



Enhance well production with a safer and versatile alternative to traditional acid treatments

Advanced Low-Aggressive Reservoir Acid (ALARA™) fluid technology

In well stimulation and remediation jobs, conventional hydrochloric acid poses significant health, safety, and environmental (HSE) risks. As a result, hydrochloric acid is subject to strict regulations regarding handling and transportation.

The Baker Hughes Advanced Low-Aggressive Reservoir Acid (ALARA™) fluid technology provides a safe acid fluid that reduces HSE risks and simplifies operations, fluid handling and storage. While ALARA fluid technology is based on hydrochloric acid, its patent-pending chemistry eliminates the corrosivity of hydrochloric acid, providing an effective treatment that is non-corrosive to surface equipment, wellbore tubulars, and downhole equipment.

ELIMINATES HSE CONCERNS

ALARA fluid technology is a proprietary formulation that is non-corrosive to the skin, and non-damaging to the eyes. With non-toxic fuming and being readily biodegradable, it provides safe fluid technology and eliminates HSE concerns associated with conventional hydrochloric acid.

SIMPLIFIES OPERATIONS, FLUID HANDLING AND TRANSPORTATION

ALARA fluid technology is not regulated for ground transportation—simplifying acid job logistics and eliminating strict regulations and permits associated with conventional hydrochloric acid.

ALARA is available in customized blends for a wide range of applications and downhole temperatures up to 450°F (232°C). The technology is delivered to the well site in a final, ready-to-pump blend with no extra chemical additives needed—eliminating mixing on location, reducing transport volumes, increasing operational efficiency, and reducing the carbon footprint. It is compatible with typical metallurgy for fresh water/frac tanks used in oil and gas industry, eliminating the need for acid tanks on location and on-site acid truck.

MAINTAINS HIGH DISSOLVING POWER OF CONVENTIONAL HCL

ALARA is a proprietary formulation with the same high dissolving power as the conventional hydrochloric acid to maximize stimulation effectiveness.

APPLICATIONS

- Scale and mineral deposit removal treatments in oil and gas, geothermal, SAGD, and CCUS wells
- Matrix acid stimulation and acid fracturing in carbonate formations
- Spearhead acid treatments for unconventional fracturing applications

BENEFITS

- Simplifies acid handling and transportation logistics
- Offers a safe alternative to conventional hydrochloric acid, eliminating HSE concerns
- Possesses high dissolving power similar to conventional hydrochloric acid, boosting stimulation efficiency at a lower treatment volume
- Prevents corrosion of downhole equipment and tubulars, saving on corrosion inhibitor costs
- Safely dissolves scale around downhole pumps without corroding pump elastomers
- Can be safely deployed during wireline runs, reducing operating time and costs for hydraulic fracturing operations
- Reduces carbon footprint to meet emissions goals and lower carbon taxes

PROTECTS DOWNHOLE EQUIPMENT

While conventional hydrochloric acid is corrosive and can damage wellbore tubulars and downhole pumps, ALARA's non-corrosive proprietary formulation protects equipment, eliminating the need for additional corrosion inhibitor treatments.

The fluid technology is also compatible with most elastomers and other components in electrical submersible pump (ESP) systems. ALARA fluid technology reliably dissolves scale plugging ESPs, restoring well productivity without the risk of inducing corrosion to ESP systems, extending the pump run lifetime. Furthermore, it eliminates costs associated with ESP replacement due to corrosion damage and the workovers required for replacement. It also allows for incremental production by eliminating the deferred production associated with ESP replacement and workovers.

BOOSTS HYDRAULIC FRACTURING EFFICIENCY

ALARA's dissolving power ensures an optimal acid reaction rate for spearhead acid treatments, maximizing the reduction in breakdown pressure while reducing pump horsepower and operating costs. ALARA's compatibility with wireline and bottomhole assemblies allows acid spotting with wireline-deployed perforating guns, reducing frac stage pumping time by up to 20 minutes per stage. This enables operators to perform additional hydraulic fracturing stages each day, increasing time efficiency and reducing operating costs.

Additionally, ALARA acid fluid technology saves excessive water volume requirements compared to the conventional spearhead acid.

Contact Baker Hughes to learn how ALARA can optimize your acidizing jobs for enhanced production at lower risks and costs.

