

Synthetic-based subsea control Fluid

DESCRIPTION

Castrol Brayco Micronic 864 HT/200 is a synthetic hydrocarbon based hydraulic control fluid specifically formulated for use as the control medium in subsea and surface production control systems. The fluid incorporates all the features that are required for operation in a wide range of equipment.

APPLICATION

Castrol Brayco Micronic 864 HT/200 has retained many of the physical characteristics found in Castrol Brayco Micronic 864, but has been formulated to tolerate the higher well temperatures encountered by those parts of a control system located in the well bore. Castrol Brayco Micronic 864 HT/200 is currently rated for use at temperatures of up to 200°C, with long-term qualification testing having been carried out on subsurface safety valves at up to 200°C and 15,000 psi. This makes Castrol Brayco Micronic 864 HT/200 particularly suitable for modern "smart completion" applications.

FEATURES

- ◆ Excellent shear stability
- ◆ Good anti-wear properties and oxidation stability
- ◆ Keeps rubber swell within controlled limits
- ◆ Exceeds cleanliness standard of NAS 1638 Class 6
- ◆ Excellent high temperature (up to 200°C) performance

Brayco Micronic 864 HT/200 is fully compatible and miscible in all proportions with Castrol Brayco Micronic grades 864, 864HT and 865. It is compatible with all metals used in subsea control systems, and with most elastomers and plastics including Nitrite and PTFE. It should NOT be used with Ethylene Propylene (e.g. EPDM) elastomers, which are not compatible with any hydrocarbon-based fluids.

All reasonable care has been taken to ensure that the information contained in this publication is accurate as at the date of printing. It should be noted however that the information above may be affected by changes occurring subsequent to the date of printing in the blend formulation or methods of application of any of the products referred to or in the requirements of any specification approval relating to any such products.



The wearing of impervious PVC (or other suitable material) apron and gloves, together with eye protection is recommended. Contaminated clothing should be changed immediately and thoroughly cleansed before re-use. This applies especially to under garments.

TYPICAL PHYSICAL CHARACTERISTICS

Relative Density @ 20°C, g/ml	0.820
Bulk Modulus, N/m ²	1.05 x 10 ⁹
Pour Point, °C	-57
Flash Point, °C	152
Total Base Number, mg KOH/g	8.79
Acid N ^o , mgKOH/g	1.04
Viscosity, cSt	
@ 100°C	3.76
@ 40°C	11.4
@ 0°C	44.4
@ -20°C	134.5
Viscosity Index	258
Foam Test Sequence, (IP146)	
Sequence I	110/0
Anti-wear (4 ball test)	
Weld Point, Kg	160
Initial Seizure Load, Kg	75
1 hour wear @ 20 Kg, mm	0.300
1 hour wear @ 30 Kg, mm	0.433
Particulate Cleanliness	
NAS 1638	Class 6 or better
ISO 4406	Code 14/11 or better
Rusting Characteristics IP135	
Distilled water, Method A	Pass
Seawater, Method B	Pass



MATERIAL COMPATIBILITY - METALS

Material	Compatibility	Comments
Plain Carbon Steel	Compatible	Unprotected carbon steel above the fluid surface may be subject to corrosion from condensed moisture if fluid contains excessive water.
Stainless Steel (316L)	Compatible	
Super Duplex Steel (2507)	Compatible	
Inconel (Incoloy 825)	Compatible	Excellent for high temperature applications
Hastelloy	Compatible	
Titanium	Compatible	
Aluminium Bronze	Compatible	
Cadmium Plating	Compatible	Often used on standard industrial hydraulic fittings
Zinc Plating	Compatible	
Chromium Plating	Compatible	
Electroless Nickel Plating	Compatible	



MATERIAL COMPATIBILITY - SEALS

Material	Compatibility	Comments
Medium Nitrile	Compatible	Widely used as standard seal material
High Nitrile	Limited Compatibility	Can be subject to slight shrinkage. Avoid in critical or inaccessible applications
Carboxylated Nitrile	Compatible	Excellent abrasion resistance
Fluorocarbon	Compatible	Performance can vary according to grade. Superior to medium nitrile if higher temperatures involved (90°C or above)
Butyl	Compatible	
Polyurethane	Compatible	
Ethylene Propylene	Not Compatible	Important if changing fluid type - EPR is not suitable for use with any hydrocarbon based fluids
Silicone	Not Compatible	
Chemraz	Compatible	Excellent for high temperature applications
Rubber Impregnated Fabric Composites	Compatible	Ensure rubber is compatible type
Acetal	Limited Compatibility	Do not use above 50°C
PTFE	Compatible	
Nylon	Compatible	Includes Nylon 11 thermoplastic for umbilical hose liners

Health and Safety information sheets are available for all Castrol products from the address below.
Castrol International, Pipers Way, Swindon, Wiltshire SN3 1RE, England., Telephone: Enquiries
+44 (0)1793 512712, Technical Enquiries +44 (0)118 984 3311, Fax +44 (0)1793 453218

All reasonable care has been taken to ensure that the information contained in this publication is accurate as at the date of printing. It should be noted however that the information above may be affected by changes occurring subsequent to the date of printing in the blend formulation or methods of application of any of the products referred to or in the requirements of any specification approval relating to any such products.

