



Anvol PE 46 XC

Fire resistant hydraulic oil

Description

Castrol Anvol PE 46 XC is based on triaryl phosphate esters selected for their excellent hydrolytic stability. It is a high performance 'HF-D' type fire resistant hydraulic fluid and contains carefully selected corrosion and oxidation inhibitors. It has excellent hydraulic performance and good fire risk protection

Application

Anvol PE 46 XC is suitable for use in hydraulic systems where, in the event of leakage or pipe fracture, there is risk of fire and where water containing fluids are unsuitable due to temperature limitations or other reasons. It is specifically designed for use in the electro-hydraulic governor control systems of steam turbines, including systems using fine tolerance servo valves. Physical properties such as foaming, air release and demulsibility are also carefully controlled within turbine manufacturers' specified limits.

Anvol PE 46 XC meets the requirements of:

Factory Mutual Group 1
General Electric GEK 46357
Siemens TLV 9012 02/01
Alstom SBV PR1002
Ansaldo 602W917
TGM 1911

Advantages

- Offers good fire risk protection in systems where fire resistance is vital and where water containing fluids are unsuitable due to temperature limitations or the need to maintain a high hydraulic system pressure.
- High flash point, fire point and auto-ignition temperature provides excellent fire resistance.
- High resistivity eliminate spool valve corrosion/erosion due to electrokinetic effects.
- Low chlorine level minimises valve erosion.
- Long record of trouble free service in highly demanding hydraulic control systems on turbines.

Typical Physical Characteristics

Test	Method	Units	Anvol PE 46 XC
Density @ 15°C	ISO 12185 / ASTM D4052	g/ml	1.12
K.V. @ 40°C	ISO 3104 / ASTM D445	mm ² /s	43
K.V. @ 100°C	ISO 3104 / ASTM D445	mm ² /s	5
Pour Point	ISO 3016 / ASTM D97	°C	-21
Flash Point, COC	ISO 2592 / ASTM D92	°C	246
Fire Point, COC	ISO 2592 / ASTM D92	°C	368
Autoignition temperature	ASTM E659	°C	575
Foam Sequence I	ISO 6247 / ASTM D892	mls/mls	30/0
Air Release @ 50°C	ISO / 9120 / ASTM D3427	mins	1
FZG (A8.3/90), fail stage	ISO 14635-1 / DIN 51354	-	7
Chlorine Content	-	ppm	25
Resistivity	-	M ohm/m	> 50
Wick Ignition - persistence of burning	7th Lux Report Section 3.3.2	secs	5
Spray Ignition (Spray Flamability Parameter)	Factory Mutual	-	Group 1
Hot Manifold at 704°C	AMS 3150C	-	No flashing or burning

Additional Information

Compatibility

Anvol PE 46 XC is compatible with all metals commonly found in electro-hydraulic control systems. Aluminium components should be hard anodised and the use of copper and copper alloy components kept to a minimum. In common with all phosphate ester fluids, special seals are required and the following materials are suitable:

Fluoropolymers (Viton)

Butyl Rubber

PTFE

Ethylene Propylene Rubber - under certain operating conditions

Where paint materials are used, they should be epoxy resin based

Service precautions

Periodic measurement of the fluid neutralisation number should be made during service as this provides a good guide to any product degradation which may occur. The level and rate of change of neutralisation value will be dependent upon the installation, conditions of operation, and whether in-line filtration of the fluid is carried out.

Conversion precaution

It is essential that rigorous flushing should be carried out when converting systems from other fluids to phosphate esters. All scale should be removed, and filters, hoses, seals and internally painted surfaces should be checked for compatibility with the new fluid.

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