



OFFSHORE



Solving Fluid Challenges At Their Deepest Level. **Together.**

Technology Overview for the Offshore Industry

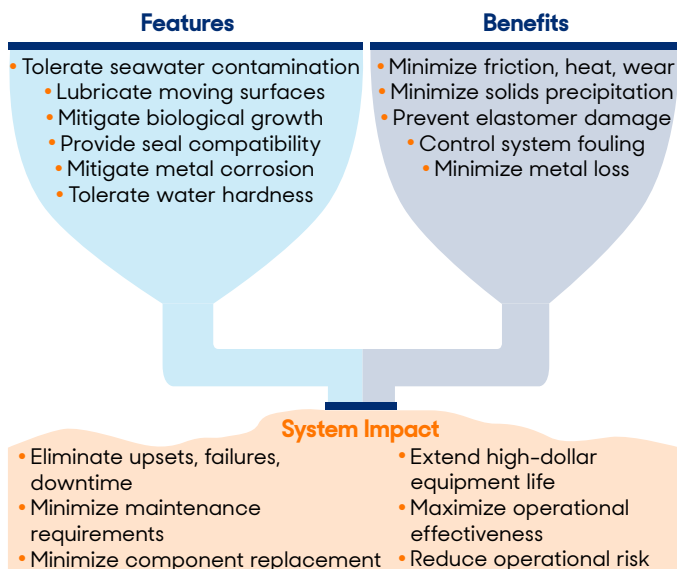




Products That Set Industry Standards

Quaker Houghton focuses on providing solutions that keep our customers moving forward. Our products are formulated with additives that provide not only superior engineering performance but also best-in-class environmental compliance. This combination is essential to meet the ever-toughening challenges our customers face in maximizing operational effectiveness in mission-critical deepwater drilling and subsea production equipment. Our products are recognized as industry standards:

- STACK MAGIC® BOP control fluids
- HOUGHTO-SAFE® Riser tensioner hydraulic fluids
- STACK GUARD™ Test and preservation fluids
- AQUALINK® Subsea production system control fluids
- RUST VETO® Corrosion preventives / storage compounds



STACK MAGIC® - BOP Control Fluids

STACK MAGIC® ECO-Fv2 delivers a unique combination of high technical performance with lead environmental compliance, supporting its use in BOPs on rigs drilling in the harshest conditions. EPA, Cefas 'D' and NEMs 'Yellow' environmental approvals qualify STACK MAGIC® ECO-Fv2 to be globally applicable.

STACK MAGIC® Eco CLDS delivers high performance across all technical attributes while achieving Cefas 'C' and NEMs 'Yellow' environmental ratings.

HOUGHTO-SAFE® - Tensioner Fluids

HOUGHTO-SAFE® 273CTFv2 delivers unequalled performance in mitigating wear, corrosion, microbial growth and seal damage in both wireline and direct acting tensioner systems.

HOUGHTO-SAFE® NL1 provides elevated technical performance required in newer, harder working direct acting tensioner systems. Innovative lubricity additives enhance friction and wear mitigation in tensioner cylinders. Advanced corrosion inhibitor and pH buffering packages serve to minimize metal loss and extend the tensioner fluid life. A low viscosity 'LV' version of NL1 is available for cold climate use.

HOUGHTO-SAFE® WL1 was formulated to provide highly enhanced fluid performance in wireline tensioner systems.

Quaker Houghton tensioner fluids are also applied with high effectiveness to other on-board motion compensation systems such as the crown mounted compensator and drill-string compensator.

STACK GUARD™ - Preservation Fluids

STACK GUARD™ preservation fluid has a long history of providing exceptional protection to BOP systems and components in storage both onshore and offshore. STACK GUARD™ contains lubricant additives, allowing it to be used to mitigate wear during component Factory Acceptance Testing (FAT). It may then simply be left in the component after testing to protect during storage and transportation.

AQUALINK® - Subsea Control Fluids

AQUALINK® fluids provide critical functionality in subsea control systems: wear mitigation, corrosion resistance, microbial growth control and seal damage reduction – rated up to Cefas 'D' of minimal environmental impact. AQUALINK® HT 804F ver2 may be used in systems at up to 160°C (320°F). It is 100% compatible with all competitive control fluids, so it may be readily used for top-up of existing systems.

RUST VETO® - Corrosion Preventives

RUST VETO® compounds are applied to protect valuable tubular goods and threaded ends from corrosion during storage and transportation. By providing a physical and chemical barrier that protects in hostile, oxidizing conditions, our wide range of proven products such as RUST VETO® AS and RUST VETO® 14, may be applied globally. RUST VETO® ENV is applied to protect the inner surfaces of drilling riser while in storage both onshore and offshore. It has a low environmental impact formulation designed for use in extremes of climactic conditions



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