

TECHNICAL DATA SHEET – BDQ-730

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-730 is a universal tractor oil (TDH) and other, biodegradable. This oil is used in equipment using a common tank or requiring a single fluid for back deck, transmission, differential and brakes.

Features and benefits

BDQ-730 is an universal tractor oil that is biodegradable vegetable based stocks. This formulation contains special frictional modifiers for the Wet Brake's equipment design, and is compounded with detergent, dispersant, anti-wear, anti-rust, and anti-foam inhibitors.

BDQ-730 is an oil ultimately biodegradable¹, multi-grade lubricant that can be used in agricultural, industrial, and construction equipment and has proven field performance. **BDQ-730** is safe, because it is composed with mixture biodegradable oil and less toxic additives. The yield levels are still as good compared to standard hydraulic oil (not biodegradable). This oil is shear stable and maintains its character multi-grade during use.

BDQ-730 meets or exceeds all of the requirements of John Deere's Hygard (Specification J20-C); Allison C-3, Cat TO-2 and API GL-4, Low-Speed/High Torque.

BDQ-730 meets and exceeds universal tractor specifications for OEMS.

John Deere

J20C, J14A
Quatrol™
J20D

Case International

JIC-145/MS-1210
JIC-185/MS-1204

MS-1205, MS1127, M1129-A

Ford

M2C134-D
M2C86-C, M2C86-B
M2C41-B, M2V48-B
M2C53-A, M2C134-A
M2C134-B, M2C134-C

White Farm

Q-1826
Q-1705, Q-1766, Q-1802

Massey-Ferguson

M1135, M1141
M1110, M1127, M1129-A

Deutz-Allis

Landini
Fiat-Hesston

Kubota

Steiger
Versatile

TRANSMISSION OEM'S

ATD Allison C-4
Caterpillar TO-2

¹Ultimate biodegradation (Pw1) within 28 days in ASTM D-5864 Aerobic Aquatic biodegradation of lubricants.

Packaging

20 liters (Pail)
205 liters (Drum)

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| Test | Typical Results | Specification Limits |
|------------------------------------------|-----------------|----------------------|
| Viscosity at 100°C ASTM D-445 | 10.26 | 9.10 min. |
| Viscosity at 40°C ASTM D-445 | 47.8 | None |
| Viscosity Index ASTM D-2270 | 210 | 140 |
| Shear Stability Orbahn ASTM D-6278 | | |
| Vis. at 100°C (after shear) | 9.38 | 9.10 min. |
| Brookfield Viscosity ASTM D-2983 | | |
| at -20°C | 1,650 | 4,500 max. |
| 5,500 per J. Deere | | |
| at -35°C | 11,150 | 70,000 max. |
| Flash Point, °C | 251 | 200 min. |
| Stable Pour Point, °C | -39 | -37 max. |
| Oxidation Stability JDQ 16 | | |
| Evaporation Loss | 0,65 % | 5.0 % max. |
| Viscosity Increase at 100°C | 5.02 % | 10.0% max. |
| Viscosity Increase at 40°C | 4.0 | ----- |
| Sludge Formation | None | None |
| Additive Separation | None | None |
| Rust Protection JDQ 22 | >100 | 100 hrs. min. |
| Copper Corrosion JDQ 32 | 1A | 1B max. |
| Foaming Characteristics JDQ 33 | | |
| Sequence 1 | 40/0 | 25/0 ml. max. |
| Foam Breaktime | 82 | 30 sec. max. |
| Sequence 2 | 0/0 | 50/ml. max. |
| Foam Breaktime | 0 | 30 sec. max. |
| Sequence 3 | 30/0 | 25/0 max. |
| Foam Breaktime | 0 | 30 sec. max. |
| Water Sensitivity JDQ 19 | | |
| Solids | 0.0 | 0.1% v max. |
| Additive Loss | 0.0 | 15.0% wt. max. |
| Extreme Pressure Properties JDQ 34 | | |
| Timken Abrasion Mass Loss | 0.5 mg. | 1.5 mg. max |
| Timken Ok Load | 73 N | 45 N min. |
| Rubber Compatibility JDQ 9 | | |
| Volume Change | + 1 | 0 à 5% |
| Hardness Change | - 0.5 | 0 à 5 pts |
| Precipitation | None | Trace |
| Rubber Compatibility Reference 69X311111 | | |
| Volume Change | + 2.5 | 0 à 5% |
| Hardness Change | - 1.5 | 0 à 5 pts |
| Precipitation | None | None |
| Oil compatibility JDQ 23 | | |
| Additive Separation | None | None |

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| Test | Typical Results | Specification Limits |
|------------------------------------------------------|------------------|--------------------------------|
| Foaming Characteristics | | |
| Sequence 1 | 0/0 | 25/0 ml. max. |
| Foam Breaktime | 0 | 30 sec. max. |
| Sequence 2 | 0/0 | 50/0 ml. max. |
| Foam Breaktime | 0 | 30 sec. max. |
| Sequence 3 | 0/0 | 25/0 ml. max. |
| Foam Breaktime | 0 | 30 sec. max. |
| Oxidation Stability | | |
| Evaporation Loss | 1.6 | 5.0% max. |
| Viscosity Increase at 100°C | 6.0 | 10.0% max. |
| Viscosity Increase at 40°C | 9.8 | ----- |
| Sludge Formation | None | None |
| Additive Separation | None | None |
| Low Temperature Fluidity JDQ 73/74 | | |
| Cold Soak at - 35°C | 27 secs. | 30.0 sec. max.* |
| Slow Cool | | |
| at - 30 °C | 30 mm en 3 sec. | 30.0 sec. max.* |
| at -35°C flow in 30 sec. | 30 mm en 11 sec. | 10.0 mm min.** |
| *Must flow 30 mm in a maximum of 30 seconds to pass. | | |
| ** Must flow at least 10 mm in 30 seconds to pass. | | |
| JDQ 94 PST Clutch Friction | | |
| Total Cycles | 2,000 | 2,000 |
| Initial Friction Coefficient | 0.077 | 0.15 max. |
| Final Friction Coefficient | 0.105 | 0.08 min. |
| Stall Time (sec.) | 1.77 | 5.0 max. |
| Disk no.1 Wear (mm) | 0.178 | 0.38 max. |
| Disk no.2 Wear (mm) | 0.174 | 0.38 max. |
| Disk no.3 Wear (mm) | 0.254 | 0.38 max. |
| Disk no.4 Wear (mm) | 0.178 | 0.38 max. |
| JDQ 102 Shear Stability | | |
| Viscosity at 100°C | 10.51 | |
| Viscosity at 100°C (Sheared) | 9.38 | |
| % Viscosity Loss | 10.8% | |
| JDQ 95 Spiral Bevel/Final Drive Gear Wear | | |
| Gear Surface Condition | | |
| Pinion | None | No Scoring |
| Ring | None | No Scoring |
| Spiral Bevel Rating | 9 | Scale of 1-10 10 = The best |
| Sun Pinion Wear | | |
| Left Side Average | <0.025 | <0.025 |
| Right Side Average | <0.025 | <0.025 |

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| <u>Test</u> | <u>Typical Results</u> | | <u>Specification Limits</u> | |
|------------------------------------------------------|---------------------------------------------|-----------|------------------------------------------------------|------------|
| JDQ 84 Sundstrand Hydraulic Pump Flow Degradation | 3.9% | | Equal to or better than reference which is – 2.0% | |
| JDQ 96 Brake Torque Variation and Friction | | | | |
| | Computer Results | Torque | SwRI | |
| Cycles | Relative Capacity | Variation | Variation | |
| 1,000 | 293,131 | 44,470 | 559,780 | |
| 10,000 | 308,090 | 36,730 | 424,130 | |
| 20,000 | 310,651 | 36,220 | 421,620 | |
| 30,000 | 312,768 | 42,380 | 506,220 | |
| Total | 1,224,640 | 159,800 | 1,911,750 | |
| Allison C-4 Oxidation Test | | | | |
| Tan Increase | 10.12 | | 7.0 max. | |
| Carbonyl Absorbance | 10.0 | | 0.9 max. | |
| Front Pump Seal | Moderate to Heavy Hardening Light Sludge | | Moderate to Heavy Hardening Light Sludge | |
| Allison C-4Wear Test | | | | |
| Total Weight Loss | 1.4mg | | 15.0 max. | |
| Allison C-4 Paper Clutch Friction Test | | | | |
| | <=5,000 | >5,000 | <=5,000 | >5,000 |
| | Cycles | | Cycles | |
| Slip Time, max | 0.70 | 0.55 | 0.72 | 0.61 |
| Mid-Point Friction Coeff. min. | 0.076 | 0.095 | 0.068 | 0.088 |
| Allison C-4 Graphite Clutch Friction Test | | | | |
| | 1,500 | | 5.500 | |
| | Cycles | | | |
| Slip Time, max. | 0.70 | 0.74 | 0.71 max. | |
| Mid-Point Friction Coeff. min. | | | 0.097 | 0.104 min. |

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Bio-Lub Canada Inc.

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