



Trusted for Generations

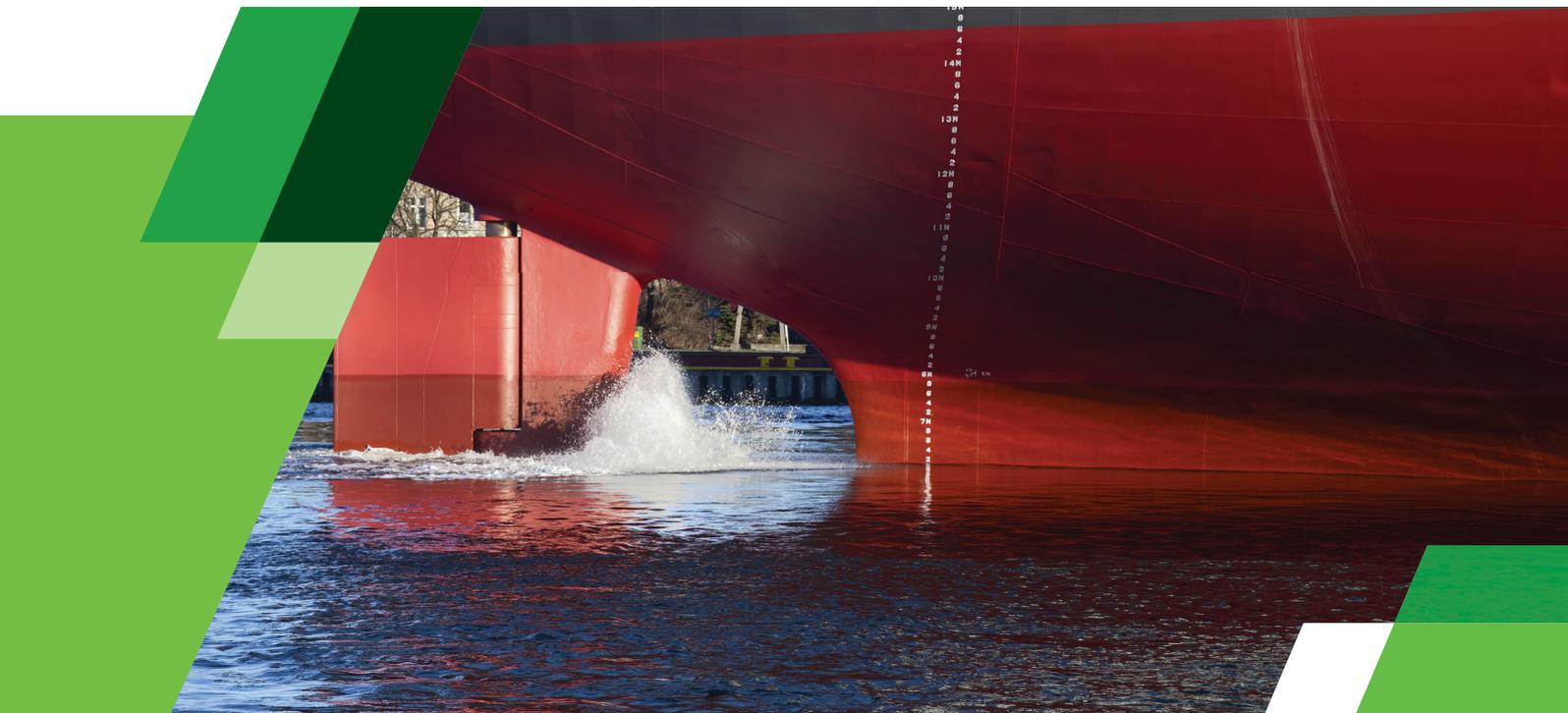


ECOSURE: REAL Performance

Environmentally Acceptable Hydraulic Fluids
delivering superior fluid life and oxidation resistance

- Exceeds the requirements of ISO 15380
- Extended fluid life
- Superior extreme temperature performance
- ISO 22, 32, 46, 68 & 100

For CPP's, stabilisers, ramps, deck equipment
and some thrusters



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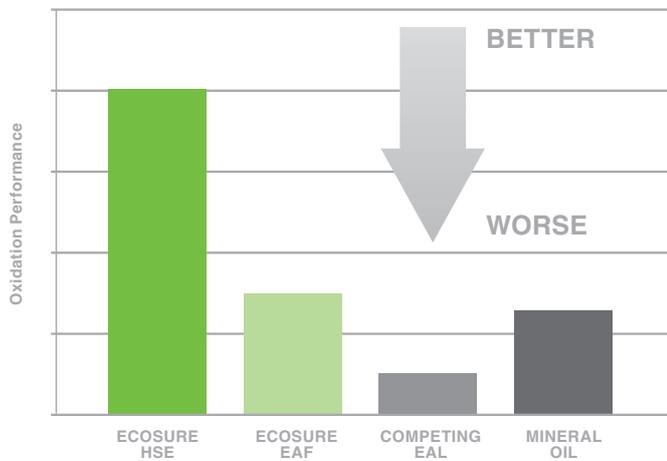
Accredited to the ISO 9001
Quality Standard and the
ISO 14001 Environmental
Management Standard



FM 01851 EMS 40717

Environmentally Acceptable Hydraulic Fluids delivering superior oxidation resistance and fluid life

FLUID LIFETIME



ECOSURE is a range of biodegradable, high performance and anti-wear hydraulic fluids. Available in ISO 22, 32, 46, 68 and 100 viscosities. These fluids use state-of-the-art ashless, zinc-free additive technology.

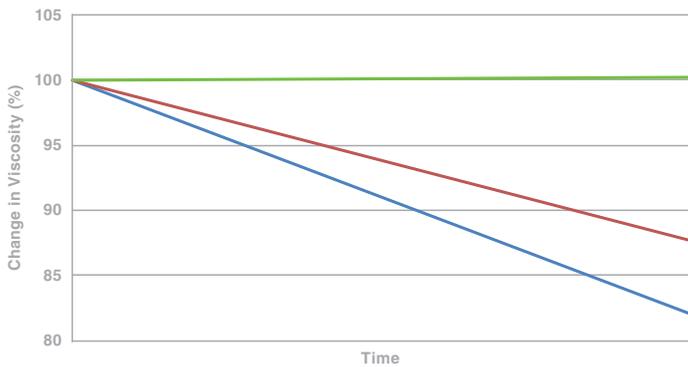
ECOSURE HSE is a high performance, VGP compliant hydraulic fluid intended for heavy duty use.

ECOSURE EAF is a VGP compliant hydraulic fluid for use with most deck equipment.

ECOSURE has a wide range of OEM approvals, including Eaton and Parker Hannifin Denison.

The ECOSURE range has an excellent viscosity temperature profile and unlike many high VI mineral hydraulic fluids, ECOSURE does not use viscosity index improvers, so will not shear down in use. ECOSURE products offer improved operation and lower environmental risk leading to overall cost savings.

SHEAR STABILITY



ECOSURE exceeds the requirements of ISO 15380 for environmentally acceptable hydraulic fluids. ECOSURE products achieve biodegradability of greater than 60% in the 28 day OECD 301B test and are considered non-toxic in the marine environment based on the following results:

- Fish LC50 exceeds 1000mg/l;**
- Daphnia EC50 exceeds 1000mg/l;**
- Algae EC50 exceeds 1000mg/l.**

ECOSURE meets the detailed ecological definitions and requirements laid down in the 2013 Vessel General Permit (VGP) published by the US EPA in March 2013.

- ECOSURE HSE / EAF
- Competing Hydraulic Fluid 1
- Competing Hydraulic Fluid 2

At a glance

Product	VGP Compliant	Attribute	Test	Result
ECOSURE HSE ECOSURE EAF	✓	Pump Lubrication	Eaton 104C & 35VQ	Pass
			Parker Hannifin Denison T6H20C	Pass
		Wear Protection	FZG	> Load Stage 12
		Corrosion Protection	ASTM D-130 Copper Corrosion	Pass
			ASTM D-665 Rust (Fresh & Sea Water)	Pass
		Elastomer Compatibility	Nitrile, Viton, Teflon, Nylon, PTFE	Pass
		Demulsification	ASTM D1401 (Fresh & Sea water)	Pass

Attribute	Benefit
Extended fluid life	Fewer fluid changes, less equipment downtime and lower overall cost of ownership
Improved lubricity	Less wear and longer pump life
Wider operating temperatures	Protects equipment from -35°C to over +100°C
Good hydrolytic stability	Resists breakdown of the lubricant by water in high temperature situations
Good oxidative stability	Less sludge and system failures, longer fluid life and less fluid thickening
Good thermal stability	Less fluid thickening and system failures due to lower levels of corrosive decomposition products
Superior demulsification	Excellent water separation allowing easy removal of water and reduced pump wear
Good VI	Fluid remains within the desired viscosity over a broader temperature range
Good shear stability	Less viscosity loss, fewer fluid changes and prolonged pump life
Good seal compatibility	Less leakage and less equipment downtime
Good long term filterability	Less filter blockage and less equipment downtime
Biodegradable and non-toxic	Lower environmental risk

ECOSURE EAF

ECOSURE EAF hydraulic fluid, based on synthetic esters, is typically used in water tight doors, ramps, platforms, davits, cranes, winches and capstans where there is potential for fluid loss to occur to the marine environment.

ECOSURE EAF 68 achieves over 330 minutes in the ASTM D-2272 RPVOT oxidation test, demonstrating greater performance and longer fluid life than many competing mineral and biodegradable hydraulic fluids.

ECOSURE EAF exhibits excellent low temperature performance with a pour point of < -48°C, making it particularly suitable for use in deck equipment exposed to very cold climates.

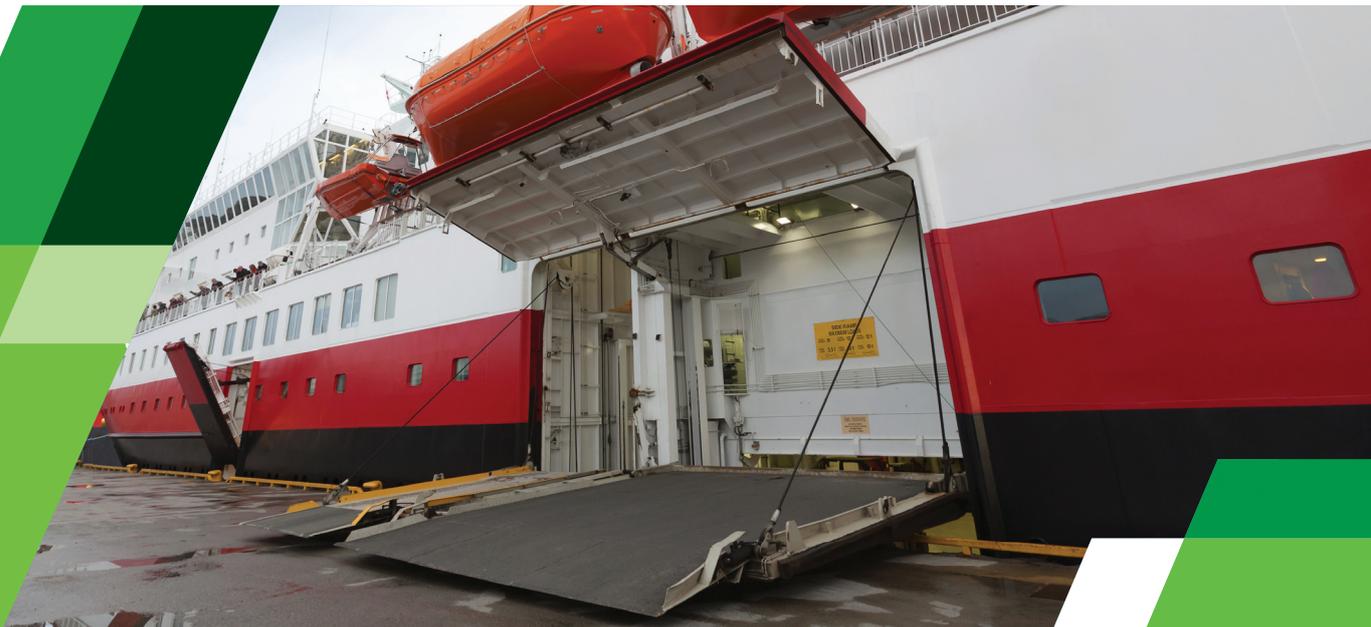
ECOSURE HSE

These high performance hydraulic fluids were designed for use in critical applications such as CPPs, stabilisers and heavy duty cranes where there is potential for fluid loss to occur to the marine environment.

ECOSURE HSE has been strongly recommended by several OEMs for its superior performance properties in critical applications below the waterline and meets the environmental requirements of Swedish Standard 15 54 34.

ECOSURE HSE fluids are based on fully saturated synthetic esters and demonstrate exceptional fluid life. In oxidation tests they achieve up to 12,000 hours in the ASTM D-943 DRY TOST test and over 800 minutes in the ASTM D-2272 RPVOT test, demonstrating performance far superior to most competing biodegradable hydraulic fluids.

They will give longer lifetime in arduous conditions by resisting the onset of ageing. Deposit formation in critical hydraulic control valves will be minimised leading to extended, smoother, more reliable operations.



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