



Fracturing Fluids, Well Completion after Drilling And Well Stimulation after Hydrofracturing

Major prospects for oil production increase in the fields are associated with the involvement of low permeability heterogeneous reservoirs into the active development as well as with a more complete oil recovery in the old fields with hard-to-recover reserves.

One of the most widely used advanced recovery and stimulation methods is hydraulic fracturing of formation (hydrofrac). Thereby to provide hydrofrac fluid with the required proppant carrying properties and to create high enough hydraulic pressure some guar-based gelling agents or other polysaccharide polymers are conventionally used. Quite high residual content of the latter in proppant pack after hydrofrac decreases dramatically the efficiency of the treatment. Proposed by Polyex variants of solving of this problem are based both on the chemicals which allow to remove the guar gel residuals and on the gelling chemicals which do not contain any solid polymer phase.

The process of oil and gas well completion after drilling is the final stage of well construction and it affects to much extent the achieving of designed well yields. Elimination of negative affect of drilling mud on to the pay zone permeability as well as preparing of the perforation media which are non-damaging for formation allow to improve sufficiently the output of wells from the very beginning of their exploitation.



Chemicals and technologies for well completion after drilling and well stimulation after hydrofracturing :

1. Hydrofracturing with the application of non-polymeric viscoelastic fracturing and proppant carrying fluids with gelling agent **SURFOGEL® grade D**.
2. Acid-proppant fracturing with the application of acid gel being a non-polymeric viscoelastic surfactant fracturing and carrying fluid, prepared with gelling agent **SURFOGEL® grade AF**.
3. Acid-fracturing with the application of acid gel being a non-polymeric viscoelastic fracturing fluid, prepared with gelling agent **SURFOGEL® grade AT, AF**.
4. Cleanout of horizontal wellbore from residual proppant in the wells with hydrofrac with the help of ultralight water-based fluids of **ULZhG** brand with the densities ranging from 0.7 g/cm³ to 0.9 g/cm³.
5. Completion of wells after hydrofrac with the use of clay & polymer destructing acid-based stimulation fluid **FLUXOCORE® 110** for the production wells in terrigenous reservoirs.
6. Well completion after drilling with the use of acid stimulation fluids **FLUXOCORE® 110, FLUXOCORE® 210, FLUXOCORE® 201**.



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Chemical	Description	Purpose of Application	Area of Application		Comments	
			Reservoir Type	Type of Problems		
SURFOGEL® grade D type 20-40	Complex of viscoelastic surfactant (VES) gel forming chemicals for preparing of water-based fracturing fluids	Preparing of polymer-free fracturing fluids, proppant carrying fluids	T	-	Supplied component-wise	
SURFOGEL® grade D type 40-70						
SURFOGEL® grade D type 70-100						
SURFOGEL® grade AF	Complex of VES gel forming chemicals for preparing of acid fracturing fluids	ACID-PROPPANT FRAC: Preparing of polymer-free gelled acid fracturing fluids, which are also proppant carrying fluids ACID FRAC: Preparing of polymer-free gelled acid fracturing fluids	C	-	Supplied component-wise	
SURFOGEL® grade AT	Complex of viscoelastic surfactant gel forming chemicals for preparing of acid fracturing fluids	ACID FRAC: Preparing of polymer-free gelled acid fracturing fluids	C	-	Supplied component-wise	
ULZhG	Hydrocarbon-free water-based ultralight killing fluids containing VES	Cleanout of horizontal wellbore from residual proppant in the wells with hydrofrac	T	Need to remove the residual proppant from the well tubing	Supplied component-wise and to be mixed at site	
FLUXOCORE® 110	Acid stimulation fluid – clay & polymer destructor	Well stimulation after hydrofrac	T	Polymer gel based fracturing fluids of various chemical compositions, clogging cake formed by hydrofrac fluids and clays. Formation temperatures up to 140°C	Ready-to-use chemical	
		Oil, gas and gas-condensate well completion after drilling	C, T	Natural and synthetic polymers, clays		
FLUXOCORE® 210 grade O grade R	Acid stimulation fluid	Oil and gas well completion after drilling, re-start treatment after conservation or prolonged stops	C, T	Clogging settlements, clay-polymeric muds and oil-water emulsions	Concentrated chemical (grade O) Ready-to-use chemical (grade R)	
FLUXOCORE® 201 grade K grade R	Acid stimulation fluid	Oil and gas well completion after drilling, re-start treatment after conservation or prolonged stops, switching to other horizons	C	Produced fluids are poorly compatible with acids, tending to form precipitation at contact with acids	Concentrated chemical (grade K) Ready-to-use chemical (grade R) May be supplied component-wise in the form of Modifiers	

To select the optimal consumption of chemicals and application technologies please contact POLYEX specialists.



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