

HFDU酯型难燃液压油

● 性能概述

迈斯拓HFDU酯型难燃液压油是以三羟基甲基丙烷与饱和混合脂肪酸酯化所得的基础油，添加抗氧化剂、抗磨剂、油性剂、防锈剂、消泡剂等多种功能剂调制而成的脂肪酸酯抗燃液压油。具有高闪点和自燃点：在遇火时不会燃烧，提供高级别的防火保护。安全使用：适用于高温或明火环境，避免火灾事故。高温性能：能够在高温下保持性能，适用于高温工作环境。稳定粘度：在温度变化下保持稳定的粘度。抗泡性减少泡沫生成：提高润滑效果，防止泡沫影响设备运行。保持性能稳定：确保液压油在各种工况下发挥最佳性能。



● 产品特点

01

优异的抗燃性：由于其合成酯基础，在遇火时不会燃烧，提供了高级别的防火保护。

02

高热稳定性：能够在高温下保持性能，适用于高温工作环境。

03

良好的润滑性：含有抗磨剂，提供良好的润滑效果，减少设备磨损。

04

高粘度指数：在温度变化下保持稳定的粘度，适合在宽温度范围内使用。

05

良好的相容性：与大多数液压系统材料和密封件相容，包括软管和密封材料。

06

可生物降解性：对环境友好，可生物降解，减少环境污染。

● 应用场景

广泛应用于钢铁、煤矿、船舶、航空、核电及环保工程等对防火和环境友好性要求较高的液压系统中，尤其适用于高温、高压或易燃易爆的工作环境。



HFDU酯型难燃液压油性能指标

项目	质量指标	试验方法
粘度等级 (GB/T 3141)	46	68
运动粘度 (40℃) / (mm ² /s)	41.4~50.6	61.2~74.8
外观	透明	目测
水分 (质量分数) / %	不大于 0.1	GB/T 0246
倾点 / °C	小于等于 -30	GB/T 3535
机械杂质	无	GB/T 511
密度 (20℃) / (kg/m ³)	小于 950	SG/T 0604
酸值 (以KOH计) / (mg/g)	小于等于 1	GB/T 4945
空气释放值 (50℃), min	不大于 8	10
燃点 / °C	不低于 330	GB/T 3536
泡沫特性 (泡沫倾向性/泡沫稳定性) / (mL/mL)		
25℃	不大于 150/10	GB/T 12579
50℃	不大于 75/10	
25℃	不大于 150/10	
液相腐蚀 (24h)	无锈	GB/T 11143
铜片腐蚀 (100℃, 3h) / 级	不大于 1b	GB/T 5096
旋转氧弹 (150℃) min	不小于 100	SH/T 0793
橡胶相容性 (60℃/168h)		
丁腈橡胶(NBR 1)		GB/T 14832
体积变化率 / %	不大于 7	
硬度变化	不小于/不大于 -7/+2	
拉伸强度变化率 / %	报告	
扯断伸长率变化率 / %	报告	
闪点 (开口) / °C	300	GB/T 3536
FZG齿轮实验 (A/8.3/90) / 失效级	不小于 11	GB/T 19936.1
叶片泵实验 (100h,总失重) / mg	不大于 50	SH/T 0307
粘度指数	大于等于 180	GB/T 1995
羟值 mgKOH/g	小于等于 15	GB/T 7383
碘值 g/100g	75~95	GB/T 5532



HFDU Ester-type Flame-Retardant Hydraulic Oil

● Performance Overview

Maxtop HFDU ester-type fire-retardant hydraulic oil is a fatty acid ester fire-retardant hydraulic oil formulated with base oil obtained by esterification of trimethylolpropane and saturated mixed fatty acids, and with the addition of antioxidants, anti-wear agents, oiliness agents, rust inhibitors, defoamers, and other functional agents. It has a high flash point and auto-ignition point: it will not burn when exposed to fire, providing a high level of fire protection.



● Features

01

Excellent flame resistance: Due to its synthetic ester base, HFDU will not burn when exposed to fire, providing a high level of fire protection.

02

High thermal stability: Able to maintain performance at high temperatures, suitable for high temperature working environments.

03

Good lubricity: Contains anti-wear agents, provides good lubrication effect and reduces equipment wear.

04

High viscosity index: Maintains stable viscosity under temperature changes, suitable for use in a wide temperature range.

05

Good compatibility: Compatible with most hydraulic system materials and seals, including hoses and sealing materials.

06

Long service life: good anti-oxidation and chemical stability, long service life, and reduced oil change frequency.

● Application Scenario

It is widely applied in hydraulic systems with high requirements for fire prevention and environmental friendliness in industries such as steel, coal mines, ships, aviation, nuclear power and environmental protection projects, especially suitable for working environments with high temperatures, high pressures or flammable and explosive properties.

HFDU Ester-type Flame-Retardant Hydraulic Oil Performance Indicators

Project	Quality indicators	
Viscosity grade (GB/T 3141)	46	68
Kinematic viscosity (40°C)/(mm ² /s)	41.4~50.6	61.2~74.8
Appearance	"Transparent"	
Moisture (mass fraction) /% shall not be greater than	0.1	
Pour point /°C is less than or equal to	- 30	
Mechanical impurities	no	
Density (at 20°C)/(kg/m ³) is less than	950	
The acid value (calculated as KOH)/(mg/g) is less than or equal to	0.5	
Air release value (50°C), min shall not be greater than	8	10
The flash point /°C shall not be lower than	330	
Foam characteristics (foam tendency/foam stability)/(mL/mL)		
25°C shall not exceed	150/10	
50°C shall not exceed	75/10	
25°C shall not exceed	150/10	
Liquid phase corrosion (24h)	Rust-free	
Copper sheet corrosion (100°C, 3h)/grade shall not be greater than	1b	
The rotating oxygen bomb (150°C) min shall not be less than	100	
Rubber compatibility (60°C/168h)		
Nitrile rubber (NBR 1)		
The rate of volume change /% is not greater than	7	
The hardness variation is not less than/not greater than	7 / + 2	
Rate of change of tensile strength /%	Report	
Rate of change in elongation at break /%	Report	
Flash point (open) /°C	300	
FZG gear test (A/8.3/90)/Failure stage is not less than	11	
The impeller pump test (100h, total weight loss) /mg shall not be greater than	50	
Viscosity index greater than or equal to	180	
The hydroxyl value mgKOH/g is less than or equal to	15	
Iodine value: g/100g	75~95	