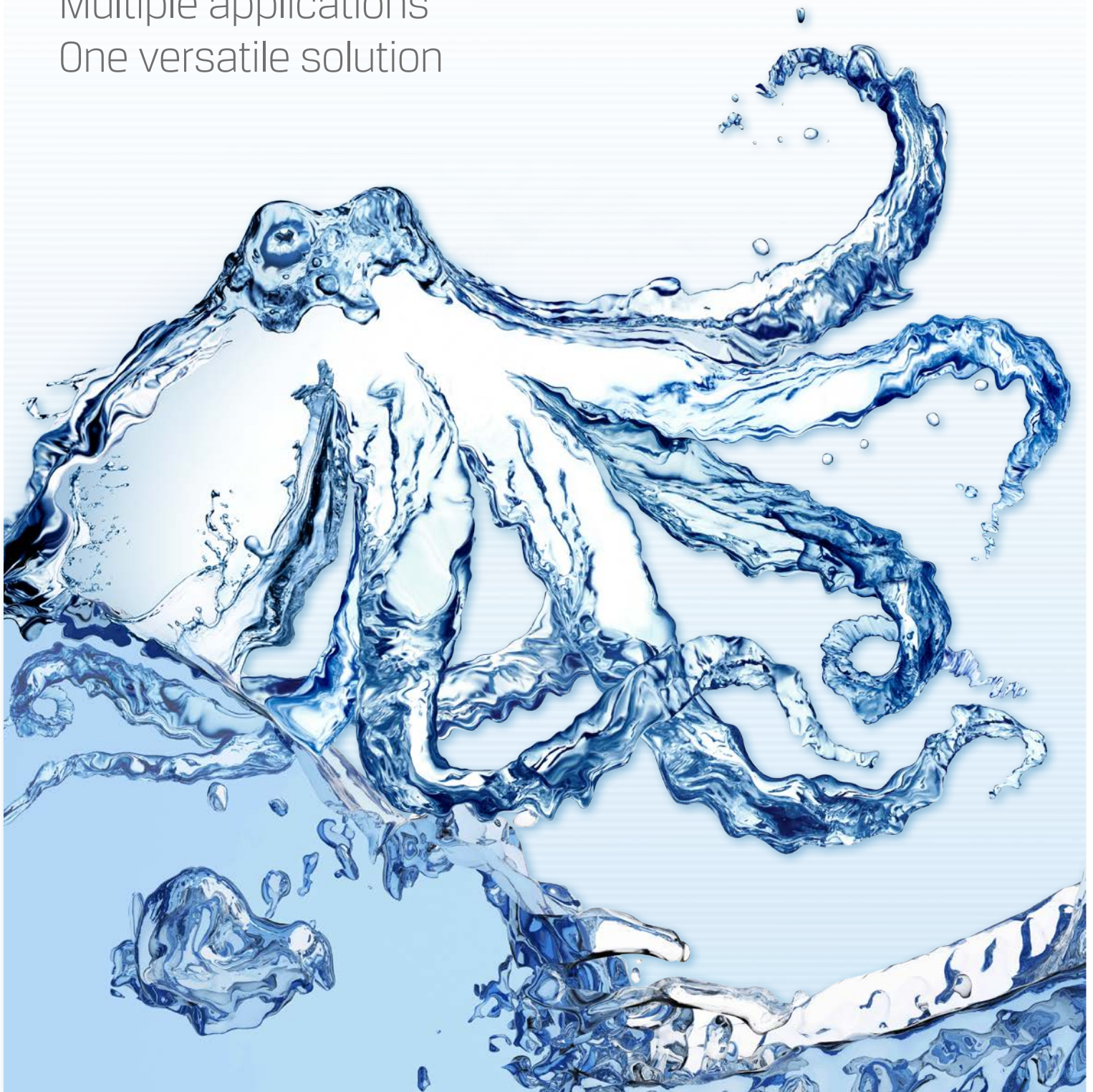




SPECIAL APPLICATION FLUIDS

Multiple applications
One versatile solution



THE FAST-ACTING MULTIPURPOSE FLUIDS

Our fast-acting and safe special application fluids are based on solids-free, high-density cesium formate brine. They're ideal for:

Releasing stuck pipe

Our special application fluids act quickly to disrupt oil-based mud (OBM) filter cake and swiftly release differentially stuck pipe.

Breaking filter cake

OBM emulsions are disrupted resulting in break up of filter cake. Special application fluids are also effective at weighting up chelating agents, such as EDTA, and acid precursors.

Dissolving hydrates

As natural inhibitors, our fluids rapidly dissolve hydrate plugs.

Reservoir perforating

Our non-damaging fluids form effective perforating pills with fluid-loss control.

Forming a debris barrier

Our fluids enable the continued function of critical valves and ports during completions to hinder mud solids settling.

Laboratory validated and field proven special application fluids are high density and solids free.

They are:

- ◆ Extremely versatile – use without additives for most applications
- ◆ Easy to use and quick to deploy – no mixing required for most applications
- ◆ Fast acting downhole – work rapidly after deployment
- ◆ Highly durable – clear brine with no solids to sag
- ◆ Thermally stable – proven to withstand temperatures up to 235°C/455°F
- ◆ Environmentally safe – protects fragile well-site ecology
- ◆ Highly effective – even in challenging high-pressure, high-temperature environments
- ◆ Cost saving – saves rig time with no additional OBM-related clean-up costs
- ◆ Safe for rig crew – ease of handling speeds up deployment
- ◆ Space saving – rig inventory is reduced as additives are not required

Why weight?

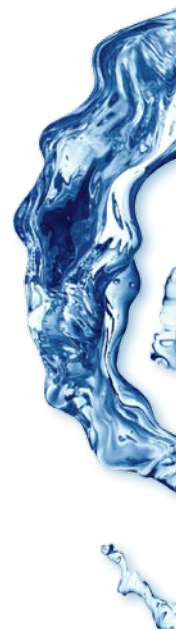
Available in solids-free densities from 1.80 g/cm³/15.0 lb/gal to 2.30 g/cm³/19.2 lb/gal, our special application fluids are readily available from stock for specific project requirements or for standby use offshore. No additives are needed in the applications listed, with the exception of debris-barrier fluids and perforating fluids where viscosifiers may be required.



Keeping our special application fluids on standby provides the rapid solution to several potentially time-consuming and costly issues.



WHY ARE OUR SPECIAL APPLICATION FLUIDS SO EFFECTIVE?



Special application fluids are formed using cesium formate brine. Effective and versatile, our brine's unique properties deliver a number of benefits:

High density and solids free

Cesium formate brine from Cabot comes in highly pure 80 wt% aqueous solution with solids-free densities up to 2.30 g/cm³/19.2 lb/gal.

Low water activity

With water activity as low as 0.3, cesium formate brine promotes beneficial osmotic back-flow and lowers freezing points to aid hydrate dissolution.

High thermal stability

Cesium formate brine is field proven to 235°C/455°F.

Low crystallization temperature

Cesium formate brine performs well at low temperatures.

Readily biodegradable

Cesium formate brine is environmentally non-damaging and gold rated by the Centre for Environment, Fisheries and Aquaculture Science (CEFAS). It is also safe to handle without specialist personal protective equipment.

Cesium formate brine has been used successfully by leading operators in over 50 fields globally since 1999. For an overview, please visit cabotcorp.com/fields.



High-density cesium formate brine is rated gold by CEFAS and meets many other exacting environmental standards.

	Stuck-pipe release pill	Hydrate pill	Perforating fluid	Debris barrier	Filter-cake breaker
No mixing	✓	✓	✓	✓	✓
Rapid deployment	✓	✓	✓	✓	✓
Rig-time savings	✓	✓	✓	✓	✓
Safe to handle	✓	✓	✓	✓	✓
Fast acting	✓	✓	✓	✓	✓
High-density range	✓	✓	✓	✓	✓
Environmentally safe	✓	✓	✓	✓	✓
No additives required	✓	✓	-	-	✓

Keeping our special application fluids on standby provides a rapid solution to many time-consuming issues.

FULL SUPPORT



You're in safe hands – no other company matches our vast experience with cesium formate brine.

We are the leading supplier of cesium formate brine to the oil and gas industry. Headquartered in Aberdeen, Scotland, we are part of the Cabot Corporation, a global force in specialty chemicals and performance materials. Cesium formate brine is held in stock at our facilities in the United Kingdom, Norway, Singapore, Canada, Belgium and the United States.

With close to 100 staff devoted to cesium formate brine, no other company matches our experience, expertise and pure dedication to this product. Our skilled team of field engineers is waiting to assist operations anywhere in the world and well-equipped laboratories in Aberdeen and Bergen provide customized fluid formulations, fluid analyzes, troubleshooting and technical advice.

To find out more about our special application fluids and how they can benefit your operations, please email cesium.formate@cabotcorp.com or contact one of the offices listed below.



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