

CASTROL SUBSEA PRODUCTION OFFER RELIABILITY TAKEN FURTHER

Providing subsea operators and equipment manufacturers the support to work in the most challenging conditions and locations.



IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.



The challenges are becoming more extreme. Whether it's developing products that can meet the needs of the most demanding production assets or responding to ever tougher environmental regulations – our subsea production offer has been leading the way in the industry for decades. It combines high performance, technical skills and expertise to help ensure you maintain reliability in your operating conditions. That means longer up time and lower cost of ownership over the life of the field; showcased by Castrol's 40-year track record.

**CASTROL
TRANSAQUA**

**CASTROL
BRAYCO MICRONIC**

**TWO GLOBALLY AVAILABLE PRODUCT LINES
WITH A LONG AND WELL-PROVEN TRACK RECORD;
DEVELOPED WITH EXTENSIVE EXPERTISE TO
PROVIDE MAXIMUM OEM QUALIFICATION AND
MEET LATEST ENVIRONMENTAL REGULATIONS.**

**WE STRIVE TO
BE YOUR LIQUID
ENGINEERING
AND TECHNOLOGY
PARTNER, CREATING
INNOVATIVE
SOLUTIONS FOR A
WORLD IN MOTION.**

TODAY

- Reliable operation of subsea hydraulic systems – Castrol Transaqua HT, HT2, DW, HC10
- Improved system protection subsea and for hardware storage on land – Castrol Transaqua SP
- Reliable operation of subsea boosting and compression – Castrol Brayco Micronic SBF E

TOMORROW

- Subsea electrification
- Subsea boosting, water injection and compression
- Ultra deep water and deep water gas
- Carbon reduction and carbon capture and storage
- Integrated renewable power

HELPING YOU TOWARDS YOUR SUSTAINABILITY GOALS

Castrol's PATH360 is our holistic sustainability program, expanding sustainable thinking into every facet of our business.

Saving waste | Reducing carbon | Improving people's lives

Castrol Brayco Micronic and Transaqua products are committed to certified carbon neutral** in accordance with PAS 2060 from 2021.









* In accordance with PAS 2060, see www.castrol.com/cneutral for more information.

** The CO₂ emissions are calculated in accordance with the Greenhouse Gas Protocol's Product Life Cycle Standard and include life cycle emissions. The demonstration of carbon neutrality is assured by an Independent Third-Party and certified to BSI's PAS 2060 carbon neutral specification. See www.castrol.com/cneutral for more information.



CASTROL TRANSAQUA






THE WATER-BASED CONTROL FLUID RANGE OPTIMISED FOR EVERY OPERATIONAL NEED

| | CASTROL TRANSAQUA HT | CASTROL TRANSAQUA DW | CASTROL TRANSAQUA HT2 | CASTROL TRANSAQUA HT2-N | CASTROL TRANSAQUA HC10 | CASTROL TRANSAQUA SP |
|-----------------------------|---|--|---|---|---|--|
| REGION | Global | Brazil | Global | Norway | Global | Global |
| ENVIRONMENTAL ASSURANCE* | OSPAR and key geographies. | Tested**. | OSPAR and key geographies. | OSPAR. | OSPAR and key geographies. | OSPAR and key geographies. |
| OPERATING TEMPERATURE RANGE | -30°C / +170°C | -5°C / +150°C | -30°C / +170°C | -30°C / +170°C | -50°C / +170°C | -45°C / +150°C |
| COMMENTS | Released 1992. With fluoresceine dye and UV leak tracer. ~700 wells globally. | Identical chemistry to HT. Lower glycol content designed for deep water Brazil market. | Identical chemistry to HT apart from proprietary dye and UV tracer. Operational since 2005. ~500 wells operating. | Identical chemistry to HT2 without UV tracer and anti-foam additives. | Identical to HT2 with increased glycol content to prevent formation of hydrates in high pressure control lines. | New enhanced fluid chemistry with excellent protection of subsea equipment (up to 50% seawater). Improved materials compatibility. |
| IMAGES |  |  |  |  |  |  |

* Registered and tested in compliance with offshore environmental regulatory requirements
** Tested according to customer requirements

CASTROL BRAYCO MICRONIC

THE WORLD’S ONLY PROVEN SYNTHETIC CONTROL AND DIELECTRIC FLUIDS

| | CASTROL BRAYCO MICRONIC SV/3 | CASTROL BRAYCO MICRONIC SV/B | CASTROL BRAYCO MICRONIC SV/4 | CASTROL BRAYCO MICRONIC LV/3 | CASTROL BRAYCO MICRONIC SBF E |
|-----------------------------|---|---|--|---|--|
| REGION | Global | Norway, Denmark, the UK and Netherlands | Global | Global | Global |
| ENVIRONMENTAL ASSURANCE* | OSPAR and key geographies. | OSPAR. | OSPAR. | OSPAR and key geographies. | OSPAR and key geographies. |
| OPERATING TEMPERATURE RANGE | -40°C / +200°C | -40°C / +150°C | -40°C / +200°C | -40°C / +200°C | -30°C / +200°C |
| VISCOSITY, CST (KV40) | 10.5 | 8.4 | 8.4 | 5.5 | 5.2 |
| POUR POINT (°C) | <-50 | <-50 | <-50 | <-50 | <-80 |
| COMMENTS | Used in closed loop systems. Operational since 2007. | Used in closed loop systems. Developed to comply with Norwegian legislation. | New enhanced product will replace SV/3 and SV/B, and deliver improved environmental performance. | Used in closed loop subsea systems and land based wells. Low viscosity useful for long tie-backs and for cold climates. | Dielectric fluid for use as barrier fluid for subsea boosting pumps and compressors (OSS). Qualified also for use in e-actuators and compensation systems / modules. |
| IMAGES |  |  |  |  |  |

* Registered and tested in compliance with offshore environmental regulatory requirements

SUBSEA COLLABORATION YOU CAN RELY ON

We go beyond our unique and proven fluids. We believe that the only way to work is through close industry collaboration, high levels of technical support and vast expertise that give you the confidence to meet today's production challenges.

EVERY PRODUCT IS CREATED IN STEP WITH EQUIPMENT MANUFACTURERS FOR THE HIGHEST LEVELS OF PERFORMANCE



TESTED TO INDUSTRY STANDARDS

API 17F Annex C



THERMAL STABILITY

Tested beyond maximum operating limits to ensure reliable performance for the life of field



MATERIALS COMPATIBILITY

Tested with a wide range of system materials including key metals, elastomers and thermoplastic



CONTROL FLUID COMPATIBILITY

Fully miscible with current control fluid grades including existing Castrol grades and common competitor grades



OEM QUALIFICATION

Qualified with major industry OEMs across a wide range of equipment including DCVs, actuators, manifold valves, SSSV, umbilicals, pumps

TECHNICAL SERVICES TO HELP KEEP YOUR OPERATIONS EFFICIENT, RELIABLE, AND SUSTAINABLE

Our technical services help you minimise downtime and costly part failures. We also recommend the most efficient product use and provide valuable training for your team.

ENGINEERING SUPPORT

- Front End Engineering Design support
- Technical reviews for optimum product selection (well conditions, hydrate risks, environmental considerations)
- System materials reviews for retrofits
- Advice on product handling, use and storage

EXPERT INVESTIGATIONAL ANALYSIS CAPABILITY

- Fluid contamination
- System cleanliness
- Corrosion
- Materials compatibility

CASTROL LABCHECK

- Sampling
- Online Analysis Reports



www.castrol.com/oilandgas

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