

# ECOSURE EAF RANGE



## DESCRIPTION

ECOSURE EAF is a range of environmentally acceptable, anti-wear hydraulic fluids. These HEES fluids are based on renewable esters and use state-of-the-art ashless, zinc-free additive technology. This range of products meets the requirements stipulated in ISO 15380 for Environmentally Acceptable Hydraulic Fluids.

## APPLICATIONS

The ECOSURE EAF range can be used in hydraulic applications in sensitive environments, especially marine, where there is potential for fluid loss to occur and where water contamination is below 1000 ppm. Typical applications include:

- CPPs
- Water tight doors
- Ramps
- Platforms
- Davits
- Winches
- Capstans
- Cranes
- Some design of stabilisers

## VGP & ENVIRONMENTAL LABELS

The ECOSURE EAF range meets the environmental requirements of Swedish Standard SS 15 54 34 and is also listed on the USDA BioPreferred® Program.

The ECOSURE EAF range meets the VGP definition of an Environmentally Acceptable Lubricant.

## FEATURES

- The ECOSURE EAF range does not use viscosity index improvers, so will not shear down in use.
- ECOSURE EAF fluids show biodegradability of > 60% in the 28-day OECD 301B test, and are considered non-toxic in the marine environment.

## BENEFITS

- Extended fluid life resulting in less equipment downtime.
- Improved lubricity resulting in less wear and longer pump life.
- Good extreme temperature performance (-35°C to +100°C).
- High VI ensuring the fluid remains within the desired viscosity over a broader temperature range.
- Good oxidative and thermal stability resulting in less fluid thickening and system failures.
- Strong demulsification giving excellent water separation.

### BENJ<sup>M</sup> R. VICKERS & SONS LTD.

Registered Office  
6 Clarence Road, Leeds,  
LS10 1ND, United Kingdom

Registered in England  
Company No. 00130013

Tel: +44 (0) 113 386 7654  
Fax: +44 (0) 113 386 7676  
Web: [www.vickers-oil.com](http://www.vickers-oil.com)  
Email: [inbox@vickers-oil.com](mailto:inbox@vickers-oil.com)

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



FM 01851 EMS 40717

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## PERFORMANCE DATA

|                             |   |
|-----------------------------|---|
| <b>Oxidation</b>            | Good oxidation properties giving excellent in-service lifetime, easily exceeding other biodegradable hydraulic fluids and many mineral oil based fluids.  |
| <b>Wear Protection</b>      | Gives excellent pump protection to meet the demands of modern hydraulic systems. Passes the demanding V104C, 35VQ25 and T6H20C pump tests. Approved by Eaton to 03-401-2010 Rev1 and Parker Hannifin Denison as HF1, HF2 and HF6 fluids. Very good anti-wear and FZG scuffing performance, EAF 22 = LS11, all other grades >LS12. |
| <b>Corrosion</b>            | Good corrosion performance with Steel and Copper.   |
| <b>Seal Compatibility</b>   | Is compatible with standard NBR1, HNBR and FKM seal elastomer and it should not be used in systems with neoprene, butyl rubber and EPDM.  |
| <b>Demulsification</b>      | Separates readily from water, allowing easy water removal if contaminated.  |
| <b>Hydrolytic Stability</b> | Good hydrolytic stability. Outperforms similar products in the Rolls Royce 1006 Hydrolytic Stability test. When used for prolonged periods in the presence of water at medium to high operating temperatures, hydrolysis will occur. In common with other biodegradable ester fluids, water content must be kept below 1000 ppm.  |
| <b>Foaming</b>              | Passes the foam test requirements of ISO 15380.   |
| <b>Air Release</b>          | Passes the air release requirements of ISO 15380, reducing the risk of pump damage through cavitation.  |
| <b>Viscosity Index (VI)</b> | Exceeds the requirements of DIN 51534-3 and passes the DIN 51350-6 KRL Shear Test. The ECOSURE EAF range has an excellent viscosity temperature profile and, unlike many high VI mineral hydraulic fluids, does not use viscosity index improvers, so will not shear down in use.   |
| <b>Changeover</b>           | Miscible with mineral oil, but in accordance with good practice, it is recommended that the previous oil be fully drained. Where the previous oil has shown significant signs of ageing or a propensity to foam, or where carry over is more than 5%, a flush fill should be considered.  |

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## TYPICAL CHARACTERISTICS AND PROPERTIES

| ECOSURE EAF RANGE      | TEST METHOD   | 22                   | 32     | 46     | 68     | 100    |
|------------------------|---|----------------------|--------|--------|--------|--------|
| Appearance             | Visual  | --- Clear Yellow --- |        |        |        |        |
| Viscosity @ 40°C (cSt) | ASTM D7042  | 22                   | 32     | 46     | 68     | 100    |
| Viscosity Index        | ASTM D2270  | 155                  | 167    | 175    | 173    | 170    |
| Density @ 15°C (kg/l)  | ASTM D4052  | 0.883                | 0.874  | 0.880  | 0.886  | 0.889  |
| Pour Point °C          | ASTM D7346  | < - 60               | < - 51 | < - 48 | < - 48 | < - 48 |
| Flash Point (COC) (°C) | ASTM D92  | > 165                | > 175  | > 185  | > 195  | > 205  |
| Shelf Life             | 5 years in original sealed containers stored out of direct sunlight |                      |        |        |        |        |

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