## GB UNIPOWER® HFDU 46 & 68

Fire Resistant Biodegradable, Synthetic Hydraulic Fluids, class HFD-U.

## APPLICATIONS

GB UNIPOWER® HFDU 46 & 68 have been specifically formulated to replace conventional mineral oil-based hydraulic fluids where fire hazards and environmentally sensitive applications exist.

GB UNIPOWER® HFDU 46 & 68 do not contain any mineral oil, phosphate ester or water as they are based on the highest quality synthetic esters and enhanced additive systems to achieve excellent hydraulic fluid performance. They can be used with hydraulic components from all major manufacturers.

## PERFORMANCE FEATURES

GB UNIPOWER® HFDU 46 & 68 have been developed for use where either fire hazards or environmental hazards exist and offer the following features:

- Excellent fire resistance, including result in hot manifold ignition test
- Easily biodegradable
- Extremely high flash point and auto ignition temperature
- Non-toxic
- Excellent corrosion protection
- Excellent oxidation stability
- Lubrication level of premium, anti-wear hydraulic oils

## COMPATIBILITY

### Elastomers

GB UNIPOWER® HFDU 46 & 68 are compatible for use with most common elastomers applied in hydraulic systems. Elastomers do not usually have to be replaced when a system is being changed from another fluid type to GB UNIPOWER® HFDU 46 & 68. Incompatible with ethylene propylene rubber and neoprene.

### Fluids

GB UNIPOWER® HFDU 46 & 68 are miscible with mineral, polyolester and phosphoric ester based fluids, however when converting a system to GB UNIPOWER® HFDU 46 & 68, residues of other fluids should be removed, to prevent the biodegradability and fire resistancy of the fluid being affected. A system flush of GB UNIPOWER® HFDU 46 & 68 with the minimum quantity necessary to operate the hydraulic system is recommended. After approximately 2 to 3 days of operation, the system should be drained and cleaned again, then refilled with fresh GB UNIPOWER® HFDU 46 & 68.
GB UNIPOWER® HFDU 46 & 68 are not compatible with water-containing fluids.

Cont'd.../…

GB LUBRICANTS
Albany Road Gateshead NE8 3BP
Tel: 0191 490 4312
Fax: 0191 477 9544
e-mail: gblsales@gblubricants.co.uk
www.gblubricants.co.uk
A division of Goodall Bates & Todd Ltd

**Metals**
GB UNIPOWER® HFDU 46 & 68 are compatible with iron and steel alloys and most non-ferrous metals and their alloys. They are not compatible with lead, cadmium, zinc and alloys containing high levels of these metals; however suitable substitutes for these materials are available and should be used.

**Paints and Coatings**
GB UNIPOWER® HFDU 46 & 68 are compatible with multi-component epoxy coatings but are not compatible with zinc-based coatings. Specific advice on coating and applications should be obtained from coating manufacturers.

## CHARACTERISTICS

| TEST | METHOD | TYPICAL PHYSICAL CHARACTERISTICS | |
|---|---|---|---|
| **ISO** | | **46** | **68** |
| Appearance | - | Yellow – brownish | Yellow – brownish |
| Kinematic viscosity @ 20°C | DIN 51562 | 117 cSt | 158 cSt |
| @ 40°C | | 49 cSt | 65 cSt |
| @ 50°C | | 33 cSt | 45 cSt |
| Viscosity Index | ISO 2909 | 185 | 185 |
| Density @ 20°C | DIN 51757 | 0.916 g/cm$^3$ | 0.928 g/cm$^3$ |
| Acid number | DIN 51558 | 1.5 mg KOH/g | 1.5 mg KOH/g |
| Pour point | ISO 3016 | -25°C | -32°C |
| Foam test | ASTM D892 | <30 / 0 ml | <30 / 0 ml |
| Corrosion protection on copper | DIN 51759 | No corrosion | No corrosion |
| Corrosion protection on steel | DIN 51585 | No corrosion | No corrosion |
| Flash point | EN ISO 2592 | 280°C | 290°C |
| Fire point | EN ISO 2592 | 335°C | 375°C |
| Auto ignition temperature | - | 430°C | 490°C |
| Air separation ability @ 50°C | DIN51381 | <5 min | <5 min |
| Vane Pump test V 105 C (140 bar) | (wear after 250h) | 7mg | 9mg |
| Water content | ASTM D4928 | <0.05% | <0.05% |
| Four ball machine test 1h/400 N | Wear diameter | 0.36mm | 0.34mm |
| FZG Test A/8.3/90 wear rate | DIN 51354 part 2 | 12 | 12 |

## STORAGE AND HANDLING

GB UNIPOWER® HFDU 46 & 68 should be stored under cover to avoid water collecting in the rim of upturned barrels.

Further information on GB UNIPOWER® HFDU 46 & 68 can be obtained by referring to the corresponding Safety Data Sheet.

***The Company policy is to ensure that a range of products is supplied which complies with the latest specifications and codes within the relevant industry. As part of this development process, we therefore reserve the right to amend formulations without prior notice.***