

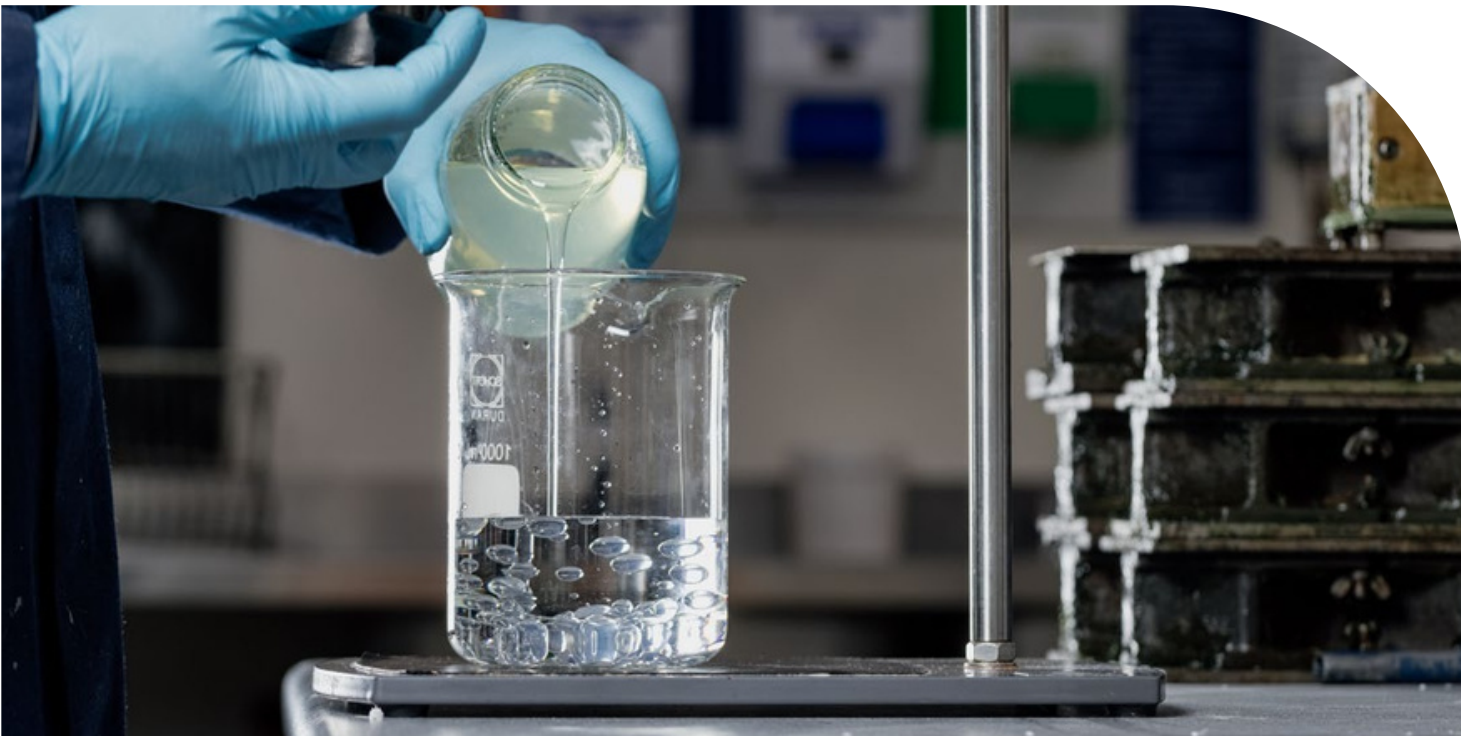
aubin



Fracturing

High-performance materials designed to
maximise your well productivity.





Hydraulic fracturing involves pumping fluid downhole at high pressures to create fractures in the formation rock, improving fluid or gas recovery.

Each additive in our portfolio is fully compatible with one another and can be combined reliably to perform to the best of their ability.

Using our in-house chemical facility for testing, our team of experts can collaborate with you and create solutions to your specific fracturing requirements that achieve your desired results.

Partnering with trusted local manufacturers, we are able to supply quality products in a cost effective and timely manner.

Crosslinked Gel Systems

Crosslinked gels offer a way to efficiently increase viscosity and suspension characteristics of a fracturing fluid without the need to increase polymer concentration

Aubin offers a range of crosslinkers to suit different well conditions.

These include:

- FX-22 is an instantaneous crosslinker that can be delayed using FDA-01 to effectively crosslink low loadings of linear gels.
- FX-23 is a temperature delayed metal crosslinker to effectively crosslink CMHPG linear gels. The product is activated at temperatures above 100 °F to allow extensive time to pump the fluid before crosslinking is activated.
- FX-24 is a liquid combination crosslinker, incorporating both borate and zirconate chemistries to provide a shear resistant, thermally stable fluid for effective crosslinking in HPHT environments.



Slickwater Additives

Slickwater systems are typically used in unconventional reservoirs where more complex fracture networks are required to improve production.

A challenge in recent years is the high freshwater consumption required to deploy slickwater systems, especially in the Middle East. As a solution to this, Aubin has developed a slickwater package that can tolerate some produced waters, reducing disposal costs and freshwater consumption.

The system includes:

- FR-100 is an anionic polymer within an oil-external emulsion that is easily dispersed and hydrated to provide excellent friction reduction in slickwater fluids.
- SS-960 is a non-ionic flowback surfactant used to lower surface tension, reducing the possibility of emulsions forming and improving fluid recovery. The product is fully compatible with FR-100 to provide a superior slickwater system.

Additional System Additives

Breakers

Breakers are used to decrease fracturing fluid viscosity by breaking down the polymer chains. Reduction of viscosity allows for easy flowback of the fracturing fluid and reduces potential formation damage.

Flowback surfactants

Aubin's range of flowback surfactants have been designed to enhance the clean-up of spent fluids and improve production after the fracturing operation. We offer a choice of surfactants designed to be compatible with different fluid types and perform under different well conditions.

Gelling Agents

Aubin's polymer gelling agent range offers various viscosity profiles and thermal stability to suit the reservoir conditions. These gelling agents can also be prepared in a hydrocarbon-free, dispersible liquid form that will not cause fish-eyes.

Clay Stabilisers

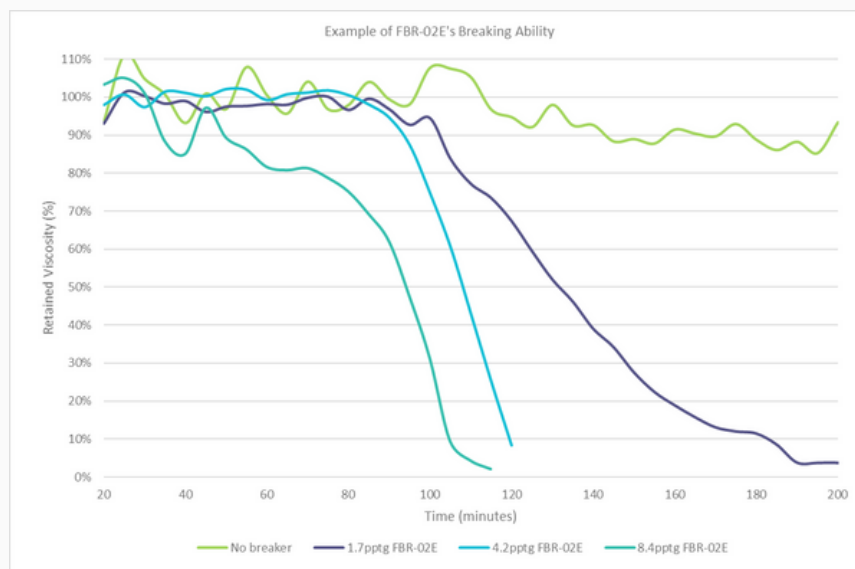
Water-based fracturing fluids can cause clays in the formation to swell or migrate into the fluid, reducing fluid return. Aubin's range includes alternatives to traditional KCl, improving handling and safety concerns and reducing logistical costs.

Biocides

Aubin's range of biocidal chemicals are used to prevent or control the growth of microorganisms in fracturing fluids. The use of polymer gels without a biocide can cause a whole host of issues within the well, including bioclogging, inhibition of production, corrosion downhole and souring of the well.

Buffers

Aubin's range of low and high pH buffers are concentrated liquids used to ensure the fracturing fluids are at the correct pH for optimal crosslinking.



Research, Development and Design Optimisation

The spark of new ideas to ultimately transform the way we think and work is often found in unusual places. We believe each challenge provides the opportunity to discover something new, maximise efficiencies and minimise risk all while contributing towards the end goal of achieving net-zero.

Aubin have a fully equipped laboratory and can conduct custom testing to design fracturing fluid systems based on specific requirements, such as fluid viscosity, reservoir temperatures and break time.



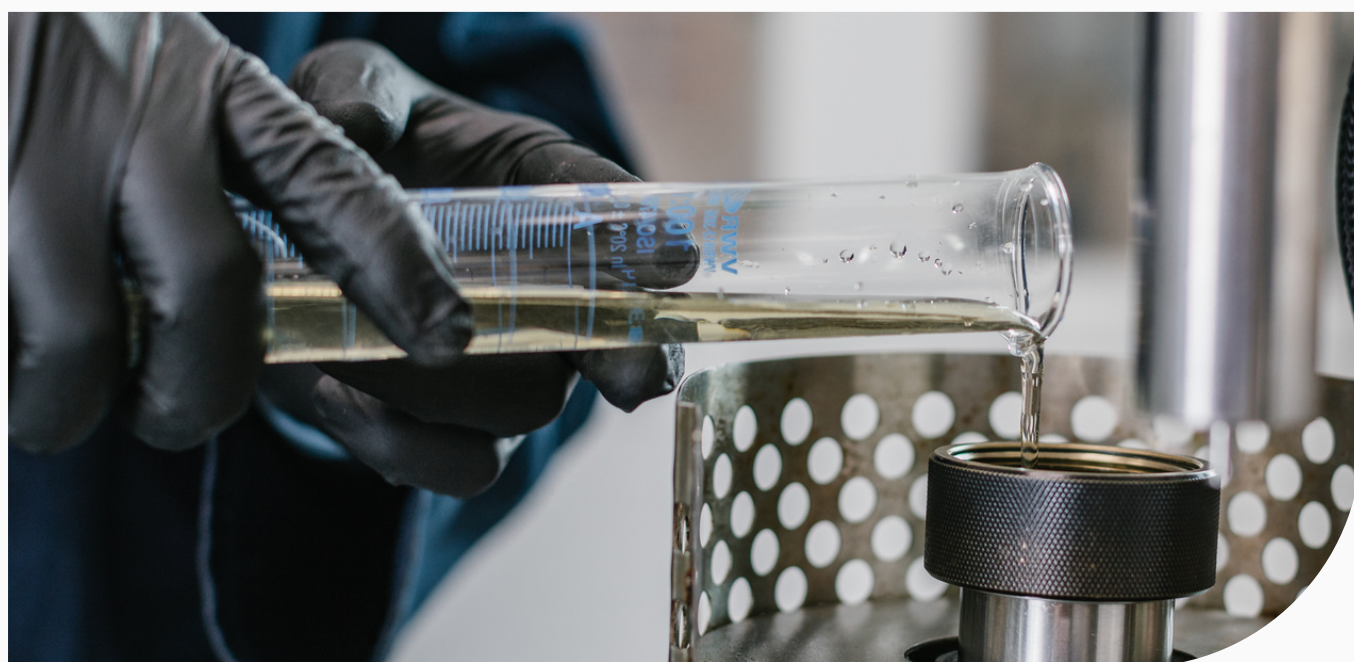
**1/3 OF OUR TIME
IS SPENT ON
RESEARCH AND
DEVELOPMENT**



**INTERNALLY AND
COLLABORATIVELY
DEVELOPED
FRACTURING SYSTEMS**



**12 PATENTS GRANTED
AND 4 PATENTS
PENDING FOR
PRODUCTS**





At Aubin, we thrive on helping you solve your problems and overcoming your challenges through chemical solutions, and strive to develop the best solutions for your specific needs.

Understanding that there is rarely a one-size-fits-all solution, we work closely with customers to help understand challenges and develop solutions.

From our state-of-the-art laboratory, our highly-skilled, knowledgeable and experienced chemical specialists develop new technology, conduct testing for customers, and produce products that will be delivered globally.

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