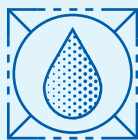




CLARION® Green Bio

OVERVIEW



- Readily biodegradable anti-wear hydraulic fluids formulated with premium high oleic natural esters derived from renewable resources.
- Formulated with zinc-free, ashless additives. Zinc compounds are regulated as priority pollutants under provisions of the Clean Water Act and SARA Title 313.
- Provide protection for demanding hydraulic systems, especially those operating in environmentally sensitive areas.

FEATURES & BENEFITS




- Meet EPA Vessel General Permit (December 2013) requirements for Environmentally Acceptable Lubricants (EAL).
- Non-toxic in acute aquatic toxicity test (LC-50).
- Readily biodegradable.
- Zinc-free, ashless formulation with outstanding rust and corrosion protection.
- Contain inhibitors to minimize foaming and air entrainment.
- Premium anti-wear protection for vane, piston, and gear pumps, motors and other hydraulic components.
- Meet Eaton (formerly Vickers) M-2950-S, I-286-S.


APPLICATIONS



- Recommended for hydraulic system applications operating in environmentally sensitive areas where the use of a zinc-free, ashless, low aquatic toxicity, readily biodegradable fluid is desired.
- Marine — marine vessels, offshore and inshore rigs, tugs, dredges, dock equipment, cranes, pile-drivers, marine construction equipment.
- Forestry — scalpers, excavators, wheel loaders.
- Construction & Mining — bulldozers, graders, backhoes, conveyors, crawlers, hole drillers.
- Oil & Gas Exploration – oil and gas drilling rigs.
- Fluid monitoring through Lubealert CPM Oil Analysis is recommended to maximize service life. Moisture content should be maintained at less than 500 ppm.

• ZINC-FREE
• READILY BIODEGRADABLE 
• MEETS 2013 EPA VGP REQUIREMENTS
• NON-TOXIC PER LC-50 AQUATIC TOXICITY TEST

PROPERTIES**Typical Properties for CLARION Green Bio:**

ISO Grade	32	46	68
Material Code	633580009	633581009	633582009
Gravity, °API ASTM D4052	27.17	23.6	21.52
Flash Point, (COC) °C (°F) ASTM D92	200 (392)	212 (413)	256 (492)
Viscosity ASTM D445			
cSt @ 40°C	34	46	69
cSt @ 100°C	8.1	10.2	13.4
Viscosity Index, ASTM D2270	223	218	200
Pour Point, °C (°F) ASTM D97	-36 (-33)	-30 (-22)	-33 (-27)
Color, ASTM D1500	L0.5	L0.5	L0.5
Copper Corrosion, ASTM D130			
3 hrs @ 100°C	1B	1B	1B
Rust Test, ASTM D665A	Pass	Pass	Pass
Four Ball Wear ASTM D4172			
@ 40 kg, mm	0.31	0.31	0.33
Foam Test ASTM D892			
Seq. I, ml	0-0	0-0	0-0
Seq. II, ml	20-0	20-0	20-0
Seq. III, ml	0-0	0-0	0-0
Total Acid Number ASTM D974			
mg KOH/g	0.26	0.29	0.78
Water Separability ASTM D1401			
@ 130°F	40/40/0/30	40/40/0/30	40/40/0/30
Dielectric Strength ASTM D877			
KV, minimum	35	35	35
RPVOT ASTM D2272 minutes	260	205	110
 Biodegradability			
OECD 301B, %	>60	>60	>60
Vickers 35VQ 25 Pump	—	Pass	—
Vickers V-104C Pump,			
Total Ring & Vane Loss (mg)	—	1.5	—

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Dielectric strength is extremely sensitive to humidity and contamination. Once the containers are opened, the dielectric strength cannot be expected to remain at its original value. Containers should be kept tightly sealed and stored in a dry environment.