

Shell EcoSafe EHC S3 DU

Fire-resistant and readily biodegradable hydraulic fluids

**SHELL
LUBRICANT SOLUTIONS**



DESCRIPTION

Shell EcoSafe EHC S3 DU, formerly EcoSafe EHC, is a synthetic fluid formulated for electro-hydraulic control (EHC) valve service in steam and gas turbines, and other fossil-fuel power station applications, including high-pressure systems and systems with servo valves.

Formulated with high viscosity index, polyalkylene glycol (PAG) base stocks coupled with a nonmetallic additive package, Shell EcoSafe EHC S3 DU, formerly EcoSafe EHC, provides the properties demanded by today's high-performance hydraulic systems and is FM global approved. The fluids in the range meet or exceed pump performance requirements, even at the highest operating pressures, and have excellent lubricity for outstanding pump life and superior shear stability.

Shell EcoSafe EHC S3 DU is resistant to oxidative and thermal degradation and will not degrade to form varnish or sludge. This contributes to long-term system cleanliness, thus extending maintenance intervals and overall service life. The fluids are hydrolytically stable, thereby minimizing fluid degradation and the acid formation that can damage and eventually destroy hydraulic pumps. The fluids have a stage 12 rating in the FZG gear test, which demonstrates a high level of protection against wear and scuffing. In addition, the high dielectric properties of Shell EcoSafe EHC S3 DU eliminate electrochemical erosion of EHC servo valves.

Shell EcoSafe EHC S3 DU is classified as an HFDU type fire resistant hydraulic fluid for use in industrial equipment operating in areas subject to fire hazard. It has a high ignition temperature and heat release and a lower flammability than mineral oils.

With proper flushing and condition monitoring, systems can be converted to Shell EcoSafe EHC S3 DU from phosphate-ester and polyol-ester-based fluids. Although Shell EcoSafe EHC S3 DU is compatible with many different types of fluids, to ensure proper system performance, thorough cleaning and flushing of hydraulic systems during conversions are recommended. Shell EcoSafe EHC S3 DU is compatible with commonly used seals, hoses and metals.



SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

Shell EcoSafe EHC S3 DU fluids are stable, noncorrosive, high-flash-point materials that are compatible with nearly all the commonly used materials in standard hydraulic systems.

Shell EcoSafe EHC S3 DU is biodegradable by greater than 60% after 28 days in the OECD 301B Carbon dioxide evolution test.



TYPICAL PHYSICAL CHARACTERISTICS

PROPERTIES			
	Method	Shell EcoSafe EHC S3 DU 46	Shell EcoSafe EHC S3 DU 68
ISO viscosity grade	ISO 3448	46	68
Kinematic viscosity at 40°C, mm ² /s	ISO 3104/ASTM D445	50.0	68.0
Kinematic viscosity at 100°C, mm ² /s	ISO 3104/ASTM D445	9.5	12.3
Viscosity index	ISO 2909/ASTM D2270	178	181
Density at 15°C, g/cm ³	ASTM D1298	0.990	0.993
Flash point (Cleveland open cup), °C	ISO 2592/ASTM D 92	279	281
Fire point (Cleveland open cup), °C	ISO 2592/ASTM D 92	315	319
Autoignition temperature, °C	ASTM E659	388	394
Pour point, °C	ISO 3016/ASTM D97	-45	-42
FZG scuffing (A/8.3/90), failure load stage	ISO 14635-1	12	12

CONTACT US

For more information, please contact your Shell Lubricant Solutions representative or visit shell.us/ecosafe.

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