

Chemicals Used in the Hydraulic Fracturing Process in Pennsylvania
Prepared by the Department of Environmental Protection
Bureau of Oil and Gas Management
Compiled from Material Safety Data Sheets (MSDS) obtained from Industry

Chemical	Product Name
2,2-Dibromo-3-Nitrilopropionamide	Bio Clear 1000/Bio Clear 2000/ Bio-Clear 200/ BioRid20L/ EC6116A
2-methyl-4-isothiazolin-3-one	X-Cide 207
5-chloro-2-methyl-4-isothiazolin-3-one	X-Cide 207
Acetic Acid	Fe-1A Acidizing Composition/ Packer Inhibitor
Acetic Anhydride	Fe-1A Acidizing Composition
Acetylene	GT&S Inc./ Airco
Alcohol Ethoxylated C12-16	NE-200
Alkyl benzene sulfonic acid	Tetrolite AW0007/ FR-46
Ammonia (aqueous)	FAW-5
Ammonium Bifluoride	ABF 37%
Ammonium Persulfate	AP Break
Ammonium Bisulfite	Techni-Hib 604/ Fe OXCLEAR/ Packer Inhibitor
Ammonium chloride	Salt Inhibitor
Ammonium Salt (alkylpolyether sulfate)	Tetrolite AW0007
Amorphous silica	TerraProp Plus/ Bituminous Coal Fly Ash ASTM C618
Benzoic Acid	Benzoic Acid
Boric Acid	BC-140/ Unilink 8.5
Boric Oxide	XLW-32
Calcium Chloride	Dowflake
Calcium Oxide	Bituminous Coal Fly Ash ASTM C618
carboxymethylhydroxypropyl guar blend	Unigel CMPHG
Choline Chloride	Clay Treat-2C
Cinnamaldehyde	ENVIROHIB 2001
Citric Acid	Ferrotrol 300L/ IC-100L
Complex polyamine salt	Clay Master-5C
Crystalline Silica: Cristobalite	
Crystalline Silica: Quartz	Silica Sand/ / Atlas PRC/ Best Sand/ Bituminous Coal Fly Ash ASTM C618
Cupric chloride dihydrate	Ferrotrol 280L
Cured resin	LiteProp 125
Cyclohexanes	CS-2
Dazomet	ICI-3240
Diethylene Glycol	Scaletrol 720/ Scaletrol 7208
d-Limonene	MA-844W

Enzyme	GBL-8X
EO-C7-9-iso-, C8 rich-alcohols	NE-940/ NE-90
EO-C9-11-iso-, C10-rich alcohols	NE-940/ NE-90
Ethoxylated Alcohol	FRW-14/ SAS-2/ Flomax 50/ WFR-3B
Ethyl Acetate	Castle Thrust
Ethyl Alcohol	FAW-5/ Castle Shop Solv/ Dallas Morris
Ethylbenzene	NDL-100/ PARANOX/ Uniflo II
Ethylene Glycol	ENVIROHIB 2001/ ICA-2/ LEB 10X/ Scaletrol 720/ Scaletrol 7208/ CC 300/ Clachek A/ Clachek LP/ Ironsta II B/ NCL-100/ BC 140/ NCL-100/ Flomax 50/ NCL/ Scalehib 100/ Unihib O/ Unilink 8.5
Formic Acid	ENVIROHIB 2001
Gluconic Acid	Interstate ICA-2
Glutaraldehyde	Alpha 114/Alpha 125/ ICI-150
Glycerol	Bio Sealers
Glycol Ethers	ENVIROHIB 2001/AMPHOAM 75/ PARANOX/ Uniflo II/ Unifoam/ WNE-342LN
Guar Gum	PROGUM 19 GUAR PRODUCT/ Unigel 19XL/ Benchmark Polymer 3400/ WGA-15/ Unigel 5F
Hydrochloric Acid	Hydrochloric Acid (HCL)/ TETRAClean 542/ Muriatic Acid
Hydrochloric Acid 3% - 35%	Hydrochloric Acid 3% - 35%
Isopropanol	AFS 30 Blend/ FAC-1W/ FAC-3W/ MA-844W/ NE 23/ NE-940/ Flomax 50/ Tetrolite AW0007/ FMW25 Foamer/ CS-2
Isopropyl Alcohol	NFS-102/ WFT-9511/ LT-32/ AR-1/ Flomax 50/ NDL-100/ Unibac/ Uniflo II/ Uniflo/ Unihib O/ WNE-342LN
Methanol	AFS 30 Blend/ NE-200/ Activator Superset-W/ CI-14/ FAW-5/ GasFlo/ Inflo-250W/ LT-32/ NE-940/ XLW-32/ Tetrolite AW0007/ FMW25 Foamer/ 40 HTL Corrosion Inhibitor/ NE 100/ HAI-OS Acid Inhibitor/ Unibac/ NE-90/ Packer Inhibitor
Methyl Alcohol	Clearbreak 400/ Super Surf/ Castle Shop Solv
Methyl Salicylate	Bio Sealers
n-butanol	AirFoam 311
Nitilotriacetamide	Salt Inhibitor
Phenolic Resin	Atlas PRC
Polyethylene Glycol	NE-940/ EC6116A/ NE-90
Polyethylene Glycol Mixture	Bio Clear 2000/ Bio-Clear 200
Polyoxylalkylene sulfate	FMW25 Foamer
Polysaccharide Blend	GW-3LDF

Potassium Carbonate	BF-7L
Potassium Chloride	Dowflake
Potassium Hydroxide	B-9, pH Increase Buffer/ BXL-2
Propargyl Alcohol	CI-14/ HAI-OS Acid Inhibitor
Propylene Glycol	SAS-2/ WFR-3B
Silica	S-8C, Sand, 100 mesh/ Montmorillonite clay
Sodium Bicarbonate	K-34
Sodium Bromide	BioRid 20L
Sodium Hydroxide	Caustic Soda/ ICI-3240/ BioRid B-71
Sodium Persulphate	High Perm SW-LB
Sodium Xylene Sulfonate	FAC-2/ FAC-3W
Sulfuric Acid	Sulfuric Acid
Surfactants	AFS-30/ GasFlo/ Inflo-250W
Talc	Adomite Aqua
Tetrakis(hydroxymethyl)phosphonium sulfate	Magnacide 575 Microbiocide
Tetramethyl ammonium Chloride	Clay Treat-3C
Trimethyloctadecylammonium chloride	FAC-1W/ FAC-3W
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