EARTHMOVING, MINING AND QUARRYING

Dedicated Lubricants

lubricants.total.

Precisely engineered for high

TVH

MyTotalSource

You can view and buy these parts via our official MyTotalSource webshop

mytotalsource.tvh.com

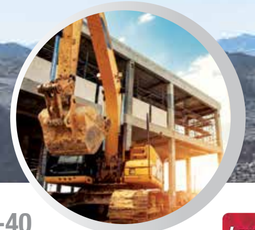
All products available for order

Large stock of core products

Anything not currently in stock can be ordered on request

UNEARTHING NEW POTENTIAL

TOTAL in Mining: a complete offer for lubricants, fuels, and value added services.
With a presence in more than 150 countries, TOTAL is a strong partner of choice for fuel and lubricants for its mining customers. Through innovation and technology leadership, TOTAL develops a broad range of high quality petroleum products. Each product is designed to suit customer specific needs for use in the harshest conditions. TOTAL 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 customer's operating costs.



ENGINES

RUBIA WORKS 4000 15W-40*

High-performance "Low SAPS" lubricant specially designed for the newest engines of earthmoving, mining and quarrying machinery.

✔ ACEA E9 / E7 ✔ API CK-4 / CJ-4 / CI-4+ / CI-4 / SN ✔ JASO DH-2

MANUFACTURER APPROVALS:
✔ DEUTZ DQC III-10 LA ✔ VOLVO VDS-4.5 ✔ MTU Category 2.1 ✔ RENAULT VI RLD-3
✔ MACK EO-S 4.5 ✔ MB-Approval 228.31 ✔ CUMMINS CES 20086
✔ DETROIT DIESEL DFS 93K222

MEETS THE REQUIREMENTS OF:
✔ CATERPILLAR ECF-3 / ECF-2

RECOMMENDED FOR THE ENGINES OF:
✔ KOMATSU ✔ HITACHI ✔ JCB ✔ KOBELCO ✔ ETC...

*Key product

RUBIA WORKS 4000 10W-40

High-performance, synthetic blend "Low SAPS" lubricant specially designed for the newest engines of earthmoving, mining and quarrying machinery.

✔ ACEA E9 / E7 ✔ API CK-4 / CJ-4 / CI-4+ / CI-4 / SN ✔ JASO DH-2

MANUFACTURER APPROVALS:
✔ DEUTZ DQC III-10 LA ✔ MTU Category 2.1 ✔ MB-Approval 228.31 ✔ VOLVO VDS-4.5
✔ MACK EO-S 4.5 ✔ RENAULT VI RLD-3 ✔ CUMMINS CES 20086
✔ DETROIT DIESEL DFS 93K222

MEETS THE REQUIREMENTS OF:
✔ CATERPILLAR ECF-3 / ECF-2 ✔ IVECO FPT TLS E9

RECOMMENDED FOR THE ENGINES OF:
✔ KOMATSU ✔ HITACHI ✔ JCB ✔ KOBELCO ✔ ETC...

PARTNERS TOWARDS GROUNDBREAKING EXCELLENCE

TOTAL 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. TOTAL also offers a full range of BIOLUBRICANTS.

ENGINES

RUBIA WORKS 4000 FE 10W-30

High-performance, synthetic blend "Low SAPS" lubricant specially designed for the newest engines of earthmoving, mining and quarrying machinery, providing Fuel Economy.

✔ ACEA E9 / E7 ✔ API CK-4 / CJ-4 / CI-4+ / CI-4 / SN ✔ JASO DH-2

MANUFACTURER APPROVALS:
✔ DEUTZ DQC III-10 LA ✔ MTU Category 2.1 ✔ MB-Approval 228.31 ✔ VOLVO VDS-4.5
✔ MACK EO-S 4.5 ✔ RENAULT VI RLD-3 ✔ CUMMINS CES 20086 ✔ DETROIT DIESEL DFS 93K222

MEETS THE REQUIREMENTS OF:
✔ CATERPILLAR ECF-3 / ECF-2 / ECF-1a

RECOMMENDED FOR THE ENGINES OF
✔ KOMATSU ✔ HITACHI ✔ JCB ✔ KOBELCO ✔ ETC...

RUBIA WORKS 3000 FE 5W-30

High-performance fully synthetic and "Low SAPS" lubricant specially designed for earthmoving, mining and quarrying machinery engines, providing Fuel Economy.

✔ ACEA E6 / E9 / E4 / E7 ✔ API CJ-4 / CI-4+ / CI-4 / CH-4 ✔ JASO DH-2

MANUFACTURER APPROVALS:
✔ DEUTZ DQC IV-10 LA ✔ MTU Category 3.1 ✔ MAN M 3477 M 3677
✔ MB-Approval 228.51 ✔ VOLVO VDS-4 ✔ MACK EO-O Premium Plus
✔ RENAULT VI RLD-3 ✔ SCANIA LDF-4 ✔ DEUTZ TTCD 6.1 L6 / 7.8

MEETS THE REQUIREMENTS OF:
✔ LIEBHERR LH 01 ENG LA ✔ CATERPILLAR ECF-3 / ECF-2 / ECF-1a ✔ CUMMINS CES 20081
✔ IVECO FPT TLS E6 ✔ DAF

RECOMMENDED FOR THE ENGINES OF:
✔ KOMATSU ✔ ISUZU ✔ PERKINS ✔ ETC...

RUBIA WORKS 3000 10W-40

High-performance "Low SAPS" lubricant specially designed for engines of earthmoving, mining and quarrying machinery.

✔ ACEA E6 / E9 / E7 ✔ API CJ-4 / CI-4+ / CI-4 / CH-4 ✔ JASO DH-2

MANUFACTURER APPROVALS:
✔ DEUTZ DQC IV-10 LA ✔ RENAULT VI RLD-3 ✔ MTU Category 3.1 ✔ MAN M 3477
✔ MACK EO-Premium Plus ✔ MB-Approval 228.51 ✔ VOLVO VDS-4

MEETS THE REQUIREMENTS OF:
✔ LIEBHERR LH-01 ENG LA ✔ CATERPILLAR ECF-3 / ECF-2 / ECF-1a ✔ CUMMINS CES 20081
✔ IVECO FPT TLS E9

RECOMMENDED FOR THE ENGINES OF:
✔ BELL ✔ WIRTGEN ✔ VOGELE ✔ KOMATSU ✔ ETC...

RUBIA WORKS 1000 15W-40*

High-performance lubricant designed for engines of earthmoving, construction or mining machinery.

✔ ACEA E7 / E5 ✔ API CI-4 / CH-4 / SL ✔ JASO DH-1

MANUFACTURER APPROVALS:
✔ CUMMINS CES 20078 / 20077 / 20076 ✔ DEUTZ DQC III-10 ✔ MTU Category 2
✔ VOLVO VDS-3 ✔ RENAULT RLD-2 ✔ DETROIT DIESEL DFS 93K215 ✔ MAN M 3275-1
✔ MB-Approval 228.3 ✔ MACK EO-N ✔ ISUZU Orop List 2015 ✔ ALLISON TES 439

MEETS THE REQUIREMENTS OF:
✔ CATERPILLAR ECF-2 / ECF-1a ✔ IVECO FPT T2 E7

RECOMMENDED FOR THE ENGINES OF:
✔ KOMATSU ✔ HITACHI ✔ LIEBHERR ✔ IVECO ✔ CASE NEW-HOLLAND ✔ DEERE
✔ JCB ✔ KOBELCO ✔ MITSUBISHI ✔ PERKINS ✔ DAF ✔ SCANIA ✔ ETC...

*Key product

POWERSHIFT TRANSMISSION FLUIDS

DYNATRANS ACX 0W-20 / 10W / 30 / 50 / 60*

Lubricant for off-road powershift transmissions, axles and final reduction gears equipped with specific clutch or brake friction discs.

MANUFACTURER APPROVALS:
10W: ZF TE-ML 03C
30: ZF TE-ML 03C, ZF TE-ML 07F

MEETS THE REQUIREMENTS OF:
0W-20: ✔ API GL-4 ✔ ALLISON C4 ✔ CATERPILLAR TO-4 ✔ CATERPILLAR HYDO Advanced ✔ ALLISON TES 439 ✔ KOMATSU Clutch
10W: ✔ API GL-4 / CF ✔ CATERPILLAR TO-4 ✔ CATERPILLAR HYDO Advanced 10 ✔ ALLISON TES 439 ✔ ALLISON C4 (obsolete) ✔ KOMATSU Clutch test
30: ✔ API GL-4 / CF ✔ CATERPILLAR TO-4 ✔ CATERPILLAR HYDO Advanced 30 ✔ ALLISON TES 439 ✔ ALLISON C4 (obsolete) ✔ KOMATSU Clutch test
50: ✔ API GL-4 / CF ✔ CATERPILLAR TO-4 ✔ KOMATSU Clutch test
60: ✔ API GL-4 / CF ✔ CATERPILLAR TO-4

SUITABLE IN TRANSMISSIONS:
✔ DANA ✔ EATON-FULLER ✔ ROCKWELL ✔ JCB ✔ ETC...

*Key product

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 USE IN:
✔ 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 ✔ KOMATSU AXO 80

DYNATRANS MPV

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

✔ API GL-4

MANUFACTURER APPROVALS:
✔ MASSEY F. CMS M1145 / M1143 ✔ VALTRA G2-08
✔ ZF TE-ML 03E / 03L / 05F / 06P / 17E / 21F ✔ VOLVO CE WB 101

MEETS THE REQUIREMENTS OF:
✔ JOHN DEERE JDM J20C ✔ FORD M2C 134D / FNHA 2C 201.00 ✔ Mc CORMICK HTX ✔ CLAAS / RENAULT AGRICULTURE

SUITABLE FOR USE IN:
✔ MASSEY F. CMS M1141 / M1135 ✔ CASE MS 1206 / 1207 / 1209 ✔ NEW HOLLAND NH 410B / NH 410C ✔ CNH MAT 3505 / 3509 / 3525 / 3526 / 3540 ✔ KUBOTA UDT ✔ KOMATSU AXO 80 ✔ AGCO / ALLIS 821 XL

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

MANUFACTURER 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

FLUIDE G3

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

MANUFACTURER 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 IIIG / IIIH ✔ Ford Mercon

RECOMMENDED FOR:
✔ Allison C4

FLUIDE XLD FE

Extra-long drain automatic transmission fluid.

MANUFACTURER 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

TRANSMISSION DUAL 9 FE 75W-90

High-perfomance 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

MANUFACTURER 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 USE IN:
✔ EATON EUROPE

DYNATRANS DA 80W-90 / 85W-140

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

✔ API GL-5 (LS) ✔ MIL-L-2105D

MANUFACTURER APPROVALS:
80W-90: ✔ ZF TE-ML 05C / 12C / 21C
85W-140: ✔ ZF TE-ML 05C / 12C / 16E

MEETS THE REQUIREMENTS OF:
80W-90: Worksite 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.

TRANSMISSION 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

MANUFACTURER 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

RECOMMEND FOR:
80W-90: ZF and MAN hypoid gears, with standard drain interval.
85W-90: MAN, MERCEDES and ZF hypoïd 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.

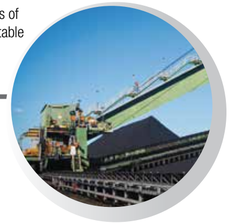
DYNATRANS GEA 680

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 USE IN:
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

High viscosity index anti-wear hydraulic oils.

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

MANUFACTURER 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

MANUFACTURER TAPPROVALS:
✔ CINCINNATI MILACRON P68, P69, P70 ✔ DENISON HF0 / HF1 / HF2 / (T6H20C)
✔ VICKERS M-2950S / -I-286

**Key product*

AZOLLA AF 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 MoS2.

✔ 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
✔ JCB ✔ Atlas Copco ✔ Liebherr ✔ Bucyrus ✔ P&H

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 USE IN:
✔ 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 MoS2.

✔ 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 MoS2, 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

MANUFACTURER 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 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

MANUFACTURER APPROVALS:
✔ VW SEAT AUDI SKODA PORSCHE: VW TL 774 D / F (G12 / G12+) ✔ MB-Approval 325.3
✔ 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

MANUFACTURER 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-1

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.

0: ✔ ISO 6743-9: L-XBDHB 0 / 00 ✔ DIN 51502 : OGPF0 / 00N-20
1: ✔ ISO 6743-9: L-XBDEB 1 ✔ DIN 51502: OGPF 1N-15
2: ✔ ISO 6743-9: L-XBDEB 2 ✔ DIN 51502: OGPF 2N-15

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

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

HYDRANSAFE HFC 146

Fire-resistant hydraulic fluid.

✔ 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 / II X

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, TOTAL 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.

TOTAL 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 TOTAL RUBIA WORKS range has been certified by the independent Danielson Laboratory (France) for producing excellent FE results.

FUEL ECONOMY CERTIFICATE ISSUED BY DANIELSON SERVICES

MEASUREMENT ON ENGINE OILS

REFERENCE OIL	Fuel consumption (kg/h)	CO2 Emission (g/h)
TOTAL RUBIA WORKS 1000 15W-40	9.254	29.337

TEST RESULT	Fuel Saving (kg/h)	Emission saving (g CO2/h)	Fuel Saving (%)
TOTAL RUBIA WORKS 4000 FE 10W-30	0.175	0.555	-1.89%
TOTAL RUBIA WORKS 3000 FE 5W-30	0.171	0.541	-1.84%

EXCELLENT REPEATABILITY (made on TOTAL 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.

TOTAL 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. TOTAL products help you keep your competitive edge through efficiency and improved equipment service life.

When you work with TOTAL, 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, TOTAL RUBIA WORKS products lower downtime and improve service lengths. With proper use and application of the TOTAL ANAC 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, TOTAL 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 thermal stability biodegradable hydraulic fluid.

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
✔ Specification CAT BF-2

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

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

BIODEGRADABLE PRODUCTS

BIOTRAFFIC 3000 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.

✔ API CJ-4 ✔ ACEA E4 / E6 / E7 / E9 ✔ DEUTZ DQC IV-10 LA
✔ DEUTZ TTCD 7.8 / 6.1 L6 ✔ MTU Category 3.1
✔ MAN M 3477 / M 3677 ✔ M 3271-1 ✔ MB-Approval 228.51 ✔ VOLVO VDS-4
✔ MACK EO-O Premium Plus ✔ RENAULT VI RLD-3 ✔ SCANIA LDF-4
✔ LIEBHERR LH 01 ENG LA ✔ CATERPILLAR ECF-3 / ECF-2 / ECF-1a
✔ CUMMINS CES 20081 ✔ IVECO TLS E6 ✔ DAF ✔ JASO DH-2

MEETS THE REQUIREMENTS OF:
✔ KOMATSU ✔ ISUZU ✔ KUBOTA ✔ MITSUBISHI

SUITABLE FOR USE IN:
✔ FIAT PT ✔ SISU ✔ VALMET ✔ PERKINS ✔ FORD ✔ RENAULT ✔ PSA

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 USE IN:
✔ 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.

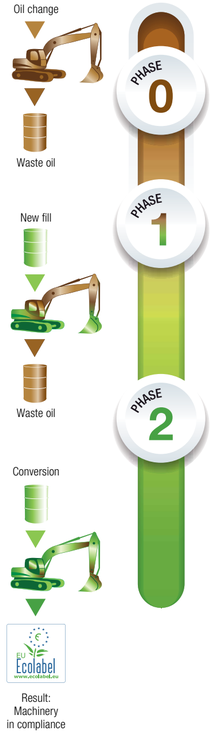
✔ API GL-5 (LS)

SUITABLE FOR USE IN:
✔ 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 Gefarhende - without danger for water)



TOTAL ANAC BIOPASS sampling

Oil is completely drained (blown out if possible)
Filters are changed
1st BIO fill
50 hours operation

IF TOTAL ANAC BIOPASS IS **GREEN**

Filter change after 50 hours

Okay up to oil change interval: with TOTAL ANAC EXPERT after 100 hours, 500 hours, and then every 1000 hours.

IF TOTAL ANAC BIOPASS IS **ORANGE**

Technical contact to determine the most appropriate procedure.

IF TOTAL ANAC BIOPASS IS **RED**

Go back to Phase 1.

From the refinery to the mine site, Total is with you every step of the way.

Depending on your needs, Total 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 (ANAC).
- 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 Total, 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.total.com**

Procedure for switching your equipment over to BIO

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

TOTAL ANAC:
BE ABSOLUTELY ASSURED OF EXCEPTIONAL PERFORMANCE

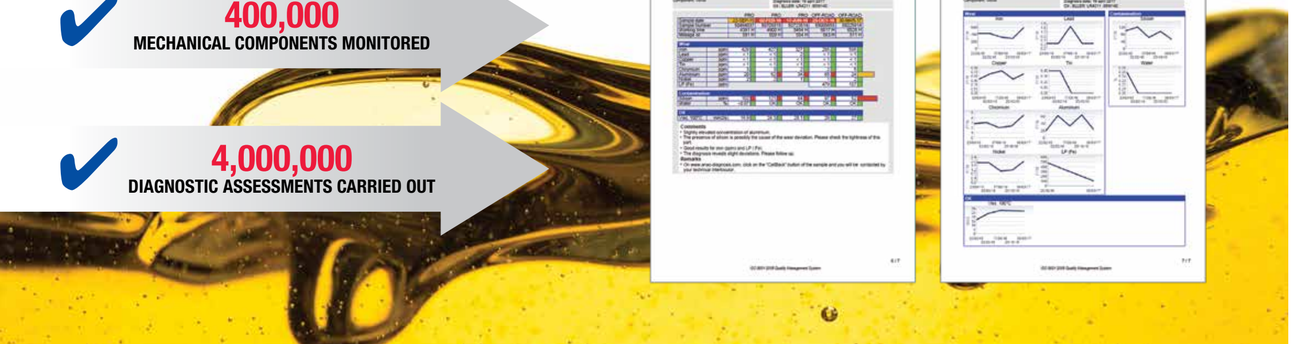
TOTAL ANAC is a preventive and curative oil analysis service that gives your company competitive edge by optimising your fleet operation.

TOTAL uses our lubricant expertise to conduct a range of lube oil analyses. From a simple oil sampling, TOTAL ANAC 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, TOTAL ANAC can provide a real leading advantage for your company.

✔ **30 Years**
OF EXPERIENCE

✔ **400,000**
MECHANICAL COMPONENTS MONITORED

✔ **4,000,000**
DIAGNOSTIC ASSESSMENTS CARRIED OUT

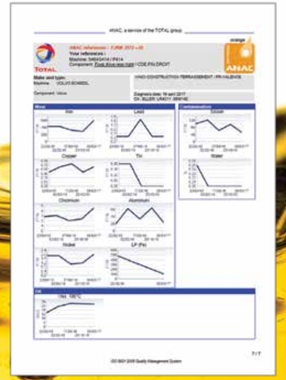


TOTAL ANAC OFF-ROAD:
A CUSTOMISED DIAGNOSIS YOU CAN TRUST

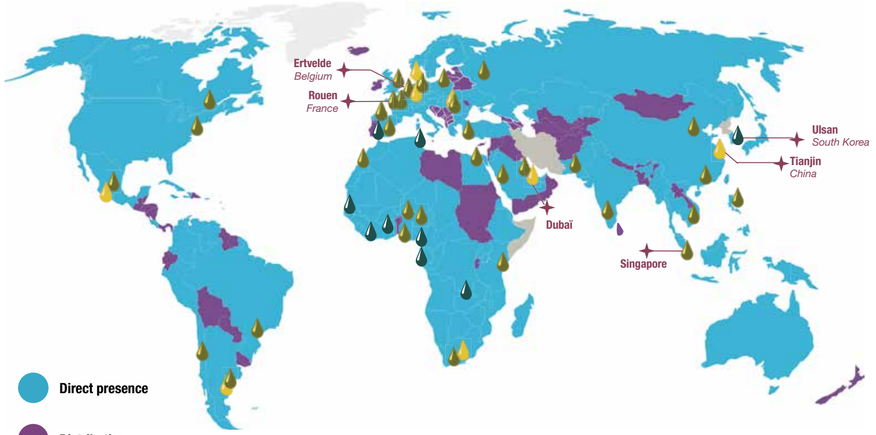
TOTAL ANAC OFF-ROAD is a tailor-made diagnostic system for engines and transmission components of construction and mining machinery fleets, based on the scientific interpretation of oil analysis.

Its measured parameters and advanced interpretation rules provide more relevant and personalised diagnoses for each machinery. TOTAL ANAC 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.

EXAMPLE OF ANAC ANALYSIS REPORT



NO STONES UNTURNED, ALL GROUNDS COVERED IN THE ENERGY SECTOR



- **Direct presence**
- **Distribution**
- **No presence**

37 Lubricant blending plants

10 Shared blending plants

9 Grease plants

Blending capacity > 100 kt

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

total.com

Total is a major energy player, which produces and markets fuels, natural gas and low-carbon electricity. Our 100,000 employees are commited to better energy that is safer, more affordable, cleaner and accessible to as many people as possible. Active in more than 130 countries, our mbition is to become the responsible energy major.

Total Lubrifiants, 562 avenue du Parc de l'île
92069 Nanterre Cedex – France