

Anvol WG 46

Fire resistant hydraulic fluid

Description

Castrol Anvol WG 46 is an HF-C type water-glycol fire resistant hydraulic fluid, containing anti-wear additives and corrosion inhibitors. It provides protection against rust and in hydraulic pump tests, Anvol WG 46 has shown high levels of anti-wear performance during product pump testing. Its foam resistance, low temperature flow, emulsion stability and storage stability are also excellent according to storage stability testing.

Application

Anvol WG 46 is for use in hydraulic systems where, in the event of fluid leakage, there is a significant risk of ignition. Examples of applications include furnace doors, die-casting machines, forging machinery and mining equipment. It can be used in vane, gear or piston-type pumps with pressures up to 206.8 bar (3000psi)

As with any water containing fluid, continuous high temperature leads to excessive evaporation. The water content should be checked regularly in service and any corrections made by addition of distilled or de-ionised water. Occasional monitoring of alkalinity is recommended to ensure the correct level of corrosion inhibition.

Care should be taken to ensure the hydraulic system is designed for using water glycol based fluids. Care should also be taken to ensure the compatibility of Anvol WG 46 with paints, seals and metals, and also ensure that the hydraulic pumps and filters used are suitable. A thorough draining and flushing procedure should be followed when converting from other fluids to water glycol based solutions.

Anvol WG 46 is compatible with the most commonly used nitrile, neoprene, silicone, nylon, butyl rubber and fluoropolymer seal materials. Compatibility with specific seal materials in use should be confirmed prior to changing to Anvol WG 46.

Anvol WG 46 meets the requirements of:
ISO 12922:2012 Category HFC as defined by ISO 6743-4:2001

Advantages

- Anti-wear performance gives wear protection to system components
- Fire resistant as defined within ISO 12922:2012
- Low pour point ensures consistent performance over a range of temperature between -20°C to 60°C

Typical Characteristics

Name	Method	Units	Anvol WG 46
ISO Viscosity Grade			46
Appearance	Visual	-	Hazy red fluid
Density @ 15C	ISO 12185 / ASTM D4052	kg/m ³	1.07
Viscosity, Kinematic @ 0C	ISO 3104 / ASTM D 445	mm ² /s	405
Viscosity, Kinematic @ 40C	ISO 3104 / ASTM D 445	mm ² /s	46
Viscosity, Kinematic @ 60C	ISO 3104 / ASTM D 445	mm ² /s	24
Viscosity Index	ISO 2909 / ASTM D2270		>200
pH			9.2
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml	10/0
Pour Point	ISO 3016 / ASTM D97	°C	-51
Water Content	Calculated	%	39
Air Release Value	ISO 9120 / ASTM D3427	min	7
Rust test - distilled water (24 hrs)	ISO 7120 / ASTM D665A	Rating	Pass

Subject to usual manufacturing tolerances.

Additional Information

Compatibility of Anvol WG 46 with hydraulic components:

Seal materials – Suitable materials are: Nitrile PTFE, Neoprene (Chloroprene) Silicone, Viton Nylon, Natural Rubber Butyl Rubber.

Filters – Most metal types are compatible, but some paper elements can be damaged by water and only types approved for high water content fluids should be used.

Paints – Fire resistant water glycols soften and lift most paints. Vinyl or epoxy resin based paints are compatible. When changing from mineral oil to water-glycol, all paint in the system should be removed unless it is known to be a compatible type.

Fluid maintenance:

In service, water can be lost by evaporation and this must be periodically replaced to maintain the correct viscosity and optimum fire resistance. Water content can be determined directly by Laboratory analysis. Only condensate, distilled or de-ionised water should be used for top-up. The required quantity of water should be slowly added to the reservoir with the system running to ensure thorough mixing.

Operating temperature range:

The operating temperature range is between -20 to +60°C. Anvol WG will remain as a fluid down to approximately -50°C. However, increased viscosity will limit its ability to run effectively at low temperatures.. Care must be taken at temperatures above 60°C so water evaporation does not occur too readily and reduce fire resistant properties.

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