



# GLUCONATES IN OIL INDUSTRY

Sodium Gluconate is used in the Oil and Gas Industry in several ways. Sodium Gluconate functions as a chelating agent in most applications, but has additional functions as well. There are four main uses:

- Well Cementing
- Fracking and Drilling fluids
- Trace Metal Chelation
- Gypsum Scale removal



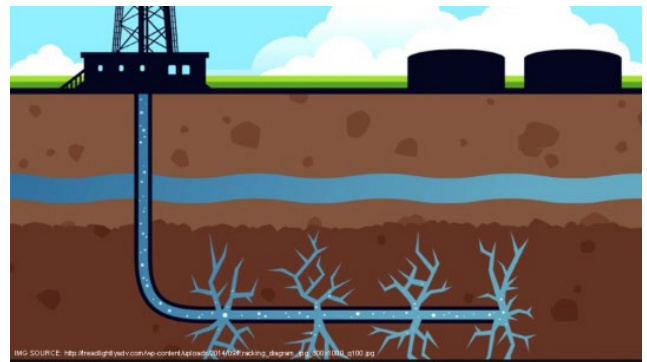
## WELL CEMENTING

Sodium Gluconate is used as a set retarder in the concrete mix used in well cementing. The delayed set time allows the concrete slurry to reach the necessary depths of the hole before setting.<sup>1</sup>

## FRACKING AND DRILLING FLUIDS

Sodium gluconate is added to fracking fluids as a cross-linking ligand to produce a viscous gel with higher temperature resistance.<sup>2</sup>

Gluconate is also added to the mud used in these applications



## TRACE METAL CHELATION

Some of the water used in fracking contains high Total Dissolved Solids (TDS) which make it incompatible with the fracking fluids. Sodium gluconate is used as a chelating agent to remove these unwanted elements and increase efficiency.



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## SCALE REMOVAL

Wells can develop a buildup of calcium sulfate (gypsum) that impedes the flow of product. A 2:1 mix of sodium gluconate:sodium hydroxide (by weight) is effective at removing this scale. This formula can be made as strong as 5:1 depending on the extent of the scale.<sup>3</sup>



## Availability

Sodium gluconate is available in solid or liquid form. Sodium Gluconate FCC comes in both granular and powder form. LG 60 (LT), LG 70, Gluconic Acid 50% and S-45/50 are available in drums, totes, bulk or rail.

- 1 Walker, Wayne A , Patent 3,053,673 “Oil Well Cement Compositions”, 1962
- 2 Yi Liu, et al., “Development and Field Application of a New Ultralow Guar Gum Concentration Weighted Fracturing Fluid in HPHT Reservoirs, Journal of Chemistry, November 2020
- 3 Jones, Lloyd W., Patent 3,688,829 “Removing Scale from Oil Wells”, 1972

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