The sustainable lubricant concept for offshore and marine applications
PANOLIN GREENMARINE for a greener future

- Since 25 years PANOLIN ECLs* help protect the environment
- Today PANOLIN helps you reduce your carbon footprint
- PANOLIN ECLs avoid several tons of CO₂ emissions from your machinery

*ECLs = Environmentally Considerate Lubricants

PANOLIN ECLs – environment considerate

The following PANOLIN ECLs have environment-considerate properties such as:
- Biodegradability: OECD 301 B/F, > 60 %, 28 days/ASTM D 5864
- Biodegradability: OECD 306
- Aquatic toxicity: ISO 10523 (Algae)
  ISO 14669 (Crustacea)
  OECD 201 Algae: EC₅₀, European Eco Label requirement > 100 mg/l
  OECD 202 Daphnia: EC₅₀, European Eco Label requirement > 100 mg/l
  OECD 203 Fish: LC₅₀, European Eco Label requirement > 100 mg/l
  PARCOM Limit Test (Fish)
Our credo

Only economically viable, technically mature and environment-friendly concepts are truly sustainable
PANOLIN lubricants with at least one of the following properties belong to the GREENMARINE concept:

- Biodegradable.
  - Biodegradability and/or negligible aquatic toxicity as confirmed by diverse tests and eco-labels.
- CO₂ reduction thanks to longer oil-change intervals (conservation of resources) and/or to easy-running properties.
  - PANOLIN ECL lubricants also reduce CO₂ emissions by enhancing machine operating efficiency.
- Longer life of synthetic PANOLIN ECLs than comparable mineral oil products.
  - Well documented by field tests (some of which over a 10 to 20-year time span).

Gear oil

**PANOLIN EP GEAR SYNTH**
- Fully synthetic rapidly biodegradable heavy-duty gear oil for thrusters.

Production line control fluid

**PANOLIN ATLANTIS 15**
- Synthetic biodegradable production line control fluid for offshore applications adjusted to the stringent OSPAR ecotox requirements/regulations for the marine environment (CEFAS, Klif, Miliøstyrelsen, SODM).
- Applications: Line control fluid (closed systems), Wellhead/SSSV, actuators, accumulators, tubing hangers, Xmas trees, subsea-completions.
Hydraulic fluids

**PANOLIN HLP SYNTH 15, 22, 32, 46, 68**
Fully synthetic zinc-free rapidly biodegradable hydraulic fluid. Enables much longer oil change intervals «lifetime filling». Applications: amongst others as hydraulic fluid for offshore and marine, steelwork and hydraulic structures.

**PANOLIN ATLANTIS 22, N 32**
Synthetic biodegradable hydraulic fluids for offshore applications adjusted to the stringent OSPAR ecotox requirements/regulations for the marine environment (CEFAS, Klif, SODM).
Applications: Deck cranes, launch and recovery systems, subsea ROV’s, winches, deck ring mains.

Stern tube lubricant

**PANOLIN STELLA MARIS 68, 100, 150, 220**

Compressor lubricant

**COMPRESS SYNTH 46, 68, 100**

Lubricant for cables and sliding parts

**BIOTRACK E 700**
ECL for cables and other sliding parts (loss lubrication) based on renewable ester. Good emergency running properties even under thin-film conditions. Applications: cables, ropes and other sliding parts.
## Stern Tube

- PANOLIN STELLA MARIS
  - ISO VG 68, 100, 150, 220

## Stabilizers/Hydraulics

- PANOLIN ATLANTIS
  - ISO VG 15, 22, N 32
  - ISO VG 15, 22, 32, 46, 68
- PANOLIN HLP SYNTH
  - ISO VG 15, 22, 32, 46, 68

## Thrusters

- PANOLIN EP GEAR SYNTH
  - ISO VG 100, 150

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### IACS (International Association of Classification Societies) – Labels

- **ABS**
  - TYPE APPROVED PRODUCT
  - PANOLIN ATLANTIS, PANOLIN HLP SYNTH

- **GREEN PLUS RINA**
  - PANOLIN ATLANTIS, PANOLIN HLP SYNTH

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### More PANOLIN labels – benchmarking environmental consideration

- **GREENMARINE®**
- **CO₂ Reduction Footprint®**
- **GREENMACHINE®**

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Next to «GREENMARINE», «The Bio Flower», «CO₂ Reduction Footprint» and «GREENMACHINE» are registered trade marks of the PANOLIN Group.
PANOLIN is a Swiss family-owned company founded over sixty years ago, with headquarters in Madetswil/Zurich. The development, production and marketing of PANOLIN lubricants are certified to ISO 9001 and ISO 14001. All main product lines are ABS approved.

PANOLIN is the global leader in long-life environmentally considerate lubricants (ECL). PANOLIN ECLs are well proven worldwide for more than 25 years in machinery by the thousands, with optimal eco-economy under the toughest conditions. And over the last decade PANOLIN has also made its mark in marine engineering, with a special line of lubricants for demanding offshore applications.