

## PRODUCT NAME

**BioFlo HFDU – Biobased Fire Resistant Hydraulic Fluid**

## MANUFACTURER

BioBlend Renewable Resources, LLC.  
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Elk Grove Village IL, 60007  
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## DESCRIPTION

BioFlo Fire Resistant HFDU is an approved Factory Mutual (FM) hydraulic fluid made from premium quality, readily biodegradable natural esters. HFDU is an excellent anti-wear hydraulic fluid for use in all applications requiring an FM approved fire resistant fluid. In addition to high performance, the product also provides excellent environmental performance due to its low toxicity additives and biobased base oil. HFDU is compatible with most mineral oils and polyolester-type hydraulic fluids. For phosphate esters, please contact your BioBlend rep. HFDU is not compatible with water containing fluids.

## FEATURES AND BENEFITS

- High performing, anti-wear hydraulic fluid for use in all applications
- High flash point for combustion resistance and low degree of evaporation
- Formulated with premium quality renewable and sustainable natural ester base stocks
- Minimally toxic - safer to use and less harmful to skin
- Naturally high viscosity index for stability in a wide temperature range
- Formulated with Zinc free, ashless antiwear additive technologies
- Readily biodegradable ( $\geq 60\%$  OECD 301A-F/ASTM D7373 testing) within 28 days, petroleum products biodegrade only 15-35%

## PACKAGING

- 5 Gallon Pails
- 55 Gallon Drums
- 275 Gallon Totes

## SUITABLE USES

Any industry (foundries, steel mills, construction, mining, marine, oil & gas, plant operations, etc.) utilizing mobile or stationary hydraulically powered equipment that requires a Factory Mutual (FM) approved hydraulic fluid. Also suitable for those

hydraulic systems where a release into the environment is possible or where a leak or spill could reach a waste stream.

## LIMITATIONS

Not compatible with water containing fluids.

## 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. Intentional misuse by concentrating and inhaling the product can be harmful or fatal.

## APPLICATIONS

- Follow recommendations provided in your equipment's 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](http://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).

## APPROVALS AND CERTIFICATIONS

- Factory Mutual FM Standard 6930 HFDU
- USDA BioPreferred – 96% Biobased Content
- Classified as Environmentally Acceptable Lubricants (EAL's) as per the guidance document that defines standards for

Environmentally Acceptable Lubricants (EPA 800-R-11-002) and as required by EPA's 2013 US Vessel General Permit (VGP)

## TYPICAL PROPERTIES

Property	ASTM Test Method	HFDU 46	HFDU 68
Product Code		BF2200146	BF2200168
ISO Grade		46	68
Specific Gravity	ASTM D1298	0.91	0.91
Viscosity @40°C, cSt	ASTM D445	46	68
Viscosity @100°C, cSt	ASTM D445	10	12
Viscosity Index (VI)	ASTM D2270	>200	>200
Pour Point °F (°C)	ASTM D97	-13 (-25)	-13 (-25)
Flash Point °F (°C)	ASTM D92	600 (315)	600 (315)
Fire Point °F (°C)	ASTM D92	650 (343)	650 (343)
Foam Test	ASTM D892	41/39/1	41/39/1
Gear Lubrication, FZG Load Stage	DIN 51354-2	>11	>11
Corrosion Protection	ASTM D665A	Pass	Pass
Readily Biodegradable (meaning>60%)		Pass	Pass
Biodegradability	OECD 301B	>70	>70
Minimally Toxic		Pass	Pass
Algae (EC 50), 72 hr, mg/L	OECD 201	>17,000	>17,000
Daphnia (EC 50), 48 hr, mg/L	OECD 202	>6,400	>7,700
Fish (LC 50), 96 hr, mg/L	OECD 203	>12,000	>27,000
Not Bioaccumulative (Calculated value as per EPA standard)		Pass	Pass
Bio-based Content %	ASTM D6866	>95	>95

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

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