

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	11/20/2012
State:	California
County:	Kern County
API Number:	0403048674
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	27N-35R
Longitude:	-119.480582
Latitude:	35.270981
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	4,215
Total Water Volume (gal)*:	163,155

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 122 Flex	Schlumberger	Activator , Surfactant , Breaker, Breaker Aid, Gelling Agent, Crosslinker, Clay Control Agent, INDUSTRIAL ANTIMICROBIAL, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		70.82472%	
			Crystalline silica	14808-60-7	98.43864%	28.71975%	
			Phenolic resin	9003-35-4	1.61953%	0.47250%	
			Carbohydrate polymer	Proprietary	0.66317%	0.19348%	
			Propan-2-ol	67-63-0	0.26089%	0.07611%	
			Aliphatic polyol	Proprietary	0.21319%	0.06220%	
			Diammonium peroxidisulphate	7727-54-0	0.19583%	0.05714%	
			Oxyalkylated Alcohol (2)	Proprietary	0.19041%	0.05555%	
			2,2',2"-nitrilotriethanol	102-71-6	0.14362%	0.04190%	
			Potassium hydroxide	1310-58-3	0.09485%	0.02767%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06567%	0.01916%	
			Zirconium dichloride oxide	7699-43-6	0.06374%	0.01860%	
			Aliphatic co-polymer	Proprietary	0.04308%	0.01257%	
			Methanol	67-56-1	0.01783%	0.00520%	
			Diocetyl sulfosuccinate sodium salt	Proprietary	0.01175%	0.00343%	
			Alkylalcohol ethoxylated	Proprietary	0.01175%	0.00343%	
			Oxyalkylated Alcohol (1)	Proprietary	0.01175%	0.00343%	
			Non-crystalline silica	7631-86-9	0.01154%	0.00337%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.01154%	0.00337%	

* 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)