

Nevada Division of Minerals Hydraulic Fracture Chemical Disclosure Reference List
(in CASRN™ numerical order)

Row #	Chemical Name (* indicates Trade Name or ingredient is Trade Secret)	Chemical Abstracts Service Registry Number (CASRN™) (1)	Product Function	Chemical Purpose	Other Uses (2)	Existing Chemical on EPA TSCA list (3)	EPA's Pesticide InertFinder Listing If Approved for Food, NonFood, Fragrance Use (4)	Carcinogenic Agent Classified (Group 1 or 2) by the IARC Monographs - (V. 1-109) (5)	CA Prop.65 Listed Agent (6)	NIOSH REL (TWA ppm) (7)	OSHA PEL (TWA ppm) (7)	API Well Usage Count West of Long. 104 (8)	Avg. Conc. In HF Fluid (% by mass) (8)
1	2-Bromo-2-nitro-1,3-propanediol	000052-51-7	Biocide	Eliminates bacteria in the water that produces corrosive by-products	Preservative in cosmetics and toiletries	Yes	F, NF	No	No	NL	NL	514	0.00172
2	Glycerine	000056-81-5	Crosslinker		Cosmetics, hand lotions, pharmaceuticals	Yes	F, NF	No	No	NA	NA	2,312	0.03336
3	Propylene glycol	000057-55-6			Paints, detergents, air fresheners, numerous skin, face and hair care products; special effects fog	Yes	F, NF, Fr	No	No	NL	NL	1,960	0.00992
4	Ethanol	000064-17-5	Surfactant	Product stabilizer and / or winterizing agent.	Alcoholic beverages, pharmaceuticals, perfumes, solvents, dehydration, rubbing alcohol	Yes	F, NF, Fr	No	No	1000	1000	6,205	0.02972
5	Formic Acid	000064-18-6	Corrosion Inhibitor	Prevents the corrosion of the pipe	Manufacture of fumigants	Yes	NF	No	No	5	5	1,952	0.00434
6	Acetic Acid	000064-19-7	pH Adjusting Agent	Adjusts the pH of fluid to maintains the effectiveness of other components, such as crosslinkers, prevents precipitation of metal oxides	Vinegar (4-8%); food additive (<8%); (>10% used as industrial chemical for controlling pH)	Yes	F, NF, Fr	No	No	10	10	6,624	0.01037
7	Choline Chloride	000067-48-1	Clay Stabilizer	Prevents clays from swelling or shifting	Pharmaceuticals; additive to chicken feed	Yes	F, NF	No	No	NL	NL	3,285	0.07977
8	Methanol	000067-56-1	Corrosion Inhibitor, Friction Reducer, Crosslinker	Prevents the corrosion of the pipe	Solvent, antifreeze, fuel; windshield wiper fluid; used as extractant for animal and vegetable oils	Yes	F, NF, Fr	No	Yes, 47,000 ug/day (inhal.), 23,000 ug/day (oral)	200	200	25,049	0.12366
9	Isopropanol	000067-63-0	Corrosion Inhibitor, Surfactant	Product stabilizer and / or winterizing agent	Solvent, rubbing alcohol, pharmaceuticals, biocide	Yes	F, NF, Fr	No	No	400	400	13,575	0.01530
10	Thioglycolic Acid	000068-11-1	Iron Control	Prevents precipitation of metal oxides	Hair removal products, hair "perm" products; often used in certain PVC products	Yes	NF	No	No	1	NA	159	0.00181
11	Propanol	000071-23-8	Crosslinker		Used in manufacture of cosmetics, skin and hair products, pharmaceuticals, perfumes, soap, window cleaners	Yes	F, NF	No	No	200	200	448	0.01593
12	Butyl alcohol	000071-36-3			Used in aerosol paints, permanent and dry erase markers, aftershave	Yes	F, NF, Fr	No	No	NA	100	344	0.00854
13	Acetaldehyde	000075-07-0	Corrosion Inhibitor	Prevents the corrosion of the pipe	Used in manufacture of plastics, resins, cosmetics, pharmaceuticals, perfumes, glue, paper; as a food preservative; occurs naturally in some foods (ripe fruits and coffee)	Yes	Fr	Yes, Group 2B (possibly carcinogenic)	Yes, (90 ug/day-inhalation)	Ca/LOQ 18	200	404	0.00016
14	Tetramethyl ammonium chloride	000075-57-0	Clay Stabilizer	Prevents clays from swelling or shifting	Industrial and medical research applications as a hygroscopic solid	Yes	NL	No	No	NL	NL	930	0.07396
15	Citric Acid	000077-92-9	Iron Control	Prevents precipitation of metal oxides	Beverages, pH aduster in food, used in making of cheese, jellies, and candies; special inks, foam inhibitor	Yes	F, NF, Fr	No	No	NL	NL	5,292	0.00842
16	Naphthalene	000091-20-3	Surfactant	Carrier fluid for the active surfactant ingredients	Intermediate chemical used in the manufacture of plastics, soaps, dyes, sheetrock, pesticides, paper, pharmaceuticals	Yes	NF, Fr	Yes, Group 2B (possibly carcinogenic)	Yes, NSRL 5.8 ug/day	10	10	3,983	0.00461
17	1,2,4 Trimethylbenzene	000095-63-6	Surfactant		Used as sterilizing agent; manufacture of dyes, perfumes, resins; occurs naturally in coal tar and petroleum	Yes	NF, Fr	No	No	NL	NL	2,548	0.00109
18	Hexamethylenetetramine	000100-97-0	Proppant	Acts to harden resin-based proppants	Used in manufacture of resins, adhesives; camping fuel tablets, antimicrobial food additive; pharmaceuticals	Yes	F, NF	No	No	NL	NL	2,651	0.05413
19	Triethanolamine	000102-71-6	Surfactant	Adjusts and buffers pH, solubilizes oils	Used in wide variety of detergents and cleaners; shaving creams, cosmetics, hand lotions	Yes	F, NF, Fr	No	No	NA	NA	1,164	0.03717
20	2-Ethylhexanol	000104-76-7			Fatty alcohol used as a low volatility biodegradeable solvent; also in the production of emollients	Yes	F, NF, Fr	No	No	NL	NL	1,398	0.00239
21	Propargyl Alcohol	000107-19-7	Corrosion Inhibitor			Yes	NF	No	No	1	NA	6,330	0.00040
22	Ethylene Glycol	000107-21-1	Crosslinker, Friction Reducer, Gelling Agent	Product stabilizer and / or winterizing agent.	Used in manufacture of textiles, resins, and plastics (PET); antifreeze; preservative for biological specimens and woods	Yes	F, NF, Fr	No	No	NA	NA	12,513	0.05389
23	Acetic anhydride	000108-24-7	pH Adjusting Agent			Yes	F, NF	No	No	5	5	1,435	0.02060
24	Propylene carbonate	000108-32-7			Used in anti-perspirant, mascara, lipstick	Yes	F, NF	No	No	NL	NL	779	0.00102
25	Glutaraldehyde	000111-30-8	Biocide	Eliminates bacteria in the water that produces corrosive by-products	Disinfectant for medical and dental equipment; industrial water treatment; pharmaceuticals	Yes	NF	No	No	REL C 0.2	NA	5,824	0.18426
26	Diethylenetriamine	000111-40-0	Activator	Assists in extraction of acid gas	Used in epoxies and adhesives	Yes	NF	No	No	1	NA	431	0.00328
27	2-Butoxyethanol	000111-76-2	Surfactant	Product stabilizer	Latex and enamel paints, silicone caulk; used in a wide variety of industrial and household cleaners; food additive; antimicrobial	Yes	F, NF, Fr	No	No	5	50	5,439	0.01545
28	Sodium bicarbonate	000144-55-8	Buffer	Controls the pH	Baking soda; used in variety of effervescent and food products; cleaning compounds	Yes	F, NF	No	No	NL	NL	707	0.01006

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29	Sodium Carbonate	000497-19-8	pH Adjusting Agent	Adjusts the pH of fluid to maintains the effectiveness of other components, such as crosslinkers	Baking powder; soda ash, used as a pH adjuster; fungicide; food additive; water softener; used in the manufacture of glass	Yes	F, NF	No	No	NL	NL	525	0.01112
30	Potassium Carbonate	000584-08-7	pH Adjusting Agent	Adjusts the pH of fluid to maintains the effectiveness of other components, such as crosslinkers	Used as a pH adjuster; food additive; water softener; used in production of beer, wine, glass and ceramics	Yes	F, NF	No	No	NL	NL	2,161	0.05904
31	Potassium formate	000590-29-4	Crosslinker		Used as a road de-icing agent	Yes	NL	No	No	NL	NL	886	0.05515
32	Ammonium acetate	000631-61-8	Buffer	Controls the pH	Used as buffering agent, food additive, biodegradable de-icing agent; used in manufacture of explosives, foam rubber, vinyl plastics; sometimes used in dialysis	Yes	NF	No	No	NL	NL	2,374	0.02837
33	2-Bromo-2-cyanoacetamide	001113-55-9	Biocide	Prevents or limits growth of bacteria	Used as anti-microbial in water treatment and fumigant	No	NF	No	No	NL	NL	347	0.00006
34	Sodium Tetraborate	001303-96-4	Crosslinker	Maintains fluid viscosity as temperature increases	Borax; used in detergents, cosmetics, fire retardants, food additives, pharmaceuticals	Yes	F, NF	No	No	NA	NA	1,721	0.02755
35	Magnesium Oxide	001309-48-4	Breaker	Allows a delayed breakdown of the gel	The mineral periclase; used as an antacid and mineral supplement; used in manufacture of cement, fire insulation, paper and rubber	Yes	F, NF	No	No	NA	NA	275	0.01210
36	Potassium Hydroxide	001310-58-3	pH Adjusting Agent	Adjusts the pH of fluid to maintains the effectiveness of other components, such as crosslinkers	Used in the manufacture of biodiesel, soft soaps, alkaline and NiMH batteries; used in shaving creams and hair removing products	Yes	F, NF	No	No	NA	NA	6,970	0.01137
37	Sodium Hydroxide	001310-73-2	pH Adjusting Agent	Adjusts the pH of fluid to maintains the effectiveness of other components, such as crosslinkers	Lye; used in vegetable oil refining, chemical peeling of fruits and vegetables in the food industry; chocolate and cocoa processing; soaps, detergents; soft drinks; thickening of ice cream	Yes	F, NF	No	No	NA	NA	8,834	0.02005
38	Ulexite	001319-33-1	Water conditioner		Natural occurring borate mineral; decomposes in hot water; used in soaps and detergents as a water softener	No	NL	No	No	NL	NL	942	0.04016
39	Sorbitan, mono-9-octadecenoate, (Z)	001338-43-8	Surfactant		Emulsifier (Polysorbate 80) in a variety of food products (ice cream, protein shakes, salad dressings); pharmaceuticals	Yes	F, NF	No	No	NL	NL	4,922	0.00219
40	Sodium glycolate	002836-32-0			Used similarly to acetic acid; in face and skin cleaners; some stain removers	Yes	NF	No	No	NL	NL	1,609	0.00051
41	Sodium Erythorbate	006381-77-7	Iron Control	Prevents precipitation of metal oxides	Food preservative used in meats, poultry and soft drinks; derived from beet, cane and corn sugars	Yes	NF	No	No	NL	NL	1,353	0.01033
42	Potassium chloride	007447-40-7	Base Fluid		Used in lawn and plant fertilizers; hair and skin products; air fresheners; laundry detergents	Yes	F, NF	No	No	NL	NL	1,817	7.62637
43	Silica, amorphous - fumed	007631-86-9	Proppant	Acts to keep fractures propped open	Diatomaceous earth; used as filtering agent for liquids (pools, beer, wine, fruit juice)	Yes	F, NF	No	No			3,110	0.70596
44	Hydrochloric Acid	007647-01-0	Acid	Helps dissolve minerals and initiate cracks in the rock	Used as cleaner and disinfectant (bleach) and scale remover; used in manufacture of foods, food additives, gelatin and PVC	Yes	F, NF	No	No	NA	NA	13,716	1.71565
45	Sodium Chloride	007647-14-5	Breaker, Clay Stabilizer	Product Stabilizer, Prevents clays from swelling	Salt; used in foods, water softeners, highway deicing, herbicides, fire extinguishers, mouthwash	Yes	F, NF	No	No	NL	NL	12,610	0.24702
46	Sodium hypochlorite	007681-52-9	Biocide	Eliminates bacteria in the water that produces corrosive by-products	Used in many kitchen and bathroom surface cleansers	Yes	NF	No	No	NL	NL	807	0.01294
47	Sodium iodide	007681-82-5			Used in iodized table salt to prevent iodine deficiency	Yes	F, NF	No	No	NL	NL	1,037	0.00005
48	Ammonium Phosphate	007722-76-1			Used in many lawn and plant fertilizers	Yes	NF	No	No	NL	NL	1,013	0.00005
49	Nitrogen	007727-37-9			Naturally occurring gas; most often used as a propellant in aerosols	Yes	NF	No	No	NL	NL	410	16.04810
50	Ammonium Persulfate	007727-54-0	Breaker	Allows a delayed break down of the gel	Oxidizer used in the manufacture of synthetic rubber and Teflon; often used in etching metals; also used in hair bleaches	Yes	NF	No	No	NA	NA	9,801	0.01636
51	Sodium Persulfate	007775-27-1	Breaker	Allows a delayed break down of the gel	Oxidizer used in hair colorants and lighteners; also in detergents and as a soil conditioner	Yes	NF	No	No	NA	NA	2,187	0.00507
52	Sodium sulfate	007757-82-6			The minerals thenardite and mirabilite; used as a filler in home laundry detergents; used in manufacture of wood pulp, glass, and textiles; also used in thermal storage	Yes	F, NF	No	No	NL	NL	3,126	0.00193
53	Sodium sulfite	007757-83-7			Used in pulp and paper industry, textile industry, at water treatment facilities; used as food preservative	Yes	NF	No	No	NL	NL	325	0.00324

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54	Sodium chlorite	007758-19-2	Breaker	Reduces fluid viscosity	Used to generate chlorine dioxide; for bleaching and stripping of textiles, pulp and paper; for disinfecting wash water for fruits, vegetables, poultry; used in mouthwashes, toothpastes, eye drops	Yes	NL	No	No	NA	NA	3,018	0.02942
55	Sodium thiosulfate	007772-98-7	Stabilizer	Reduces thermal degradation	Used to lower chlorine and bromine levels; used as components in hand warmers; as antidote to cyanide poisoning; used in medical treatments	Yes	F, NF	No	No	NL	NL	1,086	0.15843
56	Magnesium chloride hexahydrate	007791-18-6	Gelling Agent		Used in pharmaceuticals, food supplements; wastewater treatment facilities	No	NL	No	No	NL	NL	29	0.00343
57	Guar Gum	009000-30-0	Gelling Agent	Thickens the water in order to suspend the sand	Used as a thickener and stabilizer in foods, toothpaste, shampoo; also as a clumping agent in kitty litter	Yes	F, NF	No	No	NL	NL	9,611	0.22698
58	Polyacrylamide	009003-05-8	Friction Reducer	"Slicks" the water to minimize friction	Used as a flocculent in water treatment facilities; as a soil conditioner; used in skin care products and manufacture of soft contact lenses	Yes	F, NF	No	No	NL	NL	45	0.01076
59	Phenol/formaldehyde resin	009003-35-4	Proppant	Acts to keep fractures propped open	Used in manufacture of laminates, billiard balls, unsulation, countertops, and adhesives.	Yes	NF	No	No	NL	NL	3,409	0.21152
60	Sodium carboxymethyl cellulose	009004-32-4	Gelling Agent	Acts as a thickener	Used as a food additive (E466); also used in toothpaste, laxatives, diet pills, artificial tears, ice packs; paints, detergents, solid air fresheners	Yes	F, NF	No	No	NL	NL	1,140	0.00293
61	Sorbitan monooleate polyoxyethylene derivative	009005-65-6	Thickener	Acts as a thickener	Polysorbate 80 - emulsifier in foods; also used as a surfactant in soap, toothpaste and shampoo	Yes	F, NF	No	No	NL	NL	2,893	0.00044
62	Cellulase	009012-54-8	Breaker	General term for enzymes which assist with the decomposition of cellulose and polysaccharides	Used in laundry detergents, septic system treatments; also used in processing of coffee	Yes	NF	No	No	NL	NL	278	0.00259
63	Boric Acid	010043-35-3	Crosslinker	Maintains fluid viscosity as temperature increases	Occurs naturally in seawater, many plants and most fruit; used as a cleaning agent, antiseptic, and preservative	Yes	F, NF	No	No	NL	NL	1,343	0.01442
64	Xanthum gum	011138-66-2	Thickener	Acts as a thickener	Used as a thickener and stabilizer in food and cosmetic products; food additive (E415)	Yes	F, NF	No	No	NL	NL	1,034	0.00843
65	Ammonium chloride	012125-02-9	Clay Stabilizer	Prevents clays from swelling or shifting	Used primarily as nitrogen source in fertilizers; also as expectorant in cough medicine; shampoos; food additive (E510);	Yes	F, NF	No	No	NA	NA	5,434	0.00554
66	Potassium Metaborate	013709-94-9	Crosslinker	Maintains fluid viscosity as temperature increases	Derived from boric acid; used in fertilizers and cleansers	Yes	NL	No	No	NL	NL	1,933	0.01973
67	Magnesium Peroxide	014452-57-4	Breaker	Allows a delayed break down of the gel	Used in bioremediation of cotnaminated soils; also as soil amendment	Yes	NL	No	No	NL	NL	253	0.00228
68	Crystalline silica, quartz	014808-60-7	Proppant	Acts to keep fractures propped open	Used as abrasive in cleaners; used in paints, caulk, wood filler and putty	Yes	F, NF	Yes, Group 1 (inhalation)	Yes, inhalation	NA	NA	35,465	5.13010
69	1-(Benzyl) quinolinium chloride	015619-48-4	Corrosion Inhibitor	Prevents the corrosion of the pipe		Yes	NL	No	No	NL	NL	997	0.00051
70	Dipropylene glycol	025265-71-8	Crosslinker	Polymer initiator	Often used as an additive to perfumes and skin and hair products; ingredient in fog fluid for smoke machines	Yes	F, NF, Fr	No	No	NL	NL	3	0.00359
71	Copolymer of Acrylamide and Sodium Acrylate	025987-30-8	Scale Inhibitor	Prevents scale deposits in the pipe		Yes	NL	No	No	NL	NL	1,328	0.01888
72	Orthoboric acid ethanolamine salt	026038-87-9	Crosslinker			Yes	NF	No	No	NL	NL	818	0.06435
73	Dodecylbenzene sulfonic acid	027176-87-0	Surfactant	Product stabilizer	Used in car wash liquids and liquid laundry detergents; biodegradable	Yes	F, NF	No	No	NL	NL	1,122	0.00098
74	Dipropylene glycol methyl ether	034590-94-8		Enhances solubility of surfactants in water and oil	Used as a solvent in cleaning products; as enhancer in soaps and shampoo; oil dispersant	Yes	F, NF, Fr	No	No	100	100	396	0.02807
75	Tetrakis Hydroxymethyl-Phosphonium Sulfate	055566-30-8	Biocide	Eliminates bacteria in the water that produces corrosive by-products	Used as a anti-microbial and preservative in pigments, coatings, and fire protection systems	Yes	NL	No	No	NL	NL	2,246	0.01432
76	Quaternary Ammonium Chloride	061789-71-7	Biocide	Eliminates bacteria in the water that produces corrosive by-products	Used in common household cleaners and degreasers	Yes	NL	No	No	NL	NL	76	0.00294
77	Polyethoxylated fatty amine salt	061791-26-2	Surfactant	Product stabilizer	Used in toilet bowl cleaner, weed killer	Yes	F, NF	No	No	NL	NL	1,019	0.00049
78	Petroleum Distillate	064741-85-1	Crosslinker, Frction Reducer, Gelling Agent	Carrier fluid for borate or zirconate crosslinker	Also called mineral spirits; used in paint, paint removers;	Yes	NL	No	No	NL	NL	343	0.08663
79	Hydrotreated Light Petroleum Distillate	064742-47-8	Crosslinker, Friction Reducer, Gelling Agent	Carrier fluid for borate or zirconate crosslinker	Used in wide variety of auto care products; in stains and paints; as a carrier fluid for numerous pesticides,	Yes	F, NF, Fr	No	No	NL	NL	16,320	0.15692

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80	Heavy aromatic petroleum naptha	064742-94-5	Surfactant	Roduct stabilizer	Used in wide variety of auto care products; in stains and paints; as a carrier fluid for numerous pesticides,	Yes	F, NF	No	No	NL	NL	3,914	0.01360
81	Napthenic acid ethoxylate	068410-62-8				Yes	NL	No	No	NL	NL	1,115	0.00143
82	Ethoxylated hexanol	068439-45-2			Used in kitchen cleaners	Yes	F, NF	No				213	0.02474
83	Thiourea Polymer (modified)	068527-49-1	Corrosion Inhibitor	Prevents the corrosion of the pipe		Yes	NL	No	No	NL	NL	4,406	0.00100
84	Alcohols, C12-16, ethoxylated	068551-12-2			Used in a wide variety of household cleaners, detergents, and stain removers	Yes	F, NF	No	No	NL	NL	4,671	0.00219
85	Triethanolamine Zirconate	101033-44-7	Crosslinker	Maintains fluid viscosity as temperature increases	Used as a catalyst for resin croslinking and surface treatment on pigments	Yes	NL	No	No	NL	NL	306	0.02449
86	2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	Biocide	Eliminates bacteria in the water that produces corrosive by-products	Used as a biocide in water cooling facilities; quickly biodegrades in water	Yes	NL	No	No	NL	NL	3,344	0.00418
87	Silica gel	112926-00-8	Dessicant		Used as a dessicant in small containers to control local humidity and avoid spoilage or degradation of some foods, vitamins, and prescriptions; also used as an anti-caking agent in some powdered food products; as an abrasive in toothpastes and skin cleansers; used in paints	Yes	F, NF	No	No	NA	NA	2,053	0.00176
88	Zirconium Complex	113184-20-6	Crosslinker	Maintains fluid viscosity as temperature increases		Yes	NL	No	No	NL	NL	63	0.00686
89	Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		Used to separate hydrocarbons from water	Used in water filtration facilities; also at sediment and soil remediation sites	No	NF	No	No	NL	NL	1,938	0.00930
90	Poly(oxy-1,2-ethanedyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	Surfactant	Roduct stabilizer	Used as a degreaser and cleaner,; also in wood finishes	Yes	F, NF	No	No	NL	NL	2,733	0.00300
91	*Acrylate polymer	*TS			Used in soaps, hair products, lip gloss; also used in spackle and caulking	Yes	NF	No	No	NL	NL	588	0.00105
92	*Aldehyde	*TS				Yes	NF	No	No	NL	NL	1,222	0.00147
93	*Alkyl sulfonate	*TS			Used in some household cleaning products	Yes	NF	No	No	NL	NL	62	0.10193
94	*Amide	*TS			Used in some exterior car care products	Yes	NF	No	No	NL	NL	87	0.00123
95	*Borate Salts	*TS	Crosslinker	Maintains fluid viscosity as temperature increases	Used in some laundry detergents; also as a water conditioner	No	NF	No	No	NL	NL	1,711	0.04858
96	*EDTA/Copper chelate	*TS	Activator			No	NF	No	No	NL	NL	755	0.00691
97	*Ethoxylated amine	*TS			Used in detergents and in some marine epoxies and paints	Yes	F, NF	No	No	NL	NL	968	0.00053
98	*Fatty acid tall oil amide	*TS				Yes	NF	No	No	NL	NL	1,899	0.00189
99	*Modified alkane (CL-22UCw)	*TS	Crosslinker (CL-22UCw)	Maintains fluid viscosity as temperature increases		Yes	NL	Yes, 1 constituent at 0.1% of total product mass	Yes, 2 constituents each at 0.1% of total product mass	NA	5 mg/m³	305	0.05856
100	*Oxyalkylated phenolic resin	*TS				Yes	NF	No	No	NL	NL	4,080	0.01158
101	*Oxylated alcohol	*TS	Surfactant			Yes	F, NF	No	No	NL	NL	10	0.00267
102	*Phosphonic Acid Salt	*TS	Scale Inhibitor	Prevents scale deposits in the pipe		No	F, NF	No	No	NL	NL	308	0.00465
103	*Polyacrylamide copolymer	*TS			Used in hair conditioners and skin moisturizers	Yes	NF	No	No	NL	NL	2394	0.01137
104	* Polysaccharide (DCA-25005)	*TS	Gelling Agent	Thickens the water in order to suspend the sand	Used in glue, absorbent powders, and anti-perspirant	Yes	NF	No	No	NL	NL	58	0.20468
105	*Quaternary ammonium salt	*TS	Corrosion Inhibitor			Yes	NF	No	No	NL	NL	1,262	0.00105
106	*Sodium Polycarboxylate	*TS	Scale Inhibitor	Prevents scale deposits in the pipe		Yes	NF	No	No	NL	NL	204	0.00079
107	*Surfactant mixture	*TS				Yes	NF	No	No	NL	NL	3,844	0.00188
	Sources:												
	(1) Chemical Abstracts Service Registry Number is a Registered Trademark of the American Chemical Society - http://www.cas.org												
	(2) US Dept. of Health and Human Services' Household Products Database - http://hpd.nlm.nih.gov/index.htm , EPA Chemical Fact Sheets - http://www.epa.gov/chemfact/												
	(3) EPA Toxic Substances Control Act listing for production, importation, use and disposal of specific chemicals (excludes food, drugs, cosmetics, and pesticides) - http://www.epa.gov/enviro/facts/tsca/tsca_search.html												

Nevada Division of Minerals Hydraulic Fracture Chemical Disclosure Reference List
(in CASRN™ numerical order)

Row #	Chemical Name (* indicates Trade Name or ingredient is Trade Secret)	Chemical Abstracts Service Registry Number (CASRN™) (1)	Product Function	Chemical Purpose	Other Uses (2)	Existing Chemical on EPA TSCA list (3)	EPA's Pesticide InertFinder Listing If Approved for Food, NonFood, Fragrance Use (4)	Carcinogenic Agent Classified (Group 1 or 2) by the IARC Monographs - (V. 1-109) (5)	CA Prop.65 Listed Agent (6)	NIOSH REL (TWA ppm) (7)	OSHA PEL (TWA ppm) (7)	API Well Usage Count West of Long. 104 (8)	Avg. Conc. In HF Fluid (% by mass) (8)
	(4) EPA Pesticide InertFinder database listing of inert substances in pesticides for Food, Nonfood, and Fragrance uses - http://iaspub.epa.gov/apex/pesticides/f?p=INERTFINDER:1:0::NO:1::												
	(5) World Health Association's International Agency for Research on Cancer Monographs on the Evaluation of Carcinogenic Risks to Humans Volumes 1-109 (1/14/2014) - http://monographs.iarc.fr/												
	(6) California Office of Environmental Health Hazard Assessment Proposition 65 List of Chemicals Known to Cause Cancer or Reproductive Toxicity (5/2/2014) - http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html												
	(7) OSHA Occupational Chemical Database - https://www.osha.gov/chemicaldata/ ; and NIOSH Pocket Guide to Chemical Hazards - http://www.cdc.gov/niosh/npg/npgdcas.html												
	(8) FracFocus Chemical Disclosure Registry dataset (version 2.0) as of 2/15/2014; subset utilizing information from 14,865 registered wells located west of Longitude 104 degrees, i.e. western states - http://www.fracfocus.org/												