



Proposed MAM16KHSU Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	85.72452%
Crystalline Silica in the form of Quartz	14808-60-7	14.05414%
Hydrogen chloride	7647-01-0	0.00611%
Methyl alcohol	67-56-1	0.00031%
N,N-Dimethylformamide	68-12-2	0.00004%
Ethylene glycol	107-21-1	0.00009%
2-Butoxyethanol	111-76-2	0.00002%
Poly(oxy-1,2-ethanedijyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-, branched	127087-87-0	0.00002%
Tar Bases, quinoline derivs, benzyl chloride-quat	72480-70-7	0.00002%
Cinnamaldehyde	104-55-2	0.00002%
Citric acid	77-92-9	0.00031%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.05370%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.05370%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00671%
Glutaraldehyde	111-30-8	0.00212%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00032%
Quaternary Ammonium Compounds	68424-85-1	0.00032%
Ethanol	64-17-5	0.00016%
AA/ATBS Co-polymer	9003-05-8	0.00198%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00198%



Proposed MAM16LHSU Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	85.67277%
Crystalline Silica in the form of Quartz	14808-60-7	14.10642%
Hydrogen chloride	7647-01-0	0.00598%
Methyl alcohol	67-56-1	0.00031%
N,N-Dimethylformamide	68-12-2	0.00004%
Ethylene glycol	107-21-1	0.00009%
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%
Cinnamaldehyde	104-55-2	0.00002%
Citric acid	77-92-9	0.00031%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.05367%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.05367%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00671%
Glutaraldehyde	111-30-8	0.00212%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00032%
Quaternary Ammonium Compounds	68424-85-1	0.00032%
Ethanol	64-17-5	0.00016%
AA/ATBS Co-polymer	9003-05-8	0.00198%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00198%



Proposed MAM16PHSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	82.28477%
Crystalline Silica in the form of Quartz	14808-60-7	17.54450%
Hydrogen chloride	7647-01-0	0.00787%
Methyl alcohol	67-56-1	0.00041%
N,N-Dimethylformamide	68-12-2	0.00006%
Ethylene glycol	107-21-1	0.00012%
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%
Cinnamaldehyde	104-55-2	0.00003%
Citric acid	77-92-9	0.00041%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03021%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03021%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00378%
Glutaraldehyde	111-30-8	0.00203%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Ethanol	64-17-5	0.00015%
AA/ATBS Co-polymer	9003-05-8	0.00190%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00190%



Proposed MAM16QHSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	82.28478%
Crystalline Silica in the form of Quartz	14808-60-7	17.54451%
Hydrogen chloride	7647-01-0	0.00787%
Methyl alcohol	67-56-1	0.00040%
N,N-Dimethylformamide	68-12-2	0.00006%
Ethylene glycol	107-21-1	0.00012%
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%
Cinnamaldehyde	104-55-2	0.00003%
Citric acid	77-92-9	0.00041%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03021%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03021%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00378%
Glutaraldehyde	111-30-8	0.00203%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Ethanol	64-17-5	0.00015%
AA/ATBS Co-polymer	9003-05-8	0.00190%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00190%



Proposed MAM16RHSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	82.28538%
Crystalline Silica in the form of Quartz	14808-60-7	17.54463%
Hydrogen chloride	7647-01-0	0.00767%
Methyl alcohol	67-56-1	0.00041%
N,N-Dimethylformamide	68-12-2	0.00006%
Ethylene glycol	107-21-1	0.00012%
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%
Cinnamaldehyde	104-55-2	0.00003%
Citric acid	77-92-9	0.00041%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03021%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03021%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00378%
Glutaraldehyde	111-30-8	0.00203%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Ethanol	64-17-5	0.00015%
AA/ATBS Co-polymer	9003-05-8	0.00190%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00190%



Proposed MAM16SHSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	82.28479%
Crystalline Silica in the form of Quartz	14808-60-7	17.54451%
Hydrogen chloride	7647-01-0	0.00787%
Methyl alcohol	67-56-1	0.00040%
N,N-Dimethylformamide	68-12-2	0.00006%
Ethylene glycol	107-21-1	0.00012%
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%
Cinnamaldehyde	104-55-2	0.00003%
Citric acid	77-92-9	0.00041%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03021%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03021%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00378%
Glutaraldehyde	111-30-8	0.00203%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Ethanol	64-17-5	0.00015%
AA/ATBS Co-polymer	9003-05-8	0.00190%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00190%



Proposed MAM16THSM Hydraulic Fracturing Fluid Additives

Ingredients	Chemical Abstract Service Number (CAS #)	% of Total Usage (by Mass)
Water	7732-18-5	82.28477%
Crystalline Silica in the form of Quartz	14808-60-7	17.54450%
Hydrogen chloride	7647-01-0	0.00787%
Methyl alcohol	67-56-1	0.00041%
N,N-Dimethylformamide	68-12-2	0.00006%
Ethylene glycol	107-21-1	0.00012%
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%
Cinnamaldehyde	104-55-2	0.00003%
Citric acid	77-92-9	0.00041%
Acrylamide-Chloride Salt of Trimethylammonio-Ethyl Acrylate Copolymer	69418-26-4	0.03021%
Alkanes, C12-26-Branched and Linear	90622-53-0	0.03021%
Ethoxylated Alcohols (C12-16)	68551-12-2	0.00378%
Glutaraldehyde	111-30-8	0.00203%
Didecyl dimethyl ammonium chloride	7173-51-5	0.00031%
Quaternary Ammonium Compounds	68424-85-1	0.00031%
Ethanol	64-17-5	0.00015%
AA/ATBS Co-polymer	9003-05-8	0.00190%
AA/Maleic Anhydride Co-polymer	9003-04-7	0.00190%