



## Castrol BioTac OG

Environmentally responsible open gear lubricant

### Description

OSPAR compliant with no substitutable components. US Vessel General Permit 2013 compliant.

Castrol BioTac OG is a highly tenacious, high performance open gear lubricant developed specifically for the rack and pinion jacking mechanism of self-elevating mobile drilling rigs. This is one of the most arduous environments to which a lubricant can be exposed - not only is it subject to high loads and water washing in the splash zone, it also has to provide protection against corrosion to both the rack and pinion between rig moves. In addition, this is one area of operation where a lubricant is deliberately introduced to the marine environment in the course of normal use. The oceans and seas constitute the major part of our planet, using an environmentally responsible open gear lubricant can minimise environmental impact and help conserve marine biological diversity.

Castrol BioTac OG has been specifically formulated to minimise impact upon the marine environment. All the components of Castrol BioTac OG have been selected for their reduced\* environmental impact, either from the PLONOR\*\* list of chemicals or following a thorough assessment of their biodegradability, potential for bioaccumulation and their toxicity towards marine species. As a result Castrol BioTac OG is OSPAR compliant and contains no substitutable components. It is key that the lubricant performance of BioTac OG is not inferior to those greases currently used on leg racks - any performance deficiencies would prevent its adoption or result in higher consumption, negating its environmental benefits. We have used the performance characteristics of the best available traditional lubricants as the specification for Castrol BioTac OG and have matched these by using new additive technologies. The thickener structure is highly resistant to water washing and provides outstanding corrosion protection, ensuring that the volume of lubricant introduced into the environment is similar to when traditional products are used.

\*In comparison with conventional components used in mineral oil based open gear lubricants

\*\*PLONOR - Pose Little Or No Risk to the Environment (according to the OSPAR definition).

### Application

Rack and pinion gearing on the legs of jack-up drilling rigs where the lubricant is deliberately placed in contact with the marine environment.

Other open gearing in exposed locations where there is a risk of lubricant egress to the marine environment, such as anchor winches or other deck machinery.

### Advantages

Castrol BioTac OG environmentally responsible open gear lubricant has been formulated to provide the following key benefits:

- Formulated to minimise environmental impact in service, particularly in comparison with conventional open gear lubricants.
- OSPAR compliant with no substitutable components.
- All components are either PLONOR or are expected to biodegrade completely in the marine environment, a significant improvement in comparison with conventional open gear lubricants.
- Meets the requirements for being an Environmentally Acceptable Lubricant under the US 2013 Vessel General Permit.
- Contains significantly reduced levels of components with the potential to bioaccumulate in comparison to a conventional open gear lubricant.
- Exceeds US EPA toxicity requirements\*.  
\*As specified in NPDES permit GMG29000 for subsea production control fluids.
- Passes US EPA static sheen test.
- High load carrying performance to minimise wear on pinion teeth and guides.
- Highly resistant to water wash-off to give excellent corrosion protection and to maintain lubricant presence between rig moves.

## Typical Characteristics

Name	Method	Units	BioTac OG
NLGI Classification	ASTM D217	-	0 - 1
Appearance	Visual	-	Soft, beige tacky grease
Base oil kinematic viscosity @ 40°C	ASTM D445	mm <sup>2</sup> /s	650
Base oil kinematic viscosity @ 100°C	ASTM D445	mm <sup>2</sup> /s	51
Penetration, Worked	IP 50 / ISO 2137	0.1 mm	340 - 360
Density	IP 530	g/ml	1.210
Wear Scar Diameter, 1hr @ 40Kg	ASTM D2596	mm	0.742
Weld Load	ASTM D2596	N	>8000
Load Wear Index	ASTM D2596	-	141
EMCOR Corrosion Test - Demineralised Water	IP 220	-	0/0
EMCOR Corrosion Test - 3% NaCl Solution	IP 220	-	0/0
Flow Pressure @ 0°C	DIN 51 805	hPa	max. 125
Flow Pressure @ -10°C	DIN 51 805	hPa	max. 325
Flow Pressure @ -20°C	DIN 51 805	hPa	max. 425

The above figures are typical of those obtained with normal production tolerance and do not constitute a specification.

## Additional Information

Tested and registered according to OSPAR (Oslo and Paris Convention for the Protection of the Marine Environment of the North-East Atlantic) requirements and therefore meets the definition of an Environmentally Acceptable Lubricant under the US Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels (VGP) 2013.

## Care and Handling

Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.

## Storage

All packages should be stored under cover. Where outside storage is unavoidable drums should be laid horizontally to avoid the possible ingress of water and the obliteration of drum markings. Products should not be stored above 60C, exposed to hot sun or freezing conditions.

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