

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	11/11/2012
State:	California
County:	Kern County
API Number:	0403045497
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	27E-35R
Longitude:	-119.479723
Latitude:	35.270398
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	4,250
Total Water Volume (gal)*:	196,068

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Produced Water (Oxy Provided), YF 125-Flex	Schlumberger	Activator , Surfactant , Breaker, Breaker Aid, Gelling Agent, Crosslinker, Clay Control Agent, Bactericide, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		71.68423%	
			Crystalline silica	14808-60-7	98.57998%	27.91368%	
			Phenolic resin	9003-35-4	1.68308%	0.47658%	
			Carbohydrate polymer	Proprietary	0.67268%	0.19047%	
			Propan-2-ol	67-63-0	0.30733%	0.08702%	
			Diammonium peroxidisulphate	7727-54-0	0.23803%	0.06740%	
			Oxyalkylated Alcohol (2)	Proprietary	0.22662%	0.06417%	
			2,2`,2"-nitrilotriethanol	102-71-6	0.09859%	0.02792%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.07060%	0.01999%	
			Zirconium dichloride oxide	7699-43-6	0.05445%	0.01542%	
			Aliphatic polyol	Proprietary	0.05194%	0.01471%	
			Aliphatic co-polymer	Proprietary	0.04421%	0.01252%	
			Alkylalcohol ethoxylated	Proprietary	0.01345%	0.00381%	

			Diocetyl sulfosuccinate sodium salt	Proprietary	0.01345%	0.00381%	
			Oxyalkylated Alcohol (1)	Proprietary	0.01345%	0.00381%	
			Potassium hydroxide	1310-58-3	0.01252%	0.00355%	
			Methanol	67-56-1	0.01045%	0.00296%	
			Non-crystalline silica	7631-86-9	0.00723%	0.00205%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.00723%	0.00205%	

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)