



Proposed WFN12A Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.35733%
Crystalline Silica in the form of Quartz	14808-60-7	16.45950%
AA/ATBS Co-polymer	9003-05-8	0.03803%
Hydrogen chloride	7647-01-0	0.02993%
Alkanes, C12-26-branched and linear	90622-53-0	0.02992%
Alcohol alkoxylate	68511-12-2	0.00427%
Glutaraldehyde	111-30-8	0.00206%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00128%
Citric acid	77-92-9	0.00038%
Methyl alcohol	67-56-1	0.00037%
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	0.00011%
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 WFN12B Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.47755%
Crystalline Silica in the form of Quartz	14808-60-7	16.33916%
AA/ATBS Co-polymer	9003-05-8	0.03809%
Hydrogen chloride	7647-01-0	0.02997%
Alkanes, C12-26-branched and linear	90622-53-0	0.02996%
Alcohol alkoxylate	68511-12-2	0.00428%
Glutaraldehyde	111-30-8	0.00206%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00128%
Citric acid	77-92-9	0.00038%
Methyl alcohol	67-56-1	0.00037%
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	0.00011%
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 WFN12C Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.80022%
Crystalline Silica in the form of Quartz	14808-60-7	16.01617%
AA/ATBS Co-polymer	9003-05-8	0.03824%
Hydrogen chloride	7647-01-0	0.03009%
Alkanes, C12-26-branched and linear	90622-53-0	0.03007%
Alcohol alkoxylate	68511-12-2	0.00430%
Glutaraldehyde	111-30-8	0.00207%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00129%
Citric acid	77-92-9	0.00038%
Methyl alcohol	67-56-1	0.00037%
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 WFN12D Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.80022%
Crystalline Silica in the form of Quartz	14808-60-7	16.01617%
AA/ATBS Co-polymer	9003-05-8	0.03824%
Hydrogen chloride	7647-01-0	0.03009%
Alkanes, C12-26-branched and linear	90622-53-0	0.03007%
Alcohol alkoxylate	68511-12-2	0.00430%
Glutaraldehyde	111-30-8	0.00207%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00129%
Citric acid	77-92-9	0.00038%
Methyl alcohol	67-56-1	0.00037%
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 WFN12E Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	83.35733%
Crystalline Silica in the form of Quartz	14808-60-7	16.45950%
AA/ATBS Co-polymer	9003-05-8	0.03803%
Hydrogen chloride	7647-01-0	0.02993%
Alkanes, C12-26-branched and linear	90622-53-0	0.02992%
Alcohol alkoxylate	68511-12-2	0.00427%
Glutaraldehyde	111-30-8	0.00206%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00128%
Citric acid	77-92-9	0.00038%
Methyl alcohol	67-56-1	0.00037%
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	0.00011%
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%