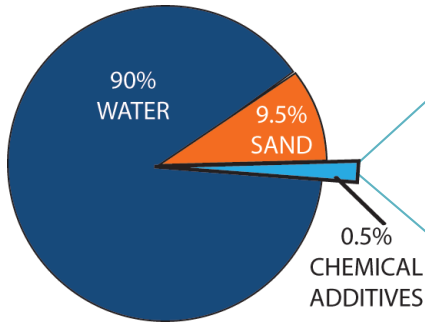


OERB FACT SHEET

What is in Hydraulic Fracturing fluid?



Water accounts for about 90 percent of the fracturing mixture and sand accounts for about 9.5 percent. Chemicals account for the remaining one half of one percent of the mixture.

Compound	Purpose	Common Applications
Acids	Help dissolve minerals and initiate fissure in rock (pre-fracture).	Swimming pool cleaner
Sodium Chloride	Allows a delayed breakdown of the gel polymer chains.	Table salt.
Polyacrylamide	Minimizes the friction between fluid and pipe.	Water treatment, soil conditioner
Ethylene Glycol	Prevents scale deposits in the pipe.	Automotive anti-freeze, deicing agent, household cleaners
Borate Salts	Maintains fluid viscosity as temperature increases.	Laundry detergent, hand soap, cosmetics
Sodium/Potassium Carbonate	Maintains effectiveness of other components, such as crosslinkers.	Washing soda, detergent, soap, water softener, glass, ceramics
Glutaraldehyde	Eliminates bacteria in the water.	Disinfectant, sterilization of medical and dental equipment
Guar Gum	Thickens the water to suspend the sand.	Thickener in cosmetics, baked goods, ice cream, toothpaste, sauces
Citric Acid	Prevents precipitation of metal oxides.	Food additive; food and beverages; lemon juice
Isopropanol	Used to increase the viscosity of the fracture fluid.	Glass cleaner, antiperspirant, hair coloring

