final drives and transfer cases in some off-highway equipment
- Non-synchronized manual transmissions in trucks, buses and heavy equipment where the manufacturer specific es an API GL-5 or MT-1 gear oil

FEATURES/BENEFITS:

- Excellent oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent thermal durability and extreme-pressure (EP) properties for extended gear life
- High load-carrying capacity for protection against scuffing and wear
- Protects against rust and corrosion
- Good foam resistance

POWERDRIVE® FLUID (10W, 30, 50)

PowerDrive Fluid is formulated with state-of-the-art additive technology that provides improved deposit control, corrosion protection and load-carrying capacity for better equipment protection and more reliable operation. Its carefully optimized frictional properties prevent clutch slippage for smoother, more consistent transmission operation and also provide improved wet brake performance.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Caterpillar TO-4, TO-2²
- Vickers (Eaton) M-2950-S

OEM-APPROVED FOR SERVICE FILL IN:

- Allison TES-439, for off-highway applications (approval no. 439-33372012)

APPLICATIONS:

- Powershift transmissions, hydrostatic transmissions, torque converters, final drives and hydraulic systems of Caterpillar, Euclid, Komatsu and other off-highway construction and mining equipment
- Heavy-duty automatic transmissions where the OEM specifies an Allison C-4 quality fluid
- Heavy-duty manual and semi-automatic transmissions in trucks and buses where the OEM specific es a Caterpillar TO-4 quality fluid or a heavy-duty engine oil

² Note: Typically, the SAE 10W and 30 viscosity grades are recommended for hydraulic systems and transmissions, and the SAE 50 viscosity grade is recommended for differentials,final drives and heavy-duty manual transmissions. Refer to the OEM recommendations for selection of the proper viscosity grade.

POWERDRIVE® SYNTHETIC ALL SEASON TO-4 FLUID (5W-30)

PowerDrive Synthetic All Season TO-4 Fluid is formulated with synthetic base stocks and state-of-the-art additive technology that reduces deposits on critical parts, provides improved yellow metal protection, and increases load carrying capacity for enhanced performance and more reliable operation. Its carefully optimized frictional properties prevent clutch slippage for smoother, more consistent transmission operation and also provide improved wet brake performance. The synthetic base stocks provide improved low-temperature performance for easier starting in frigid climates and better thermal stability at high temperatures for extended lubricant life under severe operating conditions.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Caterpillar TO-4

APPLICATIONS:

- Powershift transmissions, hydrostatic transmissions, torque converters, final drives and hydraulic systems of Caterpillar, Euclid, Komatsu and other off-highway construction and mining equipment
- Heavy-duty automatic transmissions where the OEM specifies an Allison C-4 quality fluid
- Heavy-duty manual and semi-automatic transmissions in trucks and buses where the OEM specifies a Caterpillar TO-4 quality fluid or a heavy-duty engine oil

CAUTION: Refer to the OEM recommendations for recommended temperature ranges.

FEATURES/BENEFITS:

- Synthetic formulation for enhanced performance in arctic temperatures
- Well-balanced frictional properties for smooth and efficient clutch operation
- Outstanding oxidation resistance and thermal stability for long fluid life
- High load-carrying capacity for protection of final drive gear sets
- Excellent deposit control and wear protection
- Protects yellow metals against corrosion
- High shear stability
- Compatible with a wide variety of seals and friction materials
- Excellent low-temperature properties for easier starting at low ambient temperatures
- Good foam resistance
- Suitable for year-round use in most climates

POWERDRIVE SYNTHETIC ARCTIC TO-4 FLUID (0W-20)

PowerDrive Synthetic Arctic TO-4 Fluid is formulated with synthetic polyalphaolefin (PAO) base stocks and state-of-the-art additive technology that reduces deposits on critical parts, provides improved yellow metal protection, and increases load-carrying capacity for enhanced performance and more reliable operation. Its carefully optimized frictional properties prevent clutch slippage for smoother, more consistent transmission operation and also provide improved wet brake performance. The synthetic base stocks provide improved low-temperature performance for easier starting in frigid climates and better thermal stability at high temperatures for extended lubricant life under severe operating conditions.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Caterpillar TO-4

APPLICATIONS:

- Powershift transmissions, hydrostatic transmissions, torque converters, final drives and hydraulic systems of Caterpillar, Euclid, Komatsu and other off-highway construction and mining equipment operating in arctic climates

CAUTION: Refer to the OEM recommendations for recommended temperature ranges.

FEATURES/BENEFITS:

- Synthetic formulation for enhanced performance in arctic temperatures
- Well-balanced frictional properties for smooth and efficient clutch operation
- Outstanding oxidation resistance and thermal stability for long fluid life
- High load-carrying capacity for protection of final drive gear sets
- Excellent deposit control and wear protection
- Protects yellow metals against corrosion
- High shear stability
- Compatible with a wide variety of seals and friction materials
- Excellent low-temperature properties for easier starting at low ambient temperatures
- Good foam resistance

POWERTRAN® FLUID

PowerTran Fluid is a multi-functional fluid specially formulated for use in farm tractors and other off-highway equipment requiring one lubricant for the transmission, final drive, wet brakes and hydraulic systems. It meets the performance requirements of all major brands of farm tractors and other farm equipment that utilize a common fluid reservoir.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API GL-4

APPLICATIONS:

- AGCO (Deutz-Allis) Power Fluid 821XL
- AGCO (White Farm) Q-1826, Q-1802 (Type 55 Fluid), Q-1766B
- Allison automatic transmissions in off-highway applications where a C-4 fluid is specified
- Case IH MS1210, MS1209, MS1207, MS1206
- Case New Holland (CNH) MAT3525 (134-D Fluid)

- Caterpillar TO-2 (obsolete)
- Denison Hydraulics HF-0, HF-1, HF-2
- John Deere JDM J20C, J20D (low viscosity), J14C (Type 303 Fluid)
- Ford ESN M2C134-D, M2C86-C&B, M2C41-B
- Ford-New Holland FNHA-2-C-201.00
- Kubota UDT Fluid
- Landini Tractor II Hydraulic Fluid
- Massey Ferguson M1141, M1135, M1129A, CMS M1145/M1143
- Sundstrand Hydrostatic Transmission Fluid
- Vickers (Eaton) M-2950-S, I-286-S
- Volvo VME WB 101/VCE 1273.03
- ZF TE-ML 03E, 05F, 17E, 21F

FEATURES/BENEFITS:

- Excellent oxidation resistance and thermal stability
- Excellent wear protection for clutches, gears and hydraulic pumps
- Prevents brake chatter and grabbing
- Protects against rust and corrosion
- Excellent seal compatibility
- Good foam resistance
- Improved shear stability

POWERTRAN XP FLUID

PowerTran XP is a multi-functional fluid specially formulated for use in farm tractors and other off-highway equipment requiring one lubricant for the transmission, final drive, wet brakes and hydraulic systems. It meets the performance requirements of all major brands of farm tractors and other farm equipment that utilize a common fluid reservoir.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API GL-4

APPLICATIONS:

- AGCO Power Fluid 821XL, Q-1826, Q-1802 (Type 55 Fluid), Q-1766B

- Case IH MS1210, MS1209, MS1207, MS1206
- Case New Holland (CNH) MAT3525 (134-D Fluid), MAT3506, MAT3505, MAT3540
- Denison Hydraulics HF-0, HF-1, HF-2
- Ford ESN-M2C134-D, ESN-M2C86-C, ESN-M2C86-B, ESN-M2C41-B
- Ford-New Holland FNHA-2-C-201.00
- John Deere JDM J20C, J14C (Type 303 Fluid)
- Kubota UDT Fluid, Super UDT 2
- Landini Tractor II Hydraulic Fluid
- Massey Ferguson CMS M1145/M1143, M1141, M1135, M1129A
- Sundstrand Hydrostatic Transmission Fluid
- Vickers (Eaton) M-2950-S, I-286-S
- Volvo VME WB 101 (VCE 1273.03)
- ZF TE-ML 03E, 05F, 17E, 21F

FEATURES/BENEFITS:

- Excellent oxidation resistance and thermal stability
- Excellent wear protection for clutches, gears and hydraulic pumps
- Prevents brake chatter and grabbing
- Protects against rust and corrosion
- Excellent seal compatibility
- Good foam resistance
- Improved shear stability

EXTRA DUTY GEAR OIL

Extra Duty Gear Oil is a premium quality, heavy-duty, extreme-pressure (EP) industrial gear oil developed for the lubrication of heavily loaded enclosed gear drives operating under moderate to severe service conditions. It is specially formulated with “clean gear” additive technology to minimize deposit formation and provide excellent gearbox cleanliness. It is recommended for use in all applications where the equipment manufacturer specifies an AGMA EP gear oil.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- ANSI/AGMA Standard 9005-E02, Anti-Scuff/Anti-Wear (EP) Oils
- DIN 51517 Part 3, Lubricating Oils, Type CLP
- Fives Cincinnati P-77 (ISO VG 150), P-74 (ISO VG 220), P-59 (ISO VG 320), P-35 (ISO VG 460) (approved)
- German Steel Industry SEB 181226, Type CLP
- ISO 12925-1, Type L-CKC
- U.S. Steel 224

APPLICATIONS:

- Enclosed industrial gear drives operating under heavy loads, high peak loads or intermittent shock loads

- Enclosed spur, bevel, helical, herringbone and planetary gear drives where the equipment manufacturer specifies an AGMA EP gear oil
- Heavily loaded plain and rolling-element bearings

FEATURES/BENEFITS:

- High load-carrying capacity for protection against scuffing and wear
- Excellent oxidation resistance and thermal stability
- Excellent deposit control for gearbox cleanliness
- Protects against rust and corrosion
- Fast water separation
- Quick foam release
- Effective mist suppression (“M” grades)

TRITON® SYNGEAR FE

Triton Syngear FE is formulated to provide long service life, extended gear life and better fuel economy in automotive differentials operating under varying conditions of speed, load, temperature and torque. The carefully balanced formulation is designed to minimize oxidative sludge and varnish formation, reduce wear, prevent scoring damage, and protect against metal fatigue and spalling damage under shock-load conditions. The full-synthetic formulation provides enhanced oxidation resistance and thermal stability at high temperatures and better lowtemperature properties compared with conventional mineral oil-based automotive gear oils, resulting in longer service intervals and better performance over a wider temperature range. In standard industry and commercial fleet tests, this product has shown a fuel savings of 1.0-1.5% compared to typical synthetic SAE 75W-90 gear oils.

OEM-APPROVED FOR SERVICE FILL IN:

- Dana SHAES-256 Rev C, SHAES-429

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service GL-5, MT-1
- International (Navistar) TMS 6816
- Mack GO-J Plus
- Meritor O76-N
- MIL-PRF-2105E
- SAE J2360

APPLICATIONS:

- Service fill of conventional differentials in passenger cars and trucks
- Top-off only of limited-slip differentials in passenger cars and light trucks¹
- Service fill of differentials, final drives and transfer cases in some off-highway equipment
- Non-synchronized manual transmissions in trucks, buses and heavy equipment where the manufacturer specifies an API GL-5 or MT-1 gear oil

FEATURES/BENEFITS:

- Extended drain, all-season performance
- Outstanding oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent thermal durability and extreme-pressure properties for extended gear life
- High load-carrying capacity for protection against scuffing and wear
- High shear stability
- Outstanding low-temperature properties
- Protects against rust and corrosion
- Good foam resistance
- Reduces axle operating temperatures compared with conventional mineral gear oils

TRITON SYNTHETIC GEAR LUBE

Triton Synthetic Gear Lube is formulated to provide long service life and extended gear life in automotive differentials operating under varying conditions of speed, load, temperature and torque. The carefully balanced formulation is designed to minimize oxidative sludge and varnish formation, reduce wear, prevent scoring damage, and protect against metal fatigue and spalling damage under shock-load conditions. The full-synthetic formulation provides enhanced oxidation resistance and thermal stability at high temperatures and better low-temperature properties compared with conventional mineral oil-based automotive gear oils, resulting in longer service intervals and better performance over a wider temperature range.

OEM-APPROVED FOR SERVICE FILL IN:

- Dana SHAES-429
- Mack GO-J

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service GL-5, MT-1
- International (Navistar) TMS 6816
- MIL-PRF-2105E
- SAE J2360

APPLICATIONS:

- Service fill of conventional differentials in passenger cars and trucks
- Top-off only of limited-slip differentials in passenger cars and light trucks²
- Service fill of differentials, final drives and transfer cases in some off-highway equipment

- Non-synchronized manual transmissions in trucks, buses and heavy equipment where the manufacturer specifies an API GL-5 or MT-1 gear oil

FEATURES/BENEFITS:

- Extended drain, all-season performance
- Outstanding oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent thermal durability and extreme-pressure properties for extended gear life
- High load-carrying capacity for protection against scuffing and wear
- High shear stability
- Outstanding low-temperature properties
- Protects against rust and corrosion
- Good foam resistance
- Potential fuel savings compared with conventional SAE 85W-140 gear oils

SYNGEAR SS

Syngear SS combines outstanding thermal stability and oxidation resistance at high temperatures with outstanding low-temperature properties to ensure excellent performance over a wide temperature range. It has been shown in field tests to lower operating temperatures in axles when compared with conventional mineral gear oils.

OEM-APPROVED FOR SERVICE FILL IN:

- Mack GO-J

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service GL-5, MT-1

- Ford WSL-M2C192-A
- Meritor O76-M
- MIL-PRF-2105E
- SAE J2360

APPLICATIONS:

- Service fill of conventional differentials, and top-off only of limited-slip differentials, in passenger cars and trucks³
- Service fill of differentials, final drives and transfer cases in some off-highway equipment
- Non-synchronized manual transmissions in trucks, buses and heavy equipment where the manufacturer specifies an SAE 75W-140, API GL-5 or MT-1 gear oil

FEATURES/BENEFITS:

- Extended drain, all-season performance
- Outstanding oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent thermal durability and extreme-pressure properties for extended gear life
- High load-carrying capacity for protection against scuffing and wear
- High shear stability
- Outstanding low-temperature properties
- Protects against rust and corrosion
- Good foam resistance
- Reduces axle operating temperatures compared with conventional mineral gear oils

MULTIPURPOSE R&O OIL

Multipurpose R&O Oil is a rust and oxidation (R&O)-inhibited, anti-wear circulating oil developed for use in circulation systems, centrifugal air compressors, geared turbines, lightly loaded enclosed gear drives and many other industrial applications. It contains a low level of ashless (zinc-free) anti-wear additive for mild wear protection.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- ABB G12106
- AGMA Grades 0 through 7 (non-EP)
- Alstom Power HTGD 90 117 for geared turbines
- ASTM D4304 Type I Turbine Oil (ISO VG 32, 46, 68, 100)
- British Standard 489
- Denison Hydraulics HF-1
- DIN 51517 Part 2, Lubricating Oils, Type CL
- DIN 51524 Part 1, Hydraulic Oils, Type HL

- General Electric GEK 101941A, GEK 46506e, GEK 27070 (obsolete), GEK 28143A (obsolete)
- Ingersoll-Rand Centak centrifugal compressors
- Solar Turbines ES 9-224 Class II Turbine Oil
- U.S. Military MIL-L-17672D
- U.S. Steel 126

APPLICATIONS:

- Air tools and other pneumatic equipment lubricated through air line lubricators
- Centrifugal air compressors
- Steam turbines and hydroelectric turbines, both direct-drive and with gear drives
- Lightly loaded enclosed industrial gear drives where the OEM specifies a R&O type oil (ISO VG 68 and higher, typically)
- Lightly loaded plain and rolling-element bearings, such as those in electric motors and blowers

- Vacuum pumps, deep-well water pumps and machine tools
- General-purpose machinery and shop lubrication

FEATURES/BENEFITS:

- Good oxidation resistance to minimize sludge and varnish formation
- Mild wear protection
- Protects against rust and corrosion
- Excellent water-separating properties
- Low carbon-forming tendency for use in centrifugal air compressors
- Good foam resistance

SYNCON® EP PLUS GEAR OIL

Syncon EP Plus Gear Oil is a premium quality, synthetic, extreme-pressure industrial gear lubricant developed for the lubrication of enclosed gear drives and heavily loaded plain or rolling-element bearings operating at extreme temperatures or in severe service. It is suitable for use over a wider temperature range than conventional mineral oil-based gear oils. It meets the performance requirements of major gear drive manufacturers.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- ANSI/AGMA Standard 9005-F16, Anti-Scuff Lubricants (AS)
- DIN 51517 Part 3, Lubricating Oils, Type CLP HC
- German Steel Industry SEB 181226, Type CLP HC
- ISO 12925-1:1996, Type L-CKC

- Joy Machinery Specification TO-SHEP (ISO VG 320), TO-SMEP (ISO VG 220)
- U.S. Steel 224

APPLICATIONS:

- Heavily loaded enclosed gear drives, such as those found in mine hoists and mining machinery
- Enclosed industrial gear drives operating at very low or very high temperatures, or operating continuously at higher than normal operating temperatures
- Heavily loaded plain and rolling-element bearings operating at extreme temperatures
- Applications where the equipment manufacturer recommends a high VI, synthetic, extreme-pressure gear oil

FEATURES/BENEFITS:

- Excellent oxidation resistance and thermal stability
- Excellent wear protection for clutches, gears and hydraulic pumps
- Prevents brake chatter and grabbing
- Protects against rust and corrosion
- Excellent seal compatibility
- Good foam resistance
- Improved shear stability

SYNCON MIST OIL

Syncon Mist Oil is a premium quality, synthetic, extreme-pressure (EP) gear lubricant developed for use in oil mist lubrication systems for enclosed industrial gear drives operating under extreme-temperature conditions.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- ANSI/AGMA Standard 9005-F16, Anti-Scuff Lubricants¹
- U.S. Steel 224

APPLICATIONS:

- Lightly to moderately loaded enclosed industrial gear drives with spur, helical, herringbone, or bevel gears
- Chain drives
- Plain and rolling-element bearings in rolling, rod, and wire mills

FEATURES/BENEFITS:

- Outstanding oxidation resistance and thermal stability at high temperatures
- Excellent low-temperature fluidity
- High load-carrying capacity
- Reduces stray mist
- Low fogging tendency
- Protects against scuffing and wear
- Protects against rust and corrosion

¹ Note: Syncon Mist Oil is not recommended for use in worm gear drives with bronze or brass bull gears, since these types of gears require heavier viscosity lubricants with oiliness agents.

SYNCON R&O OIL

Syncon R&O Oil (ISO VG 100-680) is a premium quality, synthetic, rust and oxidation (R&O)-inhibited circulating oil developed for use in circulating systems, lightly loaded enclosed gear drives, and other industrial equipment operating under severe-service conditions or at extreme temperatures. It is particularly recommended for use in applications where operating conditions may be unfavorable or too severe for conventional mineral oil-based circulating oils.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- AGMA 9005-F16 Inhibited, R&O, Lubricants

APPLICATIONS:

- Plain and rolling-element bearings operating at very high or very low temperatures, and sealed-for-life bearings

- Lightly to moderately loaded enclosed industrial gear drives that do not require a compounded or extreme-pressure (EP) gear lubricant
- Circulating systems of paper machine dryer sections and calender stacks
- Industrial blowers
- Industrial worm gear drives with bronze-on-steel gears
- Reciprocating air compressors where the manufacturer specifies a PAO-based lubricant (ISO VG 100 or 150, typically)
- Lubrication of the upper cylinders of gas compressors handling natural gas or process gas (ISO VG 150 or 220, typically)
- Industrial equipment operating over a wide temperature range where an inhibited mineral oil is recommended

FEATURES/BENEFITS:

- Outstanding resistance to thermal breakdown at high temperatures
- Outstanding oxidation resistance to minimize deposit and varnish formation
- Protects against wear
- Protects against rust and corrosion
- Good water-separating properties
- Good foam resistance
- Excellent low-temperature fluidity
- Extended service intervals compared with mineral oil-based lubricants
- Compatible with mineral oil-based lubricants²

² Note: For optimum performance, the mineral oil lubricant should be drained before using Syncon R&O Oil. Mixing the two products can reduce the effectiveness and performance advantages normally gained by using Syncon R&O Oil.

GREASES



DYNALIFE® 150 (NLGI #1, #2, #3)

Dynalife 150 is manufactured with high quality base oils, a special polymer and lithium-12-hydroxystearate soap thickener. It is fortified with EP and antiwear additives plus rust and oxidation inhibitors. It has good load carrying capacity for protection against wear, good oxidation resistance for long service life, protects metal parts against rust and corrosion, and is resistant to water washout. It has good resistance to shearing and will not soften excessively during high speed operation in rolling element bearings. It forms a good seal to help minimize bearing contamination.

APPLICATIONS:

- Plain and rolling element bearings in compressors, fans, centrifugal pumps and other industrial equipment where operating temperatures and loads are moderate
- Chassis parts, universal joints and water pumps on passenger cars, light trucks and other mobile equipment
- Wheel bearings of passenger cars equipped with drum brakes
- Centralized grease lubrication systems (NLGI Grade No. 1 & 2)
- General purpose shop/industrial grease

FEATURES/BENEFITS:

- Good EP and antiwear properties
- Good shear stability
- Good oxidation resistance and thermal stability
- Protects against rust and corrosion
- Resists water washout
- Good low-temperature pumpability
- Suitable for use in centralized lube systems (NLGI Grade No. 1 & 2)

DYNALIFE 220 (NLGI #000, #00, #0, #1, #2)

Dynalife 220 is manufactured with high quality base oils and a lithium 12-hydroxystearate soap thickener. It is fortified with EP and antiwear additives plus rust and oxidation inhibitors. It has good load carrying capacity to protect against wear and good oxidation resistance for long service life. It protects metal parts against rust and corrosion, and is resistant to water washout. It has good resistance to shearing and will not soften excessively during high speed operation in rolling element bearings maintaining a good seal to minimize bearing contamination.

APPLICATIONS:

- Plain and rolling-element bearings in compressors, fans, centrifugal pumps and other industrial equipment where operating temperatures and loads are moderate
- Chassis parts, universal joints and water pumps on passenger cars, light trucks and other mobile equipment
- Track rollers, commercial lawn mowers, crushers and vibrating screens (semi-fluid grades)
- Enclosed gear drives on industrial, mining and mobile equipment where oil leakage is a problem (semi-fluid grades)
- Wheel bearings of passenger cars equipped with drum brakes
- Centralized grease lubrication systems
- General purpose shop/industrial grease

FEATURES/BENEFITS:

- Good EP and antiwear properties
- Excellent shear stability
- Good oxidation resistance and thermal stability
- Protects against rust and corrosion
- Excellent resistance to water washout
- Suitable for use in centralized lube systems

MEGAPLEX® XD3 (NLGI #1, #2)

Megaplex XD3 is a high-performance, multipurpose, extreme-pressure (EP) lithium complex grease developed to satisfy the severe lubrication requirements of construction and off-road equipment manufactured by Caterpillar, Komatsu Dresser, Case New Holland, John Deere and others. It is particularly recommended for use in off-highway trucks and heavy equipment, such as excavators, bulldozers, motor graders and wheel loaders operating under heavy or shock loads.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Caterpillar Multipurpose Molybdenum Grease (MPGM)

APPLICATIONS:

- Chassis parts and wheel bearings of construction, mining and other heavy mobile equipment
- Universal joints, constant-velocity joints, brake self-adjusting screws and clutch-release bearings on off-highway trucks and other heavy equipment
- Tractor-trailer fifth wheels
- Heavily loaded plain and rolling-element bearings in industrial and mobile equipment where the manufacturer specifies a high temperature, extreme-pressure grease with 3% moly

FEATURES/BENEFITS:

- High dropping point (>500°F)
- High load-carrying capacity
- Excellent wear protection
- Contains 3% moly for extra protection against galling and wear under shock loads
- Outstanding resistance to water washout
- Excellent resistance to oil separation
- Protects against rust and corrosion
- NLGI GC-LB-certified (NLGI Grade No.1)

MEGAPLEX XD5 (NLGI #0, #1, #2)

Megaplex XD5 is a high-performance, multipurpose, extreme-pressure (EP), lithium complex grease developed to satisfy the severe lubrication requirements of mining and off-road equipment manufactured by Caterpillar, Terex, Komatsu Dresser, Le Tourneau, P&H and others.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Caterpillar Multipurpose Molybdenum Grease (MPGM)

APPLICATIONS:

- Chassis parts and wheel bearings on mining and other off-highway equipment
- Hydraulic excavator mining shovels, such as Caterpillar 5100 and 5200 series
- Mine haul trucks
- Heavily loaded plain and rolling-element bearings in industrial and mobile equipment where the manufacturer specifies a high-temperature, EP grease with 5% moly

FEATURES/BENEFITS:

- High dropping point (>500°F)
- High load-carrying capacity
- Excellent wear protection
- Contains 5% moly for extra protection against galling and wear under shock loads
- Excellent resistance to water washout
- Excellent resistance to separation
- Protects against rust and corrosion

MOLY LOW TEMP GREASE (NLGI #1)

Moly Low Temp is manufactured with low viscosity base oils and an aluminum complex soap thickener. It is compounded with select additives that provide EP and antiwear properties, good oxidation resistance, and rust and corrosion protection. It is fortified with 5% molybdenum disulfide (moly) for extra protection in equipment subject to heavy or shock loads. It has good shear stability and resistance to water washout. It is suitable for both winter and summer use in arctic climates.

APPLICATIONS:

- Mobile equipment and industrial machinery operating for prolonged periods at temperatures substantially below 32°F
- Chassis parts, wheel bearings, spring shackles and king pins on automotive and other mobile equipment operating in arctic climates
- Chassis parts and wheel bearings on mobile equipment such as lift trucks operating in refrigeration plants, cold storage rooms and sharp-freeze rooms
- Plain and rolling element bearings, slides and linkages on industrial equipment operating in cold rooms or at low ambient temperatures
- Track roller bearings and chassis parts on tractors, coal haulers, snow removal equipment and other heavy equipment operating in cold climates

FEATURES/BENEFITS:

- Suitable for year-round use in mobile equipment and industrial machinery operating in arctic climates
- Good low temperature properties down to -30°F
- Good EP and antiwear properties
- Contains moly for extra protection under heavy or shock loads
- Good oxidation resistance
- Protects against rust and corrosion
- Good shear stability
- Good resistance to water washout

MULTIPLEX® 220 (NLGI #1, #2)

Multiplex 220 is manufactured with high-quality base oils, a special polymer, and a lithium complex soap thickener. It is fortified with EP and anti-wear additives, a tackifier, and rust and oxidation inhibitors to provide outstanding wear protection, excellent thermal stability at high temperatures, and excellent resistance to corrosion and water washout. It forms an effective seal to help minimize bearing contamination and provides a high level of adhesion to bearing surfaces for improved retention and reduced leakage.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- NLGI GC-LB-certified for use as a multipurpose automotive wheel bearing and chassis lubricant

APPLICATIONS:

- Wheel bearings of passenger cars, trucks, high-performance vehicles, sport utility vehicles and motorcycles, particularly those equipped with disc brakes
- Ball joints, universal joints, other chassis parts, and water pumps on passenger cars, trucks and other mobile equipment
- Heavily loaded plain and rolling-element bearings in industrial, mining and mobile equipment

FEATURES/BENEFITS:

- Excellent high temperature performance
- Outstanding wear protection
- Good load-carrying capacity
- Excellent resistance to water washout
- Protects against rust and corrosion
- Excellent low temperature pumpability

MULTIPLEX 600 (NLGI #1, #2)

Multiplex 600 is manufactured with high-quality base oils, a special polymer and a lithium complex soap thickener. It is fortified with EP and anti-wear additives plus rust and oxidation inhibitors. It has excellent thermal stability at high temperatures, high load-carrying capacity for excellent wear protection, and protects metal parts against rust and corrosion. Its tackiness properties and heavy base oil provide a high level of adhesion to bearing surfaces, maintaining an effective seal to help minimize bearing contamination, improve retention, reduce leakage and provide excellent resistance to water washout.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- NLGI GC-LB-certified for use as a multipurpose automotive wheel bearing and chassis lubricant

APPLICATIONS:

- Agricultural, construction, mining and industrial equipment operating under heavy or shock loads
- Wheel bearings of passenger cars, trucks, high-performance vehicles, sport utility vehicles and motorcycles equipped with disc brakes
- Conveyor bearings

- Ball joints, universal joints, other chassis parts, and water pumps on passenger cars, trucks and other mobile equipment
- Pellet mills manufactured by Bliss Industries (Grade No. 2)

FEATURES/BENEFITS:

- Excellent high temperature performance
- Excellent wear protection
- High load-carrying capacity
- Protects against rust and corrosion
- Excellent resistance to water washout
- Good low temperature pumpability

OMNIGUARD® 220 (NLGI #1, #2)

Omniguard 220 is manufactured with high-quality base oils and a non-soap, calcium sulfonate thickener. It is fortified with EP and anti-wear additives as well as rust and corrosion inhibitors. It offers superior protection against rust and corrosion in high-humidity, high-temperature applications such as those found in the steel, lumber, tire manufacturing and paper industries. It has excellent load-carrying capacity, high shear stability and outstanding resistance to water washout.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- NLGI GC-LB-certified for use as a multipurpose automotive wheel bearing and chassis lubricant

APPLICATIONS:

- Industrial and automotive equipment operating at high temperatures and exposed to water contamination, high humidity or corrosive environmental conditions
- Marine equipment, heavy mobile equipment and cables exposed to salt water
- Paper machine wet- and dry-end bearings and hot calender stacks
- Rolling mills, hot roll tables, continuous casters, ingot buggies and slab mills
- Steel mill roller bearings, conveyors and gears
- Centralized lube systems and auto lubbers in service shops

FEATURES/BENEFITS:

- Excellent oxidation resistance and thermal stability at high temperatures
- Outstanding rust and corrosion protection, including resistance to saltwater corrosion
- Excellent EP and antiwear properties
- Outstanding resistance to water washout
- Excellent shear stability
- High dropping point (>550°F)
- Light colored, low staining



HYDRAULIC FLUIDS



MEGAFLOW® AW HYDRAULIC OIL (22, 32, 46, 68, 100, 150, 220, 320)

Megaflow AW Hydraulic Oil is formulated to provide excellent wear protection for hydraulic pumps and motors, and to protect hydraulic system components against rust and corrosion. It has excellent oxidation resistance and thermal stability at high temperatures to minimize deposit formation and provide long service life. It has excellent water-separating properties to minimize the formation of emulsions, and is resistant to excessive foam buildup that can cause poor or sluggish hydraulic system response.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Husky Injection Molding Systems (approved, ISO 46)
- Kraus Maffei Hydraulic Oil (ISO 46)
- Bosch Rexroth RE 90220, Type HLP
- DIN 51524 Part 2, Anti-wear Hydraulic Oils, Type HLP
- Parker Hannifin (Denison) HF-0, HF-1, HF-2 (approved ISO 32, 46, and 68)
- Eaton-Vickers I-286-S, M-2950-S,35VQ25A anti-wear performance (brochure 03-401-2010 Rev 1 ISO 32, 46, and 68)

- Fives Cincinnati P-68 (ISO VG 32), P-70 (ISO VG 46), P-69 (ISO VG 68) (approved)
- German Steel Industry SEB 181222
- ISO 11158:1997, Family H (Hydraulic Systems), Type HM
- U.S. Steel 127

APPLICATIONS:

- Hydraulic systems on industrial, mobile and marine equipment
- Plastic injection molding presses (ISO 46)
- Elevators, hoists, presses and floor jacks
- Marine cargo winches and steering systems
- Mobile construction equipment
- Service station lifts
- Air tools and other pneumatic equipment lubricated through air line lubricators
- Chain drives
- Electric motor bearings
- Lightly to moderately loaded enclosed industrial gear drives that do not require a compounded or extreme-pressure (EP) gear oil

FEATURES/BENEFITS:

- Excellent wear protection for hydraulic pumps and motors
- Excellent oxidation resistance and thermal stability
- Protects against rust and corrosion
- Excellent water-separating properties
- Good foam resistance

MEGAFLOW AW HVI HYDRAULIC OIL (22, 32, 46, 68, 100, 150, 220, 320)

Megaflow AW HVI Hydraulic Oil is a high-quality, high viscosity index anti-wear hydraulic oil developed for use in industrial and mobile equipment operating in cold climates or in locations subject to wide variations in ambient temperatures. It meets the performance requirements of all major hydraulic pump manufacturers and is recommended for use in all types of high-pressure, high-speed hydraulic pumps. It is particularly recommended for year-round use in mobile equipment such as bucket trucks, cranes and aerial lifts.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- DIN 51524 Part 3, Anti-wear Hydraulic Oils, Type HVLP
- Eaton-Vickers I-286-S, M-2950-S
- ISO 11158:1997, Family H (Hydraulic Systems), Type HV
- Parker Hannifin (Denison) HF-0, HF-1, HF-2

APPLICATIONS:

- Industrial and mobile equipment operating in cold weather or in locations subject to wide temperature fluctuations
- Bucket trucks (cherry pickers) used for servicing electrical power lines or for tree-trimming
- Hydraulic hoists and service station lifts
- Marine cargo winches and steering systems
- Off-road construction, mining and marine equipment
- Chain drives
- Electric motor bearings

FEATURES/BENEFITS:

- Excellent service over a wide temperature range
- Excellent wear protection for hydraulic pumps and motors
- Excellent oxidation resistance and thermal stability
- Protects against rust and corrosion
- Excellent water-separating properties
- Good foam resistance
- Excellent low-temperature properties for cold start-ups
- High dielectric strength for use in electrical service bucket trucks (cherry pickers)¹

¹ Note: In order to maintain its high dielectric strength for use as electrical insulating oil, the oil must be kept clean and dry. Contamination with water will significantly decrease the dielectric strength.

POWERFLOW™ NZ HYDRAULIC OIL (32, 46, 68)

Powerflow NZ Hydraulic Oil is a high-quality, zinc-free anti-wear hydraulic oil specifically developed for use in industrial and mobile equipment operating in environmentally sensitive areas. It is specially formulated for reduced environmental impact in case of leaks or spills. It is non-toxic to fish and aquatic species as determined by OECD Test Method 203 1-12, and is classified as inherently biodegradable by the OECD Test Method 301B. It passes the visual “no sheen” requirements of the U.S. EPA Static Sheen Test.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Husky Injection Molding Systems (approved, ISO 46)
- Kraus Maffei Hydraulic Oil (ISO 46)
- Bosch Rexroth RDE 90235 and is listed on the Bosch Rexroth Fluid Rating List RDE 90245
- DIN 51524 Part 2, Anti-wear Hydraulic Oils, Type HLP
- JCMAS P 041 (HK VG32, HK VG46)
- Parker Hannifin (Denison) HF-0, HF-1, HF-2 (approved ISO 32, 46, and 68)

- Eaton-Vickers I-286-S, M-2950-S, 35VQ25A anti-wear performance (brochure 03-401-2010 Rev 1 ISO 32, 46, and 68)
- Fives Cincinatti P-68 (ISO VG 32), P-70 (ISO VG 46), P-69 (ISO VG 68) (approved)
- German Steel Industry SEB 181222
- ISO 11158:1997, Family H (Hydraulic Systems), Type HM
- U.S. Steel 127
- U.S. EPA/U.S. Coast Guard Static Sheen Test, Federal Register Vol. 58, No.41

APPLICATIONS:

- Industrial and mobile systems operating at high temperatures and pressures in severe service
- Systems requiring enhanced load carrying capacity and thermal stability
- Environmentally sensitive applications where a non-toxic, inherently biodegradable, non-sheening fluid is preferred
- Plastic injection molding presses (ISO 46)
- Electric motor bearings

Note: Powerflow NZ Hydraulic Oil is compatible with most zinc-containing hydraulic oils, however, mixing the two products will lessen the environmental and performance benefits normally gained by using Powerflow NZ Hydraulic Oil.

POWERFLOW NZ HE HYDRAULIC OIL (32, 46)

Powerflow NZ HE Hydraulic Oil is a high-quality, high viscosity index, zinc-free anti-wear hydraulic oil developed for use in mobile equipment operating over a wide temperature range. It passes the visual “no sheen” requirements of the U.S. EPA Static Sheen Test, and is classified as inherently biodegradable by the OECD Test Method 301B.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Bosch Rexroth RE 90220, Type HVLP
- DIN 51524 Part 3, Anti-wear Hydraulic Oils, Type HVLP
- Parker Hannifin (Denison) HF-0, HF-1, HF-2
- Eaton-Vickers M-2950-S, I-286-S
- German Steel Industry SEB 181222
- JCMAS P 041 (HK VG32W, HK VG46W)
- Hitachi Advanced Hydraulic Oil (for use in dry systems only) (ISO VG 46)
- ISO 11158:1997, Family H (Hydraulic Systems), Type HV
- U.S. Steel 127
- U.S. EPA/U.S. Coast Guard Static Sheen Test, Federal Register Vol. 58, No. 41

APPLICATIONS:

- Industrial and mobile equipment operating in cold weather or in locations subject to wide temperature fluctuations
- Systems operating at high temperatures and pressures in severe service
- Systems requiring enhanced load carrying capacity and thermal stability
- Environmentally sensitive applications where a non-toxic, inherently biodegradable, non-sheening fluid is preferred

FEATURES/BENEFITS:

- Excellent oxidation resistance and thermal stability
- Protects against rust and corrosion (reduced sludge and deposit formation)
- Excellent water-separating properties
- Excellent wear protection for hydraulic pumps and motors
- Improved product compatibility with traditional zinc-based products
- Outstanding air release properties
- Inherently biodegradable
- Non-toxic to aquatic organisms

FEATURES/BENEFITS:

- High VI to reduce internal oil leakage and increase hydraulic system efficiency by up to 6% compared to conventional single-grade hydraulic oils
- Excellent oxidation resistance and thermal stability
- Protects against rust and corrosion (reduced sludge and deposit formation)
- Excellent water-separating properties
- Excellent wear protection for hydraulic pumps and motors
- Improved product compatibility with traditional zinc-based products
- Good filterability
- Inherently biodegradable
- Non-toxic to aquatic organisms
- Suitable for year-round use

SPECAILTY LUBRICANTS



TRANSMISSION FLUIDS



SPECIAL BAR & CHAIN OIL (68, 150, 220)

Special Bar & Chain Oil is an adhesive lubricant developed to lubricate the chain, bar guide, and drive sprocket on chain saws used in the logging industry. It is suitable for use with all types of chain saws equipped with either hand-operated or automatic oilers.

APPLICATIONS:

- Chain saws (bar guide, chain, and drive sprocket)
- Industrial chain drives
- Machine tool guides and slideways

FEATURES/BENEFITS:

- Protects against wear
- Resists sling-off
- Good foam resistance
- Dyed red for easy visibility on the chain

TRITON® 668 ATF

Triton 668 ATF is a full-synthetic, heavy-duty automatic transmission fluid designed for use in truck and bus transmissions operating under severe service conditions or in extended drain intervals. It is recommended by Phillips 66 for use in applications where the OEM specifies a fully approved Allison TES-668 fluid.

OEM-APPROVED FOR SERVICE FILL IN:

- Allison automatic transmissions where a TES-668 approved fluid is specified (Approval No. 668-10182021)

APPLICATIONS:

- Heavy-duty automatic transmissions in trucks and buses in extended drain or severe service, such as in intracity transit buses, intercity tour coaches, school buses, emergency vehicles, recreational vehicles, refuse vehicles and commercial utility vehicles

FEATURES/BENEFITS:

- Excellent friction durability for smooth shifting throughout the service interval
- Outstanding oxidation resistance and thermal stability for long fluid life

- Protects against sludge and varnish formation
- Protects against wear
- High shear stability maintains fluid integrity across the service interval
- Protects against rust and corrosion
- Outstanding low-temperature properties for easier shifting in cold weather
- Good seal compatibility and foam resistance
- Back-serviceable to Allison TES-295 applications and earlier

UNIGUIDE II (32, 46, 100, 150)

Uniguide II is a premium quality oil specially developed to provide optimum lubrication of saw guides and saw blades in sawmills. It is particularly recommended for the lubrication of arbor bearings and saw guide systems that utilize “thin kerf” technology in cutting lumber.

RECOMMENDED FOR USE IN SAW GUIDE SYSTEMS FROM ALL LEADING OEM, INCLUDING:

- Coe Newnes/McGehee
- Salem
- USNR (Schurman, Ukiah)

APPLICATIONS:

- Saw guides and blades
- Arbor bearings
- Saw system ways and gears

FEATURES/BENEFITS:

- Good metal-wetting ability
- Homogenizes into fine droplets in the presence of water
- Extreme-pressure properties for wear protection
- Resists sling-off
- Excellent filterability
- Protects against rust and corrosion
- Ashless formulation; does not contain heavy metals or chlorine
- Environmentally friendly and non-toxic to both freshwater and saltwater organisms

TRITON HEAVY DUTY

Triton Heavy Duty ATF is a full-synthetic, heavy-duty automatic transmission fluid designed for use in truck and bus transmissions operating under severe service conditions or in extended drain intervals. It is particularly recommended by Phillips 66 Company for use in applications where the OEM specifies a fluid providing performance capability comparable to the Allison on-highway extended drain specification.

OEM-APPROVED FOR SERVICE FILL IN:

- Allison automatic transmissions in off-highway applications where a C-4 fluid is specified (approval no. C4-32612008)

RECOMMENDED FOR SERVICE FILL IN:

- Allison automatic transmissions in on-highway applications where an extended drain fluid is specified
- Voith DIWA transmissions
- ZF Ecomat transmissions

APPLICATIONS:

- Heavy-duty automatic transmissions in trucks and buses in extended drain or severe service, such as in intracity transit buses, intercity tour coaches, school buses, emergency vehicles, recreational vehicles, refuse vehicles and commercial utility vehicles

FEATURES/BENEFITS:

- Excellent friction durability for smooth shifting throughout the service interval
- Outstanding oxidation resistance and thermal stability for long fluid life
- Protects against sludge and varnish formation
- Protects against wear
- High shear stability
- Protects against rust and corrosion
- Outstanding low-temperature properties for easier shifting in cold weather
- Good seal compatibility
- Good foam resistance

Note: Triton Heavy Duty ATF is not OEM-approved by Allison under their extended drain specification, nor is it OEM-approved by Voith or ZF. Recommendations are based on demonstrated field test performance and testing against Allison C-4, Ford MERCON® V and GM DEXRON®-III H transmission fluid specification requirements.

PCL-EP (46)

PCL-EP is a light viscosity, extreme-pressure Penetrating Chain Lubricant specially formulated to lubricate drive chains operating under heavy loads. It is particularly recommended for sharp chains used in sawmills.

APPLICATIONS:

- Sharp chains used in sawmills
- Industrial drive chains

FEATURES/BENEFITS:

- Good oiliness and extreme-pressure properties for wear protection
- Excellent rust and corrosion protection
- Good penetrating ability to lubricate drive chain pins and bushings

TRITON SYNTHETIC MTF

Triton Synthetic MTF (Manual Transmission Fluid) is a full-synthetic, fuel-efficient transmission lubricant designed for use in heavy-duty commercial manual transmissions operating in extreme temperatures and/or extended service intervals. It combines outstanding low-temperature properties with outstanding oxidation resistance and thermal stability at high temperatures to provide excellent all-climate, year-round performance. It provides improved fuel efficiency of up to 1.5% compared with previous-generation SAE 50 manual transmission fluids.

MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service MT-1

- Navistar MPAPS TMS 6816
- Mack TO-A Plus
- Meritor O-81

OEM-APPROVED FOR SERVICE FILL IN:

- Eaton PS-386 (supercedes Eaton PS-164 Rev 7)

APPLICATIONS:

- Heavy-duty manual and semi-automatic transmissions in commercial vehicles where the OEM specifies a non-EP SAE 40 or SAE 50 API MT-1 transmission fluid, an API GL-1 SAE 90 gear oil, or an SAE 40 or SAE 50 heavy-duty engine oil

FEATURES/BENEFITS:

- Extended drain, all-season performance
- Outstanding oxidation resistance and thermal stability to minimize sludge and varnish formation
- Improved low-temperature properties for easier shifting in cold weather
- Improved fuel efficiency
- High shear stability
- High load-carrying capacity
- Protects against component wear and gear micropitting
- Protects against rust and corrosion
- Good foam resistance
- Excellent seal compatibility

TRITON SYNTHETIC TRANSOIL 50

Triton Synthetic Transoil 50 is a full-synthetic SAE 50 transmission lubricant designed for use in heavy-duty manual and automated manual transmissions in trucks and buses operating in extreme temperatures and/ or extended service intervals. It combines improved low-temperature properties with outstanding oxidation resistance and thermal stability at high temperatures to provide excellent all-climate, year-round performance.

OEM-APPROVED FOR SERVICE FILL IN:

- Eaton PS-164 Rev 7
- Mack TO-A Plus
- Meritor O-81

APPLICATIONS:

- Heavy-duty manual and automated manual transmissions in trucks and buses where the OEM specifies a non-EP, API MT-1 SAE 50 or API GL-1 SAE 90 gear oil, or an SAE 50 heavy-duty engine oil
- Triton Synthetic Transoil 50 is recommended for multi-AMT out of warranty service lubricant for Eaton, Volvo iShift (Mack mDrive), and Detroit DT12 automated manual transmissions

FEATURES/BENEFITS:

- Extended drain, all-season performance
- Outstanding oxidation resistance and thermal stability to minimize sludge and varnish formation
- Excellent low-temperature properties for easier shifting in cold weather
- High shear stability
- High load-carrying capacity
- Protects against component wear and gear micropitting
- Protects against rust and corrosion
- Good foam resistance
- Excellent seal compatibility
- Potential fuel economy improvement compared with non-synthetic transmission fluids

SUPER ATF

Super ATF is a high-quality transmission fluid recommended for use in all domestic and import vehicles no longer under warranty where the OEM previously specified a GM DEXRON®-III H or Ford MERCON® fluid.

APPLICATIONS:

- GM and Ford automatic transmissions in 2005 and earlier model-year vehicles that are no longer under warranty, where the OEM previously specified DEXRON®-III H, DEXRON®-II, DEXRON® or MERCON® ATF
- Import vehicles where DEXRON®-III H¹ or an earlier-generation DEXRON® fluid¹ is specified
- Allison heavy-duty off-highway automatic transmissions that require a C-4 quality fluid
- Hydraulic systems on industrial and mobile equipment operating over a wide temperature range

Obsolete service category¹

FEATURES/BENEFITS:

- Proper frictional properties for smooth shifting and excellent anti-shudder performance
- Excellent thermal stability and oxidation resistance for long fluid life
- Excellent low-temperature properties
- Protects against wear
- Minimizes sludge and varnish deposits
- Protects against rust and corrosion
- Good seal compatibility
- Suitable for both automotive and industrial applications

¹ Note: Super ATF is not recommended for use in newer automatic transmissions that require a GM DEXRON® -VI, Ford MERCON® LV, Ford MERCON® SP or Ford MERCON® V fluid for warranty coverage, or in continuously variable transmissions (CVTs).



SUPPORT AND SERVICES



FROM R&D TO DEDICATED FIELD SERVICE, WE'RE HERE TO SUPPORT YOU

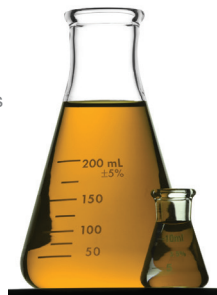
For decades, Phillips 66® Lubricants has provided forestry operations with custom products as well as supply and delivery systems. Phillips 66 has earned the reputation for leading the way in advanced, high-quality products. What you may not know, however, is that our lubricants expertise extends far beyond new product development. Our state-of-the-art research and development facility is just the tip

of the iceberg in the way that we work to support you in your daily operations and help to improve your overall bottom line. We have a highly trained Technical Service Group available to perform lubrication surveys, engine borescope inspections and thermography surveys, as well as dedicated local Marketers who are there to service all your lubrication needs.

R&D

Located in Bartlesville, Oklahoma, our Research and Development (R&D) facility occupies seven laboratories full of state-of-the-art testing and development tools. Our highly trained and well-respected team of researchers provides expertise in all areas of lubricant development and use for our customers. R&D works closely with the Lubricants Product Management and Base Oil Sales and Marketing groups to consistently ensure that we produce the highest performing, most robust products. Some of R&D's activities include:

- Developing new and revolutionary products
- Establishing performance, manufacturing and chemical specifications for all lubricant products
- Handling and solving complex product issues
- Representing us at lubricants industry technical and specification meetings



TECHNICAL SERVICES GROUP

Our experienced Technical Services Group is the backbone of the products we sell. When you purchase Phillips 66-branded products, you are purchasing a product that has been thoroughly tested before it is packaged and sold to customers. The Technical Services Group is involved in the field testing of our forestry products and knows the applications inside and out. They are always available to assist you in maximizing the performance of our products.

Contact the Technical Services Group for help in:

- Assisting customers with product selection and application
- Resolving lubricant-related problems as required
- Conducting lube surveys
- Interpreting oil analysis results
- Conducting borescope inspections and thermography surveys

DEDICATED FIELD SERVICE AND SUPPORT

We have strategically placed field service representatives and technical sales representatives across the country to provide hands-on support and training to our customers. They know the mining business and will work with your maintenance organization to ensure the lubricant

products are applied correctly and working properly. Our dedicated sales staff always looks for opportunities to help your maintenance staff maximize equipment life and operations continuity.

CLEANLINESS AND QUALITY PROGRAM

To help ensure clean, top-quality products are delivered to customers, Phillips 66 routinely inspects and monitors proper storage and handling practices. Product cleanliness is the cornerstone of good lubrication, so we deal with the entire cradle-to-grave process to ensure our lubricants perform as intended. We offer:

- Bulk storage tanks with labels meeting government requirements, sample collection for quality-control auditing, and vented breathers to prevent moisture, particulate and other contamination
- Filtration at major bulk facilities of key Marketer and customer locations to ensure contamination of new oils doesn't occur, from finished product to customer delivery

- Sample retention of finished lubricants and products delivered to the end user—so samples are available should quality questions arise

To ensure ultimate fluid cleanliness, filtering at the final point of putting the fluid in service is most effective. We recommend limiting the micron size to seven microns for heavy-duty lubricants and five microns for industrial lubricants. It's also important that proper dilution and methodology is strictly followed to provide results that are accurate and count actual harmful particles. Spot checking with patch tests, which are low-cost and accurate, is recommended.

OIL ANALYSIS

In an environment where equipment is expected to run 24 hours a day, 7 days a week under extreme conditions, downtime caused by equipment failure can quickly put a company out of business. Oil analysis is made easy with AnalysisPlus® With testing options to meet your program needs and 12 laboratories conveniently located across North America, AnalysisPlus gives you snapshots of the condition of both the lubricants you're using and the unit you're monitoring, across time. Identifying minor problems before they become major failures will save you money and unscheduled downtime, and is a timely, cost-effective way for you to maximize equipment reliability and boost company profits.

- Establish efficient drain intervals
- Reduce downtime
- Increase asset reliability
- Extend equipment life with confidence
- Reduce costs

Oil analysis helps detect equipment failures in progress and assists in finding the root cause of a problem as well, to help aid you in preventing failures and costly losses in production. Harsh operating conditions, extreme load variations and the high-dollar costs involved in equipment replacement make fluid analysis a necessary part of doing business in the mining industry. Routine testing identifies small problems before



they become major failures, allowing you to meet the demands of your business on time. If equipment is down, it's costing you money. Highly contaminated operating environments, extreme operating conditions and the economics of equipment replacement only increase the value of oil analysis as a necessary part of managing asset reliability.



TECHNICAL HOTLINE: 877.445.9198

The product specialists in the hotline group manage and respond to technical inquiries, answer questions on all of our brands, provide technical advice, assist with product training, prepare customer-focused seminars and assist in lube surveys.

Customers can contact the hotline for information on:

- Any Phillips 66 lubricant product question
- Lubrication fundamentals
- Product applications and recommendations
- Competitive cross-reference information
- OEM recommendations
- Troubleshooting or any other lubricant-related issues

ON-SITE LUBRICATION TRAINING

Lubrication is our specialty, and training of our customers' maintenance personnel is critical to the success of our business relationship. The training is conducted by trainers who are experts in lubrication, and we can customize the training to meet your specific training needs. We have advanced training that is tailored to prepare your maintenance employees to take and pass the Certified Lubricants Specialist (CLS) Certification conducted by the Society of Tribologists and Lubrication Engineers.

LUBRICANTS MARKETERS

Our Marketers are lubricant-service experts in the forestry business. They provide a level of service that is rarely found in other industries—and the level of service you need to get the right lubricants at the right time. Our full-service programs make sure that you have oil in your equipment 24/7 to continue nonstop operations.

ON-SITE LUBRICATION SURVEY SERVICES

We believe that our employees must know our customers' business and equipment inside and out in order to make accurate and practical lubricant recommendations. To this end, we ask for our customers' full cooperation as you fill out the lubricant survey. This helps us get to know your business better. These surveys, which are evaluated according to OEM recommendations and operational conditions, eliminate the guesswork in diagnosing potential equipment maintenance problems. Our personnel evaluate all surveys thoroughly and make recommendations based on industry standards and real-world experience.

An aerial photograph of a logging operation. A green skidder is positioned on a skid trail, moving a large load of cut logs. The logs are stacked in neat piles on either side of the trail. The surrounding area is a dense forest with tall trees. The lighting suggests it might be early morning or late afternoon, with long shadows cast across the ground.

**KEEPING THE
WORLD
RUNNING
SMOOTHLY.**

Phillips 66® supplies lubricants to wood companies across the nation, developing industry specific products for hydraulic systems, saw systems, presses, trucking, lifts, chains, engines, gear boxes and more. We work to increase productivity and reduce downtime and costs by providing quality oils and fluids, in-depth research, and experienced service.

**KEEPING THE
WORLD
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SMOOTHLY.**



Phillips 66® Lubricants offers a complete line of products for a wide variety of industries.
Check with your supplier today for more information and product availability.

For more information, call our Technical Hotline at **877.445.9198** | **PHILLIPS66LUBRICANTS.COM**
