

**Overview** ▶ BioFlo AWS Hydraulic Fluids are semi-synthetic, readily biodegradable, zinc-free, anti-wear hydraulic oils formulated from renewable base stocks 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.



BioFlo AWS fluids are formulated featuring our proprietary **eSyn™** technology and is available in ISO 15, 22, 32, 46, and 68.

## Typical Properties ▼

Property	ASTM Test Method	AWS 15	AWS 22	AWS 32	AWS 46	AWS 68
Product Code		BF2100115	BF2100122	BF2100132	BF2100146	BF2100168
ISO Grade		15	22	32	46	68
Specific Gravity	ASTM D1298	.90	.87	.87	.87	.90
Viscosity, @40°C, cSt	ASTM D445	15	22	32	46	68
Viscosity, @100°C, cSt	ASTM D445	4	5	7	10	14
Viscosity Index (VI)	ASTM D2270	>190	>180	>215	>215	>215
Pour Point, °F (°C)	ASTM D97	-45 (-42)	-30 (-34)	-30 (-34)	-30 (-34)	-30 (-34)
Flash Point, °F (°C)	ASTM D92	>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, A&B	ASTM D665	Pass	Pass	Pass	Pass	Pass
4 Ball Wear, Scar, mm	ASTM D4172	<0.50	<0.50	<0.50	<0.50	<0.50
Dielectric Breakdown Volt, kV	ASTM D877	>45	>45	>45	>45	>45
Readily Biodegradable (meaning>60%)				Pass	Pass	Pass
Biodegradability, %	OECD 301B			>76	>78	>70
Minimally Toxic				Pass	Pass	Pass
Algae (EC 50), 72 hr, mg/L	OECD 201			>20k mg/L	>32k mg/L	> 26k mg/L
Daphnia (EC 50), 48 hr, mg/L	OECD 202			>5k mg/L	>10k mg/L	> 8k mg/L
Fish (LC 50), 96 hr, mg/L	OECD 203			>34k mg/L	>40k mg/L	36k mg/L
Not Bioaccumulative, (Calculated value as per EPA standard)				Pass	Pass	Pass
Bio-based Content, %	ASTM D6866			>86	>86	>80

## Key Attributes / Approvals ▶



- USDA BioPreferred Program
- Classified as Environmentally Acceptable Lubricants (EAL's) as per the EPA's guidance document that defines standards for Environmentally Acceptable Lubricants (EPA 800-R-11- 002) and as required by EPA's 2013 U.S. Vessel General Permit (VGP). Viscosity grades 32 & 46 only.
- Zinc Free
- Meets Eaton Brochure 03-401-2010 (Dry ASTM D943)
- Meets ISO 15380 HEES (Dry ISO 4263-3)
- Meets DIN 51524 Part 1, 2 & 3 (Dry ISO 4263-1)

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.

See the Safety Data Sheet (SDS) for emergency, proper handling and disposal information.

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