

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/12/2018
Job End Date:	5/3/2018
State:	Texas
County:	Reagan
API Number:	42-383-39823-00-00
Operator Name:	EP Energy
Well Name and Number:	University Central 0823DH
Latitude:	31.16581000
Longitude:	-101.64923999
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,606
Total Base Water Volume (gal):	28,272,888
Total Base Non Water Volume:	0



### 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
Sodium Bisulfite	Downhole Chemical Solutions	Oxygen Scavenger					
				Listed Below			
EnviroSurf6	Downhole Chemical Solutions	Surfactant					

				Listed Below			
MBC 12:3	Downhole Chemical Solutions	Biocide					
				Listed Below			
Hydrochloric Acid (HCl)	Cooper	Acidizing					
				Listed Below			
Surf-Shield S-NEL	Aegis	non-Emulsifier					
				Listed Below			
ScaleBlok 10	Downhole Chemical Solutions	Scale Inhibitor					
				Listed Below			
Water	Customer	Carrier/Base Fluid					
				Listed Below			
HiFlow 18	Downhole Chemical Solutions	Friction Reducer					
				Listed Below			
Sand	Customer	Proppant					
				Listed Below			
Iron X I-IC	Aegis	Iron Chelatin Agent					

				Listed Below			
Acid Shield A-LL	Aegis	Corrosion Inhibitor					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	92.81500	None
			Crystalline Silica	14808-60-7	100.00000	6.73456	None
			15% Hydrochloric Acid	7647-01-0	100.00000	0.21161	None
			Water	7732-18-5	92.00000	0.04367	None
			Water	7732-18-5	91.00000	0.04212	None
			Petroleum Distillate	64742-47-8	42.00000	0.03431	None
			Petroleum Distillate	64742-47-8	42.00000	0.03431	
			Water	7732-18-5	35.00000	0.02859	None
			Water	7732-18-5	62.00000	0.02229	None
			Water	7732-18-5	84.50000	0.01980	
			Water	7732-18-5	84.50000	0.01980	None
			Polyacrylamide	9003-05-8	23.00000	0.01879	None
			Polyacrylamide	9003-05-8	23.00000	0.01879	
			Sodium Bisulfite	7631-90-5	38.00000	0.01366	
			Sodium Bisulfite	7631-90-5	38.00000	0.01366	None
			Glutawaldehyde	111-30-8	12.20000	0.00286	None
			Polycarboxylate, Sodium Salt	68-04-2	5.00000	0.00237	
			Polycarboxylate, Sodium Salt	68-04-2	5.00000	0.00237	None
			Alcohols C6-C12, Ethoxylated	68551-12-2	5.00000	0.00231	
			Alcohols C6-C12, Ethoxylated	68551-12-2	5.00000	0.00231	None
			Sodium Laureate Sulfate	9004-82-4	4.00000	0.00185	
			Sodium Laureate Sulfate	9004-82-4	4.00000	0.00185	None

			Hydroxy Phosphono- acetic acid	23783-26-8	3.00000	0.00142	
			Hydroxy Phosphono- acetic acid	23783-26-8	3.00000	0.00142	None
			Didecyl dimethyl ammonium chloride	7173-51-5	2.00000	0.00047	
			Didecyl dimethyl ammonium chloride	7173-51-5	2.00000	0.00047	None
			Citric Acid	77-92-9	20.00000	0.00039	None
			Alkyl dimethyl ammonium chloride	68424-85-1	1.30000	0.00030	None
			Alkyl dimethyl ammonium chloride	68424-85-1	1.30000	0.00030	
			Inorganic Salt	Proprietary		0.00018	
			Inorganic Salt	Proprietary		0.00018	
			Ethylene glycol	107-21-1	20.00000	0.00014	None
			Methyl Alcohol	67-56-1	17.00000	0.00012	None
			Methyl Alcohol	67-56-1	17.00000	0.00012	
			Acetic Acid	64-19-7	5.00000	0.00010	None
			Acetic Acid	64-19-7	5.00000	0.00010	
			N, N-dimethylformamide	68-12-2	13.00000	0.00009	None
			N, N-dimethylformamide	68-12-2	13.00000	0.00009	
			Polysaccharaide	Proprietary		0.00005	
			4-Nonylphenol, branched, ethoxylated	127087-87-0	7.00000	0.00005	
			Cinnamaldehyde	104-55-2	7.00000	0.00005	
			Cinnamaldehyde	104-55-2	7.00000	0.00005	None
			2-Butoxyethanol	111-76-2	7.00000	0.00005	
			4-Nonylphenol, branched, ethoxylated	127087-87-0	7.00000	0.00005	None
			2-Butoxyethanol	111-76-2	7.00000	0.00005	None
			Isopropyl alcohol	67-63-0	3.00000	0.00002	
			Triethyl Phosphate	78-40-0	3.00000	0.00002	None
			Triethyl Phosphate	78-40-0	3.00000	0.00002	
			Isopropyl alcohol	67-63-0	3.00000	0.00002	None

			Methyl Alcohol	67-56-1	5.00000	0.00002	None
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\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

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

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)