



Proposed WDTN5PHSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.92944%
Crystalline Silica in the form of Quartz	14808-60-7	15.86742%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03443%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03443%
Hydrogen chloride	7647-01-0	0.03029%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00430%
Glutaraldehyde	111-30-8	0.00207%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00107%
AA/ATBS Co-polymer	9003-05-8	0.00107%
Citric acid	77-92-9	0.00038%
Methyl alcohol	67-56-1	0.00038%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Ethanol	64-17-5	0.00016%
Ethylene glycol	107-21-1	0.00011%
N,N-Dimethylformamide	68-12-2	0.00005%
Cinnamaldehyde	104-55-2	0.00003%
2-Butoxyethanol	111-76-2	0.00003%
Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-, branched	127087-87-0	0.00003%
Tar Bases, quinoline derivs, benzyl chloride-quat	72480-70-7	0.00003%



Proposed WDTN5QHSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.58771%
Crystalline Silica in the form of Quartz	14808-60-7	16.21795%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03429%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03429%
Hydrogen chloride	7647-01-0	0.02784%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00429%
Glutaraldehyde	111-30-8	0.00207%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00107%
AA/ATBS Co-polymer	9003-05-8	0.00107%
Citric acid	77-92-9	0.00035%
Methyl alcohol	67-56-1	0.00035%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Ethanol	64-17-5	0.00015%
Ethylene glycol	107-21-1	0.00010%
N,N-Dimethylformamide	68-12-2	0.00005%
Cinnamaldehyde	104-55-2	0.00002%
2-Butoxyethanol	111-76-2	0.00002%
Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-, branched	127087-87-0	0.00002%
Tar Bases, quinoline derivs, benzyl chloride-quat	72480-70-7	0.00002%



Proposed WDTN5RHSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.58771%
Crystalline Silica in the form of Quartz	14808-60-7	16.21795%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03429%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03429%
Hydrogen chloride	7647-01-0	0.02784%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00429%
Glutaraldehyde	111-30-8	0.00207%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00107%
AA/ATBS Co-polymer	9003-05-8	0.00107%
Citric acid	77-92-9	0.00035%
Methyl alcohol	67-56-1	0.00035%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Ethanol	64-17-5	0.00015%
Ethylene glycol	107-21-1	0.00010%
N,N-Dimethylformamide	68-12-2	0.00005%
Cinnamaldehyde	104-55-2	0.00002%
2-Butoxyethanol	111-76-2	0.00002%
Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-, branched	127087-87-0	0.00002%
Tar Bases, quinoline derivs, benzyl chloride-quat	72480-70-7	0.00002%