

Cross-Index of Products and Chemicals Used by New York's Natural Gas Industry

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My work-in-progress, "Beyond MSDS: A Review of Hazardous Materials Used by New York's Natural Gas Industry" began with 48 products disclosed by the Department of Environmental Conservation (DEC) in response to a Freedom of Information Law (FOIL) request by The Committee to Preserve the Finger Lakes. However, that list was not merely incomplete, it represented less than a third of all the products subsequently disclosed in the draft Supplemental Generic Environmental Impact Statement for Regulation of the Natural Gas Industry (dSGEIS). Rather than wait until my investigation of the human and environmental toxicity of all these "new" products is complete, I'm releasing intermediate results of the project: a cross-index of what chemicals are found in which products.

A few words of explanation are in order. Where possible, I have used a unified set of chemical names rather than the multiple, often obtuse terms found in the MSDS documents provided to me by the DEC in response to my FOIL request based on the dSGEIS. Such name substitution was directed in every case by the Chemical Abstracts System (CAS) number where available, or by reference to an authoritative chemical index (usually The Merck Index).

For many products, the chemicals present were not disclosed, nor even hinted at. Reference in this cross-index to "proprietary component" was either taken directly from the MSDS document or inferred from chemical and physical properties reported for the product which were inconsistent with the listed chemicals.

I remain dissatisfied with the level of chemicals disclosure that is apparently accepted by New York's DEC. I am appalled by their lack of oversight of this aspect of natural gas exploitation, in tacitly approving for use any and all requested products regardless of their impacts on human health or ecological systems.

This article, related MSDS documents, and other material are available online at: www.sustainableotsego.org.

Ron Bishop

Gas Industry Cross-Index of Products and Chemicals

<u>Product Name</u>	<u>Chemical Composition</u>
ABF	ammonium hydrogen difluoride
Acid Pensurf	2-ethylhexanol dodecylbenzenesulfonate isopropanolamine
Activator W	polyoxyethylene lauryl ether methanol
AGA 150	isopropyl alcohol undisclosed acid gelling agent
AI 2	propargyl alcohol glycol ethers (including 2-butoxyethanol) isopropyl alcohol
Alpha-125	glutaraldehyde
AMB-100	Dazomet
APB-1	ammonium persulfate
AQF-2 Foaming Agent	diethylene glycol 2-butoxyethanol
BA-2 Buffering Agent	sulfamic acid
BA-20 Buffering Agent	ammonium acetate acetic acid
BA-40L Buffering Agent	potassium carbonate
BA-40LM Buffering Agent	potassium carbonate sodium carbonate
BC-140 X2	monoethanolamine boric acid ethylene glycol
BE-7	sodium hypochlorite sodium hydroxide

Product Name**Chemical Composition**

BE-9	tributyl tetradecylbutylphosphonium chloride
BF-1	glycolic acid
BF-7	potassium carbonate
Bio-Clear 1000	2,2-dibromo-3-nitrilopropionamide
BJ Inflo 250W	proprietary mixture of surfactants 2-butoxyethanol methanol
Breaker FR	ferrous sulfate heptahydrate propylene glycol
BXL-2	potassium hydroxide
BXL STD	ethylene glycol sodium hydroxide
Chelating Agent U42	tetrasodium EDTA sodium hydroxide
CI-14	methanol propargyl alcohol
CL-22 UC	potassium formate
CL-31 Crosslinker	potassium metaborate potassium hydroxide
CLA-CHECK LP	ethylene glycol proprietary component
CLAYMASTER 5C	undisclosed quaternary polyamine
CLAY TREAT PP	ethylene glycol undisclosed additive
CLAY TREAT TS	ethylene glycol undisclosed additive
CLAYFIX II PLUS	alkylated quaternary ammonium chloride

<u>Product Name</u>	<u>Chemical Composition</u>
CS-250 SI	polyacrylate solution ethylene glycol
CS-POLYBREAK 210	chlorine dioxide
EB-4L	undisclosed gel breaker ethylene glycol
EDB-CLEAN B880 Breaker	ammonium persulfate
EC6116A	dibromoacetonitrile 2,2-dibromo-3-nitrilopropionamide ethylene glycol
Enzyme Breaker J134L	hemicellulase sucrose ethylene glycol
Enzyme G Breakers	undisclosed enzyme (patent #5,201,370)
EZEFLO Surfactant B859	2-butoxyethanol isopropanol 3 proprietary linear glycol ethers
EZEFLO Surfactant B890	2-butoxyethanol isopropanol 1-butanol
EZEFLO Surfactant B892	2 proprietary glycol ethers methanol
FE-2	citric acid
FE-2A	citric acid
FE-5A	thioglycolic acid
FERCHEK A Reducing Agent	hydroxylamine hydrochloride citric acid amorphous fumed silica
FERCHEK Ferric Ion Inhibitor	sodium isoascorbic acid

Product Name**Chemical Composition**

FLOMAX 70 (VX9173)	methanol proprietary surfactant
FLOPAM DR 6000	water-soluble anionic polymer in emulsion
FLOPAM DR 7000	water-soluble anionic polymer in emulsion
FR-56	deodorized kerosene
Friction Reducer B315	deodorized kerosene proprietary aliphatic alcohol glycol ether
FRW-16	urea poly [2-acrylamido-2-methylpropanesulfonate]
FRW-18	deodorized kerosene proprietary polymer in emulsion
FRW-25M	polymeric "hydrocarbon" mixture; includes sulfonates
GBW-15C	enzyme; possible allergic sensitizer sodium chloride
GBW-20C	hemicellulase enzyme
Gelling Agent ClearFRAC XT B916	fatty amidoalkylbetaine 2-propanol
Green-Cide 25G	glutaraldehyde
GW-3LDF	petroleum distillate blend polysaccharide blend
High-Perm SW-LB	sodium persulfate in water solution
HPH Breaker	proprietary enzyme sodium chloride
HpH Foamer	proprietary amine
HVG-1 Fast-Hydrating Guar Slurry	deodorized kerosene guar gum

Product Name**Chemical Composition**

HYG-3	fumaric acid
IC 100L	proprietary organic acid
ICA 720	sodium erythorbate monohydrate
ICA 400	ethylene glycol combustible proprietary chemical
ICI 3240	Dazomet sodium hydroxide
Inflo-250	proprietary surfactants 2-butoxyethanol
IRON CHEK	proprietary white solid; probable chelator
Iron Stabilizer L58	sodium erythorbate
IRON STA IIC	proprietary chemicals ethylene glycol
K-34	sodium bicarbonate
K-35	sodium carbonate
KCL	potassium chloride
KCLS-2 KCL Substitute	2-butoxyethanol
LEB-10X	ethylene glycol
LGC-36 UC	hydrotreated heavy naphtha polysaccharide
LOSURF-300M	1,2,4-trimethylbenzene naphthalene nonylphenol ethoxylate polycyclic aromatic hydrocarbons ethanol

<u>Product Name</u>	<u>Chemical Composition</u>
LT-32	glycol ethers isopropanol methanol
MA-844W	isopropanol limonene proprietary aliphatic alcohol glycol ether
MO-67	sodium hydroxide
MORFLO III Surfactant	dodecylbenzenesulfonic acid 1-methoxy-2-propanol
MSA II Inhibitor	acetone thiourea ethylene glycol
Muriatic Acid	hydrochloric acid
MUSOL A Solvent	2-butoxyethanol
Mutual Solvent U66	2-butoxyethanol
NCL-100	proprietary component ethylene glycol
PARA CLEAR D-290	toluene xylenes ethylbenzene glycol ethers (including 2-butoxyethanol)
PARAGON 100E+	heavy aromatic petroleum naphtha naphthalene 1,2,4-trimethylbenzene
PARASPERSE CLEANER	toluene 2-butoxyethanol nonylphenol ethoxylate
PSI-720 (B)	ethylene glycol diethylene glycol

<u>Product Name</u>	<u>Chemical Composition</u>
S-150	methanol isopropanol
SAS-2	deodorized kerosene mineral spirits propylene glycol glycol ethers
Scale Inhibitor B317	trisodium phosphate ethylene glycol
Scale Inhibitor L065	ethylene glycol calcium chloride sodium hydroxide
Scalechek LP-65	ammonium chloride
Scalechek SCP-2	glassy calcium magnesium phosphate
SGA-II	deodorized kerosene proprietary polysaccharide
Shale Surf 1000 (W)	proprietary component methanol
Soda Ash M3	sodium carbonate
SP Breaker	sodium persulfate
Stim Lube	proprietary anionic polymer surfactant deodorized kerosene
SUPER OW-3	isopropanol (oxydiethyleneglycol) bis(coco alkyl) dimethyl ammonium chloride methanol
SUPER PENN 2000	2-ethylhexanol dodecylbenzylsulfonate isopropanolamine
SuperSol Acid	hydrochloric acid organic (probably citric) acid

Product Name**Chemical Composition**

UNIFOAM	glycol ethers (including 2-butoxyethanol)
Unigel SF	guar gum
Unihib G	3-methyl-1-butyn-3-ol methanol proprietary component
Unihib A_SP-43X	methanol C10 – C-16 ethoxylated alcohol proprietary aromatic ammonium salt heavy aromatic petroleum naphtha light aromatic solvent naphtha 2-substituted aromatic amine salt kerosene deodorized kerosene hydrodesulfurized kerosene 2-propanol 1,2,4-trimethylbenzene 1,3,5-trimethylbenzene diethylbenzene cumene xylene formaldehyde naphthalene
UNISLIK ST-50	proprietary anionic water-soluble polymer deodorized kerosene
Urea Ammonium Nitrate Solution J534	ammonium nitrate urea
VICON NF Breaker	sodium chlorite sodium chloride
WC-5584	methanol
WCS-5177	diethylene triamine penta(methylenephosphonate) methanol isopropanol sodium chloride

Product Name**Chemical Composition**

WCW-219	methanol proprietary fatty acid / polyamine salt isopropanol sodium chloride oxyalkylated alkylphenol
WF-12B Foamer	methanol proprietary surfactants
WF-12B Salt Inhibitor	2-butoxyethanol nonylphenol ethoxylate
WF-12B/SI Foamer / Salt Inhibitor	methanol ethylene glycol proprietary component
WF-12BH Foamer	methanol proprietary components
WFR-C Acid Gelling Agent	no composition information provided; probable protein or polysaccharide
WG-11 Gelling Agent	guar gum derivative
WG-17 Gelling Agent	cellulose derivative
WG-18 Gelling Agent	guar gum derivative
WG-35 Gelling Agent	guar gum
WG-36 Gelling Agent	guar gum
WLC-6 Fluid Loss Additive	tallow soap
XL-1	ferric chloride
XL-8 Crosslinker	ethylene glycol proprietary component boric acid
XLW-32	methanol boric oxide