

## PRODUCT NAME

**BioFlo AWS – Synthetic Blend Anti-Wear Hydraulic Fluid, ISO Grade 15, 22, 32, 46 (non-sheening), 68**

## MANUFACTURER

BioBlend Renewable Resources, LLC.  
1500 Jarvis Ave.  
Elk Grove Village IL, 60007  
888.BIO.BLND (888.246.2563)

## DESCRIPTION

**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. High lubricity base oils are paired with environmentally responsible 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.

## FEATURES AND BENEFITS

- Zinc free – reduced risk of corrosion of certain metals. Safer for use around bodies of water
- Readily biodegradable
- High viscosity index (VI) - excellent thermal and oxidative stability
- High lubricity
- Environmentally Acceptable Lubricant's (EAL's) as per EPA 2013 U.S. Vessel General Permit (VGP) guidelines
- Wider operating temperature range
- Excellent solvency – reduces deposits and varnish
- BioFlo AWS 46 is non-sheening

## PACKAGING

- 5 Gal Pails
- 55 Gal Drums
- 275 Gal Totes

## SUITABLE USES

Recommended for use in vane, gear and piston pump hydraulic systems that must meet the following approval specifications:

- 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 4253-1)

## COMPATIBILITY

### Equipment Compatibility

- Any mobile or stationary equipment calling for anti-wear hydraulic oil

### Lubricant Compatibility

- Compatible with most other types of lubricants (for specific applications and lubricants please contact your BioBlend representative)

### Seal & Paint Compatibility

- Compatible with most seals except seals with less than 30% Buna
- No known paint compatibility issues

## STORAGE AND SHELF LIFE

**Storage** - Keep in a cool, dry and well-ventilated place. Store in a properly labelled, original container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. To help maintain product quality, do not store in heat or direct sunlight.

**Shelf Life** - Product shelf life is 24 months from date of packaging. In some cases product can last longer, please contact your BioBlend representative for proper testing and confirmation instructions.

## CAUTIONS

Ensure adequate ventilation. Do not breathe vapor/dust. Use personal protective equipment and avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. See the safety data sheet (SDS) for emergency, proper handling and disposal information.

## APPLICATION

- Follow recommendations provided in your equipment owner's manual
- Follow your organization's manuals and/or best practices for preparation, cleaning, conversion, application, and ongoing maintenance practices
- If you have further questions, please contact BioBlend Tech Services by filling out the contact us form on **bioblend.com**

## AVAILABILITY

Worldwide.

## TECHNICAL SERVICES

For additional information including the safety data sheet (SDS), frequently asked questions, and glossary please visit [bioblend.com](http://bioblend.com).

- USDA BioPreferred – 90% biobased (68)
- 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)

## APPROVALS AND CERTIFICATIONS

## TYPICAL PROPERTIES

Property	ASTM Test Method	15	22	32	46	68
Product Code		BF2100115	BF2100122	BF2100132	BF2100146	BF100168
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

The values quoted above are typical of normal production. They do not constitute a specification.

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