

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/9/2017
Job End Date:	7/1/2017
State:	Texas
County:	Crockett
API Number:	42-105-42351-00-00
Operator Name:	EP Energy
Well Name and Number:	University Salt Draw 3820KH
Latitude:	31.05979000
Longitude:	-101.10099400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,587
Total Base Water Volume (gal):	13,489,756
Total Base Non Water Volume:	1,097,432



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
Water	Operator	Base Carrier Fluid	Water	7732-18-5	100.00000	85.48596	
Sand	Multiple Suppliers	Proppants	Silicon Dioxide	14808-60-7	100.00000	11.85961	
15% Hydrochloric Acid	Reagent	Scale Dissolver	Water	7732-18-5	85.00000	2.09400	
			36% Hydrochloric Acid	7647-01-0	15.00000	0.36953	
MCS-376	Ace Completions	Surfactants	Water	7732-18-5	75.00000	0.03195	
			Proprietary	Proprietary	15.00000	0.00639	Proprietary Data
			Ethylene oxide/propylene Oxide co-polymer	9003-11-6	10.00000	0.00426	
			Coconut diethanolamide	68603-42-9	8.00000	0.00341	
			Poly(oxy-01,2-ethanediyl), alpha hexyl-omega-hydroxy-	31726-34-8	5.00000	0.00213	
			Alcohol	68609-68-7	5.00000	0.00213	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00213	
			Solvent Naptha(Petroleum), Heavy	64742-94-5	1.00000	0.00043	

			Diethanolamine	111-42-2	1.00000	0.00043	
NE-227	ACE Completions	Non and De-Emulsifiers					
			Water	7732-18-5	90.00000	0.03842	
			Proprietary	Proprietary	15.00000	0.00640	Proprietary Data
			Alcohol	68609-68-7	5.00000	0.00213	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00213	
			Poly(oxy-1,2-ethanediyl), alpha hexyl-omega-hydroxy	31726-34-8	5.00000	0.00213	
			Solvent Naptha(Petroleum), Heavy Aromatic	64742-94-5	1.00000	0.00043	
CS-15	ACE Completions	Clay Control / Stabilizers					
			Water	7732-18-5	100.00000	0.01132	% is Proprietary
			Choline Chloride	67-48-1	100.00000	0.01132	% is Proprietary
			Magnesium Chloride	7791-18-6	100.00000	0.01132	% is Proprietary
Bactron K-139/B-51/BIOC11139W	Nalco Champion	Biocides					
			Isopropanol	67-63-0	60.00000	0.01411	Revised Version 7-15-2016
			Benzyl-C12-16-akyldimethyl-Ammonium chloride	68424-85-1	30.00000	0.00706	
			Ethylene Glycol	107-21-1	30.00000	0.00706	Revised Version 7-15-2016
			Glutaraldehyde	111-30-8	10.00000	0.00235	
			Ethanol	64-17-5	5.00000	0.00118	
FR-56	Kemira Chemicals, Inc.	Friction Reducers					
			Distillates(petroleum), hydrotreated light	64742-47-8	28.00000	0.01548	
			Alcohols, C12-16, ethoxylated	68551-12-2	3.00000	0.00166	
			Alcohols, C12-14, ethoxylated	68439-50-9	3.00000	0.00166	
			Alcohols, C10-C16, ethoxylated	68002-97-1	3.00000	0.00166	
FE-4	Finoric LLC	Iron Controller / Reducers					
			Water	7732-18-5	52.00000	0.00553	
			Citric Acid Annhydrous	77-92-9	52.00000	0.00553	
I-123	Finoric LLC	Acid Corrosion Inhibitors					
			Ethylene Glycol	107-21-1	40.00000	0.00194	
			N,N-Dimethylformamide	68-12-2	20.00000	0.00097	
			Cinnamaldehyde	104-55-2	10.00000	0.00048	
			2-Butoxyethanol	111-76-2	10.00000	0.00048	
			Tar based, quinoline derived, benzyl chloride-quaternized	72480-70-7	10.00000	0.00048	
			Ethoxylated Nonylphenol	68412-54-4	10.00000	0.00048	
			1-Decanol	112-30-1	10.00000	0.00048	
			Triethyl Phosphate	78-40-0	2.50000	0.00012	
			1-Octanol	111-87-5	2.50000	0.00012	
			Isopropyl Alcohol	67-63-0	2.50000	0.00012	

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* 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%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

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