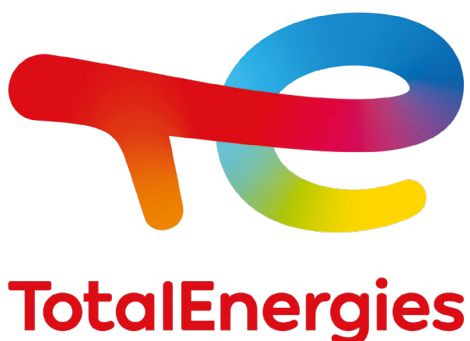




# Dedicated range of Lubricants for Construction, Earthmoving, Quarrying & Mining

Tailor-Made Lubricant Solutions  
for **Off Road range of Equipment  
& Fleets**



# Unearthing New Potential



TotalEnergies in Off-Road market with a complete offer for Lubricants, fuels and value added services.

With a presence in more than 150 countries, TotalEnergies is a strong partner of choice for fuel and lubricants for its customers. Through innovation and technology leadership, TotalEnergies develops a broad range of high quality petroleum products. Each product is designed to suit customer specific

needs for use in the harshest conditions. TotalEnergies continuously invests in R&D, cooperates closely with equipment manufacturers, and carries out field tests to improve product formulations, to ensure maximum performance, and to minimise customers' operating costs.



## Engines

### Rubia Works 5000 10W-40

Lubricant is certified in accordance with European, Japanese and American norms. It is also approved by many manufacturers.

- JASO DH-2 (approval N° D033TOL623) • ACEA E11 / E9 / E8 / E7 / E6
- API CK-4/ CJ-4/ CI-4 PLUS/ CI-4/ CH-4



#### Manufacturers' Approvals:

- DEUTZ DQC IV-18 LA • RENAULT RLD-3 • MTU Category 3.1 • MAN M 3775 • MACK EOS 4.5
- MB-Approval 228.52/51/31 • VOLVO VDS-4.5 • CUMMINS CES 20086

#### Meets the requirements of:

- LIEBHERR LH-00 ENG LA/ LH-01 • CATERPILLAR ECF-3/ECF-2/ECF-1a • IVECO FPT TLS E9 • IVECO FPT TLS CK-4

#### Suitable for:

- KOMATSU • HITACHI • ISUZU • MITSUBISHI • BELL • WIRTGEN • VOGELE • etc.

### Rubia Works 5000 FE 5W-30

Lubricant is certified in accordance with European, Japanese and American norms. It is also approved by many manufacturers.

- JASO DH-2 (approval N° D033TOL622) • ACEA E11 / E9 / E8 / E6 / E4
- API CK-4/ CJ-4/ CI-4 PLUS/ CI-4/ CH-4



#### Manufacturers' Approvals:

- DEUTZ DQC IV-18 LA • MTU Category 3.1 • MAN M 3677 / M 3777 • MB-Approval 228.52/51/31 • VOLVO VDS-4.5
- MACK EOS 4.5 • RENAULT RLD-3 • DEUTZ TTCD 6.1 L6 / 7.8 • CUMMINS CES 20086 • SCANIA LDF-4

#### Meets the requirements of:

- CATERPILLAR ECF-3 / ECF-2 / ECF-1-a • LIEBHERR LH 01 ENG LA • DAF • IVECO FPT TLS E9 • IVECO FPT TLS CK-4

# Partners Towards Groundbreaking Excellence



TotalEnergies develops lubricants suitable for the work sites, mines, and earthmoving equipment of the world's leading manufacturers. Our complete range offers customers an exceptional performance that extends the components' life, reduces unplanned downtime, increases productivity and reduces operating costs. Our full range of specific products complies with all of the international standards and

approvals required in this sector. The Rubia Works range for engines, the Dynatrans and Fluide ranges for manual and automatic transmissions, the Hydroflo, Equivis ZS and Azolla ZS ranges for hydraulic systems, and the Coolelf and Glacelf ranges for coolant fluids and anti-freezes. TotalEnergies also offers a full range of Biolubricants.

### Rubia Works 4000 15W-40\*

Lubricant is certified in accordance with European, Japanese and American norms. It is also approved by many manufacturers.

- JASO DH-2 (approval N° D033TOL621) • ACEA E11 / E9 / E7 • API CK-4/ CJ-4/ CI-4+ / CI-4/ CH-4/ SN

#### Manufacturers' Approvals:

- DEUTZ DQC III-18 LA • MTU Category 2.1 • MB-Approval 228.31 • VOLVO VDS-4.5 • MACK EO-S 4.5
- RENAULT RLD-3 • CUMMINS CES 20086 • DETROIT DIESEL DFS 93K222 • MAN M 3775
- ISUZU Recommended Lubricant (2020) • Allison TES 439

#### Meets the requirements of:

- CATERPILLAR ECF-3/ECF-2 • FORD WSS-M2C171-F1

#### Suitable for:

- ISUZU • KOBELCO • IVECO FPT TLS OFV • CASE NEW HOLLAND • JCB • PERKINS • LIEBHERR

\* Key product



### Rubia Works 4000 10W-40

The lubricant is certified in accordance with Japanese, European and American criteria. Approved by many original equipment manufacturers.

- JASO DH-2 (approval N° D033TOL620) • ACEA E11 / E9 / E7 (E5) • API CK-4/ CJ-4/ CI-4/ SN

#### Manufacturers' Approvals:

- DEUTZ DQC III-18 LA • VOLVO VDS-4.5 • MTU Category 2.1 • CUMMINS CES 20086 • MACK EO-S 4.5
- DETROIT DIESEL DFS 93K222 • DAIMLER MB-Approval 228.31 • RENAULT RLD-3 • MAN M 3775

#### Meets the requirements of:

- CATERPILLAR ECF-3/ ECF-2

#### Recommended for:

- KOMATSU engines

#### Suitable for:

- HITACHI • MITSUBISHI • DEERE • PERKINS • CASE NEW-HOLLAND • LIEBHERR • JCB • IVECO FPT TLS E9
- IVECO FPT TLS CK-4 • ISUZU • KOBELCO • DOOSAN • JOHN DEERE • etc.



### Rubia Works 4000 FE 10W-30

The lubricant is certified in accordance with Japanese, European and American criteria. Approved by many original equipment manufacturers.

• JASO DH-2 (approval N° D033TOL619) • ACEA E11 / E9 / E7 (E5) • API CK-4/ CJ-4/ CI-4/ SN

**Manufacturers' Approvals:**

• DEUTZ DQC III-18 LA • VOLVO VDS-4 .5 • MTU Category 2.1 • CUMMINS CES 20086  
• MACK EO-S 4.5 • DETROIT DIESEL DFS 93K222 • DAIMLER MB-Approval 228.31 • RENAULT RLD-3 • MAN M 3775

**Meets the requirements of:**

• CATERPILLAR ECF-3/ ECF-2/ ECF-1a • FORD WSS-M2C171-F1

**Recommended for:**

• KOMATSU engines

**Suitable for:**

• HITACHI • MITSUBISHI • DEERE • PERKINS • CASE NEW-HOLLAND • LIEBHERR • JCB • KOBELCO • DOOSAN  
• JOHN DEERE • etc.



### Rubia Works 1000 FE 10W-30

Rubia Works 1000 FE 10W-30 is compliant with international standards as well as manufacturers' standards.

• ACEA E7 • API CI-4/ CH-4

**Manufacturers' Approvals:**

• MACK EO-N • MB-APPROVAL 228.3 • RENAULT TRUCKS RLD-2 • VOLVO VDS-3  
• CUMMINS CES 20078

**Meets the requirements of:**

• MAN M 3275 • DETROIT DIESEL 93K215



### Rubia Works 3000 10W-40

Lubricant is certified in accordance with European, Japanese and American norms. It is also approved by many manufacturers.

• JASO DH-2 (approval N° D033TOL611) • ACEA E6/E9 • API CJ-4/ CI-4 PLUS/ CI-4/ CH-4

**Manufacturers' Approvals:**

• DAIMLER MB-Approval 228.51 • DEUTZ DQC IV 10 LA/TTCD 7.8/6.1 L6 • VOLVO VDS-4 • MAN M 3477  
• RENAULT RLD-3 • MTU Category 3.1 • MACK EO-O Premium Plus

**Meets the requirements of:**

• LIEBHERR LH-00 ENG LA/ LH-01 • CATERPILLAR ECF-3/ECF-2/ECF-1a • CUMMINS CES 20081

**Suitable for:**

• KOMATSU • HITACHI • ISUZU • MITSUBISHI • BELL • WIRTGEN • VOGELE • etc.



### Rubia Works 3000 FE 5W-30

Lubricant is certified in accordance with European, Japanese and American norms. It is also approved by many manufacturers.

• JASO DH-2 (approval N° D033TOL607) • ACEA E6/E9  
• API CJ-4/ CI-4 PLUS/ CI-4/ CH-4

**Manufacturers' Approvals:**

• DAIMLER MB-Approval 228.51 • DEUTZ DQC IV 10 LA • VOLVO VDS-4 • MAN M 3477/M 3677 • RENAULT RLD-3  
• MTU Category 3.1 • SCANIA LDF-4 • MACK EO-O Premium Plus

**Recommended for:**

• LIEBHERR ENGINES • In compliance with specifications: CATERPILLAR ECF-3/ ECF-2/ ECF-1a

**Suitable for:**

• KOMATSU • HITACHI • ISUZU • MITSUBISHI • CUMMINS • PERKINS • CASE • NEW-HOLLAND • JCB • etc.



### Rubia Works 1000 15W-40\*

Compliance with international standards as well as manufacturers' standards.

• JASO DH-1 (approval N° D033TOL618) • ACEA E7/E5 • API C1-4/ CH-4/ SL

**Manufacturers' Approvals:**

• CUMMINS CES 20078 / 20077 / 20076 • DEUTZ DQC III-10 • MTU Category 2 • VOLVO VDS-3 • RENAULT RLD-2  
• DETROIT DIESEL DFS 93K215 • MB-Approval 228.3 • MACK EO-N • ISUZU Orop List 2015  
• ALLISON TES 439

**Meets the requirements of:**

• CATERPILLAR ECF-2 / ECF-1a • MAN M 3275-1

**Recommended for:**

• KOMATSU • HITACHI • LIEBHERR • IVECO • CASE NEW-HOLLAND • DEERE • JCB • KOBELCO • MITSUBISHI  
• PERKINS • DAF • SCANIA • IVECO FPT T2 E7 • etc.



## Powershift Transmission Fluids

### Dynatrans AC / ACX 0W-20

Lubricant for hydraulic systems and transmission components (axles or gearboxes) equipped with specific brake friction discs, used in very low ambient temperature.

**Meets the requirements of:**

• ALLISON C4 • CATERPILLAR TO-4 • KOMATSU Micro-clutch Test (JCMAS)

**Recommended for:**

• CAT HYDO Advanced 10W and 20

**Suitable for:**

• CAT • KOMATSU • ZF • DANA • EATON-FULLER • ROCKWELL • etc.

### Dynatrans ACX 5W-30

Specially formulated lubricant for hydraulic systems and transmission components (gearboxes or transfer cases) of Off-Road machinery.

• API GL-4/ API CF

**Meets the requirements of:**

• CATERPILLAR TO-4 • KOMATSU Micro-clutch Test (JCMAS) • ZF TE-ML 03C

**Suitable for:**

• DANA • EATON-FULLER • ROCKWELL • JCB • ALLISON • KOMATSU • HITACHI • ZF • etc.



### Dynatrans AC / ACX 10W-30

Specially formulated lubricant for hydraulic systems and transmission components (gearboxes or transfer cases) of Off-Road machinery.

• API GL-4/ API CF

**Meets the requirements of:**

• CATERPILLAR TO-4 • KOMATSU Micro-clutch Test (JCMAS) • ZF TE-ML 03C

**Suitable for:**

• DANA • EATON-FULLER • ROCKWELL • JCB • ALLISON • KOMATSU • HITACHI • ZF • etc.

### Dynatrans AC / ACX 10W

Lubricant for hydraulic systems and transmission components (axles or gearboxes) equipped with specific brake friction discs, used in very low ambient temperature.

• ZF TE ML 03C

**Meets the requirements of:**

• API GL-4/ CF • CATERPILLAR TO-4 • ALLISON TES 439 • ALLISON C4 (Obsolete) • KOMATSU Micro Clutch test (JCMAS)

**Suitable for:**

• CATERPILLAR • KOMATSU • DANA • EATON-FULLER • ROCKWELL • JCB • etc.

### Dynatrans AC / ACX 30

Lubricant for hydraulic systems and transmission components (axles or gearboxes) equipped with specific brake friction discs, used in very low ambient temperature.

• ZF TE ML 03C • ZF TE ML 07F

**Meets the requirements of:**

• API GL-4/ CF • CATERPILLAR TO-4 • ALLISON TES 439 • ALLISON C4 (Obsolete) • KOMATSU Micro Clutch test (JCMAS)

**Suitable for:**

• CATERPILLAR • KOMATSU • DANA • EATON-FULLER • ROCKWELL • JCB • etc.

### Dynatrans AC / ACX 50

Lubricant for hydraulic systems and transmission components (axles or gearboxes) equipped with specific brake friction discs, used in very low ambient temperature.

**Meets the requirements of:**

• API GL-4/ CF • CATERPILLAR TO-4 • KOMATSU Micro Clutch test (JCMAS)

**Suitable for:**

• CATERPILLAR • KOMATSU • DANA • EATON-FULLER • ROCKWELL • JCB • etc.

### Dynatrans AC / ACX 60

High performance lubricant for construction & mining equipment axles with (or without) specific oil-immersed brake discs.

**Meets the requirements of:**

• CATERPILLAR TO-4 • KOMATSU Micro Clutch test (JCMAS)

**Suitable for:**

• CATERPILLAR • KOMATSU • DANA • EATON-FULLER • ROCKWELL • JCB • etc.

### Dynatrans VX FE

High-performance lubricant, based on <<synthetic technology>>, dedicated for earthmoving machinery axles, agricultural tractor transmissions, and hydraulic systems.

• API GL-4

**Suitable for:**

• MASSEY F. CMS M1145 / M1143 • JOHN DEERE JDM J20D • KUBOTA S-UDT • AGCO / ALLIS 821 XL • VALTRA G2-08 • CLAAS / RENAULT AGRICULTURE • Mc CORMICK HTX • CASE MS 1206 / 1207 / 1209 • NEW HOLLAND NH 410B / NH 410C • CNH MAT 3505 / 3509 / 3525 / 3526 / 3540 • FORD M2C 134D / FNHA 2C 201.00



### Dynatrans MPX

Lubricant for transmissions with oil-immersed brakes and hydraulic systems used in agricultural tractors and public works or material handling equipment.

• API GL-4

**Manufacturers' Approvals:**

• VALTRA G2-08 • VOLVO CE WB 101 • ZF TE-ML 03E/ 05F/ 06D/ 06K/ 06N/ 06R/ 17E/ 21F • DANA-OHTM-UTTO (Approval ID 21K-0007)

**Meets the requirements of:**

• JOHN DEERE JDM J20C • MASSEY FERGUSON CMS M1145/ M1143 • FORD M2C134-D/ FNHA 2C 201.00 • Mc CORMICK HTX • CLAAS/ RENAULT AGRICULTURE

**Suitable for:**

• CASE MS1206/ MS1207/ MS1209 • CNH MAT 3505/ 3509/ 3525/ 3526/ 3540 • NEW HOLLAND NH 410C/ NH 410B • KOMATSU AXO 80 • MASSEY FERGUSON CMS M1135/ M1141 • KUBOTA UDT • AGCO: ALLIS 821 XL • ALLISON C-4 • CATERPILLAR TO-2 • JCB STANDARD 4000/ 2000

### Dynatrans LS 20W-40

Lubricant for transmissions with oil-immersed brakes and hydraulic systems used in agricultural tractors and public works or material handling equipment.

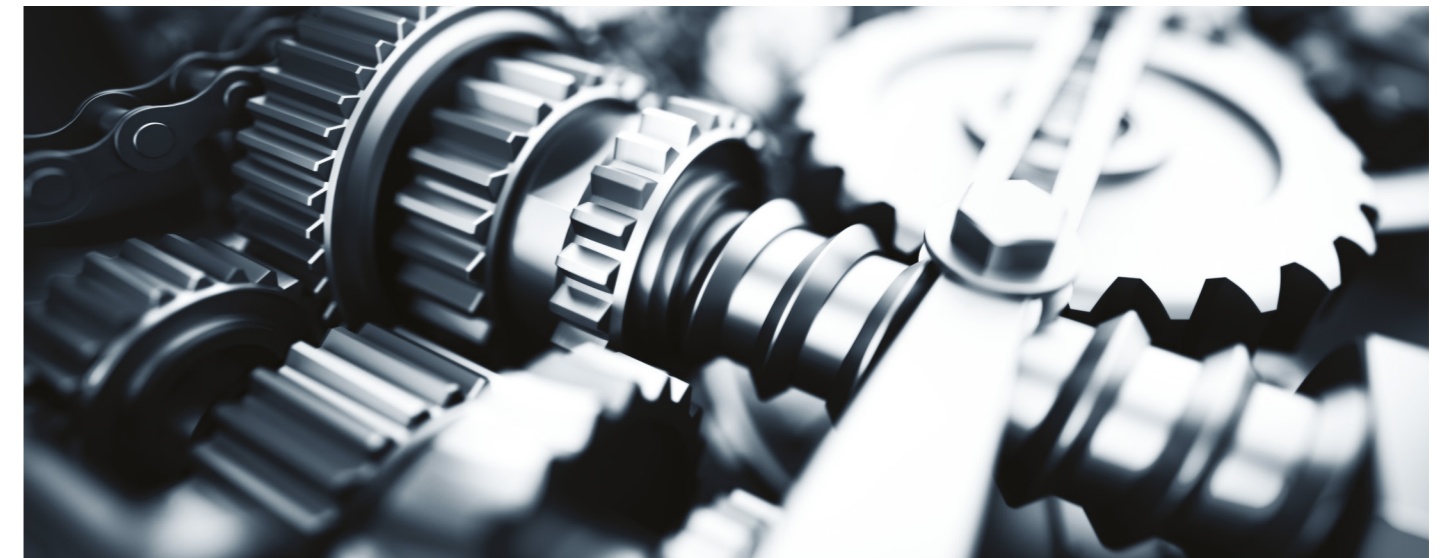
• API GL-4

**Manufacturers' Approvals:**

• ZF TE-ML 05F / 06K / 17E / 21F

**Meets the requirements of:**

• CASE: MS 1317 • HANOMAG • HITACHI • KOMATSU AXO 80 • KOMATSU • etc.



## Automatic Transmission Fluid

### Fluidmatic D3

Automatic transmission lubricant also dedicated to hydraulic systems and power steering application.

**Manufacturers' Approvals:**

• Mercedes MB-Approval 236.9 • Volvo 97341 • MAN 339 TYP V1 / Z1 / L1 • Voith H55.6335.xx • ZF TE-ML 04D / 14A / 11B

**Meets the requirements of:**

• GM Dexron III G / III H • Ford Mercon

**Recommended for:**

• Allison C4



## Fluidmatic XLD FE

Extra-long drain automatic transmission fluid.

### Manufacturers' Approvals:

• ZF TE-ML 04D / 14B / 16L / 17C / 20B • VOITH H55.6336.xx • VOLVO 97341 • MAN 339 Typ V2 / Z2  
• MERCEDES-BENZ MB-APPROVAL 236.6 • ALLISON C4 (n° 32802009)



### Meets the requirements of:

• MAN 339 Typ Z3 • GM Dexron IIIH • ZF TE-ML 02F / 14C • Mercedes-Benz MB 236.91 • Allison TES-389 / TES-295  
• VW TL 52162 • Ford Mercon / Mercon V • JASO 1A • Toyota T-IV • Hyundai, Kia, Mitsubishi SP-III • Honda Z-1  
• Mazda M-III / M-V • Aisin Warner JWS 3309

### Recommended for:

• ZF TE-ML 11B • Nissan: AT-Matic D, J, K



## Manual Transmission and Axle Fluids

### Traxium Dual 9 FE 75W-90

High-performance synthetic oil developed for synchronised or non-synchronised manual gearboxes, axles, and reduction gears.

• API GL-4 • API GL-5 • API MT-1 • MIL-PRF-2105E • MIL-L-2105D • SAE J2360

### Manufacturers' Approvals:

• MB-Approval 235.8 • MAN 341 Typ Z2 • MAN 342 Typ S1 • SCANIA STO 1:0 • VOLVO 97312  
• ZF TE-ML 02B / 05A / 12L / 12N / 16F / 17B / 19C / 21A • MERITOR 076-N

### Suitable for:

• EATON-FULLER

### Dynatrans DA 80W-90 / 85W-140

Lubricant for axles and differentials equipped with limited-slip disc self-locking systems.

• API GL-4 • API GL-5 • API MT-1 • MIL-PRF-2105E • MIL-L-2105D • SAE J2360

### Manufacturers' Approvals:

80W-90 • ZF TE-ML 05C / 12C / 21C  
85W-140 • ZF TE-ML 05C / 12C / 16E

### Meets the requirements of:

80W-90 Equipment: • LIEBHERR • TEREX • VOLVO • CASE • JCB etc.  
Agricultural tractors: • CLAAS-RENAULT • NEW-HOLLAND (NH-520B / 520C)  
• DEUTZ • STEYR • FORD (M2C 104A)  
Wheel drive passenger cars and road vehicles: • NISSAN • TOYOTA • GM • etc.  
85W-140 • CASE • JCB • LIEBHERR • TEREX • VOLVO • VAN-HOOL • etc.

### Traxium Axle 7 80W-90 / 85W-90 / 85W-140

Extreme pressure mineral oil for the lubrication of highly loaded gears (axles, final drives, transfer cases, planetary gearboxes) when an API GL-5 level of performance is required.

• API GL-5 • MIL-L-2105D

### Manufacturers' Approvals:

80W-90 • ZF TE-ML 12E, 17B, 19B • MAN 342 type M-1  
85W-90 • MAN 342 type M-1 • ZF TE-ML 16C / 17B / 19B / 21A • MB-Approval 235.0  
85W-140 • ZF TE-ML 05A / 12E / 16D / 21A

### Meets the requirements of:

80W-90 ZF and MAN hypoid gears, with standard drain interval.  
85W-90 MAN, MERCEDES and ZF hypoid axles, according to the recommended oil change interval.  
85W-140 Lubrication ZF manual transmission with drain interval based on OEM recommendations.



## Special Final Drive Fluids

### Dynatrans FD-1 50 / 60

Lubricants for axles and final drives of earthmoving and mining machineries.

• Caterpillar FD-1

### Meets the requirements of:

• Caterpillar FD-1 specification

### Recommended for:

• Axles and final drives of machines without friction discs working under severe conditions of heavy load and high temperature.

### Dynatrans GEA 680

Fully synthetic lubricant (PAO) for electric wheel motor gearing.

• DIN 51 517-3: CLP • ISO 6743-6: CKD

### Meets the requirements of:

• General Electric (GE) Transportation Systems specification D50E35E (approval in progress)

### Suitable for:

• Spur, helical, bevel and most types of industrial hypoid gearing. Also suitable for ball, roller and other types of antifriction bearings.



## Hydraulic Fluids

### Equivis ZS 32 / 46 / 68 / 100

• AFNOR NF E 48-603 HV • ISO 6743 / 4 HV • DIN 51524 P3 HVLP • JCMAS HK VG46W

### Manufacturers' Approvals:

• CINCINNATI MILACRON P68 / P69 / P70 • VICKERS M-2950S, -I-286

### Equivis AF 32 / 46 / 68

Long-drain, ashless, high viscosity index hydraulic oils.

• ISO 6743 / 4 HV • DIN 51524-3 HVLP

### Azolla ZS 32 / 46 / 68 / 100\*

High-performance, anti-wear hydraulic oils.

• AFNOR NF E 48-603 HM • ISO 6743 / 4 HM • DIN 51524 P2 HLP

### Manufacturers' Approvals:

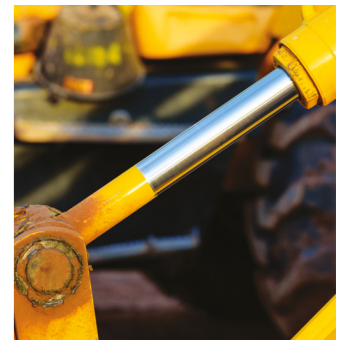
• CINCINNATI MILACRON P68 / P69 / P70 • VICKERS M-2950S, -I-286

\* Key product

### Azolla ZF 32 / 46 / 68

Zinc-free antiwear technology, ashless hydraulic oils.

• ISO 6743 / 4 HM • DIN 51524 P2 HLP • US steel 136, 127 • SEB 181222 • SAE MS 1004 • Bosch Rexroth RE 90 220  
• Eaton Vickers I-286-S (Industrial), M-2950-S (Mobile) • Cincinnati Milacron P 68, P 69, P 70  
• DENISON HF0, HF1, HF2 (approval of T6H20C pump)





## Gear Lubricants

### Carter EP 150 / 220 / 320 / 460 / 680

Extreme pressure (EP) lubricants for mineral oils used for enclosed gears operating under severe conditions.

- DIN 51517 Part 3 - CLP • ISO 12925-1 CKD • AGMA 9005 – E02 (EP) • GB 5903-2011 • DAVID BROWN S1.53.101 E
- AIST 224 • SEB 181226 • JIS K2219:2006 (Class2) • SIEMENS - FLENDER

### Carter SH 150 / 220 / 320 / 460 / 680

Synthetic oils (PAO) for enclosed gears operating under severe conditions.

- DIN 51517 Part 3 - CLP • NF-ISO 6743-6 category CKD • AISI 224 • CINCINNATI MILACRON • DAVID BROWN
- FLENDER • USINOR FT 161 • MÜLLER WEINGARTEN • AGMA 9005 - E02



## Multi Purpose Greases

### Multis Complex HV 2

Multipurpose extreme pressure, high-temperature lithium complex grease.

- ISO 6743-9: L-XBEHB 2 • DIN 51502: KP2P-30

### Multis Complex XHV2 MOLY

Extreme pressure, high-temperature complex lithium soap grease containing 3% of MoS<sub>2</sub>.

- CATERPILLAR MULTI PURPOSE GREASE WITH MOLY (MPGM)
- ISO 6743-9: L-XBEHB 2 • DIN 51502: KPF2P-20

Suitable for Use In:

- CAT • Komatsu • Hitachi • Volvo • Epiroc • Sandvik

### Multis EP 0 / 00 / 2

Multipurpose lithium/calcium grease.

- 0 • ISO 6743-9: L-XBCEB 0 • DIN 51502: MP0K-25
- 2 • ISO 6743-9: L-XBCEB 2 • DIN 51502: MP0K-25
- 00 • ISO 6743-9: L-XCBEB 00 • DIN 51502: GP00G-30

### Multis Mine 460-2 / 680-2\*

Special mining grease containing 5% solid additives to increase the productivity of operations and protect equipment in the most severe conditions.

- ISO 6743-9: L-XBEHB 2 • DIN 51502: KPF2 P- 20

Suitable for:

- CAT • Komatsu • Hitachi • Volvo • Epiroc • Sandvik • JCB • Atlas Copco • Liebherr • Bucyrus • P&H

\* Key product

### Ceran XM 220 / 460

Extreme pressure, water-resistant, high-temperature "NEW GENERATION" calcium sulfonate complex grease.

- ISO 6743-9: L-XCFIB 1 / 2 • DIN 51 502: KP1 / 2R-30
- DCSEA 360 A specification related to sea water resistant grease codified NATO G-460

### Ceran XM 220 Moly

Extreme pressure calcium sulfonate complex grease containing 5% of MoS<sub>2</sub>.

- ISO 6743-9: L-XBFIB 1 / 2 • DIN 51 502: KPF 1 / 2R-30

### Ceran XS 40 Moly

Subarctic synthetic calcium sulfonate complex grease, containing 5% of MoS<sub>2</sub>, for mining applications.

- ISO 6743-9: L-XEFFB 1 / 2 • DIN 51 502: KP1 / 2R-60



## Antifreeze and Liquid Coolants

### Coolelf Auto Supra -37°C

Pre-mixed, ready-to-use cooling liquid suitable for all cooling systems of combustion engines in cars, vans, trucks, buses, constructing machines and agricultural tractors.

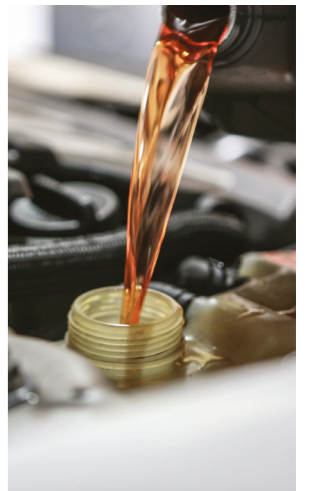
- AFNOR NFR 15-601 • ASTM D6210 • SAE J1034 • ASTM D3306 • BS 6580 • NATO S-759
- ASTM D4656 • JASO M325 • ASTM D4985

Manufacturers' Approvals:

- VW SEAT AUDI SKODA PORSCHE: VW TL 774 D / F (G12 / G12+) • DAIMLER MB 326.3
- FORD WSS-M97B44 • MAZDA MEZ MN 121 D • JAGUAR LAND-ROVER STJLR651.5003
- MAN 324 Typ SNF • DEUTZ DQC CB-14 • GM 6277M • GMW 3420
- GE Jenbacher TA1000-0201 • MWM2091 / 11 • CAT2091 / 11 • CUMMINS IS series u N14
- KOMATSU 07892 (2009) • LIEBHERR MD1-36-130 • MTU MTL 5048 • DAF 74002

Meets the requirements of:

- RENAULT 41-01-001/ S Type D • SAAB • LEYLAND TRUCKS • SCANIA • FENDT; VALTRA
- CASE; NEW HOLLAND MAT3624 • CUMMINS CES 14439 • CUMMINS CES 14603
- WARTSILLA32-9011 • CAT EC



### Coolelf Auto Supra -26°C

Pre-mixed, ready-to-use cooling liquid suitable for all cooling systems of combustion engines in cars, vans, trucks, buses, constructing machines and agricultural tractors.

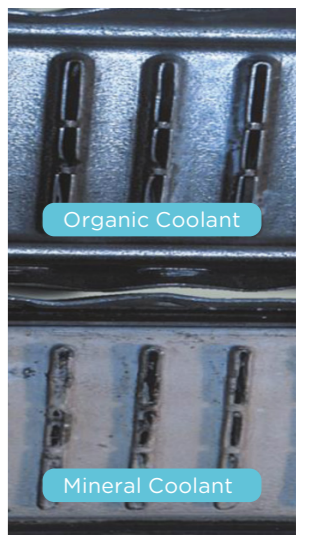
- AFNOR NFR 15-601 • ASTM D6210 • SAE J1034 • ASTM D3306 • BS 6580
- NATO S-759 • ASTM D4656 • JASO M325 • ASTM D4985

Manufacturers' Approvals:

- VW SEAT AUDI SKODA PORSCHE: VW TL 774 D / F (G12 / G12+) • DAIMLER MB
- FORD WSS-M97B44 • MAZDA MEZ MN 121 D • JAGUAR LAND-ROVER STJLR651.5003
- MAN 324 Typ SNF • DEUTZ DQC CB-14 • GM 6277M • GMW 3420
- GE Jenbacher TA1000-0201 • MWM2091 / 11 • CAT2091 / 11 • CUMMINS IS series u N14
- KOMATSU 07892 (2009) • LIEBHERR MD1-36-130 • MTU MTL 5048 • DAF 74002

Meets the requirements of:

- RENAULT 41-01-001/ S Type D • SAAB • LEYLAND TRUCKS • SCANIA • FENDT; VALTRA
- CASE; NEW HOLLAND MAT3624 • CUMMINS CES 14439 • CUMMINS CES 14603
- WARTSILLA32-9011 • CAT EC



### Glacelf Auto Supra

Very long-life antifreeze concentrate based on high purity monoethylene glycol and organic corrosion inhibitors.

- AFNOR NFR 15-601 • ASTM D3306 • ASTM D4656 • ASTM D4985 • ASTMD6210 • BS 6580 • JASO M325
- SAE J1034 • NATO S-759

Manufacturers' Approvals:

- VW SEAT AUDI SKODA PORSCHE: VW TL 774 D / F (G12 / G12+) • DAIMLER MB 326.3 • FORD WSS-M97B44
- MAZDA MEZ MN 121 D • JAGUAR LAND-ROVER STJLR651.5003 • MAN 324 Typ SNF • DEUTZ DQC CB-14
- GM 6277M • GMW 3420 • GE Jenbacher TA1000-0201 • MWM2091 / 11 • CAT2091 / 11 • CUMMINS IS series u N14
- KOMATSU 07892 (2009) • LIEBHERR MD1-36-130 • MTU MTL 5048 • DAF 74002

Meets the requirements of:

- RENAULT 41-01-001/ S Type D • SAAB • LEYLAND TRUCKS • SCANIA • FENDT; VALTRA
- CASE; NEW HOLLAND MAT3624 • CUMMINS CES 14439 • CUMMINS CES 14603 • WARTSILLA32-9011 • CAT EC

### Glacelf Eco BS

Antifreeze concentrate based on mono ethylene glycol and selected organic inhibitors, providing frost and corrosion protection. Contains no borax, amines, nitrites or phosphates.

- BS 6580

Meets the requirements of:

- BS 6580:1992 • BS 6580:2010



## Special Application Products

### GRAFOLOG H 2200

Premium open gear compound for process plants (i.e. mills, kilns) and open pits (i.e. draglines, rope shovels excavators).

• ISO 3104 • ISO 2909 • NLGI • ISO 6299 • ASTM D 2596 • ASTM D 2266 • ISO 14635-1

### Copal OGL 0 / 1 / 2

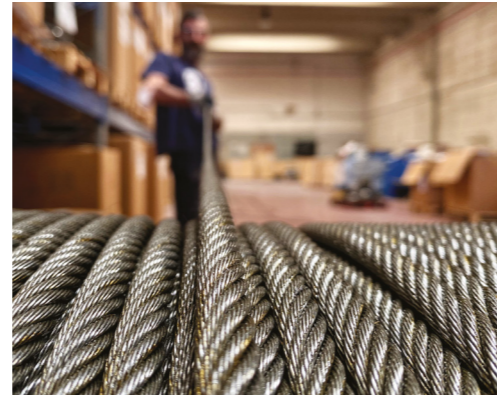
Extreme pressure adhesive aluminium complex grease with solid lubricants for loaded open gears and heavy-duty applications.

• ISO 3104 • ISO 2909 • NLGI • ISO 6299 • ASTM D 2596 • ASTM D 2266 • ISO 14635-1

### Ceran AD Plus

Extreme pressure wire rope, water resistant calcium sulfonate grease.

• ISO 6743-9: L-XBDIB 0 • DIN 51502: OGP 0N-20



### Hydransafe HFDU 46 / 48

Biodegradable fire-resistant hydraulic fluid.

• ISO 6743 / 4 HFDU • ISO 12922

#### Manufacturers' Approvals:

• FACTORY MUTUAL in accordance with FM Approval Standard 6930 - "Flammability classification of Industrial Fluids".

### Hydransafe HFC 146

• ISO 6743 / 4 HFC • ISO 12922 HFC

• Fulfill the requirements according the 7. Lux. Report. Tested by LABORATOIRE ATEST.

### Hydransafe HFA S5

Fire-resistant hydraulic fluid recommended for underground operations.

• ISO 6743 / 4 HFAS

### Isovoltine II / IIX

Pure non-inhibited mineral insulating oil.

• IEC 60296 / BS EN 60296

### Finadet MF

Super-concentrated detergent for tough cleaning jobs in highly polluted environments.

### Finasol MF

Multipurpose emulsifiable degreaser for oily pollutants and insoluble components.



## Fuel Economy: Top Fuel Efficiency Guaranteed



As fuel represents a significant part of construction and mining fleet operating costs, even the smallest reduction in fuel consumption can significantly improve the company profitability. Engine oils can provide Fuel Economy (FE) gains by providing viscosity control and friction reduction.

With the goal of formulating the best FE products for earthmoving and mining, TotalEnergies has developed the lubricants for engines operating under the most extreme conditions (full load, long periods, dusty and hot atmosphere).

Our lubricants have been tested and approved by independent testing organisations such as TUV, Millbrook, UTAC and Danielson.

Rubia Works FE lubricants have been designed and fully approved to reduce and keep consistent the fuel consumption of off-highway machinery without compromising product performance. The Rubia Works range has been certified by the independent Danielson Laboratory (France) for producing excellent FE results.

### MEASUREMENT ON ENGINE OILS

REFERENCE OIL	Fuel consumption (kg/h)	CO <sub>2</sub> Emission (g/h)
Rubia Works 1000 15W-40	9.254	29.337

TEST RESULT	Fuel Saving (kg/h)	Emission Saving (g CO <sub>2</sub> /h)	Fuel Saving (%)
Rubia Works 4000 FE 10W-30	0.175	0.555	-1.89%
Rubia Works 3000 FE 5W-30	0.171	0.541	-1.84%

EXCELLENT REPEATABILITY (made on Rubia Works 1000 15W-40):  
in "transportation" mode: delta start/end = 0.070%  
in "loading + transp." mode: delta start/end = 0.055%

Note: FE calculations are made relatively to the average values of fuel consumption.

REFERENCE OIL	Fuel consumption (kg/h)	CO <sub>2</sub> Emission (g/h)
Reference oil	9.254	29.337
RUBIA WORKS 1000 15W-40	9.254	29.337

"RUBIA WORKS" tested oils	Fuel Saving (kg/h)	Emission saving (g CO <sub>2</sub> /h)	Deviation (%)
15W-30	0.175	0.555	-1.89%
10W-30	0.171	0.541	-1.84%
5W-30	0.171	0.541	-1.84%

FUEL ECONOMY CERTIFICATE ISSUED BY DANIELSON SERVICES



# TotalEnergies Cost of Ownership: Our Partners, Our Planet, Our Promise



We are driven to fulfil both our environmental commitment and our promise to partners to deliver the most performance- and cost-efficient lubricants. TotalEnergies products help you keep your competitive edge through efficiency and improved equipment service life.

When you work with TotalEnergies, experience a reduction in the number of oil changes, downtime and expensive repairs, and keep equipment working at peak efficiency for longer. Our research team in Lyon has conducted several in-house oxidation tests to develop robust lubricants that withstand harsh mining environments without compromising lubricant and machine performance. For instance, Rubia Works products lower downtime and improve service lengths. With proper use and application of the LubAnac oil condition monitoring service, drain intervals can go up to an astonishing 2000 working hours

for certain applications. We have over 2000 different types and pack sizes of lubricants for an expansive range of needs, from reducing energy and fuel consumption, to prolonging oil life, to extending machine life while reducing maintenance cost. Our experts will assess your needs thoroughly to find the most suitable lubricant for you to reach maximum productivity.

As a major global player in the oil industry, TotalEnergies has a duty in keeping our earth green. To us, health, safety and environmental issues are paramount. Our team of experts is constantly working towards developing the best range of biodegradable lubricants and eco-friendly products. We also help our partners to reduce Total Cost of Ownership (TCO) by introducing energy efficient and fuel-saving lubricants, implementing new lubrication procedures, and changing storage infrastructure and logistics.

## Biodegradable Products

### Biohydran SE 46 / 68

**High performance product based on saturated synthetic esters, designed for demanding hydraulic systems requiring high thermal stability & good lubricating properties.**

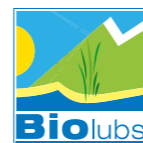
**Standards** • ISO 15380: HEES • DIN 51524 (for mineral oils):  
except DIN 51587 and ISO 13357.

**OEM** • DENISON : HF1, HF2 & HF6 approved.

**European** • Registration number: FR / 27 / 02 AFNOR CERTIFICATION.

**Meets the requirements of:**

• Swedish Standard SS 15 54 34 • JCMA HKB (VG 32 & VG 46)



### Biohydran TMP 46 / 68

**Biodegradable hydraulic fluid complying with the European Ecolabel criteria.**

**Specification** • ISO 15380: HEES

**European** • Registration number: FR / 27 / 02  
AFNOR CERTIFICATION.

**Meets the requirements of:**

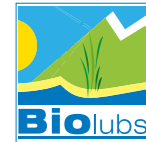
• Swedish Standard SS 15 54 34 • Specification CAT BF-2



### Biomultis EP2

**High-performance extreme pressure biodegradable lithium grease.**

• **Environmentally Acceptable Lubricant (EAL) for the 2013 Vessel General Permit (VGP)**  
• ISO 6743-9: L-XCEEB 2 • DIN 51502: KP2K-30



### Biotraffic 5000 FE 10W-30

**Very high-performance synthetic "Low SAPS" biodegradable lubricant, made from renewable raw material, for all engine types to provide substantial Fuel Economy.**

• ACEA E4, E6, E7, E8, E9, E11 • API CK-4/ CJ-4/ CI-4 PLUS/ CI-4/ CH -4



**Meets the requirements of:**

• DEUTZ DQC IV-18 LA • DEUTZ TTCD 7.8 / 6.1 L6 • MTU Category 3.1 • MAN M 3477 / M 3677 / M 3775  
• MB-Approval 228.51/ 228.52 • VOLVO VDS-4.5 • MACK EO-O Premium Plus • RENAULT VI RLD-3  
• CATERPILLAR ECF 3 / ECF 2 / ECF 1a • SCANIA LDF-4 • LIEBHERR LH 01 ENG LA • CUMMINS CES 20086  
• IVECO TLS E6 • DAF • JASO DH-2 • CNH MAT 3571/ 3521

**Recommended for:**

• KOMATSU • ISUZU • KUBOTA • MITSUBISHI

**Suitable for:**

• FPT-Iveco • SISU • VALMET • PERKINS • FORD • etc.

### Biotrans FX

**Very high quality biodegradable lubricant for transmissions equipped with wet disc brakes for agricultural machinery and Public Works equipment.**

• API GL-4 • ISO 15380 HEES

**Manufacturer Approvals:**

• MF: CMS M1145 / M1143 • ZF TE-ML 06P

**Meets the requirements of:**

• CLAAS / RENAULT AGRICULTURE

**Suitable for:**

• JCB • VOLVO • KOMATSU • CASE • FENDT • FORD • MAC-CORMICK • MASSEY-FERGUSON • JOHN DEERE



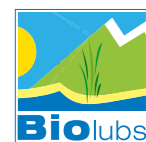
### Biotrans LS FE 75W-90

**Very high-performance synthetic, renewable, biodegradable lubricant, dedicated to final reductions and disc-limited slip differential axles.**

• API GL-5 (LS)

**Suitable for:**

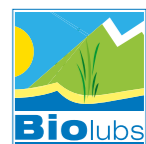
• LIEBHERR • VOLVO CE • TEREX • CASE NEW HOLLAND • JCB • CLAAS-RENAULT • STEYR • DEUTZ  
• SAME • VALTRA etc.



### Isovoltine Bio

**Biodegradable insulating oil.**

• IEC 61099 • IEC 61039 - K3 class • Biodegradable according to OECD 301B  
• NWG (Nicht Wasser Gefährdende - without danger for water)





# From the refinery to the site, TotalEnergies is with you, every step of the way.

Depending on your needs, TotalEnergies has a range of cascading servicing and support structures to assist you where fuel and lubricants are used:

- Fluid analysis for predictive and proactive maintenance LubAnac.
- Specialized mining experts in our affiliates all over the world.
- Training programs on fuel, lubricants and safety.

• **Optimizer** is an energy monitoring solution developed by TotalEnergies, to help mining company to manage all their sources of energy consumption.

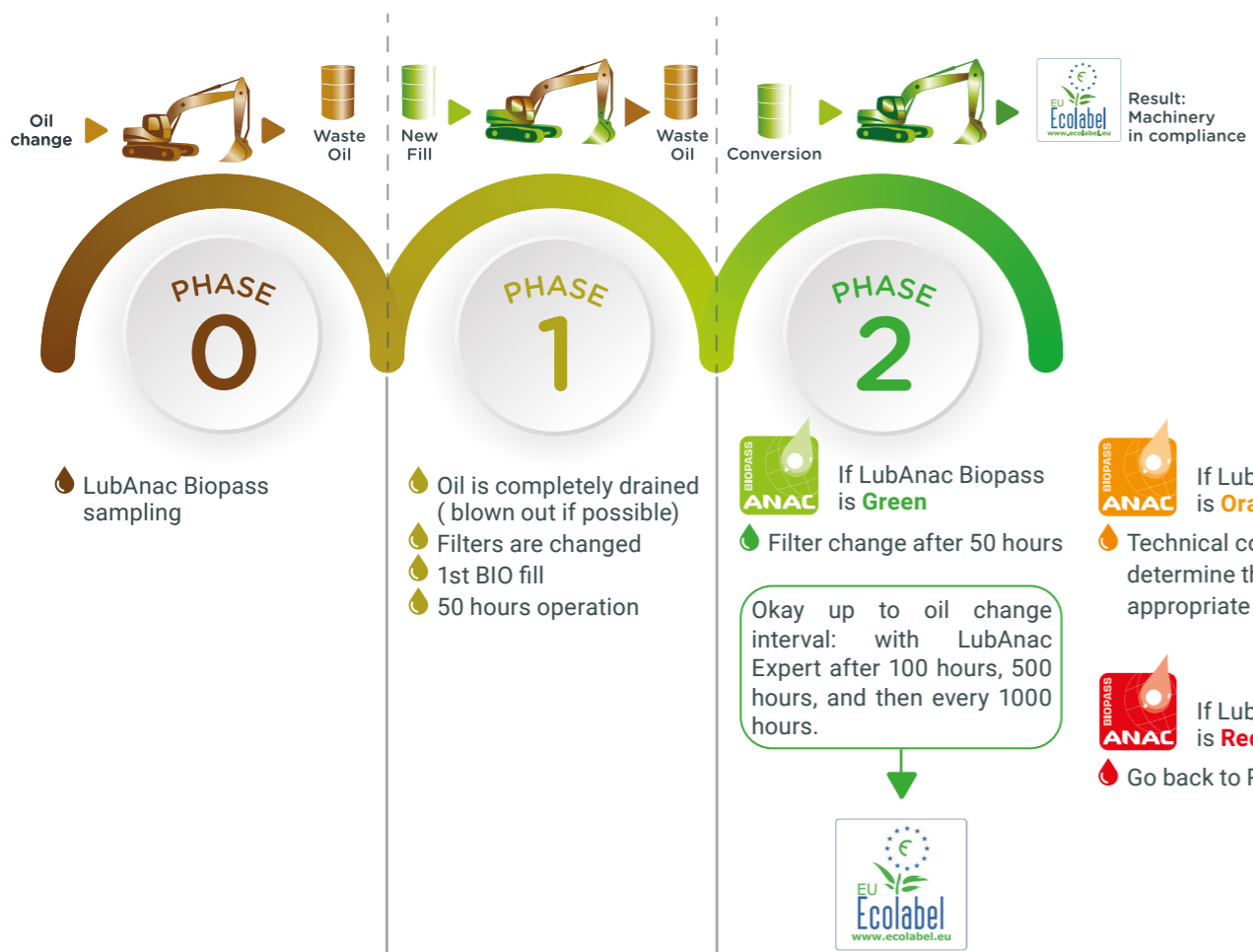
• To know more about our complete integrated mining solutions, please visit our website: [miningsolutions.totalenergies.com](http://miningsolutions.totalenergies.com)



**LubAnac**  
off road

## Procedure for switching your equipment over to BIO

- ▶ Controlled cost of switching over to BIO
- ▶ Reduced immobilisation of your equipments



**LubAnac**  
off road

# Be Absolutely Assured of Exceptional Performance

**45 Years**  
of Experience

**1,000,000**  
Mechanical Components Monitored

**8,500,000**  
Diagnostic Assessments Carried Out

LubAnac is a preventive and curative oil analysis service that gives your company competitive edge by optimising your fleet operation.

TotalEnergies uses our lubricant expertise to conduct a range of lube oil analyses. From a simple oil sampling, LubAnac can draw up a thorough diagnostic of all mechanical parts of your equipment. Being completely aware of your machine's performances, the service is both preventive and curative. Reduce cost savings on maintenance and repair by reinforcing longevity and reliability of your fleet, LubAnac can provide a real leading advantage for your company.

**LubAnac**  
off road

# A Customised Diagnosis You Can Trust

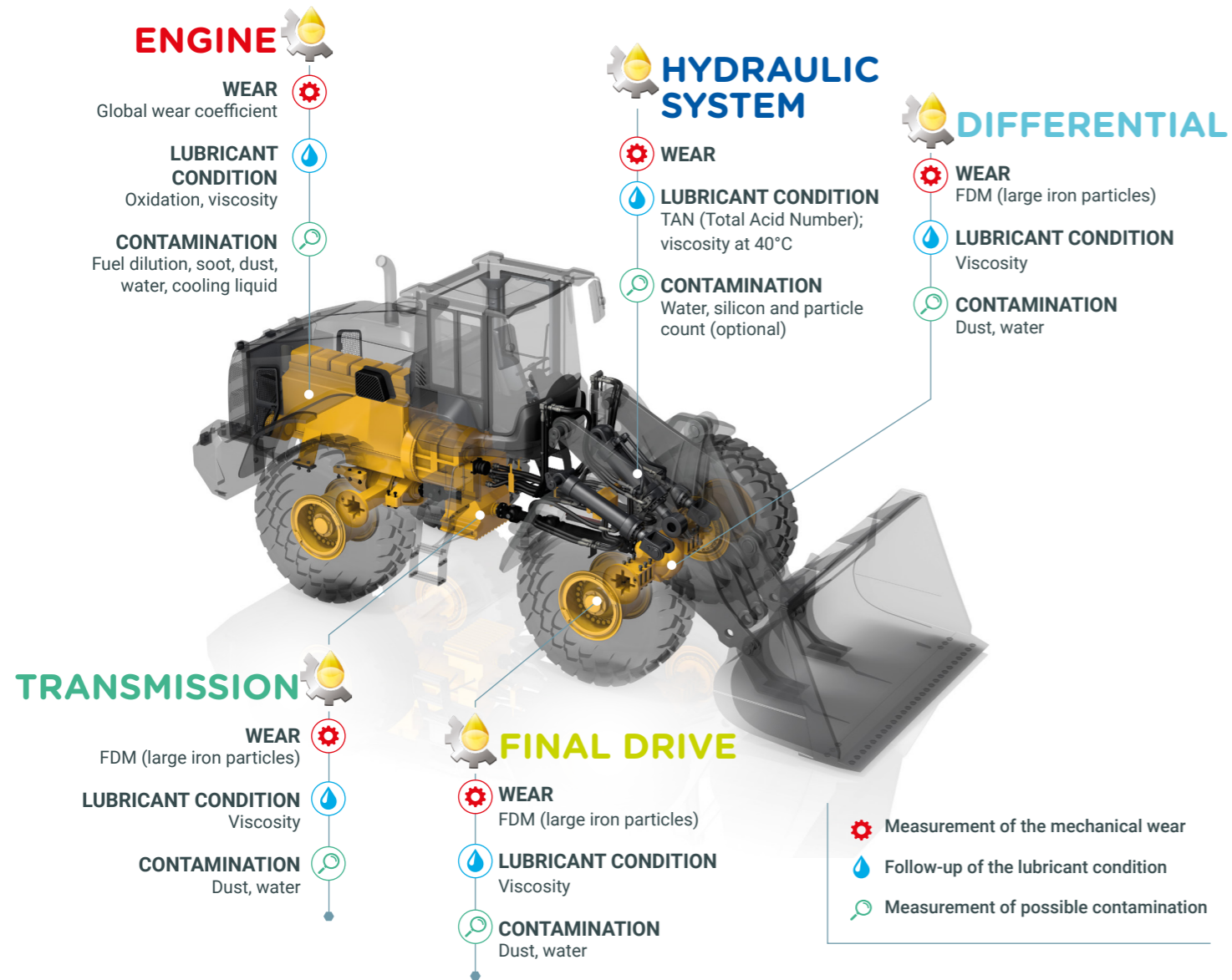
LubAnac off road is a tailor-made diagnostic system for engines and transmission components of construction and mining machinery fleets, based on the scientific interpretation of oil analysis.

rules provide more relevant and personalised diagnoses for each machinery. LubAnac off road is recommended for the systematic monitoring of the lubricant behaviour and the wear of the mechanical parts. Measured characteristics in each analysis are presented in graphs for easy understanding.

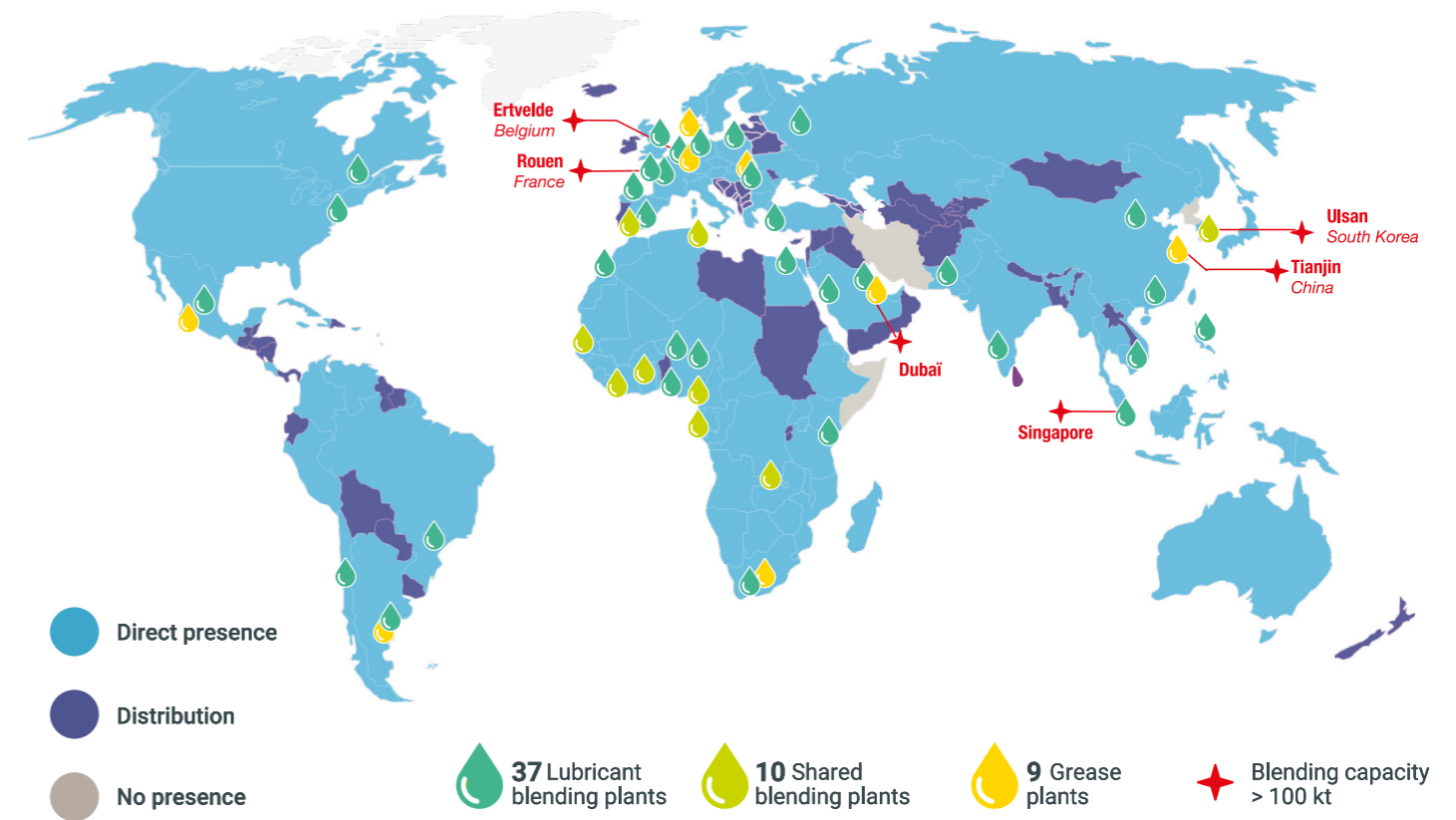
Its measured parameters and advanced interpretation

## Example of LubAnac Analysis Report





# No Stones Unturned, All Ground Covered in the Energy Sector



## 5 good reasons for choosing TotalEnergies

### A major player

With our production, supply chain and commercial presence in more than 150 countries, we deliver a full range of lubricants.

### Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total Cost of Ownership.

### References & OEMs

TotalEnergies cooperates with equipment manufacturers to create high-technology products for optimal performance and production of your machinery.

### Quality and environment

TotalEnergies ISO 9001 certification is the guarantee of a long term commitment to quality. From the initial design stage, our R&D teams seek to develop products that minimize toxicity risks and environmental impact.

### Innovation & Research

TotalEnergies invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.



**150** countries in which our lubricants are sold



**47** lubricant factories worldwide  
**9** grease plants



**2** research center and a technical center

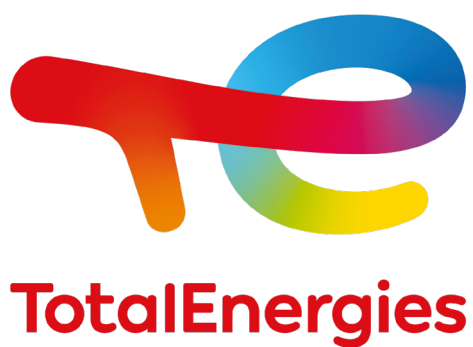


**> than 5,800** employees



**> than 312** researchers





**TotalEnergies Lubrifiants**

562, avenue du Parc de l'île  
92029 Nanterre cedex  
France