

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/15/2022
Job End Date:	5/22/2022
State:	Texas
County:	Ward
API Number:	42-475-38257-00-00
Operator Name:	Forge Energy, LLC
Well Name and Number:	UL 16 Tilden WB1 1H
Latitude:	31.47578500
Longitude:	-103.10712000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,019
Total Base Water Volume (gal):	25,285,589
Total Base Non Water Volume:	1,285,291



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	89.30671	
Sand	Multiple Suppliers	Proppants	Silicon Dioxide	14808-60-7	100.00000	9.78154	
15% Hydrochloric Acid	Multiple Suppliers	Scale Dissolver	Water	7732-18-5	85.00000	0.50562	
			36% Hydrochloric Acid	7647-01-0	15.00000	0.08923	
FR-630	SNF Inc.	Friction Reducers	Water	7732-18-5	48.00000	0.04919	
			Distillates(petroleum), hydrotreated light	64742-47-8	30.00000	0.03074	
			2-Propenoic acid polymer with acrylamide, sodium salt	25987-30-8	30.00000	0.03074	
			Buffering agents	Proprietary	22.00000	0.02255	
			Alcohols, C12-16, ethoxylated	68551-12-2	5.00000	0.00512	
			Proprietary surfactant package	Proprietary	5.00000	0.00512	
			Acrylamide(as residual)	79-06-1	0.10000	0.00010	
Axi Pro 257X	Guide Energy Solutions	Surfactants					

			Surfactant Blend	Proprietary	25.00000	0.02305
			Glycol Ether	Proprietary	5.00000	0.00461
			Alkyl Sulfonic Acid	Proprietary	5.00000	0.00461
			Isopropanol	67-63-0	5.00000	0.00461
SI-625(D-100)	ACE Completions	Scale Inhibitors				
			Water	7732-18-5	90.00000	0.01822
			Diethylenetriamine penta methyphosphoric acid sodium salts	22042-96-2	20.00000	0.00405
			Potassium hydroxide solution	1310-58-3	2.00000	0.00040
FR-533	SNF	Friction Reducers				
			Distillates(petroleum), hydrotreated light	64742-47-8	45.00000	0.00861
			Water	7732-18-5	39.00000	0.00746
			2-Propenoic acid, polymer with 2 propenamide, sodium salt	25987-30-8	29.00000	0.00555
			Poly(oxy-1,2-ethanediyl), a- tridecyl-w-hydroxy-, branched	69011-36-5	3.00000	0.00057
			Sorbitan Monooleate	1338-43-8	2.00000	0.00038
			Acrylamide(as residual)	79-06-1	0.10000	0.00002
Axi Clay CC4	Guide Energy Solutions	Clay Control / Stabilizers				
			Ethylene glycol	107-21-1	10.00000	0.00507
			Ethanol	64-17-5	5.00000	0.00253
			Cationic Surfactant	Proprietary	5.00000	0.00253
GB-210	Ace Completions	Gel Breakers/Delayed Breakers				
			Water	7732-18-5	77.00000	0.00677
			Sodium Hypochlorite	7681-52-9	12.50000	0.00110
			Sodium Chloride	7647-14-5	10.00000	0.00088
			Sodium Hydroxide	1310-73-2	2.00000	0.00018
Bio GQ 123	Ace Completions, LLC	Biocides				
			Glutaraldehyde	111-30-8	12.40000	0.00251
			Didecyl dimethyl ammonium chloride	7173-51-5	2.00000	0.00041
			Alkyl dimethyl benzyl ammonium chloride (C 12-16)	68424-85-1	1.30000	0.00026
			Ethanol	64-17-5	1.00000	0.00020
FE-6	Multiple Suppliers	Iron Controller / Reducers				
			Acetic Acid	64-19-7	82.00000	0.00148
			Water	7732-18-5	20.00000	0.00036
I-122	Chemplex/Solvay	Acid Corrosion Inhibitors				
			Methanol	67-56-1	80.00000	0.00077
			Alcohol, C14-15, Ethoxylated	68951-67-7	25.00000	0.00024
			Propargyl alcohol	107-19-7	10.00000	0.00010
Axi Slick A8908	Guide Energy Solutions	Friction Reducers				
			Surfactant	Proprietary	100.00000	0.00035

		Hydrotreated light distillate (petroleum)	64742-47-8	100.00000	0.00035	
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)