

BIOFLO AWS

Overview: BioFlo AWS Hydraulic Fluids are semi-synthetic, readily biodegradable, zinc-free, anti-wear hydraulic oils formulated from renewable basestocks to meet the performance requirements of mobile and industrial hydraulic systems. These high lubricity base oils are paired with environmentally friendly additive technologies to minimize ecological impact. These lubricants offer excellent thermal and oxidative stability, assuring superior service life with minimal viscosity change over a broad range of operating temperatures. BioFlo AWS fluids are suitable for use in all conventional hydraulic systems, especially environmentally sensitive applications.

Specifications, Approvals, Recommendations:

- USDA BioPreferred Program
- Classified as Environmentally Acceptable Lubricants (EAL's) per the EPA's 2013 U.S. Vessel General Permit (VGP). Viscosity grades 32 & 46 only.

Physical Properties	15	22	32	46	68
ISO Grade	15	22	32	46	68
Specific Gravity, ASTM D1298	.90	.87	.87	.87	.90
Viscosity, ASTM D445 @40°C, cSt	15	22	32	46	68
Viscosity, ASTM D445 @100°C, cSt	4	5	7	10	14
Viscosity Index (VI), ASTM D2270	>190	>180	>215	>215	>215
Pour Point, ASTM D97, °F (°C)	-45 (-42)	-30 (-34)	-30 (-34)	-30 (-34)	-30 (-34)
Flash Point, ASTM D92, °F (°C)	>400 (204)	>325 (163)	>325 (163)	>470 (243)	>470 (243)
FZG Load Stage, DIN 51354	11	11	11	11	11
Copper Corrosion, ASTM D4048	1A	1A	1A	1A	1A
Rust Test, ASTM D665, A & B	PASS	PASS	PASS	PASS	PASS
4 Ball Wear, ASTM D4172, Scar, mm	<0.50	<0.50	<0.50	<0.50	<0.50
Dielectric Breakdown Volt, ASTM D877, kV	>45	>45	>45	>45	>45
Environmental Stewardship: Meets EPA requirements to be classified as an EAL per the 2013 VGP					
Readily Biodegradable (meaning>60%) OECD 301B, %			PASS >76	PASS >78	
Minimally Toxic OECD 201 - Algae (EC 50), 72 hr, mg/L OECD 202 - Daphnia (EC 50), 48 hr, mg/L OECD 203 - Fish (LC 50), 96 hr, mg/L			PASS >20k mg/L >5k mg/L >34k mg/L	PASS >32k mg/L >10k mg/L >40k mg/L	
Not Bioaccumulative* [* Calculated value as per EPA standard]			PASS	PASS	
Additional Environmental Features and Characteristics					
Bio-based Content, ASTM D6866, %			>86	>86	

Applications & Industries: Any industry (construction, refuse, mining, dredging, marine, agriculture, oil & gas, plant operations, etc.) utilizing mobile or stationary hydraulically powered equipment, especially hydraulic systems where a release into the environment is possible or where a leak or spill could reach a waste stream.

