



Clarity Bio EliteSyn ES

Premium performance, palm oil free,
biodegradable hydraulic oil

Product description

Clarity Bio EliteSyn ES a premium performance palm oil-free hydraulic fluid, part of a series of new generation products specially designed for use in environmentally sensitive applications.

Clarity Bio EliteSyn ES is a palm oil-free and zinc-free hydraulic fluid formulated with fully biodegradable unsaturated ester, combined with environmentally friendly additives that help deliver excellent oxidation stability, corrosion protection, extreme pressure (EP) and low-temp performance.

Customer benefits

- Palm oil-free formulation designed for environmentally sensitive applications where contamination may occur.
- Advanced environmentally focused additive package offers good oxidation stability, and corrosion protection.
- Engineered to provide robust protection in extreme pressure (EP) and wide operating temperature range applications (-30°C up to 90°C).
- Meets a range of environmentally focused standards including OECD 301B: >60, Swedish Standard SS 15 54 34, and WGK 1 rating according to the German WGK Classification.
- Hydraulic oil that meets EPA Vessel General Permit (VGP 2013) requirements for Environmentally Acceptable Lubricants (EALs).

Product highlights

- **Palm oil free formulated designed for sensitive environments**
- **Eco-friendly additives offer oxidation stability, corrosion protection**
- **Engineered for robust protection in extreme pressures and temperatures**
- **Meets OECD 301B, Swedish SS 15 54 34, WGK 1**
- **Meets EPA VGP 2013 requirements for EALs**

Selected specification standards include:

| | |
|------|------------------|
| DIN | Eco-label |
| ISO | Swedish-Standard |
| VDMA | VGP/VIDA |

Applications

Clarity Bio EliteSyn ES is suited for all stationary and mobile hydraulic systems as recommended by ISO 15380, HEES.

Product should be used where there is a danger to soil or water pollution.

Typical applications are mobile hydraulics in drainage areas and road construction, forestry and timber industry, vehicles for ski racing track maintenance, municipal vehicles and facilities, auto hoist, hydraulic engineering, forklift, horticulture and landscaping, sewage plant, freshwater recovery, floater dredgers, sluices, water maintenance boats, tunnelling machines, offshore equipment, concrete pumps, track laying machines, etc.

Seal compatibility:

Seal Compatibility with Fluor elastomers (FPM/KKM) such as Viton.

In accordance with ISO 15380, it is recommended to test a variety of seals, including AU, NBR1, HNBR/1, and FKM2. These materials serve as reference standards and may differ from commercially available seal materials. It is essential to consider the applicability of the elastomer's behavior in practical use. In cases of uncertainty, compatibility testing is advised. Test conditions should be tailored to the specific application.

Approvals, performance and suitable for use

Approvals

- Swedish-Standard 15 54 34 (Environmental properties of hydraulic oils according to SS 15 54 34 | RISE)
- Certified with the EU Ecolabel for environmental excellence; EU Ecolabel: DE/027/336



Performance

- ISO 15 380 HEES
- DIN ISO 15 380 HEES
- VDMA 24568, HEES
- SS 15 54 34
- VGP/VIDA compliant (hydraulic oil that meets EPA Vessel General Permit (VGP 2013) requirements for environmentally acceptable lubricants)

Product maintenance and handling

Always take an oil sample to evaluate the condition of the system.

When changing over to Clarity Bio Elitesyn ES Series, the guidelines for changing fluids from mineral-based oils to environmentally acceptable fluids according to DIN ISO 15 380 (HEES) has to be followed.

Check with OEMS for specific change over procedures.

Avoid any spillage of used and unused product to the environment.

Product residue and package/container should be disposed of in dedicated collection points.

| Typical test data | | | |
|---|--------------|-------------------------------|------------------------------|
| Test | Test Methods | Results | |
| Viscosity Grade | | 32 | 46 |
| Typical Shelf Life: 24 months from date of filling indicated on the product label. | | | |
| Appearance | Visual | Clear and bright | Clear and bright |
| Colour | ISO 2049 | 1.0 | 1.0 |
| Content of carbon of biological origin, min, % | ASTM D6866 | 50 | 60 |
| Kinematic Viscosity at -30°C, mm ² /s | ISO 3107 | 3790 | 7026 |
| Kinematic Viscosity at -20°C, mm ² /s | ISO 3104 | 820 | 1411 |
| Kinematic Viscosity at 0°C, mm ² /s | ISO 3104 | 392 | 312.8 |
| Kinematic Viscosity at 40°C, mm ² /s | ISO 3104 | 31.92 | 45.39 |
| Kinematic Viscosity at 100°C, mm ² /s | ISO 3104 | 6.966 | 9.319 |
| VI | ISO 2909 | 193 | 194 |
| Density at 15°C, kg/l | ISO 12185 | 0.9224 | 0.9193 |
| Pour Point, °C | ISO 3016 | -48 | -51 |
| Flash Point, °C | ISO 2592 | 240 | 306 |
| Fire Point, °C | ISO 2592 | >240 | >300 |
| TAN, mg KOH/g | DIN ISO 6618 | 1.08 | 1.10 |
| Foam Seq (I, II, III), ml | ISO 6247 | 0/0 | 0/0 |
| Air release @ 50°C, min | ISO 9120 | 2.3 | 2min 46s |
| Water separation, time to 3ml emulsion at 54°C, min | ISO 6614 | 30 min/37 ml H ₂ O | 30min/37 ml H ₂ O |
| Water content, ppm | KF | 481 | 201 |
| Rust prevention, 24h, proc A & B | ISO 7120 | Pass | Pass |
| Copper Corrosion 100°C, 3hr, rating | ISO 2160 | 1B | 1B |
| Aniline Point, g I ₂ /100g | ISO 3691 | >90.39 | 90.39 |

The typical test data set out above does not constitute a specification. It is indicative only and can be affected by allowable production tolerances. Chevron may modify this test data. Modified data will supersede all previous data, so please ensure you refer to the latest version of this Product Data Sheet (PDS).

Disclaimer: Data provided in this Product Data Sheet (PDS) is based on standard tests under laboratory conditions and is indicative only. This product should not be used for any purpose other than those expressly set out in this PDS. The user has sole responsibility for verifying that this product is suitable for the user's intended application. Neither Chevron nor its subsidiaries (i) make any warranty or representation as to the accuracy or completeness of this PDS; and/or (ii) accept liability for any loss or damage suffered as a result of the use of this product other than in accordance with the terms of this PDS.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

When disposing of used product, take care to protect the environment and follow local legislation.

Safety Data Sheets (SDS's) are available for all Chevron products. If you require a SDS or any further information regarding a Chevron product, please contact your local sales office or see <http://europe.chevronlubricants.com>.

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