

Biolubricants

protecting the Environment






TOTAL

Total and the environment

Total offers its customers products adapted to environment protection (biolubricants, biofuels...) and services to assist them in their own environmental approach (adapted product storage, waste disposal)...

Total's commitment is specifically aimed at:

-  The sustainable development of its energy offer: diversification of energy sources, development of renewable energies.
-  The safety of its operations and their absence of impact on the environment.
 - *Safety of product transport procedures, preventing and managing accident risks.*
 - *Controlling pollutant air and water emissions, reducing accidental pollution.*
 - *Monitoring the impact of the products on the environment throughout their life cycle, protecting the biodiversity.*
-  Participating in the fight against climate change.
 - *Monitoring and reducing greenhouse gas emissions, improving the energy efficiency of our products, encouraging our customers to manage their energy use better.*



TOTAL's development of a range of biolubricants is part of the Group's environmental approach.

www.lubricants.total.com



TOTAL



BiOlubricants

TOTAL is highly sensitive to environment protection and sustainable development and has therefore developed a range of biolubricants designed in priority for activities where there is a direct risk for the environment if there is a leak or accidental loss of the product.

What is a BiOlubricant ?

The term *biolubricants* applies to all lubricants which are both **rapidly biodegradable** and **nontoxic** for humans and aquatic environments.

A *biolubricant* can be:

- vegetable oil-based (e.g.: rape-seed oils),
- based on synthetic esters manufactured from modified renewal oils or from mineral oil-based products.

There are several eco-labels which are designed to differentiate these products from existing conventional lubricants.

The European eco-label issued in 2004 is the most unifying and TOTAL has chosen to apply it to its products.



Functions of biolubricants:

- Reducing mechanical energy losses
- Reducing part wear due to friction
- Protecting parts from corrosion
- Lowering machine operating temperatures
- Increasing sealing
- Preventing the evacuation of contaminant and dirt deposits.

Advantages of biolubricants:

- High biodegradability
- Low toxicity
- Good lubricating properties
- High viscosity index
- High flash point
- Improved user safety
- Increased equipment life
- Lower evaporation and oil losses
- Prevention of environmental pollution risk.

BiOlubricants sectors of application

Biolubricants must be used in priority for all applications where there is an environmental risk.

This is the case of **total loss oils** like chainsaw chain oils or 2-stroke engine oils and of **lubricants subject to possible accidental leaks** like hydraulic oils.

Certain environments for which environmental protection is a permanent preoccupation are particularly concerned by the use of biolubricants: water, mountains, agriculture and forests...

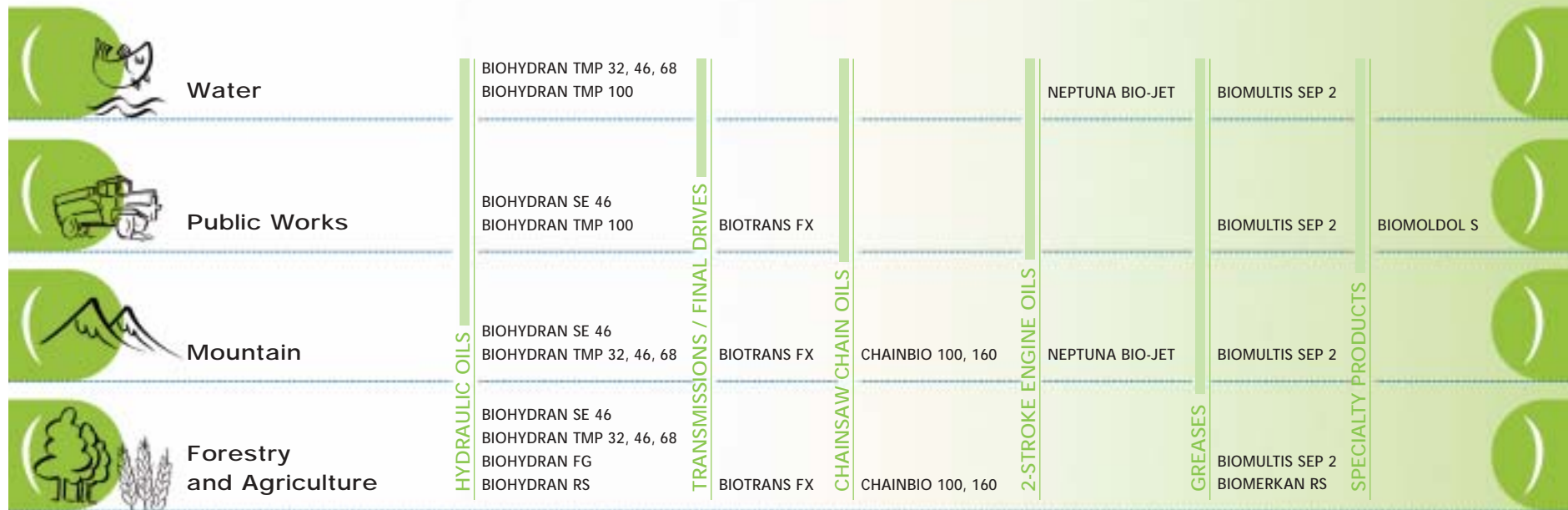


TOTAL



TOTAL BioLubs Range

Total actively participates in research and awareness programs carried out by national and European institutions and offers a specific solution for each activity sector concerned.



Water and BiOlub



TOTAL is sensitive to pollution problems and, as an alternative to conventional oils, offers a range of biodegradable lubricants providing better environment protection.



BiOlubricants for clean water



Water is by far the sector where many of the potential sources of pollution are oil-related.

We can mention, for example, machinery operating directly in rivers and canals (dredging, bank development, ...) or the boats themselves, whether for professional use (push tug, trawler, ...) or pleasure (outboard, jet ski, ...). All the equipment operating on or near water (locks, hydroelectric plants) is also concerned by this preoccupation. TOTAL offers a range of biolubricants adapted to these activities: hydraulic oils, greases and 2-stroke oils.

- Applications
- River and costal fishing
 - River and costal navigation
 - Pleasure sailing
 - Locks, hydroelectric plants
 - Public Works heavy plant

Hydraulic oils	BIOHYDRAN TMP 32, 46, 68
	BIOHYDRAN TMP 100
2-stroke engine oils	NEPTUNA BIO-JET
Greases	BIOMULTIS SEP 2



TOTAL





Water Range



Hydraulic oils

BIOHYDRAN TMP 32, 46, 68

- High quality biodegradable synthetic hydraulic oils.
- For hydraulic installations operating in severe conditions and requiring high anti-wear performance fluids with a high viscosity index, and which are very stable in time.

VDMA 24568 : HEES
ISO 15380 : HEES



BIOHYDRAN TMP 100

- High quality biodegradable synthetic hydraulic oil.
- For hydraulic installations operating in severe conditions and requiring high anti-wear performance fluids with a high viscosity index, and which are very stable in time.
- Particularly recommended for lubricating sliding and rolling bearings of stern tubes.

VDMA 24568 : HEES
ISO 15380 : HEES



2-stroke engine oils

NEPTUNA BIO-JET

- 100 % synthetic biodegradable oil for all 2-stroke engines (petrol), all power ratings including sports use.
- **Combines environment protection and high performance.**
- The manufacturer's recommendations must be followed when mixing with the fuel.

NMMA TC-W3 RL • API TC
Meets the automotive manufacturers' requirements



Greases

BIOMULTIS SEP 2

- Lithium / calcium soap-based extreme pressure multi-purpose biodegradable grease, recommended for high temperature applications and in difficult conditions.
- Wheel bearings, ball bearings, roller bearings, sliding bearings, standard seals, high loadings and all applications subject to impacts, transport, agriculture.
- **Very good lubricating film resistance.**
- **Lower maintenance costs.**
- Good mechanical and thermal stability.

ISO 6743-9 : L-XDDEB2
DIN 51502 : KPE2N-40



TOTAL

Public Works and BiOlub



TOTAL is sensitive to pollution problems and, as an alternative to conventional oils, offers a range of biodegradable lubricants providing better environment protection.



BiOlubricants for a clean environment

Public Works heavy plant often operates in the natural environment on development, construction, quarry operation and urban works projects.

During these works the transmission oils and hydraulic oils may be a source of environmental pollution due to accidental leaks.

To preserve this natural environment TOTAL offers a range of biolubricants adapted to Public Works heavy plant.

Applications

- Extraction machinery
- Construction machinery
- Earthworks machinery
- Drainage cleaning machinery

Hydraulic oils

BIOHYDRAN SE 46

BIOHYDRAN TMP 100

UTTO transmissions (Universal Tractor Transmission Oil)

BIOTRANS FX

Greases

BIOMULTIS SEP 2

Specialties

BIOMOLDOL S



TOTAL

Mountain and BioLubs



TOTAL is sensitive to pollution problems and, as an alternative to conventional oil, offers a range of biodegradable lubricants for improved environment protection.



BioLubricants for clean mountains

Mountain professionals are permanently concerned about preserving their environment and keeping the mountains "clean".

To meet their requirements TOTAL offers a range of biolubricants for all equipment in contact with nature: ski lifts, snow canons, snowmobiles, skidozers and other piste maintenance machinery.

This range comprises transmission oils and hydraulic oils and includes greases and 2-stroke engine oils.

Applications

- Piste maintenance
- Ski lifts
- Snowmobiles / Quads
- Snow plants

Hydraulic oils

BIOHYDRAN SE 46

BIOHYDRAN TMP 32, 46, 68

Transmissions / Final drives

BIOTRANS FX

Chainsaw chain oils

CHAINBIO 100, 160

2-stroke engine oils

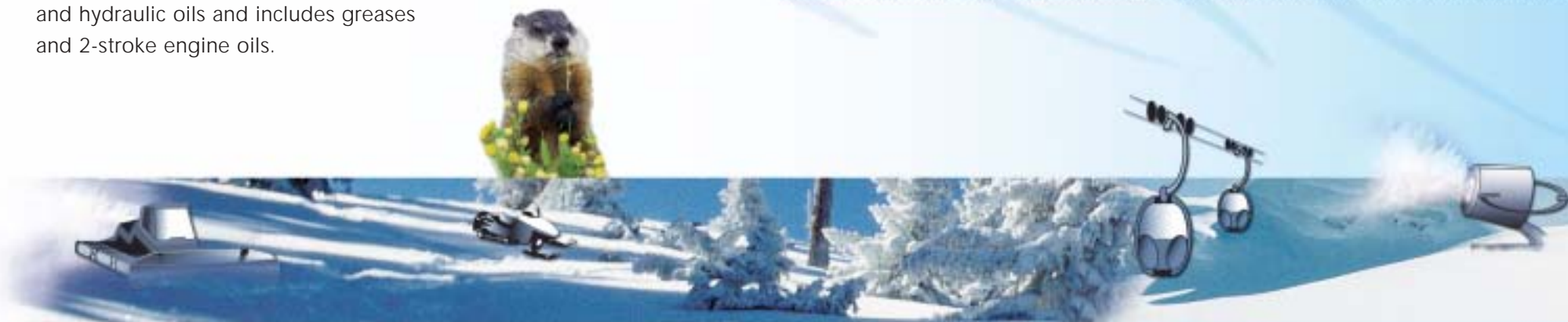
NEPTUNA BIO-JET

Greases

BIOMULTIS SEP 2



TOTAL





Mountain Range



Hydraulic oils

BIOHYDRAN SE 46

- Saturated synthetic ester-based **high quality biodegradable hydraulic oil.**
- BIOHYDRAN SE 46 can replace mineral oils after draining the system; however, a filter change is recommended.

VDMA 24568 TYP HEES

BIOHYDRAN TMP 32, 46, 68

- High quality biodegradable synthetic hydraulic oils.
- For hydraulic installations operating in severe conditions and which require fluids with high anti-wear properties and a high viscosity index, and which are very stable in time.

VDMA 24568 : HEES
ISO 15380 : HEES

Transmissions / Final drives

BIOTRANS FX

- Very high quality biodegradable synthetic lubricant for transmissions equipped with wet disk brakes on maintenance or snow compacting equipment.
- Gearing requiring an API GL-4 extreme pressure lubricant.
- For high or low pressure hydraulic systems equipped with high performance filters.
- Used in all seasons thanks to its high viscosity index: **very fluid when cold and viscous when hot.**
- BIOTRANS FX consists of oils with special renewable bases, compatible with the elastomers currently used in these components.

API GL-4 • GIMA M 1143 approved
Meets the automotive manufacturers' requirements

Chain saw chain oils

CHAINBIO 100, 160

- Biodegradable oils for chainsaw chains.
- Recommended for total loss lubrication of fast-moving chains (wood chainsaws, branch cutters...).
- **Environment friendly products** thanks to its complete biodegradability in its application environment.
- **Very good lubricating properties** due to an excellent adhesion.
- Lower oil spray.

2-stroke engine oils

NEPTUNA BIO-JET

- 100 % synthetic biodegradable oil for all 2-stroke engines (petrol), all power ratings including sports use.
- **Combines environment protection and high performance.**
- The manufacturer's recommendations must be followed when mixing with the fuel.

NMMA TC-W3 RL • API TC
Meets the automotive manufacturers' requirements

Greases

BIOMULTIS SEP 2

- Lithium / calcium soap-based extreme pressure multi-purpose biodegradable grease, recommended for high temperature applications and in difficult conditions.
- Wheel bearings, ball bearings, roller bearings, sliding bearings, standard seals, high loadings and all applications subject to impacts, transport, agriculture.
- **Very good lubricating film resistance.**
- **Lower maintenance costs.**
- Good mechanical and thermal stability.

ISO 6743-9 : L-XDDEB2
DIN 51502 : KPE2N-40



TOTAL

Forestry, Agriculture and BioLubs



TOTAL is sensitive to pollution problems and, as an alternative to conventional oils, offers a range of biodegradable lubricants providing better environment protection.



BioLubricants for a clean planet



Lubricants are used for forestry and agricultural work to lubricate small items of equipment (chainsaws and brush cutters) and machines for forestry operations (log skidders, loaders), ground or harvest preparation.

Chainsaw oils or 2-stroke oils, for all loss systems, or hydraulic oil during accidental leaks can be a source of pollution for the natural forest environment and for crops. To preserve this natural environment TOTAL offers a range of biolubricants adapted to this forestry equipment and which covers all the requirements.

Applications **Forestry operations**
Ground preparation
Agricultural equipment
Chainsaws, brush cutters

Hydraulic oils

BIOHYDRAN SE 46

BIOHYDRAN TMP 32, 46, 68

BIOHYDRAN FG

BIOHYDRAN RS

UTTO transmission (Universal Tractor Transmission Oil)

BIOTRANS FX

Chainsaw chain oils

CHAINBIO 100, 160

Greases

BIOMULTIS SEP 2

BIOMERKAN RS



TOTAL



Forestry and Agriculture Range



Hydraulic oils

BIOHYDRAN SE 46

- Saturated synthetic ester-based **high quality biodegradable hydraulic oil.**
- Can replace mineral oils after draining the system; however, a filter change is recommended.

VDMA 24568 TYP HEES

BIOHYDRAN TMP 32, 46, 68

- **High quality biodegradable synthetic hydraulic oils.**
- For hydraulic installations operating in severe conditions and which require fluids with high anti-wear properties and a high viscosity index, and which are very stable in time.

VDMA 24568 : HEES
ISO 15380 : HEES

BIOHYDRAN FG

- **Vegetable ester-based anti-wear biodegradable hydraulic oil for foodstuffs.**
- Very high viscosity index and excellent anti-wear properties.

USDA H1
VDMA 24568 (HETG)
ISO 15380 (HETG)

BIOHYDRAN RS

- **Pure vegetable oil-based biodegradable hydraulic oil.**
- Can replace mineral oils after draining the system and replacing the filter.

VDMA 24562 Végétale (HETG)

UTTO transmissions

(Universal Tractor Transmission Oil)

BIOTRANS FX

- **Very high quality biodegradable synthetic lubricant for transmissions equipped with wet disk brakes for tractors and forestry equipment.**
- Gearing requiring an API GL-4 extreme pressure lubricant.
- For high or low pressure hydraulic systems equipped with high performance filters.
- Used in all seasons thanks to its high viscosity index: **very fluid when cold and viscous when hot.**
- **BIOTRANS FX consists of oils with special renewable bases, compatible with the elastomers currently used in these components.**

API GL-4 • GIMA M 1143 approved
Meets the automotive manufacturers' requirements

Chainsaw chain oils

CHAINBIO 100, 160

- **Biodegradable oils for chainsaw chains.**
- Recommended for total loss lubrication of fast-moving chains (wood chainsaws, branch cutters...).
- **Environment friendly products** thanks to its complete biodegradability in its application environment.
- **Very good lubricating properties** due to an excellent adhesion.
- Lower oil spray.

Greases

BIOMULTIS SEP 2

- **Lithium / calcium soap-based extreme pressure multi-purpose biodegradable grease,** recommended for high temperature applications and in difficult conditions.
- Wheel bearings, ball bearings, roller bearings, sliding bearings, standard seals, high loadings and all applications subject to impacts, transport, agriculture.
- **Very good lubricating film resistance.**
- **Lower maintenance costs.**
- Good mechanical and thermal stability.

ISO 6743-9 : L-XDDEB2
DIN 51502 : KPE2N-40

BIOMERKAN RS

- **Water resistant calcium soap-based biodegradable grease** developed for total loss applications with environmental constraints. Recommended for low speed sliding and rolling bearings and articulated systems where water is present.
- **Insoluble in water.**
- Easily pumpable, for centralized lubrication systems.
- Wide variety of applications.

ISO 6743-9 : L-XBBEA3
RAL 'Blue Angel' vertrag n° 11273
DIN 51502 : ME3E-20



TOTAL