

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/7/2012
State:	California
County/Parish	Kern County
API Number:	0403045201
Operator Name:	Occidental Oil & Gas
Well Name and Number:	24H-6G
Longitude:	-119.444217015764
Latitude:	35.2616568302918
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2873
Total Water Volume (gal)*:	150,927

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
WF120, YF120ST	Schlumberger	Activator , Surfactant , Breaker, Crosslinker, Gelling Agent, Bactericide, Demulsifier, Fluid Loss Additive , Propping Agent	Water (Including Mix Water Supplied by Client)*	-		74.33636%	
			Crystalline silica	14808-60-7	94.87639%	24.34874%	
			Phenolic resin	9003-35-4	1.92687%	0.49450%	
			Propan-2-ol	67-63-0	0.85327%	0.21898%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.81585%	0.20938%	
			Guar gum	9000-30-0	0.69629%	0.17869%	
			1, 2, 3 - Propanetriol	56-81-5	0.19614%	0.05034%	
			Methanol	67-56-1	0.15874%	0.04074%	
			Diammonium	7727-54-0	0.14672%	0.03765%	

			peroxidisulphate				
			Sodium tetraborate decahydrate	1303-96-4	0.11768%	0.03020%	
			Decyl-dimethyl amine oxide	2605-79-0	0.07365%	0.01890%	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.02884%	0.00740%	
			Alcohol, C9-11-iso, C10, ethoxylated	78330-20-8	0.02821%	0.00724%	
			Ethoxylated propoxylated 4-nonylphenol-formaldehyde resin	30846-35-6	0.02109%	0.00541%	
			Heavy aromatic naphtha	64742-94-5	0.01425%	0.00366%	
			Alcohol, C11-14, ethoxylated	78330-21-9	0.01396%	0.00358%	
			Quaternary ammonium compounds chlorides derivatives	68989-00-4	0.01396%	0.00358%	
			Non-crystalline silica	7631-86-9	0.00880%	0.00226%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.00690%	0.00177%	
			Poly(oxy-1,2-ethanediyl)	25322-68-3	0.00627%	0.00161%	
			Naphtalene (impurity)	91-20-3	0.00285%	0.00073%	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00152%	0.00039%	
			Decyldimethyl amine (impurity)	1120-24-7	0.00118%	0.00030%	
			Hydrogen peroxide (impurity)	7722-84-1	0.00071%	0.00018%	

* 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%

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