

# TECHNICAL DATA SHEET – BDQ-700

BIO-LUB CANADA INC.

650, Route 349 Nord, Saint-Alexis-des-Monts (Québec) Canada J0K 1V0

Phone : 819-265-2026, Fax : 819-265-2464

www.bio-lubcanada.com

## Description Product

**BDQ-700** is a hydraulic oil ISO 32 made from vegetable oil. This hydraulic oil is environmentally friendly, can be used for construction machinery, excavation, farming, forestry and other areas where hydraulic oil should be used.

## Features and benefits

**BDQ-700** is a hydraulic oil ISO 32 BIODEGRADABLE made for PREVENTIVE PROTECTION OF ENVIRONMENT in all areas of use especially in high risk areas such as protected water areas. A burst pipe or a similar accident can have serious consequences for wildlife and flora. In such cases, **BDQ-700** helps reduce environmental pollution to an acceptable minimum.

**BDQ-700** is SAFE, because it is composed with mixture biodegradable oil and less toxic additives. The yield levels are still as good compared to a standard hydraulic oil (not biodegradable).

**BDQ-700** is shear stable and maintains his character multigrade during use.

## Packaging

20 liters (Pail)

205 liters (Drum)

## Physical and chemical properties

Appearances and odor : Yellow liquid mild odor

Viscosity at 40°C : 30.87cP

Viscosity at 100°C : 6.9cP

Viscosity index : 184

Flash point : 236°C

Pour point : -40°C

Density : 0,88g/cm<sup>3</sup> at 15°C

Solubility in water : Insoluble

## TECHNICAL DATA SHEET – BDQ-700

BIO-LUB CANADA INC.

650, Route 349 Nord, Saint-Alexis-des-Monts (Québec) Canada J0K 1V0

Phone : 819-265-2026, Fax : 819-265-2464

www.bio-lubcanada.com

Hydraulic oil **BDQ-700, 710** and **720** are ultimately biodegradable<sup>1</sup> vegetable based formulas that replace mineral oil based hydraulic fluids.

These hydraulic fluids are formulated to perform in hydraulic systems that require anti-wear, anti-rust, anti-oxidation, anti-foam, and demulsibility properties. They are highly inhibited against moisture and rusting in both fresh and sea water and pass both A and B sequences of the *ASTM D-665 Turbine oil rust test*. Incorporating specific additives into the formula increases the viscosity index past synthetic levels. Zinc-free additive systems have also been developed that are environmentally friendly and meet or exceed pump requirements.

Hydraulic oils **BDQ-700, 710** and **720** are designed for use in mobile and stationary hydraulic vane, piston and gear-type pumps and have shown to have exceptional anti-wear performance. Very little wear was encountered, 0 to 25 mg in accelerated biobased tests using Dension-5D, Vickers 20VQ, 35VQ-25 (M-2950-S) and V-104C (ASTM D-2882) pump stand tests at pressures and temperatures ranging from 2000 to 3000 psi and from 150°F to 210°F. The anti-wear performance exceeds the requirements of U.S Steel 126 and 127, the load stage 10 in the FZG (DIN51354), DIN 51524 and GM (LS-2). They also meet the requirements for ashless GL-3 gear oil in reduction units gear sets where they meet the viscosity ranges. These hydraulic oils meet and exceed the U.S federal specification AA-59354 as a replacement specification MIL-H-46001D.

The high viscosity index of **BDQ-700, 710** and **720** naturally improves the thermal shear stability of the formula and increase load capacity. With his extremely low volatility increases the flash point and fire safety features in the formula. **BDQ-700, 710** and **720** are formulated to provide seal conditioning for longer seal life and to reduce oil leakage from the system. These fluids should be used in hydraulic system where low toxicity and biodegradability properties are required. Base oils and additives used in these products pass and exceed behaviour safely the criteria of acute toxicity (LC-50). These criteria were adopted by the U.S. Fish and Wildlife Service and U.S. **BDQ-700, 710** and **720** are environment responsible lubricants that are formulated from renewable agricultural plant resources.

<sup>1</sup>Ultimate biodegradation (Pw1) within 28 days in ASTM D-5864 - Aerobic Aquatic Biodegradation of lubricants.

The test data below show that **BDQ-700**, hydraulic oil ISO 32, provide high performance in a wide variety of stationary and transportation equipment that operate in broad ranges of environmental conditions. In equipment operating outside, wear from poor cold temperature pumpability, surge loads, moisture, and dusty environments are more prominent. **BDQ-700** is formulated to improve performance in equipment that require excellent anti-wear, hydrolytic stability and excellent pumping characteristic at low temperature such as -35°C. In addition, the following tests on the hydraulic oil ISO 32, **BDQ-700**.

# TECHNICAL DATA SHEET – BDQ-700

BIO-LUB CANADA INC.  
 650, Route 349 Nord, Saint-Alexis-des-Monts (Québec) Canada J0K 1V0  
 Phone : 819-265-2026, Fax : 819-265-2464  
 www.bio-lubcanada.com

Typical specification	Method	ISO 32	Spec. Requirements
Specific gravity at 15.6°C	ASTM D-287	0.88	Report
Viscosity at 40°C	ASTM D-445	30.87	Note 1
Viscosity at 100°C	ASTM D-445	6.9	Note 1
Viscosity at -15°C, Brookfield	ASTM D-2983	550 cP	Note 1
Viscosity at -25°C, Brookfield	ASTM D-2983	1,200 cP	Note 1
Viscosity at -30°C, MRV TP1	ASTM D-4684	4,500 cP	10W=<60,000
Viscosity at -35°C, MRV TP1	ASTM D-4684	7,500 cP	5W=<60,000
Viscosity index	ASTM D-2270	184	90(min)
Pour point	ASTM D-97	-40°C	Note 1
Flash point (COC)	ASTM D-92	236°C	198°C(min)
Fire point (COC)	ASTM D-92	260°C	218°C(min)
Hydrolitic stability, Copper Wt. Loss (mg)	ASTM D-2619	0.0139	0.2
Copper Appearance		1B	Report
Change in Acide Number		0.16	Report
Water layer		3.0	4
% Insolubles		0.001	Report
Foam Sequence I, II, III (10min)	ASTM D-892	0 Foam	0 Foam
Rust Prevention Distilled Water	ASTM D-665	Pass	Pass
Syn. Sea Water		Pass	Pass
Copper Corrosion Strip 3hr at 100°C	ASTM D-130	1B	D IN 515242 (max)
Rotary Bomb Oxidation, (minutes)	ASTM D-2272	360	USS 120 (min)
Oxidation Stability (Pressure Differential Scanning Calorimeter) min	ASTM D-5483 Modified	70.0(165°C)	Note 2
Neutralization Number, mg KOH/g	ASTM D-974	<0.4	1.5(max)
Swell of Synthetic NBR-L Rubber, % (Avg.) Volume Change (%)	DIN 53538, Part 1	6.0	0 à 12
Shore A Hardness Change (%)		-4	0 à -7
Filterability A-No Water (s) (Avg.)	Denison TP02100 HF-0 Requirement	113	600 (max)
B-2% Water (s) (Avg.)		187	2xA (max)
Demulsibility, ML oil/water/Emulsion	ASTM D-1401	40/40/0 (10 minutes)	40/37/3 (max) (30 minutes)
4 Ball Wear, 1h, 167°F, 1200 RPM, 40 Kg	ASTM D-4172	0.3-0.4	USS 127 0.5 (max)
FZG Tests	DIN 51354	12	US.Steel 10 (min)
<b>Biodegradation Classification</b>	ASTM D-5864	Ultime PW1	Ultimate PW1
<b>Environmentally Friendly</b>	ISO 15380	Yes	
<b>USDA Biobased Tested Environmental Management System</b>	New Carbon ISO 14001 :1996	Yes Yes	meets/exceeds over 50%
<b>Note 1 Viscosity Sufficient for Application Note 2 Not Required</b>			

## **TECHNICAL DATA SHEET – BDQ-700**

BIO-LUB CANADA INC.

650, Route 349 Nord, Saint-Alexis-des-Monts (Québec) Canada J0K 1V0

Phone : 819-265-2026, Fax : 819-265-2464

[www.bio-lubcanada.com](http://www.bio-lubcanada.com)

### **Standard Disclaimer**

To the best knowledge of Bio-Lub Canada inc. and any of its affiliated companies (The Companies), Distributors, Representatives or Agents (Others), the information contained herein is believed to be accurate and reliable. However no liability whatsoever is assumed for the accuracy or completeness of the information contained herein. All materials may present unknown health hazards and should be used with caution. Since actual conditions of use or handling are beyond our control no liability or warranty is expressed, implied or accepted for any loss or damage caused directly or indirectly through the use of this product. Intending users should satisfy themselves by performing appropriate tests as to the suitability of this product for any particular purpose. The sole remedy for non-performance or breach shall be the refund of the purchase price. All other liability is negated and disclaimed. The Companies and Others shall not be liable for incidental or consequential damages. The Companies reserve the right to make changes to the product formulation, technical data and performance specifications without notice to any user or purchaser of the product.

Bio-Lub Canada Inc.

Web-site: [www.bio-lubcanada.com](http://www.bio-lubcanada.com)