



Carelube HES 46

Biodegradable ester based hydraulic oil

Description

Castrol Carelube HES 46 hydraulic oil is based on carefully selected synthetic esters, which are highly biodegradable and recommended for use in situations where leakage or spillage may present a risk of harm to the environment.

Application

Carelube HES 46 is used as a hydraulic oil for applications in environmentally sensitive areas such as, near or on waterways, agriculture, forestry, mining and construction industries. Carelube HES 46 may also be used for machine tool hydraulic systems where ester based soluble cutting fluids are being utilised and minimisation of impact of contamination is required.

Carelube HES 46 is miscible with conventional mineral oil-based hydraulic fluids and products based on natural esters but in order to maximise the performance benefits of this product - both physically and environmentally, draining or flushing to minimise residues left by other lubricants is recommended. It is fully compatible with the elastomer materials commonly used for static and dynamic seals, such as nitrile, silicone and fluorinated (e.g. Viton) polymers.

Carelube HES 46 is classified as follows: ISO 6743/4 - Hydraulic Oils Type HEES and meets the requirements (for appropriate viscosity grade) of: ISO DIS 15380 VDMA 24568 Komatsu G3/G4.

Advantages

- Inherently biodegradable so ideally suited for minimising the impact to the environment should leakage occur (note: local legislation/regulations regarding the clean up of oil leakage/spills should always be followed).
- Environmentally friendly with low aquatic toxicity – rated WGK 1.
- Very high viscosity index gives reliable operation and consistent response across wide temperature ranges.
- Maximum component protection at cold start-up and at elevated temperatures.
- Excellent anti-wear performance and lubricity maximises component life and ensures system reliability.
- Seal, diaphragm and hose material compatibility similar to that of mineral oil, allowing easy changeover without component modification.

Typical Characteristics

Name	Method	Units	Carelube HES 46
ISO Viscosity Grade	-	-	46
Density @ 20°C	ISO 12185 / ASTM D4052	kg/m ³	920
Kinematic Viscosity @ 40°C	ISO 3104 / ASTM D 445	mm ² /s	46
Kinematic Viscosity @ 100°C	ISO 3104 / ASTM D 445	mm ² /s	9.12
Viscosity Index	ISO 2909 / ASTM D2270	-	185
Flash Point - open cup method	ISO 2592 / ASTM D92	°C	270
Pour Point	ISO 3016 / ASTM D97	°C	-27
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	30/0
Water Separation @ 54°C / 129°F (40/37/3)	ISO 6614 / ASTM D1401	min	20
Four Ball Wear test - Wear Scar Diameter (40 kgf / 75°C / 1200 rpm / 1 hr)	ASTM D2266	mm	0.32

Subject to usual manufacturing tolerances.

Additional Information

Carelube HES 46 is miscible and compatible with nearly all mineral oil and ester type hydraulic fluids. To convert a system using these types of oils, simply drain and recharge with correct Carelube HES viscosity grade. Biodegradability CEC-L-33-A-93 > 95 % Biodegradability OECD 301B > 69 %

Storage

All packages should be stored under cover. Where outside storage is unavoidable drums should be laid horizontally to avoid the possible ingress of water and damage to drum markings. Products should not be stored above 60°C, exposed to hot sun or freezing condition.

Carelube HES 46

13 Jul 2012

Castrol, the Castrol logo and related marks are trademarks of Castrol Limited, used under licence.

This data sheet and the information it contains is believed to be accurate as of the date of printing. However, no warranty or representation, express or implied, is made as to its accuracy or completeness. Data provided is based on standard tests under laboratory conditions and is given as a guide only. Users are advised to ensure that they refer to the latest version of this data sheet. It is the responsibility of the user to evaluate and use products safely, to assess suitability for the intended application and to comply with all applicable laws and regulations. Material Safety Data Sheets are available for all our products and should be consulted for appropriate information regarding storage, safe handling, and disposal of the product. No responsibility is taken by either BP plc or its subsidiaries for any damage or injury resulting from abnormal use of the material, from any failure to adhere to recommendations, or from hazards inherent in the nature of the material. All products, services and information supplied are provided under our standard conditions of sale. You should consult our local representative if you require any further information.

10 Junction Avenue , Parktown , Johannesburg , 2193 , South Africa
 +27 11 488 5111, 0860 222 166 (SA), 0800 111 551 (SA)
www.castrol.co.za