

Global Oilfield Solutions

Performance Chemicals
for Stimulation



 **BASF**
We create chemistry

High Performance Chemicals for Stimulation

Imagine enhancing your engineering services with solutions from the world's leading chemical company. When it comes to stimulation, BASF offers a strong chemical portfolio that helps our customer to innovate.

Our proven strengths are innovative, sustainable solutions with consistent product quality. Best-in-class well site operations are essential for maximizing the recovery of oil and gas reserves while minimizing the impact on the environment. Specialty chemicals that impart unique capabilities and functionality are an integral part of this goal.

BASF provides a broad range of high-quality chemicals to help service companies meet their technical challenges in stimulation. By constantly improving the quality and reliability of our chemical solutions, we help service companies meet the industry's overall drive for greater efficiency and productivity.





Stimulation	Function	Chemistry	Recommended products
	Acids	Methanesulfonic acid	Baso MSA
	Biocides	Glutaraldehyde	Protectol® GA types Myacide® GA types
	Corrosion inhibitors	Acetylene derivatives	Basocorr™ types
	Friction reducers	Polyacrylamide-based polymers	Alcomer® types
	Gelling agents/ Viscosifiers	Polyacrylamide-based polymers	Alcomer® 788 Alcomer® 889
	Iron control agents	Amine-based oligo acetic acids	Basosolve types
	Water control polymers	Polyacrylamide-based polymers	Alcoflood® 254S Alcoflood® 955
	Breakers	Enzymes	Pyrolase® HT Cellulase

Please note that not all product versions and types may be available in all regions.

Stimulation Portfolio

High Performance Chemicals for Stimulation

BASF Global Oilfield Solutions offers a broad portfolio of specialty chemicals designed to support and enhance the stimulation process.

- **Biocides** – control bacteria in the fracturing fluid at the surface, for batch-mix operations, and once fracturing fluids are pumped into the formation.
- **Corrosion Inhibitors** – effectively protect metal equipment under highly acidic conditions.
- **Friction Reducers** – increase pumping efficiency during hydraulic fracturing.
- **Gelling Agents** – ensure proper placement of proppants in hydraulic fracturing. When used in combination with acids, they ensure good rheology for matrix stimulating jobs.
- **Scale Dissolvers** – dissolve or inhibit inorganic deposits (e.g., iron scale).
- **Water Control Polymers** – reduce production of water.

About Stimulation

A stimulation treatment is carried out to enhance or restore the productivity of a well. The increased productivity results from new flow channels from which natural gas and oil can be recovered from the targeted formation.

- Hydraulic fracturing involves pumping a fluid downhole at a pressure high enough to create fractures in the formation rock. Often proppants (grains of sand, ceramics or other particulates) are placed in the fracture by the fracturing fluid in order to keep the fracture(s) open after the hydraulic pressure is removed. Acid fracturing is employed in carbonate formations or in highly fissured reservoirs in which proppant placement is difficult to achieve. The acid (e.g., hydrochloric acid) etches the faces of the hydraulically induced fractures. When the treatment is complete and the fracture closes, the etched surface provides a high conductivity path from the reservoir to the wellbore.
- Matrix stimulation is the process of injecting a fluid, either an acid or a solvent, into a well at a pressure below the fracturing pressure. Acids are most often used in carbonate reservoirs, however they can be used in sandstone reservoirs or to remove inorganic scales, silts and clays. Whereas solvents are injected to combat paraffin or asphaltene deposition.

Discover your possibilities with BASF.





How BASF Global Oilfield Solutions can contribute to a successful stimulation job

BASF has a broad line of additives for use in fracturing to help optimize the fracturing fluid system. Hydraulic fracturing generally includes pumping specially engineered fluids at high pressure and rate into the subterranean geological formation. Commonly used fracturing fluids are comprised of a carrier fluid (usually water or brine) and, among others, specialty polymers which help to reduce flow turbulence and the amount of horsepower needed to complete the pumping job. **Alcomer**[®] products are highly efficient friction reducers that are especially used in fracturing because of their immediate effectiveness and superior performance.

In acidizing treatments, acetylenic alcohols and derivatives are typically used as corrosion inhibitors due to their outstanding performance under strong acidic and high temperature conditions. **Basocorr**[™] **PP** outperform straight propargyl alcohol while offering safer handling.

Basosolve additives are used to combat precipitation of inorganic salts.

Bacterial growth in fracturing fluids can materially alter the physical characteristics of the fluid. For example, bacterial action can degrade the gelling polymer leading to a loss of viscosity and an ineffectiveness of the fluid. **Protectol**[®] / **Myacide**[®] products are highly efficient biocides that are used to control bacterial growth in fracturing fluids.

BASF's broad range of specialty chemicals also provides solutions to address other challenges in stimulation such as diversion, clay stabilization, water shutt off, avoidance of emulsion formation, reservoir conformance and efficient wellbore clean up.

BASF offers a broad line of additives for use in stimulation. Stimulation helps to enlarge existing fissures or create new fractures.



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