

# Conoco Lubricants Gets it Done

Extreme loads and long hours take their toll on heavy-duty mining equipment. Environmental regulation only increases the challenge. Conoco continues offering products that meet and exceed the demand. Give your equipment the protection it needs with Conoco Lubricants mining products.



HEAVY-DUTY DIESEL ENGINE OILS	Triton® ECT Full Synthetic 5W-40 Guardol ECT® with Liquid Titanium® protection additive Fleet Supreme EC® Diesel Engine Oil Hydroclear Power-D® Engine Oil Conoco HD Fleet Supreme Engine Oil
TRANSMISSION LUBRICANTS	PowerDrive® 5000/6000 PowerDrive Fluid PowerTran™ Fluid Syncon® High Performance ATF VersaTrans™ ATF DEXRON®-VI ATF Super ATF Triton Synthetic Transoil 50
ENVIRONMENTALLY FRIENDLY PRODUCTS	Ecoterra® Hydraulic Fluid HVI 46 Ecoterra Hydraulic Fluid
HYDRAULIC, R&O AND SPECIALTY OILS	Powerflow AW Hydraulic Megaflow® AW Hydraulic Quintolubric® 822-450 FR Hydraulic Fluid Syncon R&O Oil Multipurpose R&O Oil Turbine Oil Rock Drill Oil XD Bearing Oil
GEAR OILS	Extra Duty Gear Oil Universal Gear Lubricant GLW Syncon Premium EP Gear Oil Syncon EP Plus Gear Oil Gear Shield® NC Open Gear Lube 595 NC
GREASES	Triton 220 & 460 Synthetic Greases Triton XD5 Megaplex® XD3 & XD5 Multiplex® Red Omniguard® Omniguard SRI Dynalife® L-EP Dynalife HT Coupling Grease Super-STA®
SUPPORT & SERVICES	Oil Analysis, Tech Support & More

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# HEAVY-DUTY DIESEL ENGINE OILS

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## Triton® ECT Full Synthetic 5W-40

This premium quality, full-synthetic engine oil was developed for use in four-stroke cycle diesel engines operating under extreme temperature conditions. It meets API CJ-4 performance requirements for use in modern low-emission engines designed to meet 2007 on-highway exhaust emission standards, and is backward serviceable for use in older diesel engines where API CI-4 PLUS, CI-4, CH-4 or CG-4 oils are specified. It is specially formulated with advanced low-SAPS (Sulfated Ash, Phosphorus and Sulfur) additive technology to protect exhaust aftertreatment devices such as diesel particulate filters (DPFs) and diesel oxidation catalysts (DOCs). The full-synthetic formulation and SAE 5W-40 viscosity grade provide excellent low-temperature properties for better performance in harsh winter climates.

### TRITON ECT FULL SYNTHETIC MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service CJ-4, CI-4, CH-4, SN
- API CI-4 PLUS
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Cummins CES 20081
- Detroit Diesel Power Guard 93K218, Power Guard 93K214, 7SE270 (4-stroke cycle engines)
- International (Navistar) diesel engines
- Mack EO-O Premium Plus
- Volvo VDS-4, VDS-3, VDS-2

### APPLICATIONS

- On- and off-highway diesel equipment operating at low ambient temperatures
- On-highway diesel trucks equipped with exhaust aftertreatment devices such as diesel particulate filters and oxidation catalysts
- Diesel engines equipped with exhaust gas recirculation (EGR) or other NOx-reduction technologies
- Older diesel equipment with conventional, non-EGR engines and without aftertreatment devices
- Off-highway construction, earth-moving and mining equipment
- Mixed fleets with diesel and gasoline-fueled vehicles

### FEATURES/BENEFITS

- Excellent protection for 2007 emissions-compliant engines as well as older diesel engines
- Specially formulated to protect against particulate filter plugging and exhaust catalyst poisoning
- 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 wear, rust and bearing corrosion
- Excellent low-temperature pumpability for easier starting and less wear during cold starts
- High shear stability
- Good resistance to foaming and aeration





## Guardol ECT® with Liquid Titanium® protection additive

Guardol ECT (Emissions Compatible Technology) is a premium quality, synthetic blend, API CJ-4 engine oil with our exclusive Liquid Titanium protection additive. It is specially formulated to reduce wear and enhance protection against corrosion and oxidation. Approved under the latest OEM specifications from Caterpillar, Cummins, Detroit Diesel, Mack, Mercedes and Volvo. Guardol ECT is backward serviceable so older engines can get the benefits of our premium formulation with Liquid Titanium protection additive, which chemically bonds to metal surfaces to shield critical engine parts and provide enhanced protection against soot-induced oil thickening, lead-bearing corrosion, and oxidative and thermal oil breakdown. Guardol ECT with Liquid Titanium 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.

### GUARDOL ECT WITH LIQUID TITANIUM MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service CJ-4, CI-4 PLUS/CI-4, CH-4, SN
- ACEA E9-08, E7-08
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Cummins CES 20081
- Detroit Diesel Power Guard 93K218
- Mack EO-O Premium Plus
- MB-Approval 228.31
- Volvo VDS-4

### APPLICATIONS

- On-highway diesel trucks equipped with exhaust aftertreatment devices
- Diesel engines equipped with exhaust gas recirculation (EGR) or other NOx-reduction technologies
- Older diesel equipment with conventional, non-EGR engines
- Off-highway construction, earth-moving and mining equipment
- Mixed fleets with diesel and gasoline-fueled vehicles

### FEATURES/BENEFITS

- Proprietary additive package with exclusive titanium technology provides excellent wear, rust and bearing corrosion protection
- Advanced low SAPS technology protects exhaust aftertreatment devices
- Exceptional soot control protects against abrasive wear and oil thickening
- Further enhances oxidation protection
- Resists viscosity and thermal breakdown, even at high temperatures
- Excellent low-temperature pumpability with soot-laden oil
- Excellent shear stability
- Resists foaming and aeration
- Protects against sludge and varnish formation

## Fleet Supreme EC® Diesel Engine Oil

Fleet Supreme EC is compliant with the API CJ-4 specification and was developed for use in four-stroke cycle diesel engines designed to meet 2007 on-highway exhaust emission standards. It also is backward serviceable for use in pre-2007 diesel engines where API CI-4 PLUS, CI-4 or CH-4 oils are specified.

### FLEET SUPREME EC MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service CJ-4, CI-4 PLUS/CI-4, CH-4, SN
- ACEA E9-08, E7-08
- Caterpillar ECF-3, ECF-2, ECF-1-a
- Cummins CES 20081
- Detroit Diesel Power Guard 93K218
- Mack EO-O Premium Plus
- MB-Approval 228.31
- Volvo VDS-4

### APPLICATIONS

- On-highway diesel trucks equipped with exhaust aftertreatment devices such as diesel particulate filters and oxidation catalysts
- Diesel engines equipped with EGR, ACERT or other emissions control technologies
- Older diesel equipment with conventional, non-EGR engines
- Off-highway construction, earth-moving and mining equipment

### FEATURES/BENEFITS

- Excellent protection for new 2007 emissions compliant engines and older diesel engines
- Specially formulated to protect exhaust aftertreatment devices
- 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 wear
- Protects against rust and bearing corrosion
- Good resistance to foaming and aeration

## Hydrotclear Power-D® Engine Oil

This premium universal fleet engine oil is formulated from high-quality, hydrocracked base oils and advanced additive technology to provide outstanding wear protection, soot control and bearing corrosion protection in both conventional and EGR-equipped diesel engines.

### HYDROCLEAR POWER-D MULTIGRADE ENGINE OILS MEET OR EXCEED THE REQUIREMENTS OF:

- API CI-4 PLUS (SAE 15W-40)
- API Service CI-4, CH-4, CF, SL
- ACEA E7-04, E5-02, E3-96 (SAE 15W-40)
- Caterpillar ECF-2, ECF-1-a
- Cummins CES 20078 (both grades), CES 20077 (SAE 15W-40 only)
- Detroit Diesel Power Guard 93K214 (SAE 15W-40), 7SE270 (4-stroke cycle engines)
- Global DHD-1 (SAE 15W-40)
- Mack EO-N Premium Plus 03 (SAE 15W-40), EO-M Plus (both grades)
- MAN 271, 3275 (SAE 15W-40)
- MB-Approval 228.3 (SAE 15W-40)
- MTU MTL 5044 Type 2 (SAE 15W-40)
- Volvo VDS-3 & VDS-2 (SAE 15W-40), VDS (SAE 10W-30)
- Diesel engines manufactured by OEMs not listed above, including International (Navistar), John Deere, Hino, Komatsu, Kubota and others

### APPLICATIONS

- On-highway diesel trucks equipped with EGR, ACERT or other technologies to meet 2004 and earlier exhaust emission standards
- Older diesel equipment with conventional, non-EGR engines
- Mixed fleets with both diesel and gasoline-fueled vehicles
- Off-highway construction, earth-moving and mining equipment
- Farm equipment with diesel or gasoline engines

### FEATURES/BENEFITS

- 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
- Excellent wear protection
- High shear stability
- Excellent rust and bearing corrosion protection
- Good low-temperature pumpability, even with soot-laden oil
- Good resistance to foaming and aeration
- Excellent protection for EGR-equipped engines, and extended drain capability for non-EGR diesel engines



## Conoco HD Fleet Supreme Engine Oil

Conoco HD Fleet Supreme is a high-quality universal fleet engine oil formulated from premium base stocks and special additive technology.

### HD FLEET SUPREME ENGINE OIL MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API CI-4 PLUS (SAE 15W-40)
- API Service CI-4, CH-4, CF, SL
- Caterpillar ECF-2, ECF-1-a
- Cummins CES 20078, CES 20076
- Detroit Diesel 7SE270 for 4-Stroke Cycle Engines
- Mack EO-N Premium Plus 03 (SAE 15W-40), EO-M Plus (both grades)
- Volvo VDS-2 (SAE 15W-40), VDS (both grades)
- Diesel engines manufactured by OEMs not listed above, including International (Navistar), John Deere, Hino, Komatsu, Kubota and others

### APPLICATIONS

- On-highway diesel trucks equipped with cooled-EGR, ACERT or other technologies to meet 2004 and earlier exhaust emission standards
- Older diesel equipment with conventional, non-EGR engines
- Mixed fleets with both diesel and gasoline-fueled vehicles
- Off-road construction, earth-moving and mining equipment
- Farm equipment with diesel or gasoline engines

### FEATURES/BENEFITS

- Excellent soot control for protection against abrasive wear and soot-induced oil thickening
- Resists viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Protects against wear
- Protects against rust and bearing corrosion
- Good low-temperature pumpability, even with soot-laden oil
- Good resistance to foaming and aeration
- Meets requirements for EGR-equipped diesel engines, conventional diesel engines and gasoline engines

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# TRANSMISSION LUBRICANTS

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## PowerDrive® 5000/6000

PowerDrive 5000 (SAE 50) and PowerDrive 6000 (SAE 60) are formulated to the Caterpillar FD-1 specification for Final Drive and Axle Oil (FDAO). These advanced technology lubricants provide improved protection for gears and bearings in bevel gears and differentials.

### FEATURES/BENEFITS

- Improved final drive performance compared to conventional TO-4 fluids
- Improved bearing life
- Extended gear life, proven improvements in pitting, wear and scuffing
- Superior wear protection under tough high-torque, low-speed operating conditions
- Excellent oxidation stability that reduces deposits and minimizes viscosity oxidative thickening throughout the drain cycle
- Reduced foaming tendencies; less foam results in lower wear rate in high-pressure contact zones
- Improved protection against rust and corrosion

## PowerDrive Fluid

PowerDrive Fluid is specifically formulated to meet Caterpillar's TO-4 specification requirements. This high-quality lubricant is extremely shear stable and provides thorough protection against wear, oxidation, rust and corrosion to help you get more out of your CAT equipment as well as other equipment that requires an Allison C-4 type fluid.

### POWERDRIVE FLUID MEETS OR EXCEEDS THE REQUIREMENTS OF:

- Allison C-4 (SAE 10W, 30)
- Caterpillar TO-4, TO-2 (obsolete)
- Dana Spicer transmissions (SAE 30, 50)
- Eaton Fuller transmissions (SAE 30, 50)
- Euclid equipment
- Komatsu equipment
- Vickers (Eaton) M-2950-S
- ZF TE-ML 03C for torque converter transmissions (SAE 10W, 30)

### APPLICATIONS

- PowerDrive Fluid is recommended for use in powershift transmissions, hydrostatic transmissions, torque converters, final drives and hydraulic systems of Caterpillar and other off-highway equipment
- It also is recommended for use in heavy-duty commercial automatic and manual transmissions where an Allison C-4 or Caterpillar TO-4 fluid is specified

### FEATURES/BENEFITS

- Well-balanced frictional properties for smooth shifting and reduced brake chatter
- Excellent oxidation resistance and thermal stability for long fluid life
- Excellent wear protection for clutches, gears and hydraulic pumps
- High shear stability
- Protects against rust and corrosion
- Compatible with a wide variety of seals and friction materials
- Good low-temperature properties
- Good foam resistance
- High load-carrying capacity for protection of final drive gear sets
- Enhanced yellow metal protection from corrosion and deposits

## PowerTran™ Fluid

An amazingly versatile lubricant, PowerTran is designed for use in farm tractors and other off-highway equipment that utilizes a common fluid reservoir. A multifunctional fluid, it lubricates the transmission and final drive, actuates oil-wetted hydraulic disc brakes and serves as a hydraulic fluid to operate power steering units, implements and attachments.

### APPLICATIONS

PowerTran Fluid is recommended for use where the equipment manufacturer specifies:

- AGCO (Deutz-Allis) Power Fluid 821XL
- AGCO (White Farm) Q-1826, Q-1802 (Type 55 Fluid), Q-1766B
- J.I. Case MS-1207, MS-1206
- Caterpillar TO-2 (obsolete)
- CNH MAT3525 (134-D Fluid)
- Denison Hydraulics HF-0, HF-1, HF-2
- John Deere J20C, J14C (Type 303 Fluid)
- Ford M2C134-D, M2C86-B, M2C41-B
- Ford-New Holland FNHA-2-C-201.00
- Kubota UDT Fluid
- Landini Tractor II Hydraulic Fluid
- Massey-Ferguson M-1141, M-1135, M-1129A
- Sundstrand Hydrostatic Transmission Fluid
- Vickers (Eaton) M-2950-S, I-286-S
- Volvo WB 101/VCE 1273.03
- ZF TE-ML 05F, 06D, 06E, 06K

### 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
- Outstanding foam resistance
- Suitable for year-round use in most climates





## Syncon® High Performance ATF

Formulated to offer better shear stability, oxidation control and wear protection, this full synthetic ATF will go the extra mile in your fleet applications.

### SYNCON HIGH PERFORMANCE ATF IS OEM-APPROVED FOR SERVICE FILL IN:

- Allison automatic transmissions in off-highway applications where a C-4 fluid is specified

### SYNCON HIGH PERFORMANCE ATF IS RECOMMENDED FOR SERVICE FILL IN:

- Allison automatic transmissions in on-highway applications where a TES-295 quality 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



## VersaTrans™ ATF

VersaTrans ATF is a premium quality, synthetic blend automatic transmission fluid formulated for use in most domestic and import passenger cars and light trucks. This versatile fluid helps reduce stocking multiple ATF products.

### VERSATRANS ATF IS FULLY LICENSED AND/OR APPROVED FOR SERVICE FILL IN THE FOLLOWING APPLICATIONS:

- Allison C-4
- Ford MERCON® V
- Voith DIWA transmissions

Note: For questions about a specific application, please call our Technical Support Hotline.

### VERSATRANS ATF MEETS OR EXCEEDS THE REQUIREMENTS OF:

- JASO M315, Class 1A

### APPLICATIONS

- Chrysler automatic transmissions, except continuously variable transmissions (CVTs)
- Ford automatic transmissions where MERCON V or an earlier-generation MERCON fluid (obsolete) is specified
- GM automatic transmissions in 2005 and earlier vehicles, except those that require DEXRON®-VI for warranty coverage, or a CVT fluid
- Many import vehicles, including Acura, Audi, BMW, Honda, Hyundai, Infiniti, Kia, Mazda, Mercedes-Benz, Mitsubishi, Nissan, Porsche, Saab, Saturn, Toyota, Volkswagen and Volvo
- Heavy-duty automatic and powershift transmissions in trucks and buses
- Hydraulic systems on industrial and mobile equipment operating over a wide temperature range

Note: VersaTrans ATF is not recommended for use in continuously variable transmissions (CVTs) or in most 6-speed or 7-speed automatic transmissions. For questions about a specific application, please call our Technical Support Hotline.

### FEATURES/BENEFITS

- Thoroughly field tested in a wide variety of domestic and import automatic transmissions
- Proper frictional properties for smooth shifting and excellent anti-shudder performance
- Excellent oxidation resistance and thermal stability for long fluid life
- Protects against sludge and varnish formation
- Protects against wear
- Protects against rust and corrosion
- Outstanding low-temperature properties for easier shifting in cold weather
- Good seal compatibility
- Good foam resistance



## DEXRON®-VI ATF

DEXRON-VI ATF is the latest and greatest in ATF technology. This synthetic fluid is so advanced that it can offer protection and consistent shift performance for up to 100,000 miles in normal service.

### DEXRON-VI ATF MEETS OR EXCEEDS THE REQUIREMENTS OF:

- GM DEXRON-VI
- Denison Hydraulics HF-0
- Vickers (Eaton) M-2950-S and I-286-S

### APPLICATIONS

- DEXRON-VI ATF is recommended for service fill in all automatic transmissions that require a GM DEXRON-VI or earlier generation DEXRON transmission fluid
- It also may be used in hydraulic systems on industrial and mobile equipment operating over a wide temperature range

### FEATURES/BENEFITS

- Meets stricter performance requirements for new GM 6-speed automatic transmissions
- Outstanding friction durability for consistent shift performance for the life of the fluid
- Excellent oxidation resistance and thermal stability for long fluid life
- Protects against sludge and varnish formation
- Protects against wear
- Protects against rust and corrosion
- High shear stability
- Excellent low-temperature properties
- Good seal compatibility
- Good foam resistance
- Backwards compatible for use in older GM automatic transmissions

## Super ATF

Super ATF is a good choice for 2005 model year and older General Motors and Ford vehicles used in construction such as light-duty pickups and sport utility vehicles.

### APPLICATIONS

- Super ATF is recommended for service fill in GM and Ford automatic transmissions in 2005 and earlier model year vehicles that are no longer under warranty and do not require a MERCON® SP, MERCON® V, Type F or Type T-IV fluid
- It also is recommended for use in import vehicles where the automaker specifies the same transmission fluid as used in GM vehicles for 2005 and earlier model years
- Recommended for Allison heavy-duty off-highway automatic transmissions that require a C-4 fluid
- Super ATF may be used in industrial and mobile hydraulic systems operating over a wide temperature range
- Super ATF is not recommended for use in automatic transmissions that require a GM DEXRON-VI or Ford MERCON V fluid for warranty coverage or in continuously variable transmissions (CVTs)

### 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

## Triton® Synthetic Transoil 50

When you need a transmission that can pass the test, trust Triton Synthetic Transoil 50. Triton Synthetic Transoil 50 is a full-synthetic SAE 50 transmission lubricant designed for use in heavy-duty truck and bus manual transmissions operating in extreme temperatures and/or extended service intervals.

### TRITON SYNTHETIC TRANSOIL 50 MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service GL-1, MT-1
- ArvinMeritor O-81
- Dana Spicer transmissions
- Eaton Fuller transmissions
- Eaton Roadranger® E500™ (PS-164 Rev 7)
- International TMS 6816
- Mack TO-A Plus
- MIL-L-2104D
- ZF Freedomline transmissions

### APPLICATIONS

- Recommended for use in ArvinMeritor, Dana Spicer, Eaton Fuller, International, Mack and other heavy-duty manual transmissions that require a non-EP gear oil (API GL-1/MT-1) or a MIL-L-2104D (API CD) quality engine oil
- Approved for 500,000-mile drain intervals in Eaton transmissions under the Eaton Roadranger® PS-164 Rev 7 specification

### 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 benefits compared with non-synthetic transmission fluids



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# ENVIRONMENTALLY FRIENDLY PRODUCTS

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## Ecoterra® Hydraulic Fluid HVI 46

Ecoterra Hydraulic Fluid HVI 46 Fluid is a premium quality, zinc-free, multiviscosity hydraulic oil specifically formulated for use in the hydraulic systems of off-road equipment manufactured by Hitachi, John Deere and other OEMs recommending a zinc-free hydraulic oil. Ecoterra Hydraulic Fluid HVI 46 meets the performance requirements of Hitachi Advanced Hydraulic Oil and is fully compatible with it and with Hitachi seals and hoses.

### ECOTERRA HYDRAULIC FLUID HVI 46 MEETS THE PERFORMANCE REQUIREMENTS OF:

- Bosch Rexroth RE 90 220
- Cincinnati Lamb Machine Specification P-70
- Denison HF-0, HF-1, HF-2
- DIN 51524 Part 3, Antiwear Hydraulic Oils, Type HVLP
- German Steel Industry Specification SEB 181222
- Hitachi Advanced Hydraulic Oil
- ISO 11158:1997 for Hydraulic Fluids, Family H
- U.S. Steel 126, 127, 136
- Vickers (Eaton) M-2950-S, I-286-S

### APPLICATIONS

- Hitachi excavators with 4,000-hour service intervals
- Hydraulic systems of excavators, backhoes, bulldozers, crawlers, skid steers, front-end loaders, wheel loaders, motor graders, compaction equipment and forestry equipment, where the manufacturer recommends a zinc-free hydraulic fluid

### FEATURES/BENEFITS

- Zinc-free formulation
- Suitable for year-round use
- Excellent wear protection for hydraulic pumps and motors
- Excellent oxidation resistance
- Protects against rust and corrosion
- Excellent water-separating properties
- Good foam resistance
- Extended equipment life



## Ecoterra Hydraulic Fluid

Ecoterra Hydraulic Fluid is a reduced environmental impact, zinc-free antiwear hydraulic fluid specifically developed for use in industrial and mobile equipment operating in environmentally sensitive areas.

### ECOTERRA HYDRAULIC FLUID MEETS THE PERFORMANCE REQUIREMENTS OF:

- Bosch Rexroth RE 90 220
- Cincinnati Lamb Machine Specifications P-68 (ISO VG 32), P-70 (ISO VG 46), P-69 (ISO VG 68)
- Denison Hydraulics HF-0, HF-1, HF-2
- DIN 51524 Part 2, Antiwear Hydraulic Oils, Type HLP
- German Steel Industry Specification SEB 181222
- ISO 11158:1997 for Hydraulic Fluids, Family H
- U.S. EPA/Coast Guard Static Sheen Test
- U.S. Steel 126, 127, 136
- Vickers (Eaton) M-2950-S, I-286-S

### APPLICATIONS

- Hydraulic equipment operating in environmentally sensitive areas such as national parks, wildlife refuges, ski resorts and other recreational areas
- Hydraulic equipment in amusement parks and zoos
- Oil drilling rigs and offshore platforms
- Electric motor bearings
- Hydraulic presses, shears, jacks and punches in machine shops
- Service station lifts
- Hydraulic systems requiring an ashless, zinc-free hydraulic oil

### FEATURES/BENEFITS

- Nontoxic to aquatic organisms (OECD Test Method 203 1-12)
- Inherently biodegradable (OECD Test Method 301B)
- Does not contain zinc or other heavy metals
- 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
- Lower-cost alternative to synthetic biodegradable hydraulic fluids

Note: Ecoterra Hydraulic Fluid is not compatible with zinc-containing hydraulic oils, and may cause residue, gelling or filter plugging if mixed with such fluids. Mixing the two products will lessen the environmental advantages normally gained by using Ecoterra Hydraulic Fluid.

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# HYDRAULIC, R&O AND SPECIALTY OILS

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## Powerflow AW Hydraulic Oil

Powerflow AW Hydraulic Oil is formulated for use in a wide variety of industrial and mobile hydraulic systems operating under high-pressure, high-temperature conditions. Powerflow AW Hydraulic Oil is available in viscosity grades: ISO 32, 46, 68 and 100.

### POWERFLOW AW HYDRAULIC OIL MEETS THE REQUIREMENTS OF THE FOLLOWING INDUSTRY AND OEM SPECIFICATIONS:

- Bosch Rexroth RE 90 220
- Denison Hydraulics HF-0, HF-1, HF-2
- DIN 51524 Part 2, Antiwear Hydraulic Oils, Type HLP
- German Steel Industry SEB 181222
- ISO 11158:1997, Family H (Hydraulic Systems), Type HM
- U.S. Steel 127
- Vickers (Eaton) M-2950-S, I-286-S

### APPLICATIONS

- Hydraulic systems of plastic injection molding machines
- Automated machine tools
- Hydraulic elevators, hoists, presses and floor jacks
- Hydraulic systems on mobile construction equipment
- Marine cargo winches and steering systems
- Service station lifts
- Air tools and other pneumatic equipment lubricated through air line lubricators
- Moderately loaded enclosed industrial gearboxes that do not require an extreme pressure (EP) gear oil (ISO VG 68, 100)
- Plain and rolling-element bearings in electric motors

### FEATURES/BENEFITS

- Outstanding performance in plastic injection molding machines
- Excellent wear protection for hydraulic pumps and motors
- Protects against rust and corrosion
- Excellent water-separating properties



## Megaflow® AW Hydraulic Oil

Megaflow AW Hydraulic Oil was developed for use in a wide variety of industrial, mobile and marine hydraulic system applications. It is recommended for use in all types of high-speed, high-pressure hydraulic pumps. Megaflow AW Hydraulic Oil is available in eight viscosity grades: ISO 22, 32, 46, 68, 100, 150, 220 and 320. It is formulated with high-quality paraffinic base oils, a zinc dithiophosphate antiwear additive, rust and oxidation inhibitors, and an antifoam agent. It is recommended for use in all types of high-pressure, high-speed hydraulic pumps.

### MEGAFLOW AW HYDRAULIC OIL MEETS THE REQUIREMENTS OF THE FOLLOWING INDUSTRY AND OEM SPECIFICATIONS:

- Bosch Rexroth RE 90 220
- Denison Hydraulics HF-0, HF-1, HF-2
- DIN 51524 Part 2, Antiwear Hydraulic Oils, Type HLP
- German Steel Industry SEB 181222
- ISO 11158:1997, Family H (Hydraulic Systems), Type HM
- U.S. Steel 127
- Vickers (Eaton) M-2950-S, I-286-S

### APPLICATIONS

- Hydraulic systems on industrial, mobile and marine equipment
- Automated machine tools
- Elevators, hoists, presses and floor jacks
- Marine cargo winches and steering systems
- Mobile construction equipment
- Plastic injection molding machines
- Service station lifts
- Air tools and other pneumatic equipment lubricated through air line lubricators
- Chain drives
- Electric motor bearings
- Moderately loaded enclosed industrial gearboxes that do not require an 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
- Excellent filterability, even in the presence of a small amount of water
- Good foam resistance



## Quintolubric® 822-450 FR Hydraulic Fluid

Quintolubric 822-450 FR Hydraulic Fluid is a premium quality, readily biodegradable, synthetic, fire-resistant, hydraulic fluid developed for use in hydraulic systems operating in areas subject to fire hazards, such as in underground mining operations, steel mills and foundries.

### APPLICATIONS

- Hydraulic systems subject to fire hazards and extreme heat
- Replacement for petroleum-based antiwear hydraulic fluids
- Steel mills, surface mines, foundries and manufacturing plants

### FEATURES/BENEFITS

- Fire resistant
- High flash point, fire point and autoignition temperature for reduced fire/explosion hazard
- Outstanding oxidation resistance and thermal stability at high temperatures
- Good low-temperature fluidity
- Excellent load-carrying capacity
- Protects against rust and corrosion
- Nontoxic, non-irritating and contains no hazardous ingredients
- Readily biodegradable
- Fire resistance certified by Factory Mutual Research Corporation
- MSHA approved

Note: Quintolubric 822-450 FR Hydraulic Fluid should not be mixed with conventional antiwear hydraulic oils, invert emulsions, phosphate esters or water-glycol fluids. It is a stand-alone product and cannot be used as top-up for existing hydraulic systems with different fluid types. For information on seal and elastomer compatibility, please call our Technical Support Hotline.

## Syncon® R&O Oil

Syncon Synthetic R&O Oil comprises a line of synthetic PAO-based, multifunctional products intended for industrial applications.

### APPLICATIONS

- Rotary air compressors where the manufacturer specifies a PAO-based lubricant
- Plain and rolling-element bearings operating at very high or very low temperatures
- Lightly to moderately loaded enclosed industrial gearboxes that do not require an extreme pressure (EP) gear lubricant
- Industrial worm gear drives with bronze-on-steel gears
- Circulating systems of paper machine dryer sections and calender stacks
- Industrial equipment operating over a wide temperature range where inhibited mineral oil is recommended

Note: Always follow the equipment manufacturers' recommendations for selecting the proper viscosity grade and for preferences regarding the use of PAO-based lubricants. For information on compatibility with seals, paints and plastics, please call our Technical Support Hotline.



## Multipurpose R&O Oil

Multipurpose R&O Oil is a rust- and oxidation-inhibited industrial oil fortified with an ashless antiwear additive package.

### MULTIPURPOSE R&O OIL MEETS THE PERFORMANCE REQUIREMENTS OF:

- ABB G12106
- AGMA R&O Grades 0 through 7 (non-EP)
- Alstom HTGD 90117 for geared turbines
- ASTM D4304 Type I Turbine Oil (ISO VG 32, 46, 68, 100)
- British Standard 489-1999
- Cincinnati Lamb Machine Specifications P-38 (ISO VG 32), P-55 (ISO VG 46), P-54 (ISO VG 68), P-57 (ISO VG 150)
- Denison Hydraulics HF-1
- DIN 51517 Part 1, Lubricating Oils, Type CL
- DIN 51524 Part 1, R&O Hydraulic Oils, Type HL
- General Electric GEK-101941a, GEK-46506d and obsolete GEK-27070, GEK-28143a
- Ingersoll-Rand Centak centrifugal compressors
- Mitsubishi Type 2 Multipurpose R&O Oil
- Solar ES9-224 Class II Turbine Oil
- Toshiba
- U.S. Military Specification MIL-L-17672D

### APPLICATIONS

- Air tools and other pneumatic equipment lubricated through air line lubricators
- Centrifugal air compressors
- Crankcases of sealed hydraulic pumps
- Direct-drive and geared steam and hydroelectric turbines
- Industrial gearboxes with spur, helical and double-helical gears that do not require an extreme pressure (EP) gear oil
- 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 plant lubrication
- U.S. Steel 126, R&O Inhibited Hydraulic Oil

### FEATURES/BENEFITS

- Good oxidation resistance to minimize sludge and varnish formation
- Protects against wear
- Protects against rust and corrosion
- Excellent water-separating properties
- Low carbon-forming tendency for use in air compressors
- Good foam resistance
- Available in eight viscosity grades for use in many applications over a wide temperature range

## Turbine Oil

Turbine Oil is a high-quality rust- and oxidation-inhibited turbine oil formulated with hydrocracked base stocks and select additives for use in steam and hydroelectric turbines, rotary air compressors and other industrial applications.

### TURBINE OIL MEETS THE PERFORMANCE REQUIREMENTS OF:

- ABB G12106
- AGMA R&O Grades 0 through 3 (non-EP)
- Alstom HTGD 90117 for non-geared turbines
- ASTM D4304 Type I Turbine Oil
- British Standard 489-1999
- Cincinnati Lamb Machine Specifications P-38 (ISO VG 32), P-55 (ISO VG 46), P-54 (ISO VG 68)
- Denison Hydraulics HF-1
- DIN 51517 Part 1, Lubricating Oils, Type CL
- DIN 51524 Part 1, R&O Hydraulic Oils, Type HL
- General Electric GEK-46506d and obsolete GEK-27070, GEK-28143a
- Ingersoll-Rand Centak centrifugal compressors
- Siemens Westinghouse TLV 9013 04
- Solar ES9-224 Class II Turbine Oil
- Toshiba
- U.S. Military Specification MIL-L-17672D
- U.S. Steel 126, R&O Inhibited Hydraulic Oil

### APPLICATIONS

- Air tools and other pneumatic equipment lubricated through air line lubricators
- Centrifugal and rotary air compressors
- Closed heat transfer systems
- Crankcases of sealed hydraulic pumps
- Direct-drive steam turbines and hydroelectric turbines
- Industrial gearboxes with spur, helical and double-helical gears that do not require an extreme pressure (EP) gear oil
- 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 plant lubrication

### FEATURES/BENEFITS

- Excellent oxidation resistance and thermal stability
- Protects against sludge and varnish formation
- Protects against rust and corrosion
- Excellent water-separating properties
- Low carbon-forming tendency for use in air compressors
- Good foam resistance
- Compatible with electrostatic oil cleaners



## Rock Drill Oil

Rock Drill Oil is an adhesive, extreme pressure lubricant specially developed for use in pneumatic equipment such as rock drills, jackhammers and pavement breakers.

### ROCK DRILL OIL MEETS THE PERFORMANCE REQUIREMENTS OF:

- Gardner-Denver Rock Drill Oil
- Ingersoll-Rand Rock Drill Oil

### APPLICATIONS

- Rock Drill Oil is recommended for use in pneumatic equipment manufactured by leading OEMs, including Chicago Pneumatic, Gardner-Denver, Ingersoll-Rand and Joy; typical applications include Drifters, Jackhammers, Pavement breakers, Rock drills and Stoppers
- Rock Drill Oil also is recommended for the lubrication of slideways on machine tools such as boring machines, grinders, milling machines and planers

### FEATURES/BENEFITS

- Excellent extreme pressure properties
- Protects against wear and seizure
- Good adhesiveness to metal surfaces in the presence of moisture
- Good oxidation resistance and thermal stability
- Protects against rust and corrosion
- Low odor
- Good foam resistance
- Seven viscosity grades for use over a wide range of temperatures

## XD Bearing Oil

XD Bearing Oil is a high-performance antiwear circulating oil specifically developed for use in Morgan Construction No-Twist® rod mills. It meets the performance requirements of Morgan specification MMC40003.

### APPLICATIONS

- Morgan, Danieli, Demag and Pomini rod and bar mills
- Circulating oil for ferrous and non-ferrous rolling mills
- Circulating systems where water contamination is a problem
- Large, slow-speed gears in mixers and mills
- Hot and cold strip mills

### FEATURES/BENEFITS

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



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# GEAR OILS

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## Extra Duty Gear Oil

Extra Duty Gear Oil is a heavy-duty, extreme pressure (EP) industrial gear oil developed for use in enclosed gearboxes operating under moderate to severe service conditions.

### EXTRA DUTY GEAR OIL MEETS THE REQUIREMENTS OF:

- AGMA Standard 9005-E02 (formerly 250.04)
- Aluminum Company of America (ALCOA)
- Cincinnati Machine Specifications P-63 (2 EP), P-76 (3 EP), P-77 (4 EP), P-74 (5EP), P-59 (6 EP), P-35 (7 EP), P-78 (8A EP)
- DIN 51517 Part 3, Lubricating Oils, Type CLP
- German Steel Industry Specification SEB 181226, Type CLP
- ISO 12925-1:1996, Type L-CKC
- U.S. Steel 224
- Most major gearbox manufacturers, including Amarillo, David Brown, Falk, Hansen and Lufkin

### APPLICATIONS

- Enclosed industrial gear sets operating under heavy loads, high peak loads or intermittent shock loads
- Enclosed spur, bevel, helical, herringbone and planetary gear sets 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
- Good oxidation resistance and thermal stability
- Protects against deposits and varnish formation
- Protects against rust and corrosion
- Fast water separation
- Quick foam release



## Universal Gear Lubricant

Looking for a gear lubricant that can handle the heat? Look no further than Universal Gear Lubricant. It is formulated to protect hypoid and spiral bevel gears operating under varying conditions of speed, load, temperature and torque.

### UNIVERSAL GEAR LUBRICANT MEETS OR EXCEEDS THE REQUIREMENTS OF:

- API Service GL-5, MT-1
- ArvinMeritor O76-A (SAE 85W-140), O76-D (SAE 80W-90)
- Mack GO-J
- MIL-PRF-2105E
- SAE J2360

### APPLICATIONS

- Universal Gear Lubricant is recommended for service fill of conventional differentials and for top-off of limited-slip differentials in passenger cars and trucks'
- It also is recommended for service fill of differentials, final drives and transfer cases in some off-highway equipment
- It may be used in 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

- Excellent 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
- Protects against rust and corrosion
- Good foam resistance

'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.



## GLW

GLW 220, 320 and 460 are premium quality, extreme pressure, longwall mining gear lubricants specifically developed for the lubrication of gearboxes of Joy Machinery mining equipment and other mining and construction equipment operating under extreme loads and in a heavily contaminated, wet environment.

### GLW MEETS THE PERFORMANCE REQUIREMENTS OF:

- ANSI/AGMA Standard 9005-E02
- DIN 51517 Part 3, Type CLP
- U.S. Steel 224
- Joy Mining Machinery specifications TO-MEP (ISO VG 220), TO-HEP (ISO VG 320), TO-HD (ISO VG 460)

### APPLICATIONS

- Enclosed gearboxes of longwall mining machinery and heavy construction and excavation equipment
- Enclosed industrial gearboxes operating in the presence of water, such as in steel mills and rock quarries
- Gear drives and pinion stands of metal rolling mills, ball mills and cement mills

### FEATURES/BENEFITS

- Excellent performance in wet or contaminated gearboxes
- Outstanding load-carrying capacity
- Excellent protection against scuffing and wear
- Good oxidation resistance and thermal stability
- Good deposit control
- Protects against rust and corrosion
- Good seal compatibility
- Chlorine-free for reduced environmental impact



## Syncon® Premium EP Gear Oil

Syncon Premium EP Gear Oil is a premium quality, synthetic, extreme pressure gear lubricant specially formulated to protect the heavily loaded enclosed gears and bearings found in General Electric wheel motors in mining haul trucks. It also is recommended for use in enclosed industrial gearboxes operating under extreme temperature conditions.

### SYNCON PREMIUM EP GEAR OIL MEETS THE PERFORMANCE REQUIREMENTS OF:

- AGMA 9005-E02 (formerly 250.04)
- Cincinnati Lamb Machine Specifications P-59 (ISO VG 320), P-35 (ISO VG 460) and P-34 (ISO VG 680)
- DIN 51517 Part 3, Lubricating Oils, Type CLP HC
- GE Specification D50E27
- German Steel Industry Specification SEB 181226, Type CLP HC
- ISO 12925-1:1996, Type L-CKC
- Joy Machinery Specification TO-SHEP (ISO VG 320)
- U.S. Steel 224
- Most major gearbox manufacturers, including Amarillo, David Brown, Falk, Hansen and Lufkin

### APPLICATIONS

- GE motorized wheels found in mining haul trucks
- Enclosed industrial gearboxes operating at very high or very low temperatures, or operating continuously at higher than normal operating temperatures<sup>1</sup>
- Heavily loaded plain and rolling-element bearings operating under extreme temperatures
- Applications where the manufacturer recommends a synthetic

<sup>1</sup> Note: Syncon Premium EP Gear Oil is not recommended for use in worm gear drives with bronze-on-steel gears or in automotive differentials with hypoid gears.

### FEATURES/BENEFITS

- Outstanding oxidation resistance and thermal stability at high temperatures
- Outstanding low-temperature properties
- High load-carrying capacity
- Protects against scuffing and wear
- Protects against rust and corrosion
- Non-chlorinated additive system
- Suitable for year-round use
- Extended service intervals compared with conventional mineral oil-based gear oils

## Syncon® EP Plus Gear Oil

Syncon EP Plus Gear Oil is a premium quality, high viscosity index, synthetic extreme pressure gear lubricant recommended for heavily loaded bearings and enclosed gears operating under extreme temperature conditions.

### SYNCON EP PLUS GEAR OIL MEETS THE PERFORMANCE REQUIREMENTS OF:

- AGMA 9005-E02 (formerly 250.04)
- Cincinnati Lamb Machine Specifications, P-74 (ISO VG 220), P-59 (ISO VG 320) and P-35 (ISO VG 460)
- DIN 51517 Part 3, Lubricating Oils, Type CLP HC
- German Steel Industry Specification SEB 181226, Type CLP HC
- ISO 12925-1:1996, Type L-CKC
- Joy Machinery Specifications TO-SHEP (ISO VG 320), TO-SMEP (ISO VG 220)
- U.S. Steel 224
- Most major gearbox manufacturers, including Amarillo, David Brown, Falk, Hansen and Lufkin

### APPLICATIONS

- Heavily loaded enclosed gearboxes, such as those commonly found in mine hoists and mining machinery
- Enclosed industrial gearboxes 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 under extreme temperatures
- Applications where the equipment manufacturer recommends a high VI synthetic EP gear oil

### FEATURES/BENEFITS

- Outstanding oxidation resistance and thermal stability at high temperatures
- Outstanding low-temperature properties
- High viscosity index and low pour point for use over a wide temperature range
- Excellent extreme pressure properties
- Protects against scuffing and wear
- Protects against rust and corrosion
- Non-chlorinated additive system
- Suitable for year-round use
- Extended service intervals compared with conventional mineral oil-based gear oils



## Gear Shield® NC

Gear Shield is a high viscosity fluid that provides superior separation of gear teeth in the heaviest loaded zone of gear tooth mesh. Gear Shield is a blend of high viscosity base fluids and highly refined resins combined with extreme pressure (EP) and oxidation-resistant additives further enhancing this protection. Gear Shield is the open gear lubricant of choice for mills and kilns in mineral processing such as gold, copper, iron, taconite and phosphate. It is also the product of choice in the power generation and cement industries.

### GEAR SHIELD MEETS THE PERFORMANCE REQUIREMENTS OF:

- Exceeds OEM and AGMA base oil viscosity requirements for open gear lubricants applied by intermittent spray application

### APPLICATIONS

- Gear Shield NC is recommended for use on gear operating temperatures up to the flashpoint of the product; it can be applied by spraying, brushing or dripping and is designed to be applied through all automatic lubrication equipment

### FEATURES/BENEFITS

- High viscosity fluid designed to lubricate heavily loaded open gears
- Antiwear and extreme pressure additives provide unparalleled protection in the most heavily loaded zones of gear tooth mesh
- Industry-leading FZG Specific Mass Loss wear test result (0.0532 mg/kWh)
- No build-up in gear tooth roots
- Pumps freely down to 32° F/0 °C; for applications below 32° F/0° C, use Gear Shield NCW
- Environmentally safe; passes TCLP Protocol A; does not contain chlorinated solvents or lead and is free of all carcinogens

## Open Gear Lube 595 NC

Open Gear Lube 595 NC is a viscous, semifluid lubricant designed to lubricate open gears on shovels, draglines and associated mining equipment under all conditions. Open Gear Lube 595 NC is designed to be applied through all automatic lubrication equipment. Open Gear Lube 595 NC does not contain chlorinated solvents.

### OPEN GEAR LUBE 595 NC MEETS THE PERFORMANCE REQUIREMENTS OF:

Open Gear Lube 595 NC exceeds OEM base oil viscosity requirements for open gear lubricants on shovels and draglines.

### APPLICATIONS

- Open Gear Lube 595 NC is designed to lubricate open gears on shovels, draglines and associated mining equipment under all conditions; it can be applied by spraying, brushing or dripping and is designed to be applied through all automatic lubrication equipment

### FEATURES/BENEFITS

- High viscosity fluid designed to lubricate heavily loaded open gears and extend component life while reducing consumption
- Solid and organo-metallic antiwear and extreme pressure additives provide protection in heavily loaded zones of gear tooth mesh
- Lubricant is recommended for use in ambient temperatures ranging from 32F (0°C) and above; for applications below 32°F (0°C), use Open Gear Lube 585 NC or 585 NCW
- Lubricant resists wash-off in rain and snow
- Environmentally safe; no chlorinated solvents, lead or carcinogens

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# GREASES

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## Triton® 220 & 460 Synthetic Greases

Our premium quality, synthetic, PAO-based, lithium-complex Triton greases are specifically developed to provide outstanding protection for equipment operating at extreme temperatures.

### APPLICATIONS

- Triton 100 is non-EP grease with good antiwear properties formulated with an ISO VG 100 base oil, recommended primarily for the lubrication of high-speed bearings in electric motors and other industrial applications
- Triton 220 is a multipurpose extreme pressure grease formulated with an ISO VG 220 base oil, recommended for the lubrication of medium-speed bearings in industrial equipment and for chassis and wheel bearing lubrication on both on-highway and off-road mobile equipment
- Triton 460 is a heavy-duty extreme pressure grease formulated with an ISO VG 460 base oil, recommended for the lubrication of low- to medium-speed bearings in automotive, agricultural, industrial and marine equipment operating under heavy loads and/or exposed to water or corrosive environments

### FEATURES/BENEFITS

- Excellent wear protection for longer equipment life
- Outstanding oxidation resistance and thermal stability at high temperatures
- Outstanding pumpability at low temperatures
- Protects against rust and corrosion
- High load-carrying capability (220 and 460 grades)



## Triton XD5

This premium quality, synthetic, extreme pressure, calcium-sulfonate grease provides excellent protection against wear and corrosion for equipment operating at moderate to very low temperatures. It is fortified with 5% "moly" for extra protection under heavy loading.

### TRITON XD5 MEETS THE PERFORMANCE REQUIREMENTS OF:

- Caterpillar Multipurpose Molybdenum Grease (MPGM)

### APPLICATIONS

- Off-road construction and mining equipment operating at moderate to very low temperatures
- Steering linkages, kingbolt bearings, pin joints, universal joints and other articulated pivots
- Heavily loaded plain and rolling-element bearings in off-road equipment
- Conveyor and fan bearings in chemical and manufacturing plants that require a corrosion-resistant grease with moly
- Centralized lube systems

### FEATURES/BENEFITS

- Meets Caterpillar requirements for 5% moly grease
- High load-carrying capacity
- Excellent wear protection
- Outstanding low-temperature properties
- Excellent resistance to water washout
- Protects against rust and corrosion

## Megaplex® XD3 & XD5

For mobile equipment operating under severe conditions, there's no better choice than Megaplex XD3 with 3% "moly" or Megaplex XD5 with 5% "moly" for extra protection during heavy loads or shock loading. These high-quality, multipurpose, lithium-complex greases provide excellent wear protection, corrosion protection and resistance to water washout in heavily loaded equipment operating under wet conditions and/or at high temperatures.

### MEGAPLEX XD3 MEETS THE PERFORMANCE REQUIREMENTS OF:

- Caterpillar Multipurpose Molybdenum Grease (MPGM)

### APPLICATIONS (XD3)

- 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 equipment where the manufacturer specifies a high-temperature, extreme pressure grease with 3% moly

### FEATURES/BENEFITS (XD3)

- Meets Caterpillar requirements for 3% moly grease (MPGM)
- High dropping point (>500°F)
- High load-carrying capacity
- Excellent wear protection
- Excellent resistance to water washout
- Excellent resistance to separation
- Protects against rust and oxidation
- NLGI GC-LB certified (Grade No. 1)



### MEGAPLEX XD5 MEETS THE PERFORMANCE REQUIREMENTS OF:

- Caterpillar Multipurpose Molybdenum Grease (MPGM)

### APPLICATIONS (XD5)

- Chassis parts and wheel bearings of mining and other off-highway equipment
- Caterpillar 5100 and 5200 series hydraulic excavator mining shovels
- Terex haul trucks
- Heavily loaded plain and rolling-element bearings in industrial gearboxes where the manufacturer specifies a high-temperature, extreme pressure grease with 5% moly

### FEATURES/BENEFITS (XD5)

- Meets Caterpillar and Terex requirements for 5% moly grease
- High dropping point (>500°F)
- High load-carrying capacity
- Excellent wear protection
- Excellent resistance to water washout
- Excellent resistance to separation
- Protects against rust and corrosion





## Multiplex® Red

Multiplex Red is a high-performance, multipurpose, extreme pressure, lithium-complex grease developed for a wide range of automotive and industrial applications.

### APPLICATIONS

- Wheel bearings of passenger cars, trucks, high-performance vehicles, sport utility vehicles and motorcycles equipped with disc brakes
- Ball joints, universal joints, other chassis points and water pumps on passenger cars, trucks and other mobile equipment
- Heavily loaded plain and rolling-element bearings in industrial, mining and mobile equipment where a water-resistant, high temperature, extreme pressure grease is required

### FEATURES/BENEFITS

- Excellent high-temperature performance
- Outstanding wear protection
- High load-carrying capacity
- Protects against rust and corrosion
- Excellent resistance to water washout
- Good low-temperature pumpability
- NLGI GC-LB certified (Grades No. 1 and No. 2)



## Omniguard®

When operating at high temperatures and/or under wet or corrosive conditions, you need the absolute best protection possible. Omniguard is a high-quality, high-performance and corrosion-preventative grease that's proven its worth in some of the harshest operating environments out there.

### APPLICATIONS

- Industrial and automotive equipment operating in unfavorable conditions involving water contamination and/or high temperatures
- Plain and rolling-element bearings operating in corrosive environmental conditions
- Marine equipment, heavy mobile equipment and cables exposed to saltwater
- 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
- Industrial equipment subject to high loads, high humidity and high temperatures
- Centralized lube systems and auto lubbers in service shops

### FEATURES/BENEFITS

- High load-carrying capacity
- Excellent shock-load resistance
- Excellent oxidation resistance
- Adhesive to metal surfaces
- High shear stability
- Protects against rust and corrosion
- Excellent resistance to water washout





## Omniguard® SRI

This product is a multipurpose, grease-based wire-rope lubricant and corrosion preventative. It penetrates cables rapidly to prevent rust and corrosion and provides optimal protection for equipment exposed to freshwater or saltwater.

### APPLICATIONS

- Wire ropes and wound cables on shovels, draglines, winches, boom trucks, cable cars and ski lifts
- Corrosion preventive for equipment exposed to freshwater or saltwater, such as pumps and chains on offshore drilling rigs, ships and marine docks
- Corrosion preventive for metal parts, tools and other equipment in temporary storage or during shipment

### FEATURES/BENEFITS

- Outstanding rust and corrosion protection, including resistance to saltwater corrosion
- Excellent wetting and penetrating ability for wire ropes and cables
- Good low-temperature properties
- Transparent for easy visibility
- Easy to apply by brush or by spray
- Excellent for protecting metal parts in temporary storage or during shipment

## Dynalife® L-EP

Dynalife L-EP is a versatile, general purpose, extreme pressure lithium grease developed for automotive and industrial applications where temperatures and loads are moderate.

### APPLICATIONS

- Wheel bearings of passenger cars equipped with drum brakes
- Ball joints, universal joints, other chassis parts and water pumps on passenger cars, trucks and other mobile equipment
- Plain and rolling-element bearings in pumps, compressors and other industrial equipment where temperatures and loads are moderate
- Centralized lube systems
- General-purpose plant grease
- Enclosed gear sets where oil leakage is a problem (semifluid grades)

### FEATURES/BENEFITS

- Multipurpose grease for many applications; reduces inventory
- Good extreme pressure and antiwear properties
- Good shear stability
- Good oxidation resistance and thermal stability
- Protects against rust and corrosion
- Resists water washout
- Good low-temperature pumpability
- Excellent for use in centralized lube systems
- Choice of six NLGI grades



## Dynalife HT

Dynalife HT is a high-quality, multipurpose, extreme pressure (EP) lithium-complex grease developed to satisfy the severe lubrication requirements of heavily loaded plain and rolling-element bearings operating at moderate to high temperatures. It is recommended for use in a variety of automotive, agricultural, mining and industrial applications. It is NLGI GC-LB certified for use as a multipurpose automotive wheel bearing and chassis lubricant.

Dynalife HT is manufactured with high-quality, heavy paraffinic base oils thickened with lithium-complex soap. It contains an effective extreme pressure additive, a tackifier, and rust and oxidation inhibitors to provide excellent wear protection, excellent thermal stability at high temperatures, and excellent resistance to corrosion and water washout. The combination of tackifier and heavy base oil provides a high level of adhesion to metal parts for improved retention and reduced leakage at high temperatures, and enhanced resistance to water washout.

Dynalife HT forms an effective seal to help minimize bearing contamination. It is dyed red for ease of identification.

### APPLICATIONS

- Wheel bearings of passenger cars, trucks, high-performance vehicles, sport utility vehicles and motorcycles equipped with disc brakes
- Ball joints, universal joints, other chassis parts and water pumps on passenger cars, trucks and other mobile equipment
- Centralized lube systems and auto lubbers in service shops
- Conveyor bearings
- Heavily loaded plain and rolling-element bearings in agricultural, industrial and mining equipment

### 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
- NLGI GC-LB certified



## Coupling Grease

Coupling Grease is a high-performance, polymer-containing, lithium-complex grease developed for use in grease-lubricated flexible couplings, such as those commonly found in mining equipment, power plants, manufacturing plants and chemical plants.

### APPLICATIONS

- Gear, metallic grid and flexible-chain couplings
- Couplings commonly used in mining and gas field equipment
- Couplings and universal joints operating under high centrifugal forces
- Couplings used between electric motors and gearboxes in industrial and chemical plants
- Coupling Grease fully meets ANSI/AGMA CG-1 and CG-2 specifications for medium- and high-speed couplings manufactured by Browning®, Emerson, Falk, Fluden, Kop-Flex®, Koppers, Morse®, Reuland and others

### FEATURES/BENEFITS

- Outstanding resistance to oil separation
- Excellent oxidation resistance and thermal stability
- Protects against rust and corrosion
- Excellent load-carrying ability
- Minimizes friction and wear to help extended coupling life

## Super-STA®

Super-STA greases are multipurpose, extreme pressure lithium greases developed for a wide variety of automotive and industrial applications. They contain a tackiness additive for improved retention, reduced leakage and enhanced resistance to water washout. Super-STA M contains 1% “moly” for extra protection under heavy or shock load conditions.

### APPLICATIONS

- Automotive chassis parts such as steering knuckles, ball joints, U-joints and tie-rod ends
- Wheel bearings on passenger cars and heavy equipment equipped with drum brakes
- Moderately loaded plain and rolling-element bearings in industrial equipment
- Agricultural and construction equipment requiring a tacky, water-resistant, extreme pressure lithium grease
- General-purpose shop/industrial grease Super-STA M meets the performance requirements of Mack Specification MG-C

### FEATURES/BENEFITS

- Multipurpose grease for use in a wide variety of industrial and automotive applications
- Good extreme pressure and antiwear properties
- Good tackiness for improved retention
- High shear stability
- Protects against rust and corrosion
- Resists water washout
- Protects against fretting in splined shafts, pivot pins and other parts subject to oscillation, sliding or vibration (Super-STA M)



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# SUPPORT & SERVICES

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### From R&D to dedicated field service, we're here to support you

For decades, the Conoco brand has provided mine operators with custom products as well as supply and delivery systems. Conoco 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 Ponca City, 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 Conoco-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 mining 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 in 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 & 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 are working properly. Our dedicated sales staff always looks for opportunities to help your maintenance staff maximize equipment life and operations continuity.

#### Lubricants marketers

Our Marketers are lubricant service experts in the mining 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 non-stop operations. The mining business has become very fluid and our program continues to evolve to meet this highly demanding industry.

### Oil analysis with AnalysisPlus®

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 a snapshot into the condition of both the lubricants you're using and the unit you're monitoring, all the 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. No matter what the application—on- or offshore drilling, field services or oil & gas production—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 for the hotline, answer questions on all four 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 Conoco, 76, Kendall or Phillips 66 lubricant product question
- Lubrication fundamentals
- Product applications and recommendations
- Competitive cross-reference information
- OEM recommendations
- Troubleshooting or any other lubricant-related issues

### Onsite 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.

### Onsite 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.





GETS IT DONE.

For more information, please call our Technical Hotline at **877.445.9198**  
or visit **[phillips66lubricants.com](http://phillips66lubricants.com)**