

Balmerol® Protomac Hydralube Series (HFDU)

Fire Resistant Hydraulic Fluid

Technical Data Sheet

Product Description:

Balmerol Protomac Hydralube (HFDU) is a bio-degradable, environmental friendly, synthetic fatty ester based hydraulic fluid which has excellent fire resistance property and special affinity to metal surfaces operating under boundary lubrication condition. Balmerol Protomac Hydralube (HFDU) has also been carefully formulated to provide excellent anti-wear, anti-corrosion protection and has low ash, high flash point and high viscosity index than conventional mineral based hydraulic fluids. Balmerol Protomac Hydralube (HFDU) is used in applications where there is a risk of fire due to leakage or spillage of hydraulic fluid from the equipment.

Features & Benefits:

Balmerol Protomac Hydralube (HFDU) provides the following benefits:

- Good anti-wear property, lower equipment wear and better equipment protection
- High thermo-oxidation stability, longer ODI
- Low sludge formation, better performance of filters and control valves
- Bio-degradable, non – toxic and environmentally friendly

Balmerol Protomac Hydralube 68 (HFDU) carries DGMS (Directorate General of Mines Safety) approval.

Applications / Recommendations:

Balmerol Protomac Hydralube (HFDU) is recommended for applications where there is a risk of fire due to leakage or spillage of hydraulic fluid from the equipment and requires HFDU type oil.

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Typical Properties:

Balmerol Protomac Hydralube Series (HFDU)		
Properties	Protomac Hydralube 46	Protomac Hydralube 68
Colour & Appearance	Yellowish Transperant Liquid	Yellowish Transperant Liquid
Fire Resistance Characteristics, IS: 7895 - 1975	Pass Test A, B and C	Pass Test A, B and C
Viscosity, ASTM D 445		
cst @ 40°C	48.4	62.9
cst @ 100°C	9.7	11.8
Density @ 15°C g/ ml, ASTM D 4052	0.915	0.932
Pour Point, °C, ASTM D 97	-36	-24
Flash Point, °C, ASTM D 92	270 minimum	270 minimum
Fire Point, °C, COC, ASTM D 92	350	360
Auto Ignition Temp, °C, IS 1448 - P:87	416	458
Rust Characteristics, Method A, IS 1448 - P: 96	Pass	Pass
Air Release Property - minutes, ASTM D 1401	6	7.9
Foaming Tendency/ Stability - ml/ml, ASTM D 892		
Sequence I	20/0	30/0
Sequence II	20/0	20/0
Sequence III	20/0	30/0
Neutralization No, TAN mg KOH/ gm, ASTM D 974	1.02	1.22
Water Content, Karl Fisher Method, ASTM D 4928	Nil	Nil
Demulsibility - minutes (40-40-0), ASTM D 1401	30	25
Biodegradability,% , ASTM D 5864-05	90	90

Health and Safety:

Balmerol Protomac Hydralube (HFDU) is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet (MSDS) are followed. For MSDS please contact your local Balmer Lawrie Marketing / Technical Service team.

For Further Information, contact:

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