TOTAL Lubricants: our commitment

DEVELOPING YOUR PRODUCTIVITY
We are at your side to help you get the best of your machinery and to accompany your development at both local and international levels.

SPECIFIC PRODUCTS
Each industrial sector has a specific operating environment. Our knowledge and experience of industrial applications means that our products are suited perfectly to your requirements. TOTAL lubricants offer a comprehensive range of oils and greases for industries such as: Chemicals, Energy, Iron and Steel, Automotive, Equipment Manufacturers, Mines, Construction Materials and the Food Processing Industry.

INNOVATIVE PRODUCTS
Innovation is a priority for us. We have several research centres, where chemical and mechanical engineers and specialists in tribology work together. Our close relations with equipment manufacturers enable the formulation and testing of tomorrow’s products, and guarantee optimal performance and protection of your machines.

SAFE AND ENVIRONMENTALLY-FRIENDLY PRODUCTS
We have made a commitment to safety, health and respect for the environment. Our R&D teams integrate from the initial design stage of new products parameters conducive to the reduction of toxicity risks and VOC emissions, biodegradability, recycling or disposal of the products.

HIGH ADDED VALUE SERVICES
We bring our expertise to help you to optimize the productivity of your machinery and improve your competitiveness. You benefit from our specialist knowledge and high-level after-sales services that include: rationalisation and organisation of lubrication operations, maintenance and laboratory analyses of the fluids in service, training of your personnel.

PROXIMITY AND REACTIVITY
We provide a local sales presence to answer your specific needs. In addition, our integrated organisation and supply chain (our own refineries, lubricant blending plants and logistics platforms) ensure your deliveries will be on-time.
General Lubrication

- COOLANTS
- CIRCULATION OILS
- COMPRESSORS
- DETERGENTS AND CLEANING FLUIDS
- ENGINE OILS
- GEARS
- HEAT TRANSFER FLUIDS
- HYDRAULIC SYSTEMS
- PNEUMATIC SYSTEMS
- PROCESS OILS
- TRANSFORMER OILS
- TURBINES
## Specifications

**Nature**

<table>
<thead>
<tr>
<th>Product</th>
<th>Nature</th>
<th>Applications</th>
<th>Features and Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOLTECH LLO</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Concentrate &amp; Premix</td>
<td>Premium quality, organic, long life anti boil/anti freeze coolant based on carbonate technology and contains no silicates, phosphates, nitrates, nitrites or amines for automotive and heavy duty diesel engines.</td>
<td>Suitable for use in passenger cars, light commercial vehicles, taxi fleets, government departments, bus and large truck fleets.</td>
<td>Meets both the phosphate-free requirements of European manufacturers and silicate-free requirements of Japanese manufacturers.</td>
</tr>
<tr>
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</tr>
<tr>
<td>COOLTECH HDD</td>
<td>Advanced premium quality hybrid anti boil/anti freeze coolant with nitrate/nitrite chemistry for heavy duty diesel engines.</td>
<td>Suitable for use in marine engines, earth moving, mining, heavy transport and trucking fleet operations.</td>
<td>Exceptional rust protection: Provides maximum protection against 'hot spot' corrosion, and eliminates hard water scale deposits.</td>
</tr>
<tr>
<td>Concentrate &amp; Premix</td>
<td>Concentrate contains 10% monohydrate glycol. Premix contains 45% monohydrate glycol. Both concentrate and premix products contain a heavy duty inhibitor package.</td>
<td></td>
<td>Compatibility with parts components: No deleterious effects on hoses, silicon seals or gaskets. Also suitable where SCA filters are recommended.</td>
</tr>
<tr>
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</tr>
<tr>
<td>COOLTECH PREMIUM PG</td>
<td>Propylene glycol long life organic coolant for mining applications. The product contains a double inhibitor package. Particularly suitable for the mining sector, but with wide application across automotive and commercial fleets.</td>
<td>Suitable for use in a wide range of marine, transport and mining equipment. Where a propylene glycol based anti boil/anti freeze coolant is specified.</td>
<td>Superior rust and corrosion inhibitor additive package. This protects against 'hot spot' corrosion, common in aluminium cylinder heads. Based on carbonate technology, product contains no silicates, borates, phosphates, nitrates, nitrites or amines. Extended service life: Up to 6 years / 600,000kms / 6,000hrs in heavy duty diesels.</td>
</tr>
</tbody>
</table>

## INTERNATIONAL STANDARDS

- **ASTM D 3306 (EG)**
- **ASTM D 6210 (ES)**
- **AS 2108.1:2004 Type A**
- **JASO M 324, SAE J 1034**
- **BS 6580**
- **Japanese JS K 2234**
- **SAE J 1034 & JASO M 324**
- **TMC RP-336 Extended Life**
- **Cummins® ES Complet**
- **Cummins® CES 14603**
- **Detroit Diesel 75E298**
- **Freezeright 48 – 2280**
- **GM® 1699**
- **Hycox® John Deere® 6659-5**
- **John Deere® JD-M224**
- **Navistar® PACCAR®**
- **Saab Scania® 6901**
- **Volvo® (Spec. No. 1286083)**

## BIODEGRADABLE

- **H1** suitable for incidental food contact
- **3H** suitable for direct food contact

For a full list of specifications refer to the Product Data Sheet.
CIRKAN, CORTIS and MTC are circulation oils designed for the centralised lubrication of various systems on industrial machines: bearings, gears, chains etc. TOTAL offers a wide range, from pure mineral oil for lubrication of lightly loaded systems operating at a moderate temperature, to highly sophisticated products adapted to the severest operating conditions.

### CIRCULATION OILS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>ISO VG</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIRKAN C</td>
<td>Total loss or sump lubrication for movements, joints, bearings, chains.</td>
<td>Severely refined paraffinic mineral oil. High natural viscosity index.</td>
<td>68</td>
<td>ISO 6743-4 HH • ISO 6743/1 AN</td>
</tr>
<tr>
<td>CIRKAN RO</td>
<td>Apparatus and hydraulic circuits subjected to temperature constraints.</td>
<td>Anticorrosion protection of equipment. Oxidation resistance.</td>
<td>220, 320</td>
<td>ISO 6743-4 HL • ISO 6743-6 CKB • DIN 51517-2 CL • DIN 51524-1 HL • AGMA 9005-E2 RO</td>
</tr>
</tbody>
</table>

### CHAIN OILS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
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</tr>
</thead>
</table>
| MTC 100, 150, 220 (MINERAL) | An Adhesive oil with antiwear and anti-rust properties. | Total loss lubrication of high speed machinery:  
- Manual or mechanical chainsaw  
- Chain conveyors  
- Suitable in timber industry equipment.  
- 100 viscosity grade is typically used for the lubrication of fixed mechanical chainsaw in wood cutting machines.  
- 150 and 220 viscosity grades are recommended for chainsaws and industrial conveyors. | Friction reduction.  
Chain and guide wear reduction.  
Adhesiveness ensures low spattering, pollution and low oil consumption. | 100, 150, 220 |
| CHAINLUB AEROSOL | An aerosol spray can of adhesive oil with proprietary additives. | Lubrication of chains, cables and mechanisms typically found in wide variety of industries including textile and printing industries as well as in forklift trucks.  
Joint and various mechanisms including: locks, hinges, wipers, bearings and domestic devices.  
Hard to reach applications that require a light adhesive oil. | Strong adhesiveness due to dedicated additives.  
High penetrating power.  
Good oxidation resistance.  
Anticorrosion | 68 (after propellant has evaporated) |
| CHAIN BIO 100 | A biodegradable adhesive chain and bar oil | Lubrication of chains and guides of mechanical chainsaws installed in forestry equipment, hand held chainsaws as well as mechanisms where a bio degradable oil is required. | Certified biodegradable to European Ecological Seal requirements.  
Adhesive oil to minimise fling off and oil consumption.  
Reduced wear of chains and guides. | 100 |

### HIGH TEMPERATURE CHAIN OILS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>VISCOSITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
| CORTIS SHT 200 | Continuous lubrication systems.  
- Movements, roller chains, rollers of the roller bearings, cams operating in ovens or stoves.  
- Glass manufacturing machines.  
- Conveyor chains for continuous hot-pressing machines. | Synthetic bases limiting oxidation deposits at very high temperatures.  
Anti-wear power guaranteed at very high temperatures.  
Ensures continuous lubrication of devices at temperatures up to +240 °C. | 200 | NSF H1 |
| TOTAL NEVASTANE CHAIN OIL XT | Continuous lubricating oil for conveyor chains operating at very high temperature in the Food Industry.  
For very high load, Lubrication of industrial mechanism working at very high temperatures where incidental contact with the food product is possible according to the HACCP assessment. | Synthetic lubricant for continuous lubrication of devices at temperatures up to 240 °C.  
Excellent resistance to bacterial development and moisture ingress. | 220 | NSF H1 |

* Typical kinematic viscosity at 40 °C in mm²/s
**General Lubrication**

**COMPRESSORS**

**DACNIS oils** are formulated in accordance with manufacturers’ requirements to optimise the efficiency of air compressors.

- Oil drain intervals ranging from 2000 hours to as much as 8000 hours, under normal conditions of operation.
- Protection against wear and corrosion.
- Absence of carbonaceous deposits, even at high temperatures.
- Effective oil/air and oil/condensates separation.

### AIR COMPRESSORS

<table>
<thead>
<tr>
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</table>
| DACNIS VS | Mineral | • Rotary screw-type air compressor | • Oil drain interval up to 2000 hours  
• Ensures long filter life | 32 to 68 |
| DACNIS | Mineral | • Reciprocating air compressors. | • Avids carbon build up  
• Protects against wear and corrosion | 100, 150 |
| DACNIS LD | Hydrocracked mineral | • Rotary screw-type air compressors. | • Oil drain interval 4000 hours.  
• Low pour point. | 32 to 68 |
| DACNIS SH | Synthetic PAO | • Rotary screw-type air compressors. | • Oil drain interval 8000 hours.  
• Very low pour point. | 32 to 100 |
| DACNIS SE | Synthetic ester | • High-pressure reciprocating air compressors, rotary compressors  
and turbocompressors. | • High thermal stability.  
• Low pour point. | 46 to 100 |

**TOTAL NEVASTANE SH**

<table>
<thead>
<tr>
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</thead>
</table>
| | Synthetic PAO | • Air compressors.  
• Adapted to the severe environment of the Agrifood Industries. | • Very high equipment protection level, even under severe conditions. | 32 to 100 |

### DACNIS / TOTAL NEVASTANE

<table>
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</table>

* Typical kinematic viscosity at 40 °C in mm²/s
Depending on the type of refrigerant, **LUNARIA** and **PLANETELF** fluids are designed to match broad usage conditions. In all cases, they ensure excellent lubrication performances as well as:

- Anti-wear and anti-foaming properties.
- Low formation of deposits.
- Excellent thermal and chemical stability.
- Return of the lubricant to the compressor.

### REFRIGERATING COMPRESSORS

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| LUNARIA K | High performance Alkyl Benzine refrigeration lubricant that is fully compatible with mineral oil | • Can be used for NH3(Ammonia), R-12, R-22, R123 and R 502 refrigerants  
• Suitable for Evaporator Temperature down to  
  ~ For NH3, K32(-40°), K46(-32°), K68 (-28°)  
  ~ For Freon, K32-46-68 (-50°) | • Alky Benzene Technology that is fully compatible with mineral oil.  
• Does not cause clogging problems in the refrigerating system even at low temperature because it is full synthetic oil with no wax.  
• Better miscibility with R-12 or R-22 than mineral oil and allows use at low temperature. | 32, 46, 68 | ISO 6743-3 DRA  
• APV  
• Bock  
• Bitzer  
• Gram  
• Carrier  
• Grasso  
• Howden  
• J & E Hall  
• Sabroe  
• York |
| LUNARIA FR | Naphthenic mineral oil | • Refrigerating compressors using CFC, HCFC and NH3 as a refrigerant. | • Evaporating temperature >= -15 °C. | 32 to 100 | ISO 6743-3 DRA  
• APV  
• Gram  
• Bock  
• J & E Hall  
• Grasso  
• Howden  
• Sabroe  
• York |
| LUNARIA NH | Hydrocracked mineral oil | • Refrigerating compressors using NH3/ammonia. | • Evaporating temperature >= -30 °C. | 46 68 | ISO 6743-3 DRA  
• APV  
• Gram  
• Bock  
• J & E Hall  
• Grasso  
• Howden  
• Sabroe  
• York |
| LUNARIA SH | Synthetic PAO | • Refrigerating compressors using NH3/ammonia. | • Evaporating temperature >= -50 °C. | 46 68 | ISO 6743-3 DRE  
• APV  
• Gram  
• Bock  
• J & E Hall  
• Grasso  
• Howden  
• Sabroe  
• York |
| LUNARIA SK | Synthetic alkyl benzene | • Refrigerating compressors using CFC or HCFC refrigerants. | • Evaporating temperature >= -60 °C. | 55 to 150 | ISO 6743-3 DRE  
• APV  
• Bitzer  
• Bock  
• Fraschold  
• Grasso  
• Howden  
• Sabroe  
• Sulzer  
• York  
• RefComp |
| PLANETELF ACD | Synthetic POE | • Refrigerating compressors using HFC refrigerants. | • Evaporating temperature >= -60 °C. | 32 to 220 | ISO 6743-3 DRE  
• Aerzen  
• Bock  
• Fraschold  
• Grasso  
• Howden  
• Sabroe  
• Sulzer  
• York |
| PLANETELF PAG | Synthetic PAG | • Car air conditioning compressors using R-134a and/or R-1234yf. | • Good compatibility behaviour and miscibility with R-134a and/or R-1234yf.  
Specific packaging to limit the water absorption. | 46,100,130 | ISO 6743-3 DRE |

PV 100 oils are destined for the lubrication of rotary and reciprocating vacuum pumps. Their performance over time is guaranteed by the properties of the fluid:

- Less consumption of fluid due to low volatility.
- Achievement of ultimate vacuum of the pumps, ensured by the low saturating vapour pressure of the lubricant.
- Constant tightness due to the very low variation of viscosity during the entire oil service life.
- Absence of product degradation and residue formation due to excellent oxidation resistance.

### VACUUM PUMPS

<table>
<thead>
<tr>
<th>PRODUCT</th>
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<th>SPECIFIC ADVANTAGES</th>
<th>VISCOITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
| PV 100 | Mineral | • Vacuum pump.  
• Extraction of neutral gas. | | 125 | ISO 6743-3 DVC |
| PV SH 100 | Semi-synthetic | • Alternating and rotary vacuum pump.  
• Extraction of acid or corrosive gases. | • Suitable for incidental food contact. | 100 | NSF H1  
ISO 6743-3 DVD |

* Typical kinematic viscosity at 40 °C in mm²/s
**General Lubrication**

**DEGreasERS**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>FINASOL / FINADET</th>
</tr>
</thead>
</table>
| FINASOL WR       | Solvent Based Quick Break Degreaser | • Finasol WR has been developed to offer effective degreasing and cleaning in workshops for automotive, heavy industrial and mining.  
                    |                                | • Finasol WR is ideal as a general purpose water rinsable solvent degreaser for cutting through tough to remove grease and grime.  
                    |                                | • Finasol WR is ready to use and application should be by brush or spray. Allow 1 - 2 minutes for the product to penetrate and begin to lift the grease and grime, then hose off. The removal with a high pressure water spray gun gives best results. | • Quick Break formulation which readily separates water and oil to avoid issues with triple interceptors in washdown areas.  
                    |                                |                                                                              | • Heavy duty grease and grime removal. The professionally formulated blend of high aromatic solvents and effective surfactant soaps makes use of this product very effective for heavy duty grease and grime removal. | <60.5 deg C       |
| FINADET HD       | Water based Caustic Degreaser consisting of a blend of surfactants and wetting agents combined with a caustic solution. | • Finadet HD can be used in both concentrated and diluted form and is suitable for;  
                    |                                | • Concrete cleaning  
                    |                                | • Heavy soils  
                    |                                | • Use with pressure washers (Ensure pressure washer can tolerate high pH cleaners)  
                    |                                | • See the technical data sheet for recommended concentrations and critical application advise and restrictions. | • Finadet HD has excellent adhesion and cleaning ability on vertical and horizontal surfaces.  
                    |                                |                                                                              | • Ideal for cleaning a broad range of soils and is excellent for soaking through thick layers of clay, grease, foods and oil stains. | Non Flammable     |
| FINADET MFA      | Concentrated Water Based Quick Break Degreaser containing, wetting agents and surfactants | • Finadet MFA is a water based, concentrated non solvent degreaser that is ideal for general workshop, engine bay and light industrial degreasing including concrete.  
                    |                                | • Suitable for use with manual cleaning, pressure washers, parts washers, soak tanks.  
                    |                                | • Finadet MFA is a highly concentrated formula of emulsifiers, wetting agents and surfactants for the removal of oil and dirt from all material types.  
                    |                                | • Finadet MFA is non flammable making it suitable for parts washers and in areas where flammable liquids cannot be used.  
                    |                                | • See the technical data sheet for recommended concentrations and critical application advise and restrictions. | • Biodegradable: It is fully bio degradable.  
                    |                                |                                                                              | • Quick Break formulation which readily separates water and oil to avoid issues with triple interceptors in washdown areas.  
                    |                                |                                                                              | • Effectively removes oil and dirt from all material types: The water based degreaser does not damage rubber, plastic, automotive paintwork or metals when used as recommended.  
                    |                                |                                                                              | • Inhibits ferrous metal corrosion. | Non Flammable     |

**DETerGENTS**

<table>
<thead>
<tr>
<th>PRODUCT</th>
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<th>SPECIFIC ADVANTAGES</th>
<th>FINADET</th>
</tr>
</thead>
</table>
| FINADET TW       | Water based, non caustic, heavy duty truck wash | • Finadet TW is used to wash trucks, trailers, cars, boats, coaches and mining equipment. It can be used with manual cleaning, pressure washers and automated washing systems.  
                    |                                | • Finadet TW effectively removes road grime and dirt from all surfaces including plastic, rubber, chrome, aluminium and paintwork.  
                    |                                | • Suitable for use on side curtains of trailers and all fabrics found in the transport and marine environments.  
                    |                                | • It is also a very effective cleaner and laundry cleaner (especially on greasy clothing).  
                    |                                | • See Technical Datasheet for recommended dilution ratios. | • Quick Break formulation which readily separates water and oil to avoid issues with triple interceptors in washdown areas.  
                    |                                |                                                                              | • Finadet TW has been specifically developed not to streak, and is free rinsing to leave paintwork shiny and streak free.  
                    |                                |                                                                              | • This product contains corrosion inhibitors to surfaces protect from rusting | Non Flammable     |
| FINADET CITRUS   | Water Based Citrus Hand Cleaner containing polymer beads and skin conditioners. | • Finadet CITRUS is a handcleaner suitable for use in most industries where heavy duty hand cleaning is required such as automotive, manufacturing, mining and printing. | • Cleansing & conditioning: contains polymer beads for deep cleansing of the skin and skin conditioning ingredients (including lanolin) to prevent drying and cracking of skin.  
                    |                                |                                                                              | • Specialised formulation: The specialised formulation also includes unique imported advanced surfactant soaps and non petrochemical solvents. This product contains no petroleum solvents (which promote drying and harsh removal of the skins natural oils).  
                    |                                |                                                                              | • Refreshing citrus fragrance: A neutral pH and citrus fragrance leaves hands refreshed. | Non Flammable     |
**General Lubrication**

**ENGINE OILS**

**NATERIA** lubricants are detergent oils for gas engines and motor-compressors running on all types of fuel, from natural gas to highly corrosive landfill gas. As a result of long experience, the formulation of **NATERIA** lubricants complies with manufacturers’ requirements by ensuring maximum engine protection.

- Longer oil drain intervals due to substantial reserve alkalinity.
- Thermal stability, resistance to oxidation and nitration.
- Considerable anti-wear and anticorrosion properties.
- Detergent and dispersant capacities that reduce the formation of deposits.

### GAS ENGINES

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>SAE GRADE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATERIA MH 40</td>
<td>Mineral Ash content &lt; 0.5% TBN: 5.5</td>
<td>• Natural gas engines. Can be used in cogeneration.</td>
<td>• Long life oil. • Compatibility with catalytic converters.</td>
<td>40</td>
<td>GE-JENBACHER: TA 1000-1109, Caterpillar: series 3500 • CES/MWM: sulphate ash content up to 0.5 wt.% • Perkins: 4000 • Waukesha: APG 2000/3000 • Wärtsilä: 220 SG • MTU: natural gas • MAN: natural gas</td>
</tr>
<tr>
<td>NATERIA MP 40</td>
<td>Mineral Ash content &lt; 0.5% TBN: 4.6</td>
<td>• Natural gas engines, operating under severe conditions.</td>
<td>• Very long life oil. • High-performing under severe conditions.</td>
<td>40</td>
<td>GE-JENBACHER: TA 1000-1109, Caterpillar: series 3500 • CES/MWM: sulphate ash content up to 0.5 wt.% • ROLLS-ROYCE: KG &amp; BV-G • MTU: natural &amp; biogas, • BR 400 &amp; 4000 • MAN - natural gas</td>
</tr>
<tr>
<td>NATERIA MX 40</td>
<td>Semi-synthetic Ash content &lt; 0.5% TBN: 6.7</td>
<td>• Natural gas engines, operating under very severe conditions.</td>
<td>• Oil Drain interval Extension: 40%. • Strongsly improves detergency and reduces vanish at high temperatures.</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>NATERIA X 405</td>
<td>Synthetic Ash content &lt; 0.5% TBN: 5.2</td>
<td>• Natural gas engines, operating under very severe conditions.</td>
<td>• Extra long life oil. • Increased yield due to very considerable reduction in the formation of deposits on the heat exchanger tubes.</td>
<td>40</td>
<td>Wärtsilä: 220 SG, 25 SG, 28 SG, 34 SG, 32 DF, 50 DF • Waukesha: APG 2000/3000</td>
</tr>
<tr>
<td>NATERIA MJ 40</td>
<td>Mineral Ash content &lt; 1% TBN: 8.8</td>
<td>• Natural gas and biogas engines: purification stations, liquid manure, landfill sites.</td>
<td>• Long life oil. • Strengthened detergency.</td>
<td>40</td>
<td>GE-JENBACHER: TA 1000-1109 • CES/MWM: sulphate ash content up to 1 wt.% • MTU biogas • MAN - special gas</td>
</tr>
<tr>
<td>NATERIA ML 406</td>
<td>Mineral Ash content &lt; 1% TBN: 6.1</td>
<td>• Landfill gas engines with a controlled H2S content.</td>
<td>• Long life oil. • Neutralization of the acid compounds contained in the gas.</td>
<td>40</td>
<td>GE-JENBACHER: TA 1000-1109</td>
</tr>
<tr>
<td>NATERIA V 40</td>
<td>Mineral Ashless</td>
<td>• 2-stroke and 4-stroke gas engines and motor-compressors.</td>
<td>• Compatibility with catalytic converters.</td>
<td>40</td>
<td>MIL-L-2104A • Clark • Cooper-Bessemer • Ingersoll-Rand KVS</td>
</tr>
</tbody>
</table>

### DIESEL ENGINES

<table>
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<tr>
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<tbody>
<tr>
<td>RUBIA WORKS 2000 10W-40</td>
<td>Low SAPS detergent diesel engine oil</td>
<td>• Diesel engines with exhaust after-treatment using ULS diesel</td>
<td>• Advanced Low SAPS formula helps protect diesel particulate filters. • Excellent thermal stability</td>
<td>10W-40</td>
<td>API CJ-4 / SL • ACEA E9 / E7 / ES • CUMMINS CES 20081 • DEUTZ DGC111-10 LA • MTU Category 2.1 • CATERPILLAR ECF-3 / ECF-2 / ECF-1a</td>
</tr>
<tr>
<td>RUBIA WORKS 1000 15W-40</td>
<td>Mineral detergent diesel engine oil</td>
<td>• Diesel engines without exhaust after-treatment devices</td>
<td>• Withstands very long working periods under severe conditions with high load</td>
<td>15W-40</td>
<td>API CI-4 / SL • ACEA E7 / ES • CUMMINS CES 20078 / 20077 / 20076 • DEUTZ DGC111-10 • MTU Category 2.1 • CATERPILLAR ECF-2 / ECF-1a</td>
</tr>
<tr>
<td>RUBIA TIR 7900 15W-40</td>
<td>Mineral Low SAPS detergent diesel engine oil</td>
<td>• Diesel engines using ULDS with exhaust after-treatment such as DPF / SCR</td>
<td>• Exceptional detergent dispersant and anti-wear additives to effectively control soot, sludge, and piston deposits</td>
<td>15W-40</td>
<td>API CJ-4 / SL • ACEA E9 • CUMMINS CES 20081 • CATERPILLAR ECF-3</td>
</tr>
<tr>
<td>RUBIA TIR 7400 15W-40</td>
<td>Mineral detergent diesel engine oil</td>
<td>• Diesel engines without exhaust after-treatment devices</td>
<td>• Outstanding detergent dispersant and anti-wear properties to keep engines clean</td>
<td>15W-40</td>
<td>API CI-4 / SL • ACEA E7 • CUMMINS CES 20078 / 20077 / 20076 • CATERPILLAR ECF-1a</td>
</tr>
</tbody>
</table>
CARTER and TOTAL NEVASTANE oils are designed for the lubrication of gears.
Numerous parameters need to be taken into account when choosing a gear lubricant:
- The type of gear: dimensions, metallurgy of the toothing, sliding characteristics and speed reducing ratio, open or closed casing.
- The operating conditions: depending on load, vibration and shock levels, the anti-wear and extreme-pressure properties determine the choice of lubricant.
- The temperature of oil in service: very low, moderate between +20 °C and +80 °C, hot at more than +80 °C, and extreme temperature exceeding +120 °C.
- The impact of the lubricant on the gears environment, in the event of leakage: biodegradability properties, suitability for incidental food contact or non-staining are necessary.
- The impact of the environment of the gear on the lubricant: in order to prevent corrosion and shorter fluid life due to humidity, dust or other elements, certain oils offer reinforced anticorrosion properties.
- The conditions of maintenance: a synthetic fluid offering a long oil drain interval and guaranteeing proper operating safety makes significant savings in maintenance costs.

<table>
<thead>
<tr>
<th>MINERAL GEAR OILS</th>
<th>CARTER / TOTAL NEVASTANE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT</td>
<td>NATURE</td>
</tr>
<tr>
<td>CARTER EP 68 - 1000</td>
<td>Mineral</td>
</tr>
<tr>
<td>TOTAL NEVASTANE EP</td>
<td>White</td>
</tr>
<tr>
<td>CARTER XEP</td>
<td>Mineral Top tier</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SYNTHETIC GEAR OILS</th>
<th>CARTER / TOTAL NEVASTANE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT</td>
<td>NATURE</td>
</tr>
<tr>
<td>CARTER SH</td>
<td>Synthetic PAO</td>
</tr>
<tr>
<td>CARTER SG</td>
<td>Synthetic PAG</td>
</tr>
<tr>
<td>TOTAL NEVASTANE XSH</td>
<td>Synthetic PAO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECIAL OILS</th>
<th>CARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT</td>
<td>NATURE</td>
</tr>
<tr>
<td>CARTER EP 1500, 2200, 3000</td>
<td>Semi-synthetic</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SERIOLA and JARYTHERM® heat transfer fluids cover a wide variety of applications: heating of domestic and industrial premises, manufacturing processes in cement works, paper mills, Chemical and Plastics Processing Industries and installations combining heating and cooling cycles.

Whether they are mineral or synthetic base, SERIOLA and JARYTHERM® fluids are characterized by:
- Great thermal stability, thereby preventing buildup of deposits and soot in systems.
- High heat exchange capacity which enables energy savings due to the reduced warm-up time of the installations.
- Long service life without degradation of the fluid even at process temperatures rising as high as +350 °C.

### HEAT TRANSFER FLUIDS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>VISCOSITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERIOLA 1510</td>
<td>Mineral</td>
<td>• Closed circuits without air contact.</td>
<td>• Process temperature &lt; +310 °C (+330 °C in the film).</td>
<td>30</td>
<td>ISO 6743-12 L-QC</td>
</tr>
<tr>
<td>TOTAL NEVASTANE HTF</td>
<td>White mineral</td>
<td>• Closed circuits without air contact. • Numerous manufacturing processes in Agrifood Industry: water baths, autoclaves, reactors, ovens, presses and moulds.</td>
<td>• Process temperature &lt; +310 °C (+330 °C in the film).</td>
<td>32</td>
<td>NSF H1 &amp; HT1 • ISO 6743-12 L-QC • ISO 21469 • Halal, Kosher</td>
</tr>
<tr>
<td>JARYTHERM® DBT</td>
<td>Synthetic</td>
<td>• Closed circuits without air contact. • Main applications in the Chemical and Plastics Processing Industries.</td>
<td>• Process temperature from 0 °C to +350 °C (+370 °C in the film).</td>
<td>19</td>
<td>ISO 6743-12 L-Q0</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity at 40 °C in mm²/s

SERIOLA / JARYTHERM® / TOTAL NEVASTANE

JARYTHERM® A REGISTERED TRADE MARK OF ARKEMA.
TOTAL hydraulic fluids meet the requirements of international standards and manufacturers’ technical specifications. Our ranges of products correspond to the classifications of the ISO 6743-4 standard: 
- **HM class:** AZOLLA. Mineral fluids with good oxidation stability ensuring anticorrosion and anti-wear protection of the equipment.
- **HV class:** EQUIVIS. HM properties complemented by a high-viscosity index, for use of the fluid over a wide temperature range that permits start-ups at low temperature.
- **HETG, HEES classes:** BIOHYDRAN. Biodegradable fluids recommended for equipment used in sensitive natural areas so as to limit the impact of incidental discharges on the environment.
- **HFA, HFC, HFD classes:** HYDRANSAFE. Fluids specifically developed to limit the risks of a fire spreading in the event of a leak.

**TOTAL NEVASTANE** hydraulic fluids are available in HM and HV class.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>ISO VG</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZOLLA ZS</td>
<td>Hydraulic systems operating in high temperature and pressure conditions. Bearings and miscellaneous devices.</td>
<td>• Reinforced protection of the equipment thanks to anti-wear and anticorrosion properties. • Considerable service life for the fluid and preventing deposits, ensured by thermal stability and resistance to oxidation. • Filterability even in the presence of water.</td>
<td>10 to 150</td>
<td>ISO 11158 HM • DIN 51524-2 HLP • Eaton 1-286S, M-2950S • Denison HFO, HF1, HF2</td>
</tr>
<tr>
<td>AZOLLA AF</td>
<td>Hydraulic systems especially sensitive to the formation of deposits and/or operating in high temperature and pressure conditions. Bearings and miscellaneous equipment.</td>
<td>• Formation deposits prevented due to ashless additives. • Very good anti-wear and thermal stability performances. • Very good filterability in service even in the presence of water. • Extension of oil drain intervals. TOST = 4000 hours.</td>
<td>22 to 100</td>
<td>ISO 11158 HM • DIN 51524-2 HLP • Eaton 1-286S, M-2950S • Denison HFO, HF1, HF2</td>
</tr>
<tr>
<td>AZOLLA DZF</td>
<td>All hydraulic systems, in particular when the presence of water is inevitable and the draining of water impossible. Miscellaneous devices calling for extreme-pressure properties.</td>
<td>• Excellent hydrolysis stability thanks to ashless additives. • Detergent fluid preventing deposits in the circuits. • Reinforced extreme-pressure properties.</td>
<td>46</td>
<td>ISO 11158 HM • ISO 12925 CKC • DIN 51524-2 HLPD • Müller Weingarten • MAN N698 HLPD</td>
</tr>
<tr>
<td>AZOLLA VTR</td>
<td>Hydrokinetic transmissions and couplings. Specially designed for turbo-transmissions, Voith Turbo gear boxes.</td>
<td>• Dispersant and detergent fluid limiting deposits. • Very good load capacity (FZG&gt;12) and anti-wear protection. • Thermal stability. Very low foaming.</td>
<td>32</td>
<td>ISO 6743-4 HM • DIN 51524 HLPD Voith Turbo • SNCF</td>
</tr>
<tr>
<td>TOTAL NEVASTANE AW</td>
<td>Hydraulic systems operating under severe conditions.</td>
<td>• Very good equipment protection power. • Increased equipment service life. • Miscibility with mineral fluids.</td>
<td>22 to 68</td>
<td>NSF H1 • Kosher • Halal ISO 6743-4 HM • ISO 21469</td>
</tr>
</tbody>
</table>
## HV Hydraulic Fluids: For Low Temperatures

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>ISO VG</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQUIVIS ZS</td>
<td>• Hydraulic systems operating outdoors.</td>
<td>• Extension of oil drain intervals due to very good thermal stability and resistance to oxidation.</td>
<td>15 to 100</td>
<td>ISO 11158 HV • DIN 51524-3 HLP • Vickers • Cincinnati-Milacron • P88, P99, P70</td>
</tr>
<tr>
<td>EQUIVIS XV</td>
<td>• Hydraulic systems operating at low temperatures as far down as -30 °C.</td>
<td>• Protection of equipment due to a viscosity index &gt; 250, ensuring limitation of cavitation phenomena in circuits during start-up phases and maintenance of lubricant film thickness at elevated temperatures.</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>EQUIVIS XLT</td>
<td>• Hydraulic systems operating at extremely low temperatures as far down as -40 °C.</td>
<td>• Enhanced protection due to a viscosity index of 350. • Prevention of deposits due to ashless additives. • Excellent filtration properties even in the presence of water. • Extended service life of the fluid. TOST = 4000 hours.</td>
<td>15 to 32</td>
<td></td>
</tr>
<tr>
<td>TOTAL NEVASTANE SH</td>
<td>• Hydraulic systems and particularly those operating at low temperatures.</td>
<td>• High performance product, due to its 100% synthetic composition. • Excellent protection of equipment. • Extension of oil drain intervals.</td>
<td>32 to 100</td>
<td>NSF H1 • Kosher • Halal • ISO 6743-4 HV • ISO 21469</td>
</tr>
</tbody>
</table>

## Biodegradable Hydraulic Fluids

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>ISO VG</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOHYDRAN TMP</td>
<td>Biodegradable Synthetic esters</td>
<td>• Hydraulic systems operating outdoors. • Optimal operating temperatures: -20 °C to +80 °C.</td>
<td>• Excellent protection against wear and corrosion. • Protection and efficiency of equipment. • Miscible with mineral oils.</td>
<td>32 to 100</td>
<td>ISO 15380 HEES • European Ecolabel • Swedish Standard SS 15 54 34</td>
</tr>
</tbody>
</table>

## Fire-Resistant Hydraulic Fluids

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>ISO VG</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDRANSAFE HFDU</td>
<td>Esters based fire resistant fluid</td>
<td>• Recommended in the event of incidental leaks into the environment. Excellent fire resistance. • Operating temperature: -10 °C to +70 °C on a continuous basis, +120 °C at peak periods.</td>
<td>• Ultimate biodegradability (OECD 301B). • Excellent anti-wear properties. • Miscible with mineral oils.</td>
<td>68</td>
<td>ISO 6743-4 HFDU • Factory Mutual</td>
</tr>
</tbody>
</table>

**Service Products, Blue Concentrate:** Blue dye for hydraulic fluids and other mineral lubricants, enabling early detection of leaks.
**General Lubrication**

**PNEUMATIC SYSTEMS**

**PNEUMA** oils guarantee the performance of pneumatic equipment and enable reduced fluid consumption.

- Adhesiveness and tacky character, preventing pollution by oil mist.
- Excellent resistance to shocks due to the extreme-pressure additives and good anti-wear protection.
- Water-repellent and anti-rust properties.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>VISCOSITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEUMA</td>
<td>Mineral</td>
<td>Pneumatic tools: pneumatic shock engines, line lubricators or pulverisers for hammer drills.</td>
<td>Possible use in confined atmosphere: galleries, tunnels.</td>
<td>150, 320</td>
<td>ISO 6743-11 P</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity at 40 °C in mm²/s

**WHITE OILS**

**FINAVESTAN** white oils are exceptionally highly purified, due to the additional refining processes which include a high technology and high pressure hydrogenation process. Oils of medicinal quality meet the requirements of the Pharmaceutical, Cosmetics and Agrifood Industries in accordance with the national legislation in force.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>VISCOSITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
| FINAVESTAN
A 80 B  | Medicinal white oil | Designed for the following industries: - plastics: plasticizer for PS and other polymers, for all packaging intended for food contact, - pharmaceutical: excipient. | Very high purity. Odourless, flavourless, colourless. Does not contain sulphur or aromatic hydrocarbon. | 15 | The use of these oils depends on the national legislation in force - European Pharmacopoeia - US Pharmacopoeia USA FDA: 21 CFR 178.3620 (a), white mineral oil • NSF H1 |
| FINAVESTAN
A 360 B  | Medicinal white oil | | | 70 | |

* Typical kinematic viscosity at 40 °C in mm²/s
**ISOVOLTINE** oils are extremely effective in their ability to insulate components of the transformer and ensure efficient cooling in the system. In addition, they enable outstanding protection against oxidation and prevent wear of the core, windings and other insulating materials.

**ISOVOLTINE** main performances are:
- Superior insulating properties due to: high dielectric breakdown voltage, volume resistivity, interfacial surface tension and absence of polar substances.
- Outstanding resistance to oxidation.
- Very high purity levels minimize power factors and help to prevent temperature rises.
- Excellent cooling properties due to good fluidity and heat transfer capacities.
- Highly refined oil ensures chemical stability and durability in service.
- Ultra efficient protection of equipment due to non corrosive nature and cleaning properties.

---

### ISOVOLTINE

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NATURE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>VISCOSITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ISOVOLTINE II X</strong></td>
<td>Naphthenic mineral (inhibited)</td>
<td>For transformers, circuit breakers, contactors and all high-voltage equipment.</td>
<td>High insulating power. Contains inhibitor to ensure a better resistance to oxidation. Good cooling properties.</td>
<td>10</td>
<td>IEC 60296:2012 – Inhibited</td>
</tr>
<tr>
<td><strong>ISOVOLTINE BIO</strong></td>
<td>Synthetic ester</td>
<td>Transformers. Highly recommended to reduce fire hazards (mining, on-board transformers).</td>
<td>Biodegradable. Excellent resistance to fire. No danger for the aquatic environment.</td>
<td>26</td>
<td>IEC 61039 • IEC 61039 - K3 Class • OECD 301B • NWG</td>
</tr>
<tr>
<td><strong>ISOVOLTINE KA 7-4 Type II</strong></td>
<td>High Voltage Insulating Oil (Oxidation Inhibited)</td>
<td>Transformers, switchgears, contact breakers, welding set and all high voltage electrical equipment that calls for an inhibited insulating oil.</td>
<td>Excellent resistivity, power factor and dielectric strength. Suitable anti-oxidation and high thermal stability. Low viscosity ensuring satisfactory cooling. Excellent stability in operation and resistance to aging. Very low pour point.</td>
<td>11.1</td>
<td>ASTM D 3487 Type II • BS 148 Class IA • IEC 60296/8 • KS C 2301 • JIS C 2320</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity at 40 °C in mm²/s
PRESLIA oils are designed for the lubrication of hydraulic, gas, steam and combined-cycle turbines. Their formulation stems from long experience and meets manufacturers’ severest specifications.

- Excellent resistance to oxidation permitting longer oil drain intervals.
- Foaming, air release and demulsification behavior, ensuring proper facility operations.
- Specific anti-wear and extreme-pressure additives that enable the gearing to withstand high loads.

<table>
<thead>
<tr>
<th>PRODUCT</th>
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<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>VISCOSITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
• General Electric GEK 28143B, GEK 32568G, GEK 27070, GEK 46506E  
• MAN Diesel & Turbo SPD01000494906  
• MAN Turbo SPD 100000242284  
• Siemens TUV 901304, TUV 901305  
• Solar ES 9-224 W Class II |
| PRESLIA GT    | Hydrocracked mineral          | • Steam turbines.                                 | • Very high resistance to oxidation. Reinforced anti-wear and extreme-pressure additivation.  
• General Electric GEK 28143B, GEK 32568G, GEK 107395A, GEK 101941A, GEK 27070, GEK 46506E  
• MAN Turbo SPD 100000494906  
• Siemens TUV 901304, TUV 901305  
• Škoda turbíny Plzen  
• Solar ES 9-224 W Class II |
| PRESLIA SE JET| Synthetic ester               | • Aero-derivative gas turbines.                   | • Excellent resistance at high temperatures.                                           | 25         | MIL-PRF-23699F  
• Allison Rolls Royce (USA)  
• General Electric  
• Rolls Royce (UK)  
• Turbomeca |

* Typical kinematic viscosity at 40 °C in mm²/s
TOTAL offers a very wide range of lubricating greases for all applications in a variety of sectors: Heavy Industry (cement plants, iron and steel...), agrifood, papermaking, public works, transport, agriculture and marine.

TOTAL lubricating greases can be classified by “Families” depending on the nature of their thickeners.

The thickener provides specific properties to the greases such as mechanical and thermal stability and water resistance.

Within each “Family”, the greases will be classified according to their ranges of applications and specific performances.
### Greases

**LITHIUM / CALCIUM GREASES**

**MULTIS** is a high performance range of multipurpose greases based on Lithium / Calcium thickener. They are available in NLGI grades from 000 to 3, with or without solid additives.

**MULTIS** greases are formulated to provide good protection against wear, rust and water wash out. **MULTIS** greases permit the rationalisation of stocks and the reduction of maintenance cost.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MULTIS 3</strong></td>
<td>Multipurpose grease for automotive and industrial applications.</td>
<td>• Compatible with most conventional soaps.</td>
<td>Lithium / Calcium</td>
<td>3</td>
<td>120</td>
<td>-20 °C to +120 °C</td>
<td>L-XBCEA 3</td>
</tr>
<tr>
<td><strong>MULTIS EP 000</strong></td>
<td></td>
<td></td>
<td>Lithium / Calcium</td>
<td>000</td>
<td>150</td>
<td>-30 °C to +100 °C</td>
<td>L-XCBEB 000</td>
</tr>
<tr>
<td><strong>MULTIS EP 00</strong></td>
<td>Grease for centralized lubrication system and enclosed gears.</td>
<td>• Good pumpability. • Long service life thanks to the good resistance of the lubricating film.</td>
<td>Lithium / Calcium</td>
<td>00</td>
<td>150</td>
<td>-30 °C to +100 °C</td>
<td>L-XCBEB 00</td>
</tr>
<tr>
<td><strong>MULTIS EP 0</strong></td>
<td></td>
<td></td>
<td>Lithium / Calcium</td>
<td>0</td>
<td>150</td>
<td>-30 °C to +120 °C</td>
<td>L-XCCEB 0</td>
</tr>
<tr>
<td><strong>MULTIS EP 1</strong></td>
<td></td>
<td></td>
<td>Lithium / Calcium</td>
<td>1</td>
<td>150</td>
<td>-30 °C to +120 °C</td>
<td>L-XBCEB 1</td>
</tr>
<tr>
<td><strong>MULTIS EP 2</strong></td>
<td>Extreme Pressure, multipurpose grease for a wide range of industrial and automotive applications.</td>
<td>• Enables to rationalise stocks and simplify maintenance operations.</td>
<td>Lithium / Calcium</td>
<td>2</td>
<td>150</td>
<td>-25 °C to +120 °C</td>
<td>L-XBCEB 2</td>
</tr>
<tr>
<td><strong>MULTIS EP 3</strong></td>
<td></td>
<td></td>
<td>Lithium / Calcium</td>
<td>3</td>
<td>150</td>
<td>-20 °C to +120 °C</td>
<td>L-XBCEB 3</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity of base oil at 40 °C in mm²/s

---

**MULTIS XLT 2**

- Very high-performance synthetic grease for very high speed and/or very low temperature applications.
  - Wide operational temperature range.
  - Reduced power consumption due to low running torque.
  - Enables to achieve very high speed factor.
  - Compatible with plastics.

<table>
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<tr>
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<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MULTIS XLT 2</strong></td>
<td>Very high-performance synthetic grease for very high speed and/or very low temperature applications.</td>
<td>• Wide operational temperature range. • Reduced power consumption due to low running torque. • Enables to achieve very high speed factor. • Compatible with plastics.</td>
<td>Lithium / Calcium</td>
<td>2</td>
<td>18</td>
<td>-60 °C to +120 °C</td>
<td>L-XEDEA 2</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity of base oil at 40 °C in mm²/s
**Greases**

**LITHIUM COMPLEX GREASES**

**MULTIS COMPLEX** products are premium quality greases for wide range of heavy-duty application based on Lithium Complex thickener. They are formulated with high performance additives providing outstanding equipment protection.

**MULTIS COMPLEX** range is an excellent choice to severe operating conditions such as extreme temperatures, heavy loading and contaminated environment (water, dust).

<table>
<thead>
<tr>
<th>PRODUCT</th>
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<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTIS COMPLEX EP 2</td>
<td>Extreme Pressure, multipurpose grease suitable for wheel bearings, ball bearings, roller bearings, plain bearings, seal.</td>
<td>• Excellent mechanical and thermal stabilities. • Minimised downtime and maintenance cost.</td>
<td>Lithium Complex</td>
<td>2</td>
<td>165</td>
<td>-20 °C to +160 °C</td>
<td>L-XBEHB 2 KP2P-20</td>
</tr>
<tr>
<td>MULTIS COMPLEX EP 3</td>
<td>Extreme Pressure, multipurpose grease for loaded applications. • For wheel bearings, ball bearings, roller bearings, plain bearings, seals...</td>
<td>Contains 3% MoS2, • Good resistance to water. • Reduces wear, rust and corrosion.</td>
<td>Lithium Complex</td>
<td>3</td>
<td>165</td>
<td>-20 °C to +160 °C</td>
<td>L-XBEHB 3 KP3N-20</td>
</tr>
<tr>
<td>MULTIS COMPLEX HV 2</td>
<td>Extreme Pressure grease for extremely by highly loaded applications and high temperatures.</td>
<td>Contains 3% MoS2, • Reduces wear and corrosion. • Excellent water resistance. • Excellent resistance to shocks and vibrations.</td>
<td>Lithium Complex</td>
<td>2</td>
<td>340</td>
<td>-30 °C to +160 °C</td>
<td>L-XBEHB 2 KP2P-30</td>
</tr>
<tr>
<td>MULTIS COMPLEX HV 2 MOLY</td>
<td>Extreme Pressure grease suitable for slow-moving heavily loaded bearings and sliding mechanisms especially in Mining Industry.</td>
<td>• Reduced gear wear due to excellent EP properties. • Long service life even at high operating temperatures. • Reduced power consumption due to low running torque.</td>
<td>Lithium Complex</td>
<td>2</td>
<td>800</td>
<td>-20 °C to +160 °C</td>
<td>L-XDEHB 2 KP2P-20</td>
</tr>
<tr>
<td>MULTIS COMPLEX SHD 00</td>
<td>High performance, Extreme Pressure synthetic semi-fluid grease for gearbox applications.</td>
<td>• Oustanding low and high temperature performances. • Improved mechanical efficiency. • Long service life.</td>
<td>Lithium Complex</td>
<td>00</td>
<td>460</td>
<td>-50 °C to +160 °C</td>
<td>L-XEEHB 00 KP0P-50</td>
</tr>
<tr>
<td>MULTIS COMPLEX SHD 32</td>
<td>High performance, Extreme Pressure synthetic grease for bearings operating over a wide range of temperatures.</td>
<td>• Oustanding low and high temperature performances. • Improved mechanical efficiency. • Long service life.</td>
<td>Lithium Complex</td>
<td>2</td>
<td>32</td>
<td>-50 °C to +160 °C</td>
<td>L-XEEHB 2 KP2P-50</td>
</tr>
<tr>
<td>MULTIS COMPLEX SHD 100</td>
<td>Extreme Pressure synthetic grease particularly suited for high speed bearings application such as electric motors.</td>
<td>• Oustanding low and high temperature performances. • Improved mechanical efficiency. • Long service life.</td>
<td>Lithium Complex</td>
<td>2</td>
<td>100</td>
<td>-50 °C to +160 °C</td>
<td>L-XEEHB 2 KP2P-50</td>
</tr>
<tr>
<td>MULTIS COMPLEX SHD 220</td>
<td>Extreme Pressure, multipurpose grease synthetic grease for heavy duty automotive and industrial applications.</td>
<td>• Oustanding low and high temperature performances. • Improved mechanical efficiency. • Long service life.</td>
<td>Lithium Complex</td>
<td>2</td>
<td>220</td>
<td>-40 °C to +160 °C</td>
<td>L-XEEHB 2 KP2P-40</td>
</tr>
<tr>
<td>MULTIS COMPLEX SHD 460</td>
<td>High performance synthetic grease allowing outstanding protection of slow speed, heavily loaded bearings over a wide temperature range recommended in Paper Industry.</td>
<td>• Oustanding low and high temperature performances. • Improved mechanical efficiency. • Long service life.</td>
<td>Lithium Complex</td>
<td>1.5</td>
<td>460</td>
<td>-40 °C to +160 °C</td>
<td>L-XEEHB 1/2 KP1P-40</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity of base oil at 40 °C in mm²/s
Greases
ALUMINIUM COMPLEX GREASES

**COPAL** products are excellent adhesive greases based on Aluminium Complex thickener. They have excellent resistance to water washout. **COPAL** range is recommended for slow moving heavy-duty applications where shock loads are present.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER*</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPAL OGL 0</td>
<td>• Highly adhesive Extreme Pressure grease, for heavy loads and high temperatures. • Application in cement plants: open gears of kilns and mill drives. • Application in sugar mills: open gears in sugar cane mills.</td>
<td>• Contains 8% Graphite and 1% MoS₂. • Dual solid addition reduces wear particularly near the tooth crest and tooth base, decreasing energy consumption. • Very good water resistance.</td>
<td>Aluminium Complex</td>
<td>0-00</td>
<td>&gt;1000</td>
<td>-20 °C to +150 °C</td>
<td>L-XB0HB 0/00 0GP00N-20</td>
</tr>
<tr>
<td>COPAL OGL 2</td>
<td>• Highly adhesive Extreme Pressure grease, for heavy loads and high temperatures. • Specially developed for lubrication of open gears when a NLGI 2 grade is required.</td>
<td></td>
<td>Aluminium Complex</td>
<td>2</td>
<td>&gt;1000</td>
<td>-15 °C to +150 °C</td>
<td>L-XB0HB 2 0DP2N-15</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity of base oil at 40 °C in mm²/s
* Aluminium Complex thickened greases are not compatible with other thickener types.

**NEVASTANE** products are excellent adhesive food grade greases based on Aluminium Complex thickener. They have excellent resistance to water washout. **NEVASTANE** grease range is recommended for most greasing applications where a food grade grease is required.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER*</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL NEVASTANE XMF 0</td>
<td>• Extreme Pressure, multipurpose and adhesive grease. • Suitable for high to medium speed bearings in Food Processing Industry. • Roller and plain bearings. • Crimping machines.</td>
<td>• Good adhesiveness on metallic surfaces. • Provides excellent corrosion protection and water resistance.</td>
<td>Aluminium Complex</td>
<td>00</td>
<td>120</td>
<td>-20 °C to +150 °C</td>
<td>NSF H1 ISO 21469 KOSHER HALAL L-XB0FA00 K00N-20</td>
</tr>
<tr>
<td>TOTAL NEVASTANE XMF 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L-XBODA0 L0N-20</td>
</tr>
<tr>
<td>TOTAL NEVASTANE XMF 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L-PX0F1 K1N-20</td>
</tr>
<tr>
<td>TOTAL NEVASTANE XMF 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L-XB0F02 K02N-20</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity of base oil at 40 °C in mm²/s
* Aluminium Complex thickened greases are not compatible with other thickener types.
Greases

**POLYUREA GREASES**

**ALTIS** products are premium quality greases providing long service life even at extreme temperature. They are based on polyurea thickener especially formulated for high speed and high temperature applications. **ALTIS** range is suitable for fill for life lubrication or extended relubrication intervals.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALTIS EM 2</td>
<td>• High performance grease suited for high speed bearings and high temperature applications such as electric motors.</td>
<td>• Reduced vibration. • Reduced energy consumption. • Extended relubrication intervals.</td>
<td>Polyurea</td>
<td>2</td>
<td>110</td>
<td>-20 °C to +180 °C</td>
<td>L-XBFHA 2</td>
</tr>
<tr>
<td>ALTIS SH 2</td>
<td>• Very high performance synthetic grease suited for high speed bearings such as electric motors, over a wide range of temperatures. • Formulated for First Fill applications and long service life.</td>
<td>• Reduced vibration. • Reduced energy consumption. • Extended relubrication intervals. • Extreme temperature operations even at high speed.</td>
<td>Polyurea</td>
<td>2</td>
<td>80</td>
<td>-40 °C to +180 °C</td>
<td>L-XDFEB 2</td>
</tr>
</tbody>
</table>

**CALCINUM SULFONATE COMPLEX GREASES**

**CERAN** products are high technology greases developed by TOTAL over many years. They are based on Calcium Sulfonate Complex thickener providing their outstanding resistance to water, wear and load and mechanical stability. **CERAN** greases are suitable for heavily loaded applications over a wide range of temperatures. **CERAN** range are the products of choice of many industries around the world because of their reputation for exceptional performance, quality and reliability.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERAN XM 100</td>
<td>• High performance, Extreme Pressure grease for high speed applications over a wide range of temperature. • Recommended for high speed bearings in the Paper Industry. • Suitable for heavy-duty and off-road applications in civil engineering and industry.</td>
<td>• Excellent water resistance. • High speed applications. • Extended relubrication intervals.</td>
<td>Calcium Sulfonate Complex</td>
<td>1.5</td>
<td>100</td>
<td>-30 °C to +180 °C</td>
<td>L-XCFIB 1/2</td>
</tr>
<tr>
<td>CERAN XM 220</td>
<td>• Extreme Pressure, high performance, multipurpose, grease. • Recommended for the lubrication of severe industrial applications in extreme conditions (high load, temperature, water, dust) such as continuous castings and rolling mills in steel plants, bearings in wet and dry (felt roll) sections of paper mills.</td>
<td>• Excellent water resistance. • Highly loaded applications. • Enabled inventory rationalization.</td>
<td>Calcium Sulfonate Complex</td>
<td>1.5</td>
<td>220</td>
<td>-30 °C to +180 °C</td>
<td>LXCFIB 1/2</td>
</tr>
<tr>
<td>CERAN XM 460</td>
<td>• Extreme Pressure, very high performance, multipurpose grease for shocks loaded industrial applications at high temperatures. • Recommended for the lubrication of bearings in steel plants, in Paper Industry, for the lubrication of hard wood granular presses and in all industrial applications under severe conditions (water, dust).</td>
<td>• Excellent water resistance. • Highly loaded applications. • Extended relubrication intervals. • Good anti corrosion properties.</td>
<td>Calcium Sulfonate Complex</td>
<td>1.5</td>
<td>460</td>
<td>-25 °C to +180 °C</td>
<td>L-XBFIB 1/2</td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity of base oil at 40 °C in mm²/s
### Greases

**CALCIUM SULFONATE COMPLEX GREASES**

#### SPECIALITIES

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
| CERAN AD PLUS | • Highly adhesive, Extreme Pressure grease adapted to severe conditions.  
• Recommended for metal cables.  
• Suitable for applications in cement plants, mines, quarries, offshore, marine. | • Outstanding resistance to water.  
• Extended life of parts subjected to heavy loads. | Calcium Sulfonate Complex | 0.5 | > 1700 | -20 °C to +150 °C | ISO 6743-9, DIN 51502 |
| CERAN GEP | • Adhesive and Extreme Pressure semi-fluid grease, adapted to high temperatures and heavy loaded applications.  
• Recommended for gears, transmissions and open gears of sugar cane mills. | • Contains 6.5% Graphite and 1% MoS₂.  
• Good adhesiveness.  
• Extended service life. | Calcium Sulfonate Complex | 0 | 695 | -25 °C to + 180 °C | ISO 6743-9, DIN 51502 |
| CERAN MS | • Extreme Pressure, multipurpose grease adapted to very loaded industrial application at high temperature.  
• Recommended for shock loading applications with vibration. | • Contains 2% MoS₂.  
• Extended service life.  
• Very good adhesiveness. | Calcium Sulfonate Complex | 1.5 | 650 | -20 °C to + 180 °C | ISO 6743-9, DIN 51502 |

- * Typical kinematic viscosity of base oil at 40 °C in mm²/s

**TOTAL NEVASTANE XS** range is specially designed for the Food Industry. As high performance products, they provide equipment protection and extended service life while securing the production chain.

The **TOTAL NEVASTANE XS** range is NF H1 registered and Kosher and Halal certified. These greases are produced in ISO 21469 certified plants. The **TOTAL NEVASTANE XS** range exists in different based oil viscosities.

#### CALCIUM SULFONATE COMPLEX GREASES

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
| TOTAL NEVASTANE XS 80 | • Extreme Pressure, very high performances synthetic grease for high speed and very low temperatures applications in Food Processing Industry.  
• Bearings at low temperatures. Oven turbines.  
• Sterilisers. Freezing tunnels. | • Very low temperature.  
• Excellent water resistance.  
• Long service life.  
• Reduced energy consumption. | Calcium Sulfonate Complex | 1.5 | 80 | -55 °C to +180 °C | NSF H1 ISO 21469 KOSHER HALAL, L-XEFBB 1/2, KP1/2R-55 |
| TOTAL NEVASTANE XS 320 | • Extreme Pressure, very high performances synthetic grease for loaded application in Food Processing Industry.  
• Suitable for pelleting machines.  
• Bearings under loads and subject to shocks. | | Calcium Sulfonate Complex | 1.5 | 320 | -40 °C to +180 °C | NSF H1 ISO 21469 KOSHER HALAL, L-XDFBB 1/2, KP1/2R-40 |

- * Typical kinematic viscosity of base oil at 40 °C in mm²/s
## Greases

### SPECIFIC GREASES AND AUTOMATIC LUBRICATORS

#### SPECIFIC GREASES

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
| SPECIS CU | • Anti-seizing grease for threaded assembly under severe corrosion conditions, water vapour, gasses. | • Contains Copper additive.  
• Seizing prevention.  
• Easy dismounting of components in a moist atmosphere or wet environment. | Clay | 1 | 500 | -20 °C to +300 °C | L-XBGBB 1  
MPFIU-20 |
| STATERMIC XHT | • Special fluorine compounds-based grease for very high temperatures and medium-to-heavy loads. | • Reduced friction coefficient of most plastics and metals.  
• Extended life of the lubricated parts. | Fluorine | 2 | 150 | -25 °C to +250 °C | L-XBGDB 2  
KFKP2U-25 |
| STATERMIC NR | • Special fluorine compounds-based grease for high temperatures, resistant to powerful acids, halogenated compounds, alcohols, oxidants and radiations. | • Protection of lubricated parts even in the presence of acids, halogenated alcohols, oxidants or in the presence of radiation.  
• NSF H1. | Fluorine | 2 | 375 | -25 °C to +250 °C | L-XBGDB 2  
KFKP2U-25 |

#### AUTOMATIC LUBRICATORS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>BO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
| GREASYMAT AUTOMATIC GREASE SYSTEM STARTERPACK | • Electro-mechanical automatic lubricator, single point, refillable.  
• 10 bar ejection pressure. | • Remote up to 2 meters from the lubrication point.  
• Set up for a lubrication program of 1, 3, 6 or 12 months.  
• ATEX certification. | Polyurea | 2 | 80 | -40 °C to +180 °C | L-XDFEB 2  
KP2R-40 |
| GREASYMAT AUTOMATIC GREASE SYSTEM REFILL ALTIS SH 2 | • Very high performance synthetic grease suited for high speed bearings such as electric motors, over a wide range of temperatures.  
• Specially developed for the lubrication of fans and electric engines with TOTAL AUTOMATIC GREASE SYSTEM. | | | | | |
| GREASYMAT AUTOMATIC GREASE SYSTEM REFILL CERAN XM 220 | • Extreme Pressure, high performance, multipurpose grease.  
• Suitable for the lubrication of conveyors, rails, chains with TOTAL AUTOMATIC GREASE SYSTEM. | | | | | |
| GREASYMAT AUTOMATIC GREASE SYSTEM REFILL TOTAL NEVASTANE XS 80 | • Extreme Pressure, very high performance, synthetic grease designed for high speed applications over a wide range of temperature.  
• Recommended for the Food Industry and/or very low temperatures, with TOTAL AUTOMATIC GREASE SYSTEM. | | | | | |

* Typical kinematic viscosity of base oil at 40 °C in mm²/s
**Metalworking**

**CUTTING MACHINING GRINDING / SOLUBLE CUTTING FLUIDS**

### MACRO-EMULSIONS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>METALS</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>LACTUCA LT 2 AP</td>
<td>Soluble Cutting Oil</td>
<td>• Routine machining of non-ferrous metals and high-grade carbon steels. This product is specially designed for the machining of copper alloys and free cutting brass. • Ensures moisture retention by chips • Recommended rate of use: 5% to 10% by volume.</td>
<td>• Very easy to use simply by pouring the oil into good quality water. • Good resistance to bacterial growth. • Forms a milky emulsion with excellent stability in use allowing long intervals between oil changes • Easy monitoring by analysis using a refractometer. • Exceptional antitrust &amp; antifoam properties. • No harmful effect on good quality paintwork (baked epoxy types).</td>
</tr>
</tbody>
</table>

### CIRCULATION OILS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>VISCOSITY*</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>

---

The **DROSERA** product range is dedicated to the lubrication of machine tools. The various grades of viscosity available allow lubrication of a wide variety of mechanical parts:

- Very high speed spindles (grade 2) and high speed spindles (grades 5 to 22).
- Hydraulic circuits (grades 32 and 46).
- Both horizontal and vertical slides (grades 68 to 220).

**DROSERA** oils offer the following advantages:

- Multipurpose
- Very good extreme-pressure performances
- Excellent stick-slip properties.
- Low friction coefficient

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**BIODEGRADABLE**

**H1 suitable for incidental food contact**

**3H suitable for direct food contact**

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24
For more than 50 years TOTAL NEVASTANE products and experts are supporting the Food Industry in its technical evolution.

Our products and our plants are ISO 21469 certified guarantying the highest level of Safety, Security and Quality.

By using TOTAL NEVASTANE products you will achieve the utmost reliability and durability while satisfying the performance requirement of your processing equipment.
The **TOTAL NEVASTANE** range is specially designed for the Food Processing Industry and its related activities such as the manufacture of packaging. It is also used in the Pharmaceutical and the Cosmetics Industry. All **TOTAL NEVASTANE** products are NSF H1 registered. Their use is essential when a high level of hygiene is required, in compliance with HACCP method.

As high performance products, they provide equipment protection and extended service life while securing the production chain. Many products from the **TOTAL NEVASTANE** range are produced in ISO 21469 certified plant, this is an additional proof that TOTAL is applying the highest hygiene standards to produce NSF H1 lubricants.

<table>
<thead>
<tr>
<th>OILS</th>
<th>PRODUCT</th>
<th>TYPE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>ISO VG</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
</table>
|      | TOTAL NEVASTANE AW | White Mineral | • Hydraulic systems.  
• Air-line lubricators. | • Excellent anti-wear and corrosion protection.  
• Increase equipment service life.  
• Miscible with mineral fluids. | 22 to 68 | NSF H1 • ISO 21469 • ISO 6743-4 HM • Kosher • Halal |
|      | TOTAL NEVASTANE EP | Semi-synthetic | • Gears.  
• Plain and roller bearings.  
• Conveyor belts and chains. | • Superior protection against high loads.  
• Adapted to a wide range of applications. | 100 to 1 000 | NSF H1 • ISO 21469 • ISO 6743-6 CKD • Kosher • Halal |
|      | TOTAL NEVASTANE SH | Synthetic (PAO) | • Air compressors.  
• Vacuum pumps.  
• Hydraulic systems and especially those operating at low temperatures. | • Wide temperature range.  
• Excellent equipment protection.  
• Extension of oil drain intervals.  
• High viscosity index. | 32 to 100 | NSF H1 • ISO 21469 • ISO 6743-4 HV • Kosher • Halal |
|      | TOTAL NEVASTANE XSH | Synthetic (PAO) | • Gears.  
• Plain and roller bearings.  
• Conveyor belts and chains.  
• Sideways. | • Wide temperature range.  
• Low temperature start-up.  
• Excellent equipment protection.  
• Extension of oil drain intervals.  
• High loads. | 150 to 460 | NSF H1 • ISO 21469 • ISO 6743-6 CKD • Kosher • Halal |
|      | TOTAL NEVASTANE SY | Synthetic (PAG) | • High temperature oven chains.  
• Bottling equipment.  
• Worm gears. | • Excellent thermal stability.  
• Low volatility.  
• High lubricating power.  
• Excellent adhesion properties. | 220 to 460 | NSF H1 |
|      | TOTAL NEVASTANE CHAIN OIL XT | Synthetic (Esters) | • Conveyor belts.  
• Oven chains.  
• Mechanisms that operate at high temperatures. | • Very good thermal stability.  
• Low volatility.  
• High lubricating power.  
• Excellent adhesion properties. | 220 | NSF H1 • Kosher • Halal |
## FOOD GRADE GREASES

### TOTAL NEVASTANE

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>THICKENER</th>
<th>NLGI GRADE</th>
<th>ISO VISCOSITY*</th>
<th>OPERATING TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL NEVASTANE</td>
<td>• Extreme Pressure, multipurpose and adhesive grease.</td>
<td>• Good adhesiveness on metallic surfaces.</td>
<td>Aluminium Complex</td>
<td>00</td>
<td>120</td>
<td>-20 °C to +150 °C</td>
<td>NSF H1 ISO 21469 KOSHER HALAL</td>
</tr>
<tr>
<td>XMF 0</td>
<td>• Suitable for high to medium speed bearings in Food Processing Industry.</td>
<td>• Provides excellent corrosion protection and water resistance.</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td>L-XBDF00 K00N-20</td>
</tr>
<tr>
<td></td>
<td>• Roller and plain bearings.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>L-XBDF00 K0IN-20</td>
</tr>
<tr>
<td></td>
<td>• Crimping machines.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>L-XBDF02 K0IN-20</td>
</tr>
<tr>
<td>TOTAL NEVASTANE</td>
<td>• Extreme Pressure, very high performances synthetic grease for high speed and very low temperatures applications in Food Processing Industry.</td>
<td>• Very low temperature.</td>
<td>Calcium Sulfonate Complex</td>
<td>1.5</td>
<td>80</td>
<td>-55 °C to +180 °C</td>
<td>NSF H1 ISO 21469 KOSHER HALAL</td>
</tr>
<tr>
<td>XMF 1</td>
<td>• Bearings at low temperatures. Oven turbines.</td>
<td>• Excellent water resistance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L-XEFFB 1/2 K1/2R-55</td>
</tr>
<tr>
<td></td>
<td>• Sterilisers. Freezing tunnels.</td>
<td>• Long service life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL NEVASTANE</td>
<td>• Extreme Pressure, very high performances synthetic grease for loaded application in Food Processing Industry.</td>
<td>• Reduced energy consumption.</td>
<td>Calcium Sulfonate Complex</td>
<td>1.5</td>
<td>320</td>
<td>-40 °C to +180 °C</td>
<td>NSF H1 ISO 21469 KOSHER HALAL</td>
</tr>
<tr>
<td>XS 80</td>
<td>• Suitable for pelleting machines.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L-XDFFB 1/2 K1/2R-40</td>
</tr>
<tr>
<td></td>
<td>• Bearings under loads and subject to shocks.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL NEVASTANE</td>
<td>• Extreme Pressure, very high performances synthetic grease for high speed and very low temperatures applications in Food Processing Industry.</td>
<td>• Very low temperature.</td>
<td>Calcium Sulfonate Complex</td>
<td>1.5</td>
<td>80</td>
<td>-55 °C to +180 °C</td>
<td>NSF H1 ISO 21469 KOSHER HALAL</td>
</tr>
<tr>
<td>XS 320</td>
<td>• Suitable for pelleting machines.</td>
<td>• Excellent water resistance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L-XEFFB 1/2 K1/2R-55</td>
</tr>
<tr>
<td></td>
<td>• Bearings under loads and subject to shocks.</td>
<td>• Long service life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Typical kinematic viscosity of base oil at 40 °C in mm²/s

### Notes

- **BIODEGRADABLE**
- **NSF H1 suitable for incidental food contact**
- **3H suitable for direct food contact**

Available in Lube-Shuttle cartridges
# FOOD GRADE SPRAY LUBRICANTS & SPECIALTIES

## SPRAYS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>TYPE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>TEMPERATURE RANGE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL NEVASTANE LUBE AEROSOL</td>
<td>Multipurpose translucent adhesive oil</td>
<td>• Small machines requiring almost daily lubrication. &lt;br&gt;• Conveyors and rails. &lt;br&gt;• Packaging machines. &lt;br&gt;• Plain and roller bearings.</td>
<td>• Exceptional adhesion to metal surfaces. &lt;br&gt;• Resistant to water, steam and weak acid and alkaline atmospheres. &lt;br&gt;• Compatible with most of elastomers and plastics.</td>
<td>-20 °C to +150 °C</td>
<td>NSF H1</td>
</tr>
<tr>
<td>TOTAL NEVASTANE GREASE AEROSOL</td>
<td>Water resistant grease Aluminium Complex</td>
<td>• Bearings, hinges, springs, chains, rails and tools.</td>
<td>• Excellent resistance to water and steam. &lt;br&gt;• Exceptional adhesion to metal surfaces. &lt;br&gt;• Inertive to detergents.</td>
<td>-20 °C to +150 °C</td>
<td>NSF H1</td>
</tr>
<tr>
<td>TOTAL NEVASTANE SILICONE SAFEGARD</td>
<td>Multipurpose Silicone oil</td>
<td>• Small machines and chains subject to extreme temperatures. &lt;br&gt;• Shrink oven chains. &lt;br&gt;• Conveyors and rails.</td>
<td>• Very wide temperature range. &lt;br&gt;• Insulating, anti-rust and anti-corrosion. &lt;br&gt;• Spray without propellant gas (Safegard technology) for environmental protection.</td>
<td>-40 °C to +200 °C</td>
<td>NSF H1 • KOSHER</td>
</tr>
</tbody>
</table>

## SPECIALTY PRODUCTS

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>TYPE</th>
<th>APPLICATIONS</th>
<th>SPECIFIC ADVANTAGES</th>
<th>ISO VG</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL NEVASTANE FLUSH OIL</td>
<td>Light viscosity fluid for cleaning and flushing</td>
<td>• Cleaning or flushing of hydraulics, gear reducers, chains and other moving components.</td>
<td>• Elimination of deposits and impurities. &lt;br&gt;• Excellent solvent power. &lt;br&gt;• Ideal for changing from standard lubricant to NSF H1 lubricant (except PAG and MPG).</td>
<td>9.5</td>
<td>NSF H1 • KOSHER • HALAL</td>
</tr>
<tr>
<td>TOTAL NEVASTANE SDO</td>
<td>Sugar dissolving oil</td>
<td>• Dissolves sugar accumulated on equipment in production and packaging areas. &lt;br&gt;• Application in pure or diluted form.</td>
<td>• Excellent for dissolving accumulated sugar on machine parts. &lt;br&gt;• Dirt removing power. &lt;br&gt;• Reduction of maintenance costs and shutdowns.</td>
<td></td>
<td>NSF H1</td>
</tr>
<tr>
<td>TOTAL NEVASTANE H1F</td>
<td>White Mineral</td>
<td>• Closed circuits without air contact. &lt;br&gt;• Numerous manufacturing processes in Agrifood industry: water baths, autoclaves, reactors, ovens, presses and moulds.</td>
<td>• Process temperature &lt; +310 °C (+330 °C in the film).</td>
<td>32</td>
<td>NSF H1 • ISO 21469 • ISO 6743-12 L • QC KOSHER • HALAL</td>
</tr>
</tbody>
</table>
ALTIS .................................................................................................................................21
AZOLLA ............................................................................................................................12
BIOHYDRAN .......................................................................................................................13
CARTER ..............................................................................................................................10
CERAN ...............................................................................................................................21-22
CHAIN Bio .........................................................................................................................5
CHAIN OILS .........................................................................................................................5
CHAINLUB AEROSOL .........................................................................................................5
CIRKAN .................................................................................................................................5
COOLTECH .........................................................................................................................4
COPAL ....................................................................................................................................20
CORTIS ..................................................................................................................................20
DACNIS .................................................................................................................................6
DISOLA ...................................................................................................................................9
DROSERA .............................................................................................................................24
EQUIVIS ...............................................................................................................................13
FINADET ...............................................................................................................................8
FINASOL ...............................................................................................................................8
FINAVESTAN ........................................................................................................................14
GREASYMAT AUTOMATIC GREASE SYSTEM ...................................................................23
HYDRANSAFE ....................................................................................................................13
ISOVOLTINE ........................................................................................................................15
JARYTHERM® ......................................................................................................................11
LACTUCA .............................................................................................................................24
LUNARIA ................................................................................................................................7
MULTIS ..................................................................................................................................18
MULTIS COMPLEX .............................................................................................................19
NATERIA ................................................................................................................................9
PLANETELF ..........................................................................................................................7
PNEUMA ................................................................................................................................14
PRESLIA ................................................................................................................................16
PV ..........................................................................................................................................7
RUBIA ....................................................................................................................................9
SERIOLA ................................................................................................................................11
SPECIS ..................................................................................................................................23
STATERMIC ..........................................................................................................................23
TOTAL NEVASTANE ..........................................................................................................5-6-10-11-12-13-20-22-26-27-28
MEASURING KINEMATIC VISCOSITY

In the international measurement system, kinematic viscosity is expressed in mm$^2$ per second.

ISO VG

The international ISO VG classification allows classification of oils according to viscosity. The ISO VG grade corresponds by convention to the median point of a kinematic viscosity interval in mm$^2$/s at 40 °C.

ISO CLASSIFICATION DES LUBRICANTS AS A FUNCTION OF THEIR VISCOSITY (ISO 3448 STANDARD)

<table>
<thead>
<tr>
<th>ISO viscosity class</th>
<th>Kinematic viscosity range at 40 °C in mm$^2$/s</th>
<th>NLGI grade</th>
<th>Worked penetration at 25 °C (1/10 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO VG 2</td>
<td>0.2 - 0.5</td>
<td>000</td>
<td>445 - 475</td>
</tr>
<tr>
<td>ISO VG 3</td>
<td>0.6 - 1.0</td>
<td>00</td>
<td>400 - 430</td>
</tr>
<tr>
<td>ISO VG 5</td>
<td>1.2 - 2.0</td>
<td>0</td>
<td>355 - 385</td>
</tr>
<tr>
<td>ISO VG 7</td>
<td>2.5 - 3.5</td>
<td>1</td>
<td>310 - 340</td>
</tr>
<tr>
<td>ISO VG 10</td>
<td>3.5 - 4.5</td>
<td>2</td>
<td>265 - 295</td>
</tr>
<tr>
<td>ISO VG 15</td>
<td>5.0 - 6.0</td>
<td>3</td>
<td>220 - 250</td>
</tr>
<tr>
<td>ISO VG 22</td>
<td>7.5 - 9.0</td>
<td>4</td>
<td>180 - 210</td>
</tr>
<tr>
<td>ISO VG 32</td>
<td>10.0 - 12.0</td>
<td>5</td>
<td>150 - 180</td>
</tr>
<tr>
<td>ISO VG 46</td>
<td>12.5 - 15.0</td>
<td>6</td>
<td>120 - 150</td>
</tr>
<tr>
<td>ISO VG 68</td>
<td>15.0 - 18.0</td>
<td>7</td>
<td>100 - 130</td>
</tr>
<tr>
<td>ISO VG 100</td>
<td>18.5 - 22.0</td>
<td>8</td>
<td>80 - 100</td>
</tr>
<tr>
<td>ISO VG 150</td>
<td>22.0 - 26.0</td>
<td>9</td>
<td>60 - 80</td>
</tr>
<tr>
<td>ISO VG 220</td>
<td>26.0 - 30.0</td>
<td>10</td>
<td>40 - 60</td>
</tr>
<tr>
<td>ISO VG 320</td>
<td>30.0 - 35.0</td>
<td>11</td>
<td>20 - 40</td>
</tr>
<tr>
<td>ISO VG 460</td>
<td>35.0 - 40.0</td>
<td>12</td>
<td>0 - 20</td>
</tr>
<tr>
<td>ISO VG 680</td>
<td>40.0 - 45.0</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>ISO VG 1000</td>
<td>45.0 - 50.0</td>
<td>14</td>
<td>-</td>
</tr>
<tr>
<td>ISO VG 1500</td>
<td>50.0 - 55.0</td>
<td>15</td>
<td>-</td>
</tr>
<tr>
<td>ISO VG 2200</td>
<td>55.0 - 60.0</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
<td>ISO VG 3200</td>
<td>60.0 - 65.0</td>
<td>17</td>
<td>-</td>
</tr>
</tbody>
</table>

Virtually all the lubricants are non-flammable under ambient conditions. However, they need to be stored at a distance from:

- Oxidizing, corrosive or inflammable substances: chlorine, oxygen, acids, bases, solvents, etc.
- Hot surfaces or fire points.
- Electric contacts.

For access to material safety data sheets please visit www.quickfds.com

ENVIRONMENT

The storage areas must permit easy recovery (pumping, absorption) in the event of accidental leaks, with no discharges into the natural environment.

A tank or a holding facility is recommended, even mandatory, depending on the legislation in force.
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
Total Lubricants cooperates
with equipment manufacturers
to create high-technology products
for optimal performance
and protection
of your machinery.

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

Quality and environment
Total Lubricants 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.

Safety Data Sheets are available at www.totaloil.com.au