

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	12/7/2012
State:	California
County:	Kern County
API Number:	0403045493
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	16SE-35R
Longitude:	-119.483634
Latitude:	35.282033
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	4,237
Total Water Volume (gal)*:	146,951

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), YF122 Flex	Schlumberger	Activator , Surfactant , Breaker, Stabilizing Agent, Gelling Agent, Crosslinker, Clay Control Agent, INDUSTRIAL ANTIMICROBIAL, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		72.78237%	
			Crystalline silica	14808-60-7	98.36763%	26.77334%	
			Phenolic resin	9003-35-4	2.29699%	0.62519%	
			Carbohydrate polymer	Proprietary	0.60876%	0.16569%	
			Aliphatic polyol	Proprietary	0.26206%	0.07133%	
			Propan-2-ol	67-63-0	0.25396%	0.06912%	
			2,2',2"-nitrilotriethanol	102-71-6	0.23486%	0.06392%	
			Diammonium peroxidisulphate	7727-54-0	0.19160%	0.05215%	
			Oxyalkylated Alcohol (2)	Proprietary	0.17465%	0.04754%	
			Potassium hydroxide	1310-58-3	0.11781%	0.03206%	
			Zirconium dichloride oxide	7699-43-6	0.07086%	0.01929%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06614%	0.01800%	
			Aliphatic co-polymer	Proprietary	0.04311%	0.01173%	
			Methanol	67-56-1	0.02180%	0.00593%	
			Non-crystalline silica	7631-86-9	0.01568%	0.00427%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.01568%	0.00427%	
			Oxyalkylated Alcohol (1)	Proprietary	0.01322%	0.00360%	
			Alkylalcohol ethoxylated	Proprietary	0.01322%	0.00360%	
			Diocetyl sulfosuccinate sodium salt	Proprietary	0.01322%	0.00360%	

* 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)