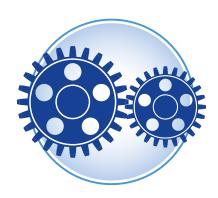


# CARTER BIO 220



High performance biodegradable lubricant for enclosed gears.

## **APPLICATIONS**

Environmentally Acceptable Lubricant (EAL) as per the US 2013 Vessel General Permit (VGP).

**CARTER BIO** is designed to replace mineral gear oils for enclosed gears and bearing lubrication.

#### **FEATURES AND BENEFITS**

**CARTER BIO** is designed for use when incidental spillage in environmentally sensitive areas may occur.

**CARTER BIO** has very good extreme pressure properties and a high scuffing load capacity ensuring good protection of gears operating under high load.

**CARTER BIO** ensures a high corrosion protection, confirmed with sea water contamination.

SPECIFICATIONS AND APPROVALS				
~	US Vessel General Permit Compliant	~	WÄRTSILÄ	
~	HHI thrusters	~	ZF PROPULSION	
~	SCANA			

TECHNICAL DATA : CARTER BIO 220					
CHARACTERISTICS	METHODS	UNITS	TYPICAL VALUES*		
Density at 15°C	ISO 3675	kg/m³	1.000		
Kinematic viscosity at 40°C	ISO 3104	mm²/s	218.5		
Kinematic viscosity at 100°C	ISO 3104	mm²/s	25.4		
Viscosity index	ISO 2909	-	147		
Flash Point (OC)	ISO 2592	°C	284		
Pour Point	ISO 3016	°C	- 39		
FZG A/8, 3/90 failure stage	DIN 51354-2	_	> 13		

<sup>\*</sup>The specifications above are for illustrative purposes and communicated for information only.



CUSTOMER BENEFITS			
~	CARTER BIO combines good lubrication properties and a high oxidation stability.		
~	CARTER BIO provides lubrication advantages at both high and low temperatures compared to mineral oils.		
~	The very high viscosity index and shear stability of <b>CARTER BIO</b> ensures a high lubricating film thickness at high temperatures.		
~	The lower pour point and the low temperature viscosity will ensure a better start up in cold operating environments.		

## **GENERAL RECOMMENDATIONS**

## COMPATIBILITY

Compatibility should be checked.

Please consult your Lubmarine Lubrication Engineer should you have any questions.

## **STORAGE**

This product should be stored under cover in clean, dry conditions and protected from frost.

Recommended storage temperature range is 5°C to 50°C.

Drums that are stored on deck should be raised on pallets and covered to protect from the elements.

Always check regularly for leakage.

## **COMPLIMENTARY PRODUCTS AND SERVICES**

- ✓ DiagomarPlus Laboratory based used oil analysis program.
- ✓ Tech'Care Suite of onboard testing kits.
- **Technical Expertise & Support** Total Lubmarine engineers are on hand at worldwide locations to assist with lubrication concerns.
  - **Lube-On-Ship** Visualize your lube oils needs aboard Total Lubmarine's innovative virtual vessel.



Total Lubmarine / 00-04-2021 / CARTER BIO 220

This lubricant used as recommended and for the application for which it has been designed does not present any particular risk. A material safety data sheet conforming to the regulations in can be obtained via your Total Lubrarine technical advisor or from sdstotalms.total.com





