CASTROL BIO RANGE HELPS SUPPORT YOUR ENVIRONMENTAL AGENDA AND PROTECT YOUR VESSELS WITHOUT COMPROMISING LUBRICANT PERFORMANCE

WWW.CASTROL.COM/MARINE
REDUCED ENVIRONMENTAL IMPACT. ENHANCED PERFORMANCE. GREATER OVERALL VALUE.

THE PERFORMANCE OF YOUR VESSEL DEPENDS ON THE QUALITY OF ITS LUBRICANTS. THE WORLD’S OCEANS DEPEND ON US TO PROTECT THEM.

That’s why we have developed a comprehensive range of advanced high performance lubricants that protect the world’s oceans while delivering outstanding lubricant performance. Our Bio Range helps you keep your critical equipment operating at maximum efficiency, adding value to your operations and reducing your environmental impact. The Castrol Bio Range can be easily retrofitted to existing equipment with minimal downtime.
PROVEN ADVANTAGES, PROVEN VALUE.

At Castrol Marine, we deliver lubrication technology so advanced it can add real commercial value to fleet operations.

The Castrol VALUE PROVEN stamp is a symbol of the solid trial data and true customer testimonials that demonstrate the value that our products and services can add.

These might be operational advantages such as cleaner-running engines, reduced component wear, improved environmental performance or commercial benefits like reduced maintenance, lubricant costs or improved vessel reliability.
SOLUTIONS DESIGNED AROUND THE INDUSTRY’S NEEDS

Each year, up to 224,000 tons of oil-based lubricants enter the world’s oceans, releasing potentially persistent, bioaccumulative and toxic chemicals into the marine environment.

The marine industry has a responsibility to protect the oceans on which it operates. Many types of lubricants, hydraulic fluids and greases are used in shipping and offshore. These are vital to the safe and reliable operation of equipment, but unfortunately they can often be discharged at sea. Conventional lubricants are a mixture of mineral oil and additives. Most mineral oils degrade slowly and have relatively high toxicity. Many of the functional additives, which may be up to 30% of the total content in normal lubricants are both persistent and toxic towards marine life and some may bioaccumulate, which can lead to toxins building up in the fatty tissue of different species throughout the food chain – becoming concentrated at high levels in marine mammals such as seals, whales and polar bears.
Castrol Bio Range delivers scientifically demonstrable improvements in environmental performance.

The ethos behind Castrol Bio Range is to offer:

- Superior biodegradation in marine waters
- Significantly reduced toxicity to marine organisms
- Enhanced renewability - products contain components derived from renewable resources, minimising their mineral oil content
- Significantly reduced potential for bioaccumulation in marine organisms

*When compared to conventional mineral oils

RESPONSIBILITY WITHOUT COMPROMISE

Castrol Bio Range has been designed to minimise the impact of oil entering the seawater without compromising the product performance as a lubricant. Test programmes have shown that product life, component life and system reliability are in no way compromised by Bio Range’s superior environmental performance. The base oils and additives are performance-tested against national and equipment manufacturers’ standards.

We also ensure compatibility with existing components and lubricants to simplify the conversion process. The Castrol Bio Range of advanced environmentally responsible lubricants provides solutions for applications throughout the vessel where leakage presents a risk.

WHERE DOES LEAKAGE PRESENT A RISK?

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LEGISLATIVE COMPLIANCE

Polar waters are increasingly protected, and some 5000 Marine Protected Areas exist worldwide. Guidelines have been issued by the International Maritime Organization’s Maritime Safety Committee and Marine Environment Protection Committee for ships operating in polar waters. “Stern tube bearings, seals and main propulsion components located outside the hull should not leak pollutants. Non-toxic, biodegradable lubricants are not considered to be pollutants” (Ref. Resolution A.1024(26). Guidelines for Operating in Polar Waters. Section 7.2.3).

In the US, recent updates to the Clean Water Act require all ship-source discharges – including lubricants – to be monitored and reported on a regular basis, urging “owner/operators to use an environmentally preferable lubricant, for applications at risk of operational discharge” (Ref. Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels (VGP). Authorisation to Discharge Under the National Pollutant Discharge Elimination System. Section 2.2.9).

ISO 14001 COMPLIANCE

The use of Castrol Bio Range products, as part of an environmental improvement programme, can assist ship owners in achieving compliance with the requirements of ISO 14001.
CASTROL BIOSTAT STERN TUBE/THRUSTER LUBRICANTS

CASTROL BIOSTAT CONTINUES TO DELIVER EFFECTIVE LUBRICATION WITH UP TO 20% WATER CONTAMINATION, SIGNIFICANTLY MORE THAN CONVENTIONAL MINERAL OILS CAN, AS SHOWN BY THE GRAPH BELOW ON THE RIGHT. THIS ALLOWS CONTINUED OPERATIONS UNDER FAULTY CONDITIONS, HELPING YOU MINIMISE DOWNTIME.

BioStat is available in the following ISO viscosity grades: 68cSt, 100cSt, 150cSt, 220cSt
**ENVIRONMENTAL PERFORMANCE**

Reduced environmental impact when compared to conventional lubricants - demonstrable benefits in the following key environmental performance criteria:

- Superior marine biodegradation
- Significantly reduced bioaccumulation** and toxicity to marine organisms
- Enhanced renewability

**SERVICE BENEFITS**

- Readily emulsifiable; 20% water absorption without compromising lubricating performance
- Better protection of bearings and gear components* to avoid unscheduled inspections/repairs

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* When compared to conventional mineral oils
** Using OSPAR criteria for assessing bioaccumulation potential
BioBar is available in the following ISO viscosity grades: 32cSt, 46cSt, 68cSt, 100cSt

CASTROL BIOBAR
HYDRAULIC FLUIDS

CASTROL BIOBAR LASTS UP TO 50% LONGER THAN CONVENTIONAL MINERAL OILS, REDUCING LUBRICANT CONSUMPTION AND PROVIDING GREATER EQUIPMENT AVAILABILITY IN OPERATIONS, THUS AVOIDING UNNECESSARY MAINTENANCE.
SERVICE BENEFITS

- Lasts up to 50% longer than conventional mineral oils. Proven in long field experience
- High viscosity index and low pour point:
  - Allows start-up at low temperatures
  - Provides thicker lubricating film and therefore enhanced component protection at high temperatures
- Excellent wear and corrosion protection, providing long term machinery protection

ENVIRONMENTAL PERFORMANCE

Reduced environmental impact when compared to conventional hydraulic fluids – demonstrable benefits in the following key environmental performance criteria:

- Superior marine biodegradation
- Significantly reduced bioaccumulation\(^*\) and toxicity to marine organisms
- Enhanced renewability

\(^*\)Using OSPAR criteria for assessing bioaccumulation potential

“HYDRAULIC SYSTEM OPERATED RELIABLY UNDER WIDE RANGE OF CLIMATIC CONDITIONS… PUMPS INSPECTED AND FOUND IN EXCELLENT CONDITION…I NO EXTRA MAINTENANCE NECESSARY…NO DEPOSIT OR SLUDGE DETECTED…CASTROL USED OIL ANALYSIS RESULTS SUPPORTED THE ABOVE FINDINGS AND SHOWED OIL IN PERFECT CONDITION…THE PERFORMANCE OF CASTROL BIOBAR 32 EXCEEDED OUR EXPECTATIONS AND CASTROL BIO RANGE ENVIRONMENTALLY RESPONSIBLE HYDRAULIC FLUIDS ARE NOW OUR LUBRICANTS OF CHOICE ACROSS OUR ENTIRE FLEET.”

Castrol BioBar
Danilo Latkovic
Marine Superintendent
Polarcus
CASTROL BIOTRANS PROVIDES LONG TERM MACHINERY PROTECTION AND LASTS UP TO 100% LONGER THAN CONVENTIONAL MINERAL OILS, CONSIDERABLY REDUCING YOUR OVERALL LUBRICANT CONSUMPTION.
**TECHNICAL PERFORMANCE**

- Long-term machinery protection (up to 25% life extension of gear teeth in wind turbines, operating under high load 24/7)*
- Lasts up to 100% longer than conventional mineral oils
- High viscosity index and lower pour point:
  - Allows start-up at low temperatures
  - Thicker lubricating film at high temperatures
  - Additional anti-wear protection

**ENVIRONMENTAL PERFORMANCE**

Reduced environmental impact when compared to conventional lubricants - demonstrable benefits in the following key environmental performance criteria:
- Superior marine biodegradation
- Significantly reduced bioaccumulation** and toxicity to marine organisms
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** Using OSPAR criteria for assessing bioaccumulation potential
CASTROL BIOTAC EP2 GREASE

CASTROL BIOTAC EP2 PROVIDES EXCELLENT PROTECTION FOR EQUIPMENT EVEN WHEN EXPOSED TO WATER WASH, REDUCING FREQUENCY OF RELUBRICATION.*
TECHNICAL PERFORMANCE

- Water spray-off resistance reduces frequency of application
- Good pumpability at low temperatures (operating temperature range from -35°C to 120°C) facilitates use of pressurised lubrication equipment
- High load carrying capacity and anti-corrosion properties protecting equipment and adding value

ENVIRONMENTAL PERFORMANCE

- Formulated with a base oil that is rapidly biodegradable
- Improved marine biodegradation potential in comparison with conventional greases

CASTROL BIOTAC EP2 - USED FOR:
- IRON ROUGHNECK
- PIPE HANDLING
- HOOK BLOCK
- CROWN BLOCK HOLLANDIA

RESULTS:
- GOOD PENETRATION INTO THE LUBRICANT CHANNEL
- FILM DISTRIBUTED UNIFORMLY AND MAINTAINED FOR A LONG TIME
- GOOD RESULT AT LOW TEMPERATURES
- GOOD RESISTANCE IN HUMID, SALTY SEA
(Product observed for 6 months)
Chief of Rig GSP JUPITER
Mircea Panait
Chief Engineer
Vasile Beldiman

* When compared to conventional mineral oils
ENVIRONMENTALLY RESPONSIBLE SOLUTIONS.
RELIABLE SUPPLY.
CREATED TO MEET YOUR MOST DEMANDING GLOBAL ENVIRONMENTAL CHALLENGES, THE CASTROL BIO RANGE IS AVAILABLE THROUGH OUR PORT NETWORK. TO HELP YOU MANAGE YOUR GLOBAL LUBRICANT NEEDS, SPEAK TO YOUR LOCAL SALES REPRESENTATIVE WHO WILL PROVIDE COMPREHENSIVE INFORMATION ON OUR LUBRICANT SUPPLY FACILITIES, PORT AND BERTH INFORMATION, NOTICE PERIODS, METHODS OF DELIVERY AND VOLUME PARAMETERS AT SPECIFIC PORTS.
To find out more about Castrol Marine lubricants please visit: www.castrol.com/marine

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