

Human health and oil and gas development: An assessment of chemical usage in oil and gas activities in the Los Angeles Basin and the City of Los Angeles

Seth B.C. Shonkoff, PhD, MPH^{1,2,3}, Jeremy K. Domen, MS³, Lee Ann L. Hill, MPH¹

¹ PSE Healthy Energy, Oakland, CA

² Department of Environmental Science, Policy, Management, University of California, Berkeley, CA

³ Lawrence Berkeley National Laboratory, Berkeley, CA

Appendix A

Table A.1. Complete list of chemicals reported with invalid CASRN that could and could not be identified.	2
Table A.2. List of chemicals with valid CASRN after corrections were made.	4
Table A.3. List of trade secret chemicals reported without CASRN.	10
Table A.4. List of trade name products (chemical mixtures without CASRN) with disclosed chemical components.	14
Table A.5. Chemicals with available acute inhalation data for entire SCAQMD dataset.	18
Table A.6. Chemicals with available chronic inhalation reference concentrations (RfV) for entire SCAQMD dataset.	20
Table A.7. Chemicals with available occupational exposure limits for entire SCAQMD dataset.	21
Table A.8. List of chemicals classified as not readily biodegradable for entire SCAQMD dataset.	23
Table A.9. Estimated Hazard Metric values for chronic inhalation for entire SCAQMD.	25
Table A.10. Estimated Hazard Metric values for acute inhalation for entire SCAQMD.	27

Table A.1. Complete list of chemicals reported with invalid CASRNs that could and could not be identified.

Standardized Name	Correct CASRN	Original Reported Name	Original Invalid CASRN
1,2-Ethanediaminium, N1, N2-bis[2-[bis(2-hydroxyethyl) methylammonio]ethyl]-N1, N2-bis(2-hydroxyethyl)-N1, N2-dimethyl-, chloride (1:4)	138879-94-4	OXYAKYLATED AMINE QUAT	13887-99-4
1,2-Ethanediamine, N1-(2-aminoethyl)-N2-(2-((2-aminoethyl)amino)ethyl)-, polymer with 2-methyloxirane and oxirane	68815-65-6	POLYAMINE POLYETHERS	68815-65-1
2-Butoxyethanol	111-76-2	2-BUTOXY ETHANOL	111-76-1
2-propenoic acid, polymer with sodium 2-propenoate	9033-79-8	2-PROPENOIC ACID, POLYMER WITH SODIUM 2-PROPENOATE (1:1)	9003-79-8
Acetic acid	64-19-7	ACETIC ACID	6-41-9
Alcohols, C12-15 ethoxylated	68131-39-5	ETHOXYLATED ALCOHOL	683131-39-5
Aluminum distearate	300-92-5	ALUMINUM DISTEARATE	300-32-5
Ammonium chloride	12125-02-9	AMMONIUM CHLORIDE ((NH4)CL)	12125-20-9 121215-45-9 1212-50-2
Bentonite	1302-78-9	BENTONITE	1308-78-9 1305-78-9
Benzenesulfonic acid, C10-16-alkyl derivs., compds. with cyclohexylamine	255043-08-4	BENZENESULFONIC ACID, C10-16-ALKYL DERIVS., COMPDS. WITH CYCLOHEXYLAMINE	25504-30-8
C13-16 Isoparaffin	68551-20-2	C13-C16 ISOALKANES	6855-10-2
Calcium carbonate	471-34-1	CARBONIC ACID CALCIUM SALT (1:1)	741-34-1
Calcium chloride	10043-52-4	CALCIUM CHLORIDE (CACL2)	1004-35-2
Cellophane	9005-81-6	CELLOPHANE	9005-18-6
Citric acid	77-92-9	CITRIC ACID	779-29-9 77-92-1 72-92-9
Citrus terpenes	94266-47-4	CITRUS TERPENES	4266-47-4
Coco-amido-propylamine oxide	68155-09-9	AMPHOTERIC SURFACTANT	6815-50-9
Crystalline silica (quartz)	14808-60-7	CRYSTALLINE SILICA, QUARTZ	14808-43-7
Ethyl octynol	5877-42-9	1-OCTYN-3-OL, 4-ETHYL-	5477-42-9
Ethylbenzene	100-41-4	ETHYLBENZENE	10-04-1
Glutaraldehyde	111-30-8	GLUTARAL	11-30-8
Glycerol	56-81-5	1,2,3-PROPANETRIOL	5-68-1
Heavy aromatic naphtha	64742-94-5	SOLVENT NAPHTHA (PETROLEUM), HEAVY AROM.	6004742-94-5

Standardized Name	Correct CASRN	Original Reported Name	Original Invalid CASRN
Hydrochloric acid	7647-01-0	HYDROGEN CHLORIDE	6747-01-0
Isotridecanol, ethoxylated	9043-30-5	ISOTRIDECANOL, ETHOXYLATED	9403-30-5
Limestone	1317-65-3	CALCIUM DERIVATIVE (CALCIUM CARBONATE)	131-76-5
Limonene	138-86-3	P-MENTHA-1,8-DIENE or D-LIMONENE (Classified as proprietary)	254504-00-1 (Classified as proprietary)
Methanol	67-56-1	METHANOL	67-57-1 67-51-1
Pine oil	8002-09-3	PINE OIL or TERPENE HYDROCARBON	8002-09-0 80020-90-3
Poly(oxy-1,2-ethanediyl), .alpha.-isodecyl-.omega.-hydroxy-, phosphate, potassium salt	68071-17-0	POLY(OXY-1,2-ETHANEDIYL), .ALPHA.-ISODECYL-.OMEGA.-HYDROXY-, PHOSPHATE, POTASSIUM SALT	680711-70-0
Potassium chloride	7447-40-7	POTASSIUM CHLORIDE	7477-40-7
Propargyl alcohol	107-19-7	2-PROPYN-1-OL	107-19-1
Sodium carboxymethylcellulose	9004-32-4	CARBOXYMETHYLCELLULOSE SODIUM SALT	900-43-4
Sodium chloride	7647-14-5	SODIUM CHLORIDE	7647-15-5
Sodium polyacrylate	9003-04-7	ANIONIC ACRYLAMIDE COPOLYMER	90030-40-7 900-30-4 90-30-4
Sodium polynaphthalenesulfonate	9084-06-4	NAPHTHALENESULFONIC ACID, POLYMER WITH FORMALDEHYDE, SODIUM	908-46-4
Solvent naphtha, petroleum, light arom.	64742-95-6	LIGHT AROMATIC NAPHTHA	64742-95-5
Unknown	Unknown	ALKYLARYL SULFONATE (Classified as proprietary)	68484-27-0 (Classified as proprietary)
Water	7732-18-5	WATER	7732-15-5 732-18-5 773-21-8
Xanthan gum	11138-66-2	XANTHAN GUM (Classified as proprietary)	59370-00-0 (Classified as proprietary)
Xylenes	1330-20-7	XYLENE	133-02-0
Zinc sulfate	7733-02-0	SULFURIC ACID, ZINC SALT (1:1)	7732-02-0
Zirconium dichloride oxide	7699-43-6	ZIRCONIUM DICHLORIDE OXIDE	7699-54-0

Table A.2. List of chemicals with valid CASRNs after corrections were made.

Chemical Name	CASRN	Chemical Name	CASRN
1,2-Ethanediaminium, N1,N2-bis[2-[bis(2-hydroxyethyl)methylammonio]ethyl]-N1,N2-bis(2-hydroxyethyl)-N1,N2-dimethyl-, chloride (1:4)	138879-94-4	2-Butenedioic acid (2E)-, polymer with 2-methyloxirane, oxirane and 1,2,3-propanetriol	68400-71-5
1,2,3-Trimethylbenzene	526-73-8	2-butenedioic acid (e)-, polymer with 1,2-ethanediol and .alpha.,.alpha.?-[(1-methylethylidene)di-4,1-phenylene]bis[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]	39382-21-3
1,2,4-Trimethylbenzene	95-63-6	2-Butoxyethanol	111-76-2
1,2-benzisothiazolin-3-one	2634-33-5	2-Butoxypropan-1-ol	15821-83-7
1,2-Ethanediamine, N1-(2-aminoethyl)-N2-((2-aminoethyl)amino)ethyl-, polymer with 2-methyloxirane and oxirane	68815-65-6	2-Ethylhexan-1-ol	104-76-7
1,3,5-Trimethylbenzene	108-67-8	2-Mercaptoethyl alcohol	60-24-2
1-Butoxy-2-propanol	5131-66-8	2-Methyl-3(2H)-isothiazolone	2682-20-4
1-Eicosene	3452-07-1	2-propenoic acid, 2-methyl-, polymer with 2-propenoic acid	25751-21-7
1-Hexadecene	629-73-2	2-propenoic acid, polymer with 2-propenamide	9003-06-9
1-Methoxy-2-propanol	107-98-2	2-Propenoic acid, polymer with 4-(1,1-dimethylethyl)phenol, formaldehyde, 2,5-furandione, 2-methyloxirane, 4-nonylphenol and oxirane	129828-31-5
1-Octadecene	112-88-9	2-propenoic acid, polymer with sodium 2-propenoate	9033-79-8
1-octanesulfonic acid sodium salt	5324-84-5	2-Propenoic acid, telomer with sodium sulfite (1:1), sodium salt	68479-09-4
1-propanaminium, n-(carboxymethyl)-n,n-dimethyl-3-(((13z)-1-oxo-13-docosenyl)amino)-, inner salt	149879-98-1	3-aminopropyl (sileanetriol)	58160-99-9
1-propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, monoammonium salt, polymer with 2-propenamide	110897-64-8	4,7-methano-1h-indene, 3a,4,7,7a-tetrahydro-, polymer with 1,3-cyclopentadiene, cyclopentene, 1-hexene, 2-methyl-2-butene and 1,3-pentadiene	68003-51-0
1-Tetradecene	1120-36-1	5-Chloro-2-methyl-3(2H)-isothiazolone	26172-55-4
2,2 Dibromo-3-nitrilopropionamide	10222-01-2	Acetic acid	64-19-7
2,2"-oxydiethanol (impurity)	111-46-6	Acetic acid ethenyl ester, polymer with chloroethene and ethene	25085-46-5

Chemical Name	CASRN	Chemical Name	CASRN
Acetic acid ethenyl ester, polymer with ethenol	25213-24-5	Benzenesulfonic acid, 4-methyl-, potassium salt	16106-44-8
Acetic anhydride	108-24-7	Benzenesulfonic acid, C10-16-alkyl derivs	68584-22-5
Acetone	67-64-1	Benzenesulfonic acid, c10-16-alkyl derivs., compds. with 2-propanamine	68584-24-7
Acetophenone	98-86-2	Benzenesulfonic acid, C10-16-alkyl derivs., compds. with cyclohexylamine	255043-08-4
Acetyltriethyl citrate	77-89-4	Benzenesulfonic acid, c10-16-alkyl derivs., compds. with triethanolamine	68584-25-8
Acrylamide	79-06-1	Benzenesulfonic acid, C10-16-alkyl derivs., potassium salts	68584-27-0
Acrylic polymer	203008-81-5	Bis(isopropyl)naphthalene	38640-62-9
Alcohols, C10-14, ethoxylated	66455-15-0	Boric acid	10043-35-3
Alcohols, C11-14-iso-, C13-rich	68526-86-3	Boron sodium oxide	1330-43-4
Alcohols, C12-15 ethoxylated	68131-39-5	C12-14 Isoparaffin	68551-19-9
Alcohols, C12-16, ethoxylated	68551-12-2	C13-16 Isoparaffin	68551-20-2
Alcohols, C14-C15, ethoxylated	68951-67-7	Calcite	13397-26-7
Alkenes, C>10 a-	64743-02-8	Calcium bromide	7789-41-5
Aluminum	7429-90-5	Calcium carbonate	471-34-1
Aluminum distearate	300-92-5	Calcium chloride	10043-52-4
Aluminum oxide	1344-28-1	Calcium hydroxide	1305-62-0
Aluminum oxide silicate	12141-46-7	Calcium lignosulfonate	8061-52-7
Amide, tallow, N-(3-(dimethylamino)propyl)-N-oxides	68647-77-8	Calcium magnesium oxide	37247-91-9
Amines, hydrogenated tallow alkyl, acetates	61790-59-8	Calcium oxide	1305-78-8
Ammonium bifluoride	1341-49-7	Calcium sulfate	7778-18-9
Ammonium chloride	12125-02-9	Calcium sulfate hemihydrate	10034-76-1
Ammonium fluoride	12125-01-8	Canola oil	120962-03-0
Ammonium hydroxide	1336-21-6	Carbon	7440-44-0
Ammonium persulfate	7727-54-0	Cellophane	9005-81-6
Ammonium sulfate	7783-20-2	Cellulose, microcrystalline	9004-34-6
Ashes (residues), coal	68131-74-8	Chlorinated paraffins	8029-39-8
Aziridine, polymer with methyloxirane and oxirane	52501-07-2	Choline chloride	67-48-1
Barite	13462-86-7	Cinnamaldehyde	104-55-2
Barium sulfate	7727-43-7	Citric acid	77-92-9
Bentonite	1302-78-9	Citrus terpenes	94266-47-4
Benzene	71-43-2	Coal, ground	50815-10-6
Benzene, c10-c16 alkyl derivatives	68648-87-3	Cocamidopropyl betaine	61789-40-0
Benzene, diethenyl-, polymer with ethenylbenzene and ethenylethylbenzene	9052-95-3	Coco-amido-propylamine oxide	68155-09-9
Benzene, tetrapropylene-	25265-78-5	Crystalline silica (cristobalite)	14464-46-1

Chemical Name	CASRN	Chemical Name	CASRN
Crystalline silica (tridymite)	15468-32-3	Ethyl lactate	97-64-3
Cumene	98-82-8	Ethyl octynol	5877-42-9
Cyclohexamine sulfate	19834-02-7	Ethylbenzene	100-41-4
Cyclohexanol	108-93-0	Ethylene glycol	107-21-1
Cyclohexasiloxane, 2,2,4,4,6,6,8,8,10,10,12,12-dodecamethyl-	540-97-6	Ethylene oxide	75-21-8
Cyclopentasiloxane, 2,2,4,4,6,6,8,8,10,10-decamethyl-	541-02-6	Etidronic acid	2809-21-4
Cymene	25155-15-1	Extract of walnut	84012-43-1
D-glucitol	50-70-4	Fatty acids, tall-oil	61790-12-3
D-Glucopyranuronic acid, polymer with 6-deoxy-L-mannose, D-glucose and D-mannose, calcium potassium sodium salt	72121-88-1	Fatty acids, tall-oil, reaction products with triethanolamine	67784-78-5
Diatomaceous earth, calcined	91053-39-3	Ferric chloride	7705-08-0
Diatomaceous earth, natural (kieselguhr)	61790-53-2	Ferrous sulfate, monohydrate	17375-41-6
Dicoco dimethyl quaternary ammonium chloride	61789-77-3	Formaldehyde	50-00-0
Diethanolamine	111-42-2	Formaldehyde, polymer with 2-methyloxirane, 4-nonylphenol and oxirane	63428-92-2
Diethylene glycol mono-n-butyl ether	112-34-5	Formaldehyde, polymer with 4-(1,1-dimethylethyl)phenol, 2-methyloxirane and oxirane	30704-64-4
Diethylenetriaminepenta(methylenephosphonic) acid	15827-60-8	Formaldehyde, polymer with 4-(1,1-dimethylpropyl)phenol, 2-methyloxirane and oxirane	63428-91-1
Diisopropyl naphthalenesulfonic acid	28757-00-8	Formic acid	64-18-6
Dimethyl siloxanes and silicones	63148-62-9	Fuller's earth	8031-18-3
Disodium metasilicate	6834-92-0	Fumes, silica	69012-64-2
Disodium pyrophosphate	7758-16-9	Gilsonite	12002-43-6
Diutan	125005-87-0	Glassy calcium magnesium phosphate	65997-17-3
Dodecylbenzene	123-01-3	Glutaraldehyde	111-30-8
Dodecylbenzene sulfonic acid	27176-87-0	Glycerol	56-81-5
Erythorbic acid	89-65-6	Glycolic acid	79-14-1
Esters of rosin oligomers with pentaerythritol	65997-12-8	Glyoxal	107-22-2
Ethanesulfonic acid, 2-[methyl[(9z)-1-oxo-9-octadecen-1-yl]amino]-, sodium salt (1:1)	137-20-2	Graphite	7782-42-5
Ethanol	64-17-5	Guar gum	9000-30-0
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives	68909-77-3	Heavy aromatic naphtha	64742-94-5
Ethoxylated alcohol C6-12	68439-45-2	Hemicellulase enzyme	9012-54-8
Ethoxylated alcohol C8-10	68603-25-8	Hemicellulase enzyme concentrate	9025-56-3

Chemical Name	CASRN	Chemical Name	CASRN
Hexamethylenetetramine	100-97-0	MBNPA (2-bromo-3-nitrilopropionamide)	1113-55-9
Hexylene glycol	107-41-5	Methanol	67-56-1
Humic acids	1415-93-6	Methyl borate	121-43-7
Hydrocarbons, terpene processing by-products	68956-56-9	Methyl isobutyl ketone	108-10-1
Hydrochloric acid	7647-01-0	Mica	12001-26-2
Hydrofluoric acid	7664-39-3	Monoethanolamine	141-43-5
Hydrogen peroxide	7722-84-1	Monoethanolamine borate	26038-87-9
Hydrotreated Light Petroleum Distillate	64742-47-8	Morpholine	110-91-8
Hydroxyethyl cellulose	9004-62-0	Mullite	1302-93-8
Iron oxide	1309-37-1	Naphtha (petroleum), heavy catalytic reformed	64741-68-0
Isobutylmethylcarbinol	108-11-2	Naphthalene	91-20-3
Isopropanol	67-63-0	Naphthalenesulfonate-formaldehyde condensate, sodium salt	9008-63-3
Isoquinoline	119-65-3	Naphthalenesulfonic acid, bis(1-methylethyl)-, compd. with cyclohexanamine (1:1)	68425-61-6
Isotridecanol, ethoxylated	9043-30-5	n-Butyl alcohol	71-36-3
Laural hydrosultaine	13197-76-7	Nitrilotriacetic acid	139-13-9
Lecithins	8002-43-5	Non-crystalline silica (impurity)	7631-86-9
L-Glutamic acid, N,N-diacetic acid	58976-65-1	Nonylphenol polyethylene glycol ether	127087-87-0
L-Glutamic acid, N,N-diacetic acid, tetrasodium salt	51981-21-6	Octamethylcyclotetrasiloxane	556-67-2
Lignin	9005-53-2	Orange terpenes	68647-72-3
Lignosulfonic acid, ethoxylated, sodium salts	68611-14-3	Paraffinic petroleum distillate, hydrotreated light	64742-55-8
Limestone	1317-65-3	PEG-15 Cocoate	61791-29-5
Limonene	138-86-3	Peracetic acid	79-21-0
Linear/branched alcohol ethoxylate (11eo)	127036-24-2	Petroleum distillate-mineral oil grade	8002-05-9
Lithium carbonate	554-13-2	Petroleum distillates	64741-44-2
Chloric acid, lithium salt	36355-96-1	Petroleum distillates	64742-46-7
Lithium chloride	7447-41-8	Petroleum distillates	68990-35-2
Lithium hydroxide	1310-65-2	Petroleum resins	64742-16-1
Lithium hypochlorite	13840-33-0	Phenolic resin	9003-35-4
Magnesium	7439-95-4	Phosphogypsum	13397-24-5
Magnesium chloride	7786-30-3	Phosphonic acid	13598-36-2
Magnesium nitrate	10377-60-3	Phosphoric acid	7664-38-2
Magnesium oxide	1309-48-4	Pine oil	8002-09-3
Magnesium silicate hydrate (talc)	14807-96-6	Plaster of paris	26499-65-0
Maltodextrin	9050-36-6	Poly(oxy-1,2-ethandiyl), a-(nonylphenyl)-w-hydroxy-	9016-45-9

Chemical Name	CASRN	Chemical Name	CASRN
Poly(oxy-1,2-ethanediyl), .alpha.-[bis(1-methylpropyl)phenyl]-.omega.-hydroxy-	53964-94-6	Quinaldine	91-63-4
Poly(oxy-1,2-ethanediyl), .alpha.-2,4,6-tris(1-phenylethyl)phenyl-.omega.-hydroxy-	70559-25-0	Quinoline	91-22-5
Poly(oxy-1,2-ethanediyl), .alpha.-isodecyl-.omega.-hydroxy-, phosphate, potassium salt	68071-17-0	Saponite	1319-41-1
Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-hydroxy-, c6-10-alkyl ethers, ammonium salts	68037-05-8	Sepiolite	63800-37-3
Poly(sodium styrenesulfonate)	25704-18-1	Silanetrio; (3-aminopropyl, homopolymer	68400-07-7
Polyacrylamide	9003-05-8	Silica gel	112926-00-8
Polydimethyl diallyl ammonium chloride	26062-79-3	Silicon dioxide crystalline	60676-86-0
Polyepichlorohydrin, trimethyl amine quaternized	51838-31-4	Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7
Polyethylene glycol monohexyl ether	31726-34-8	Sodium acetate	127-09-3
Polyethylene glycol monostearate	9004-99-3	Sodium aluminate	1302-42-7
Polyethylene glycol trimethyl nonyl ether	84133-50-6	Sodium aminotris(methylenephosphonate)	20592-85-2
Polyethylene oxide	25322-68-3	Sodium bicarbonate	144-55-8
Polyethylene, polypropylene ether glycol copolymer	9003-11-6	Sodium borosilicate	50815-87-7
Polyoxyethylene dinonylphenol	9014-93-1	Sodium C14-16 olefin sulfonate	68439-57-6
Polypropylene	9003-07-0	Sodium carbonate	497-19-8
Polypropylene glycol	25322-69-4	Sodium carboxymethylcellulose	9004-32-4
Polyquaternium 5	26006-22-4	Sodium chloride	7647-14-5
Polyvinyl alcohol	9002-89-5	Sodium chloroacetate	3926-62-3
Portland cement	65997-15-1	Sodium citrate	68-04-2
Potassium acetate	127-08-2	Sodium dichloroisocyanurate	2893-78-9
Potassium bisulfate	7646-93-7	Sodium dodecylpoly(oxyethylene) sulfate	9004-82-4
Potassium carbonate	584-08-7	Sodium erythorbate	6381-77-7
Potassium chloride	7447-40-7	Sodium formate	141-53-7
Potassium hydroxide	1310-58-3	Sodium gluconate	527-07-1
Potassium Iodide	7681-11-0	Sodium hydroxide	1310-73-2
Potassium oxide	12136-45-7	Sodium hypochlorite	7681-52-9
Prolonium chloride	55636-09-4	Sodium lignosulfonate	8061-51-6
Propargyl alcohol	107-19-7	Sodium oxide	12401-86-4
Propylene glycol	57-55-6	Sodium persulfate	7775-27-1
Pumice	1332-09-8	Sodium polyacrylate	9003-04-7
Quaternary ammonium compounds, benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite	121888-68-4	Sodium polynaphthalenesulfonate	9084-06-4

Chemical Name	CASRN	Chemical Name	CASRN
Sodium silicate	1344-09-8	Thioglycolic acid	68-11-1
Sodium sulfate	7757-82-6	Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1
Sodium tetraborate decahydrate	1303-96-4	Toluene	108-88-3
Solvent naphtha, petroleum, light arom.	64742-95-6	Tributyl phosphate	126-73-8
Sorbic acid	110-44-1	Tricalcium phosphate	7758-87-4
Sorbitan stearate	1338-41-6	Triethanolamine	102-71-6
Starch	9005-25-8	Triethylene glycol	112-27-6
Stearic acid	57-11-4	Trimethylbenzenes	25551-13-7
Stoddard solvents	8052-41-3	Undecanol, branched and linear	128973-77-3
Strontium chloride	10476-85-4	Urea	57-13-6
Sulfuric acid	7664-93-9	Vinylidene chloride/methylacrylate copolymer	25038-72-6
Sulfurous acid, sodium salt (1:1), polymer with formaldehyde and 1,3,5-triazine-2,4,6-triamine	64787-97-9	Water	7732-18-5
Tall oil	8002-26-4	Xanthan gum	11138-66-2
Tar bases, quinoline derivs.	68513-87-1	Xylenes	1330-20-7
Tetrakis hydroxymethyl phosphonium sulfate	55566-30-8	Zinc sulfate	7733-02-0
Tetrasodium ethylenediaminetetraacetate	64-02-8	Zirconium dichloride oxide	7699-43-6
Tetrasodium pyrophosphate	7722-88-5	Crystalline silica (quartz)	14808-60-7

Table A.3. List of trade secret chemicals reported without CASRN.

Chemical Name	Chemical Name	Chemical Name
? SAYS PROPRIETARY MATERIALS	AMIDE SURFACTANT, PHOSPHATE	AROMATIC HYDROCARBON (2)
ACID MODIFIED PETROLEUM RES.	AMIDE SURFACTANT, PHOSPHATE ACID SALT	AROMATIC HYDROCARBON (3)
ACID MODIFIED PETROLEUM RESIDUUM	AMIDE SURFACTANT, PHOSPHATE ESTER SALT	AROMATIC HYDROCARBON (3A)
ACRYLIC CO-POLYMER	AMIDE SURFACTANT, PHOSPHORIC ACID SALT	AROMATIC HYDROCARBON (3B)
ALCOHOL	AMIDE SURFACTANT, SALT OF ORGANIC ACID	AROMATIC HYDROCARBON (3C)
ALDEHYDE	AMIDE SURFACTANTS	AROMATIC HYDROCARBON (4)
ALIPHATIC ALCOHOL	AMINE SALTS	AROMATIC HYDROCARBON (5)
ALIPHATIC ALCOHOL (1)	AMMONIUM SALT	AROMATIC HYDROCARBON (7)
ALIPHATIC ALCOHOL (2)	AMPHOTERIC SURFACTANT	AROMATIC HYDROCARBON (7A)
ALIPHATIC ALCOHOL (3)	ANIONIC ACRYLAMIDE COPOLYMER	AROMATIC HYDROCARBON (7B)
ALIPHATIC PROPYLENE GLYCOL ETHERS	ANIONIC COPOLYMER	AROMATIC HYDROCARBON A (7A)
ALIPHATIC SULFONATE	ANIONIC POLYACRYLAMIDE	AROMATIC HYDROCARBON A (7B)
ALKENES	ANIONIC POLYMER	AROMATIC HYDROCARBON A (7C)
ALKYL ARYL AMINE SULFONATE	ANTI-FOAMER	AROMATIC HYDROCARBONS (7)
ALKYL BENZENESULFONIC ACID	AROMATIC AMINES, TOFA SALT	ASPHASOL SUPREME
ALKYL DIAMIDE	AROMATIC ALDEHYDE	BA-10A
ALKYL ETHER OF CORN SUGAR	AROMATIC AMINE, TOFA SALT	BENZENESULFONIC ACID, C10-16-ALKYL DERIVS., COMPDS. WITH CYCLOHEXYLAMINE
ALKYLARYL SULFONATE	AROMATIC AMINES	BIOPOLYMER
ALKYLARYL SULFONATES	AROMATIC AMINES, TOFA SALTS	BLEND
ALKYLARYL SULFONATES_2	AROMATIC COMPOUND	BLEND OF VEGETABLE AND POLYMER FIBERS
ALKYLBENZENESULFONIC ACID	AROMATIC COMPOUND (1)	BORATE
ALKYLENE OXIDE BLOCK POLYMER	AROMATIC COMPOUND (2)	CAL-ACID 50
ALKYNE ALCOHOL	AROMATIC COMPOUND (3)	CALCARB
AMBER DEFOAMER 7	AROMATIC COMPOUND (4)	CALCIUM CARBONATE
AMIDE SURFACTANT, PHOSPHATE ESTER SALT	AROMATIC COMPOUND (5)	CALCIUM SALTS
AMIDE SURFACTANT	AROMATIC COMPOUND (6)	CALCIUM SULFATE
AMIDE SURFACTANT, PHOSPHATE ACID SALT	AROMATIC HYDROCARBON	CAP
AMIDE SURFACTANT, ESTER ACID SALT	AROMATIC HYDROCARBON (1)	CARBOHYDRATE
AMIDE SURFACTANT	AROMATIC HYDROCARBON (1) BENZENESULFONIC ACID, C10-16-ALKYL DERIVS., COMPDS. WITH CYCLOHEXYLAMINE	CARBOHYDRATES

Chemical Name	Chemical Name	Chemical Name
CARBON	DIOL COMPOUND	FATTY ACID OXYALKYLATE
CELLULOSE	DISPERSANT	FATTY ACIDS
CELLULOSE DERIVATIVE	DISTILLATES (PETROLEUM), HYDRITREATED LIGHT; KEROSENE - UNSPECIFIED	FATTY ACIDS ESTER
CEMENT RETARDER	D-MULSE	FATTY ACIDS, TALL OIL
CF DESCO II	DRILLING DETERGENT	FDP-S1047-12
C-INHIB	DRILLING MUD ADDITIVE	FORMATE SALT
CINNAMIC IN	EDTA/COPPER CHELATE	GBW-30 BREAKER
CINNAMIC INHIBITOR	EMULSIFIER	GLYCOL
CITRUS EXTRACT	EMULSION OF COMPLEX STEARATES	HALAD-322
CLAY	ENVIRO C-INHB	HALAD-344
COAL, <5% SIO2	ENVIRO C-INHIB	HALIDES, INORGANIC SALT
COMPLEX STEARATES	ENVIRO D-MULSE	HR-5
CONQOR 404	ENVIRO M-SOLV	HYDROXIDE
CONTAINS NON-HAZARDOUS INGREDIENTS WHICH ARE LISTED IN THE NON-MSDS SECTION OF THE REPORT	ENVIRO MUD	INORGANIC COMPOUND
COPOLYMER	ENVIRO OG	INORGANIC NITRATE SALT
CORROSION CONTROL	ESTER	INORGANIC POTASSIUM
CORROSION INHIBITOR	ETHOXYLATE	INORGANIC POTASSIUM COMPOUND
CROSSLINKED POLYOL ESTER	ETHOXYLATED ALCOHOL	INORGANIC POTASSIUM COMPOUND/ALKALI HYDROXIDE
CURED ACRYLIC RESIN	ETHOXYLATED ALCOHOLS	INORGANIC POTASSIUM COMPOUND/A
CYCLIC ALKANES	ETHOXYLATED ALCOHOLS C12-16	INORGANIC SALT
D-AIR 5000	ETHOXYLATED ALKYL AMINES	INORGANIC SALT OF AN ACID
DDBSA SALT	ETHOXYLATED CYCLIC AMINES	INORGANIC SOLVENT
DEFLOCCULANT	ETHOXYLATED NONYLPHENOL	INORGANIC SOLVENTS
DEFOAMER	ETHOXYLATED NONYLPHENOL ALCOHOL	IONIC COMPOUND
DEFOAMER 7	ETHOXYLATED SURFACTANT	IONIC SURFACTANT
DEFOAMING AGENT	ETHYLENE OXIDE-NONYLPHENOL POLYMER	IONIC SURFACTANTS
DEFOAM-X	FATTY ACID	IONIC SURFACTANTS SS-27
DETERGENT	FATTY ACID ESTER	IONIC SURFACTANTS SW-211
DIETHANOLAMINE	FATTY ACID ESTERS	KETONE

Chemical Name	Chemical Name	Chemical Name
LIGNOSULFONATE	NON-HAZARDOUS INGREDIENTS	PHOSPHATE ESTER
LINEAR ALKYL BENZENE	NON-IONIC DEFOAMING AGENT	PHOSPHATE ESTER SALT
LITHIUM CHLORATE	NON-IONIC SURFACTANT	PHOSPHONATE SALT
LUBRICANT	NON-IONIC SURFACTANTS	PHOSPHONIC ACID SALT
LUBRICANT (COMPLEX STEARATES)	NONYLPHENOL ETHOXYLATE	POL-E-FLAKES
METHYL EST OF SULFONATE TANNIN	NONYLPHENOL	POLYACRULAMIDE BLEND
METHYL ESTER OF SULFONATED TANNIN	OLEFIN	POLYACRYLATE
MINERAL	OLEFINS	POLYACRYLATE/POLYACRYLAMIDE POLYMER BLEND
MINERAL FIBER	ORGANIC ACID	POLYANIONIC CELLULOSIC POLYMER
MIXTURE	ORGANIC ACID SALT	POLYANIONIC POLYMER
MIXTURE OF SURFACTANTS	ORGANIC ACID SALT 2	POLYCYCLIC AROMATIC HYDROCARBON
MODIFIED ACRYLAMIDE CO-POLYMER	ORGANIC PHOSPHONATE	POLYCYCLIC COMPOUND
MODIFIED ALKANOLAMIDE	ORGANIC SULFONIC ACID AMINE SALT	POLYDIMETHYLSILOXANE COMPOUND
MODIFIED LIGNIN	ORGANO SULFUR COMPOUNDS	POLYESTER
MODIFIED LIGNOSULFONATE	ORGANOPHILIC CLAY	POLYETHER
MODIFIED STARCH	ORGANOPHOSPHONIC ACID SALT	POLYGLYCOL ESTER
MODIFIED SULFONATE	ORGANOSULFUR COMPOUND (1)	POLYMER
MODIFIED THIOUREA POLYMER	ORGANOSULFUR COMPOUND (2)	POLYMER AND WATER
M-SOLV	OXIDE SUPPORT	POLYNUCLEAR AROMATIC HYDROCARBON
MUD FLUSH III	OXYALKYLATED ALKYLPHENOL	POLYNUCLEAR AROMATIC HYDROCARBONS
MUTUAL SOLVENT	OXYALKYLATE	POLYOLPHOSPATE ESTER
NAP-FORMALDEHYDE CONDENSATE, SODIUM SALT	OXYALKYLATED ALKYLPHENOLIC RESIN	POLYOXYALKYLENES
NAPHTHALENESULFONATE-FORMALDEHYDE	OXYALKYLATED AMINE	POLYOXYALKYLENE
NAPHTHALENESULFONATE-FORMALDEHYDE CONDENSATE	OXYALKYLATED AMINE QUAT	POLYPHOSPHATE ESTER
NAPHTHALENESULFONATE-FORMALDEHYDE CONDENSATE, SODIUM SALT	OXYALKYLATED FATTY ACID	POLYSACCHARIDE
NAPHTHALENESULFONIC ACID, BIS(1-METHYLETHYL)-, COMPD. WITH CYCLOHEXANAMINE (1:1)	OXYALKYLATED POLYAMINE	POLYTEK
NATURAL PEAT	OXYLATED ALCOHOL	POWERVIS
NON-HAZARDOUS ORGANIC COMPOUND	PETROLEUM RESINS	PROPRIETARY
NON-HAZARDOUS	PHOSPHATE ACID SALT	PROPRIETARY BLEND

Chemical Name	Chemical Name	Chemical Name
PROPRIETARY BLEND OF COMPLEX STEARATES	SILICA SAND GRAVEL	SURFACTANT BLEND
PROPRIETARY MATERIALS	SILICA SUPPORT	SURFACTANT, PHOSPHATE ACID SALT
QUATERNARY AMINE	SILICA, CRYSTALLINE, QUARTZ	SYNTHETIC ACID
QUATERNARY AMMONIUM COMPOUND	SILICONE	TANNIN, SODIUM SALT POLYMER WITH ACRYLIC MONOMERS
QUATERNARY AMMONIUM COMPOUND (1)	SILICONE FLUID	THRUTROL
QUATERNARY AMMONIUM COMPOUND (1))	SODIUM POLYACRYLATE/ POLYCRYLAMIDE	TUNED SPACER III
QUATERNARY AMMONIUM COMPOUND (2)	SODIUM POLYNAPHTHALENE SULPHONATE	UCS
QUATERNARY AMMONIUM COMPOUND (3)	SODIUM SALT	UNSATURATED ALCOHOL
QUATERNARY AMMONIUM COMPOUND-1	SS 26 IN XYLENE	VEGETABLE AND POLYMER FIBERS
QUATERNARY AMMONIUM COMPOUND-2	SSP-40 IN XYLENE	VINYL COPOLYMER
QUATERNARY AMMONIUM COMPOUND-3	SUBSTITUTED FATTY AMIDE	VISCOSIFIER
RCI 07289 CORROSION INHIBITOR	SUFONATE	WALNUT SHELL
SA-1015	SUGAR	WALNUT SHELLS
SALT COMPOUND	SULFATE	WATER (INCLUDING MIX WATER SUPPLIED BY CLIENT)
SALT OF AMINE/CARBONYL CONDENSATE	SULFONATE	WOOD
SALT OF FATTY ACID POLYAMINE	SULFONATE SALT	WOOD CHEMICALS
SALT OF INORGANIC ACID	SULFONATED POLYMER	WOOD DUST
SALT OF ORGANIC ACID	SULFONIC ACID SALT	WOOD DUST, SOFT WOOD
SATURATED ALCOHOLS	SULFUR COMPOUND	WOOD FIBER
SATURATED MONOCARBOXYLIC ACID, CALCIUM SALT	SULFURIC ACID, BARIUM SALT (1:1)	XANTHAN GUM (59370-00-0)
SAWDUST	SURFACTANT MIXTURE	ALKYLARYL SULFONATE (68484-27-0)
SILICA FUME	SURFACTANT	D-LIMONENE (254504-00-1)

Table A.4. List of trade name products (chemical mixtures without CASRN) with disclosed chemical components.

Chemical Name	Chemical Name	Chemical Name
12% HCL - 3% HF (ABF30)	AMBER HS	CALCARB
12.0 INGLEWOOD LEAD CIII	AMMONIUM	CALCARB 325
12.5 SURFACE LEAD CIII	AMMONIUM CHLORIDE (FOR BREAKS)	CALCARB 325 MESH
12.6 SURFACE LEAD CIII	AMMONIUM CHLORIDE MIXTURE	CALCARB 80 MESH
13.0 INGLEWOOD LEAD	AMMONIUM CHLORIDE WATER	CALCIUM BROMIDE 14.2 SUMMER
13.0 INGLEWOOD TAIL CIII	AMMONIUM FLUORIDE - 35% SOLUTION	CALCIUM CHLORIDE - PELLETS
13.5 SURFACE TAIL CIII	ANIONIC ACRYLAMIDE COPOLYMER	CALCIUM CHLORIDE LIQUID
13.5% HCL - 1.5% HF (ABF30)	AROMATIC 150	CALCIUM CHLORIDE POWDER
14.8 INGLEWOOD LEAD	AS-6	CAP
14.8 INGLEWOOD TAIL	ASA-301	CARBOXYMETHYLCELLULOSE SODIUM SALT
15% HCL	ASPHASOL SUPREME	CAUSTIC POTASH
16.0 KO PLUG	BA-10A	CD-32
20/40 MESH SAND	BA-59	CD-34
3% KCL WATER	BA-61	CD-38
3% NH4CL	BA-90	CELLOFLAKES
7.5% HCL/1.5% HF	BARITE	CELLOPHANE
7.5% HCL/1.5% HF MIXTURE	BARITE 41	CELLOPHANE FLAKE
9% HCL - 1% HF (ABF30)	BC-140	CEMENT CLASS G
A-10	BC-3	CEMENT G
A-7P, CALCIUM CHLORIDE	BE-3S BACTERICIDE	CEMENT TYPE III
ACETIC ACID 80%	BEN X	CF DESCO II
ACETIC ACID IN HCL	BENEX	CFR
ACETIC ACID IN HCL PICKLE	BENTONITE	CFR-3
ACETIC ACID IN HCL/HF	BF-7L	CI-111
ACETIC ACID IN HF	BF-8L	CI-27
ACETIC ACID, GLACIAL	BHS 117	CI-27 (260 GAL TOTE)
ACR-3L	BICARB	CI-31
ADDITIVE	BICARBONATE OF SODA	CITRIC ACID SOLUTION 50% IN HCL
AFR-3L	BIT SLICK	CITRIC ACID SOLUTION 50% IN HCL/HF
AG-12	BJ FIBER	CITRIC ACID, 50%
AI 2015	BJ SANDSTONE ACID 15-HT (ABF30)	CL-27
AL 205 IN HCL PICKLE	BJ SANDSTONE ACID 15-LT	CLA-STA XP ADDITIVE
AL 205	BJ SANDSTONE ACID 15-LT (ABF30)	CLAY MASTER-5C
AL 205 IN HCL	BLEACH	CLAYFIX 5
AL 205 IN HCL/HF	BRINE	CLAYFIX MATERIAL
ALUMINUM STEARATE	C-27	CLEAN FAZE
AMBER DMS	CACL SOLUTION	CLEARFRAC XT
AMBER GUARD	CAL ACID 50	CONQOR 404
AMBER GUARD 215	CALCHLOR	CORTRON RA-501

Chemical Name	Chemical Name	Chemical Name
CRW9133 CORROSION INHIBITOR	FDP-S1047-12	GRAVEL PACK SAND 20/40 MESH
CRYSTALLINE SILICA	FE-1A ACIDIZING	G-SEAL PLUS
CSE-2	FE-1A ACIDIZING COMPOSITION	GW-3LDF
CW	FE-2	GYP SUM
CW100	FE-2A	HAI-OS ACID INHIBITOR
CW7	FERROTROL 210	HALAD-322
D066	FERROTROL 300L	HALAD-344
D-AIR 3000L	FERROTROL 810	HALAD-447
D-AIR 5000	FINECEM	HCL 15%
DCA-16002	FL-52	HCL 9%
DCA-16004	FL-62	HCL MIXTURE
DCA-17002	FL-66	HCL PICKLE
DCA-31001	FLO-BACK 20	HCL SOLUTION
DCA-31003	FLO-VIS PLUS	HCL, 0.1 - 5%
DCA-32003	FLOW GUARD L	HCL, 10.1 - 15%
DCA-32008	FLOWZAN	HCL, 15.1 - 20%
DEEPCLEAN	FLYASH	HCL, 5.1 - 7.5%
DESCO	FOAMER 1026	HCL, 7.6 - 10%
D-FOAM 14	FORMIC ACID	HCL/HF
DI-BALANCE	FORMIC ACID IN HCL	HCL/HF MIXTURE
DIVERT S	FRESH WATER	HCL/HF SOLUTION
D-LIMONENE	FRW-16A	HEC-10
DMA	FSA-1	HF
DMO146	GASFLO G	HF 1%
DMS	GASFLO G2	HIGH PERM CRB
DRISPAC SL	GBW-30	HR-12
DUO-VIS	GBW-30 BREAKER	HR-5
EC-1	GBW-5	HR-800
ECF-1843	GCR-4	HY TEMP I
ECONOLITE	GEL	HY TEMP O
ECONOLITE ADDITIVE	GELEX	HYDROCHLORIC ACID 10-30%
ENVIRO D-MULSE IN ENVIRO OG	GELEX BENTONITE EXTENDER	HYDROFLUORIC
ENVIRO M-SOLV IN ENVIRO OG	GELITE	HYDROGEN FLOURIDE
ENVIRO OG	GEO GEL	INFLO 250
ENVIROSOL-XS	GEOZAN	INFLO 250G
ENZYME G-I	GLUTARAL	INFLO 250G, 330 GL TOTE
ETHYLBENZENE	GRAVEL	INFLO-102
EZ-FLO	GRAVEL PACK SAND 16/30 MESH	INJECTROL A
EZ-FLO II	GRAVEL PACK SAND 20/40	ISA 100

Chemical Name	Chemical Name	Chemical Name
ISA 100 IN HCL	MITSUBISHI PREMIUM	PARAVAN 28
ISA 100 IN HCL PICKLE	MITSUBISHI PREMIUM CEMENT	PARAVAN D
ISA 100 IN HCL/HF	M-I-X II COARSE	PARAVAN F
ISA 100 IN HF	M-I-X II FINE	PEN-88M
ISOQUINOLINE	M-I-X II MEDIUM	PHOS ACID
JCL/HF	MO-67	PHOSPHORIC ACID
K-35	MORFLO III SURFACTANT	PHOSPHORIC ACID, 85%
KCL (POTASH)	MSA-III US	PLOYTHIN
KCL 22%	MUD ACID	POL-E-FLAKE
KCL 95 PE	MUD CLEAN	POLYMER
KCL 95%	MUD CLEAN I	POLYPAC R
KOL-SEAL	MUD FLUSH	POLYPAC UL
LIME	MUD FLUSH III	POLY-PLUS
LIMESTONE	MUDPUSH EXPRESS	POLY-THIN
LP791	MUSOL A SOLVENT	POLY-VIS
LVT	MYACIDE GA25	PORTLAND CEMENT
LVT OIL	NE-110W	POTASH
LW-6	NE-118	POTASSIUM CHLORIDE (KCL)
MAGMA FIBER	NE-530	POTASSIUM CHLORIDE (KCL) 95 PERCENT
MAGMA FIBER COARSE	NE-900	POTASSIUM HYDROXIDE
MAGMA FIBER FINE	NH4CL WATER	POZ (FLY ASH)
MAGNESIUM	NIS	POZMIX A
MAGNESIUM OXIDE	NSF 37 IN HCL	POZMIX-FLYASH
MARBLE WHITE 1640	NSF 37 IN NH4CL	POZMIZ-FLYASH
MARBLE WHITE 30	OILSAFE	POZZLON
MCS-D	OILSAFE AR	PREMIUM PLUS CEMENT
MD	OILSAFE/HF	PRIMASEAL
MD-C	OMNIPOL	PRIME GEL
M-I GEL	OMNIPOL II	PROONE
M-I WATE (BARITE)	OTHER INGREDIENT	PROPARGYL ALCOHOL
MICROLITE	OTHER INGREDIENT(S)	QC BUBBLES
MINERAL OIL	OXYALKYLATED ALKYLPHENOL	QUINALDINE
MISOL	PA 50	R-21L
MISOL IN HCL	PA 50 IN HCL	ROCKON MX 5-3521
MISOL IN HCL/HF	PA 50 IN HCL PICKLE	S012
MISOL IN HF	PAC	S-8
MISOL IN NH4CL	PAC LV	SA-101 ACID SURFACTANT
MISOL IN PICKLE	PACK LV	SACK BLACK
MISOL IN XYLENE	PAO3047	SAFE-BREAK L

Chemical Name	Chemical Name	Chemical Name
SAFE-CARB 10	SS-200	TORKEASE
SAFE-CARB 20	SS-26 IN HCL	TUNED SPACER
SAFE-CARB 250	SSA 63	TUNED SPACER III
SAFE-CARB 40	SSA-1	UCS
SAFE-CARB 750	SSA-63 IN XYLENE	ULTRA FLUSH HV SYSTEM
SAFE-COR	SSD-921	ULTRA FLUSH II
SALT	SSD-921 IN HCL	ULTRA FLUSH II SYSTEM
SALT (96%)	SSD-921 IN HCL PICKLE	US-40
SAND	SSM 50 IN HCL	VERSACLEAN
SAND - PREMIUM WHITE	SSM 50 IN HCL/HF	VERSASET
SAND, WHITE	SSM 50 IN HF	VERSATROL M
SAPP	SSM 50 IN NH4CL	WALNUT
SAWDUST	SSP-40 IN XYLENE	WALNUT HULLS
SCR-100	STARCH	WALNUT NUT PLUG FINE
SCW4003	STATIC FREE	WALNUT NUT PLUG MEDIUM
SEALBOND SPACER	STEARIC ACID	WATER IN HCL
SEALBOND SPACER 25	STIMCARB GLDA	WATER IN HF
SF PILL	SUGAR	WATER IN NH4CL
SILICA FLOUR	SULFONATE	WAW273
SILICA SAND	SUPER CBL	WAW5206
SILICA, CRYSTALLINE, QUARTZ	SUPER CBL ADDITIVE	WG-36 GELLING AGENT
SODA ASH	SUPER LC	WHITE SAND
SODIUM BICARBONATE	SUPERSET W	WT-1040
SODIUM CARBONATE	SURFATRON DP-88	XANIVS
SODIUM METASILICATE	SURFATRON DP-99	XANVIS
SP BREAKER	SW 211	XCD
SP DMA	SW 211 IN 15% HCL	XCD POLYMER
SP-101	SW 211 IN AMMONIUM CHLORIDE	X-CIDE
SPHERELITE	SW 211 IN HCL	X-CIDE 207
SRW4808S	SW 211 IN HCL PICKLE	XLW-32
SS 20	SW 211 IN NH4CL	XLW-56
SS 20 IN HCL	TACKLE	X-PEL-G
SS 20 IN HCL PICKLE	TANNATHIN	XYLENE
SS 20 IN HCL/HF	TECHNI-WET 4923	XYLENE IN HCL
SS 20 IN HF	THRUCARB	XYLENE MIXTURE
SS 26 IN XYLENE	TOP OUT	ZONELOCK SC

Table A.5. Chemicals with available acute inhalation data for entire SCAQMD dataset.

Chemical Name	CASRN	Used in City of LA	Acute Inhalation GHS Category	“Floor Value” Estimate
2,2 Dibromo-3-nitrilopropionamide	10222-01-2		1	
Boric acid	10043-35-3		1	X
Glutaraldehyde	111-30-8	X	1	
Naphthalene	91-20-3	X	1	X
Polyethylene, polypropylene ether glycol copolymer	9003-11-6		1	
Sodium tetraborate decahydrate	1303-96-4		1	X
Phosphoric acid	7664-38-2	X	1	X
Peracetic acid	79-21-0		1	
Thioglycolic acid	68-11-1		1	
Hexylene glycol	107-41-5		1	X
Glycolic acid	79-14-1	X	1	
Ethylene oxide	75-21-8		2	
2-Ethylhexan-1-ol	104-76-7	X	2	X
5-Chloro-2-methyl-3(2H)-isothiazolone	26172-55-4		2	
Hydrofluoric acid	7664-39-3	X	2	
Sulfuric acid	7664-93-9	X	2	
Lithium hydroxide	1310-65-2		2	
Hydrogen peroxide	7722-84-1		2	
Formaldehyde	50-00-0	X	2	
Petroleum distillates	64741-44-2		2	
Methyl isobutyl ketone	108-10-1		3	
Triethylene glycol	112-27-6	X	3	X
2-Butoxyethanol	111-76-2	X	3	
Formic acid	64-18-6	X	3	
Glycerol	56-81-5		3	X
Hydrochloric acid	7647-01-0	X	3	
Paraffinic petroleum distillate, hydrotreated light	64742-55-8		3	
Hydrotreated Light Petroleum Distillate	64742-47-8	X	3	X
Potassium chloride	7447-40-7	X	3	
Propargyl alcohol	107-19-7	X	3	
Tetrakis hydroxymethyl phosphonium sulfate	55566-30-8		3	
Glyoxal	107-22-2	X	3	

Chemical Name	CASRN	Used in City of LA	Acute Inhalation GHS Category	"Floor Value" Estimate
Lithium carbonate	554-13-2		3	
Graphite	7782-42-5		3	
Stoddard solvents	8052-41-3		3	X
Acetic anhydride	108-24-7		3	
Cyclohexanol	108-93-0		3	X
1-Methoxy-2-propanol	107-98-2	X	4	
Non-crystalline silica (impurity)	7631-86-9	X	4	X
1,2,4-Trimethylbenzene	95-63-6	X	4	
Ethylbenzene	100-41-4	X	4	
Xylenes	1330-20-7	X	4	
Sodium carbonate	497-19-8	X	4	X
Solvent naphtha, petroleum, light arom.	64742-95-6	X	4	X
Cumene	98-82-8	X	4	
n-Butyl alcohol	71-36-3		4	
Mullite	1302-93-8		4	X
Boron sodium oxide	1330-43-4		4	X
Acrylamide	79-06-1		4	X
Ethyl lactate	97-64-3		4	X
Sodium carboxymethylcellulose	9004-32-4	X	>4	
Acetic acid	64-19-7	X	>4	
Ammonium persulfate	7727-54-0		>4	
Ethanol	64-17-5	X	>4	
Heavy aromatic naphtha	64742-94-5	X	>4	
Isopropanol	67-63-0	X	>4	
Methanol	67-56-1	X	>4	
Sodium chloride	7647-14-5	X	>4	
1,3,5-Trimethylbenzene	108-67-8	X	>4	
Toluene	108-88-3	X	>4	
Sodium acetate	127-09-3		>4	
Morpholine	110-91-8		>4	
Cyclopentasiloxane, 2,2,4,4,6,6,8,8,10,10-decamethyl-	541-02-6	X	>4	
Octamethylcyclotetrasiloxane	556-67-2	X	>4	
Acetone	67-64-1	X	>4	
Aluminum	7429-90-5	X	>4	
Tributyl phosphate	126-73-8		>4	
Benzene	71-43-2		>4	

Table A.6. Chemicals with available chronic inhalation reference concentrations (RfV) for entire SCAQMD dataset.

Chemical Name	CASRN	Used in City of LA	Chronic Inhalation Reference Value (RfV) (mg/m ³)	Source
Acrylamide	79-06-1		7.69E-06	OEHHA Unit Risk
Glutaraldehyde	111-30-8	X	0.00008	OEHHA REL
Diethylene glycol mono-n-butyl ether	112-34-5		0.0001	PPRTV RfC
Ethylene oxide	75-21-8		0.000113	OEHHA Unit Risk
Naphthalene	91-20-3	X	0.000294	OEHHA Unit Risk
Formic acid	64-18-6	X	0.0003	PPRTV Provisional RfC
Benzene	71-43-2		0.000344	OEHHA Unit Risk
Sulfuric acid	7664-93-9	X	0.001	OEHHA REL
Formaldehyde	50-00-0	X	0.00166	OEHHA Unit Risk
Crystalline silica (cristobalite)	14464-46-1	X	0.003 ¹	OEHHA REL
Crystalline silica (quartz)	14808-60-7	X	0.003	OEHHA REL
Crystalline silica (tridymite)	15468-32-3	X	0.003 ¹	OEHHA REL
Diethanolamine	111-42-2		0.003	OEHHA REL
Magnesium silicate hydrate (talc)	14807-96-6		0.003 ¹	OEHHA REL
Mullite	1302-93-8		0.003 ¹	OEHHA REL
Sepiolite	63800-37-3		0.003 ¹	OEHHA REL
Ethylbenzene	100-41-4	X	0.004	OEHHA Unit Risk
Aluminum	7429-90-5	X	0.005	PPRTV RfC
Nitrilotriacetic acid	139-13-9	X	0.00666	OEHHA Unit Risk
Phosphoric acid	7664-38-2	X	0.007	OEHHA REL
Hydrochloric acid	7647-01-0	X	0.009	OEHHA REL
Hydrofluoric acid	7664-39-3	X	0.014	OEHHA REL
1,2,3-Trimethylbenzene	526-73-8	X	0.06	IRIS RfC
1,2,4-Trimethylbenzene	95-63-6	X	0.06	IRIS RfC
1,3,5-Trimethylbenzene	108-67-8	X	0.06	IRIS RfC
2-Butoxyethanol	111-76-2	X	0.082	OEHHA REL
Solvent naphtha, petroleum, light arom.	64742-95-6	X	0.1	PPRTV RfC
Toluene	108-88-3	X	0.3	OEHHA REL
Cumene	98-82-8	X	0.4	IRIS RfC
Ethylene glycol	107-21-1	X	0.4	OEHHA REL
Xylenes	1330-20-7	X	0.7	OEHHA REL
Isobutylmethylcarbinol	108-11-2		3	PPRTV Provisional RfC
Methyl isobutyl ketone	108-10-1		3	IRIS RfC
Methanol	67-56-1	X	4	OEHHA REL
1-Methoxy-2-propanol	107-98-2	X	7	OEHHA REL
Isopropanol	67-63-0	X	7	OEHHA REL
Acetone	67-64-1	X	30.8	ATSDR MRL

1. Reference chemical: Crystalline silica (quartz) (CASRN: 14808-60-7)

Table A.7. Chemicals with available occupational exposure limits for entire SCAQMD dataset.

Chemical Name	CASRN	Used in City of LA	Occupational Reference Value (RfV) (mg/m ³)	Source
Formaldehyde	50-00-0	X	0.00023479	NIOSH REL
Acrylamide	79-06-1		0.000357	NIOSH REL
Crystalline silica (quartz)	14808-60-7	X	0.000595	NIOSH REL
Ethylene oxide	75-21-8		<0.002142	NIOSH REL
Benzene	71-43-2		0.003808	NIOSH REL
Glutaraldehyde	111-30-8	X	0.00952	NIOSH REL
Boron sodium oxide	1330-43-4		0.0119	NIOSH REL
Phosphoric acid	7664-38-2	X	0.0119	NIOSH REL
Sulfuric acid	7664-93-9	X	0.0119	NIOSH REL
Hydrogen peroxide	7722-84-1		0.01666	NIOSH REL
Calcium oxide	1305-78-8	X	0.0238	NIOSH REL
Graphite	7782-42-5		0.0238	ACGIH TLV
Magnesium silicate hydrate (talc)	14807-96-6		0.0238	NIOSH REL
Potassium hydroxide	1310-58-3	X	0.0238	NIOSH REL
Propargyl alcohol	107-19-7	X	0.0238	NIOSH REL
Sodium hydroxide	1310-73-2	X	0.0238	NIOSH REL
Tributyl phosphate	126-73-8		0.02618	ACGIH TLV
Hydrofluoric acid	7664-39-3	X	0.02975	NIOSH REL
Mica	12001-26-2	X	0.0357	NIOSH REL
Thioglycolic acid	68-11-1		0.0476	NIOSH REL
Aluminum	7429-90-5	X	0.0595 ¹	NIOSH REL
Aluminum oxide	1344-28-1	X	0.0595 ¹	OSHA PEL
Barium sulfate	7727-43-7	X	0.0595 ¹	NIOSH REL
Calcium hydroxide	1305-62-0		0.0595 ¹	OSHA PEL
Calcium sulfate	7778-18-9	X	0.0595 ¹	NIOSH REL
Cellulose, microcrystalline	9004-34-6	X	0.0595 ¹	NIOSH REL
Glycerol	56-81-5		0.0595	NIOSH REL
Iron oxide	1309-37-1	X	0.0595 ¹	NIOSH REL
Limestone	1317-65-3	X	0.0595 ¹	NIOSH REL
Phosphogypsum	13397-24-5	X	0.0595 ¹	NIOSH REL
Plaster of paris	26499-65-0		0.0595 ¹	NIOSH REL
Portland cement	65997-15-1	X	0.0595 ¹	NIOSH REL
Sodium tetraborate decahydrate	1303-96-4		0.0595	NIOSH REL
Starch	9005-25-8		0.0595 ¹	NIOSH REL
Tetrasodium pyrophosphate	7722-88-5		0.0595	NIOSH REL
Triethanolamine	102-71-6		0.0595	ACGIH TLV

Chemical Name	CASRN	Used in City of LA	Occupational Reference Value (RfV) (mg/m ³)	Source
Zirconium dichloride oxide	7699-43-6		0.0595 ²	NIOSH REL
Monoethanolamine	141-43-5		0.0714	OSHA PEL
Non-crystalline silica (impurity)	7631-86-9	X	0.0714	NIOSH REL
Hydrochloric acid	7647-01-0	X	0.0833	NIOSH REL
Formic acid	64-18-6	X	0.1071	NIOSH REL
Ammonium chloride	12125-02-9	X	0.119	NIOSH REL
Magnesium oxide	1309-48-4	X	0.119	ACGIH TLV
Diethanolamine	111-42-2		0.1785	NIOSH REL
Acetic anhydride	108-24-7		0.238	NIOSH REL
2-Butoxyethanol	111-76-2	X	0.2856	NIOSH REL
1,3,5-Trimethylbenzene	108-67-8	X	0.2975	NIOSH REL
Acetic acid	64-19-7	X	0.2975	NIOSH REL
Naphthalene	91-20-3	X	0.595	NIOSH REL
Morpholine	110-91-8		0.833	NIOSH REL
Isobutylmethylcarbinol	108-11-2		1.19	NIOSH REL
1,2,3-Trimethylbenzene	526-73-8	X	1.4875	NIOSH REL
1,2,4-Trimethylbenzene	95-63-6	X	1.4875	NIOSH REL
Hexylene glycol	107-41-5		1.4875	NIOSH REL
Ethylene glycol	107-21-1	X	1.5113	NIOSH REL
n-Butyl alcohol	71-36-3		1.785	NIOSH REL
Toluene	108-88-3	X	2.2372	ACGIH TLV
Cyclohexanol	108-93-0		2.38	NIOSH REL
Methyl isobutyl ketone	108-10-1		2.4395	NIOSH REL
Cumene	98-82-8	X	2.9155	NIOSH REL
Methanol	67-56-1	X	3.094	NIOSH REL
Stoddard solvents	8052-41-3		4.165	NIOSH REL
1-Methoxy-2-propanol	107-98-2	X	4.284	NIOSH REL
Ethylbenzene	100-41-4	X	5.1765	NIOSH REL
Acetone	67-64-1	X	7.021	NIOSH REL
Isopropanol	67-63-0	X	11.662	NIOSH REL
Petroleum distillate-mineral oil grade	8002-05-9		16.66	NIOSH REL
Ethanol	64-17-5	X	22.61	NIOSH REL

1. As respirable dust
2. Zirconium compounds as Zr

Table A.8. List of chemicals classified as not readily biodegradable for entire SCAQMD dataset.

Chemical Name	CASRN	Used in City of LA	Chemical Name	CASRN	Used in City of LA
1,2,3-Trimethylbenzene	526-73-8	X	Heavy aromatic naphtha	64742-94-5	X
1,2-benzisothiazolin-3-one	2634-33-5		Hydrotreated Light Petroleum Distillate	64742-47-8	X
2,2 Dibromo-3-nitrilopropionamide	10222-01-2		Isoquinoline	119-65-3	X
2-Methyl-3(2H)-isothiazolone	2682-20-4		Lecithins ¹	8002-43-5	X
3-aminopropyl (sileanetriol) ¹	58160-99-9		Naphtha (petroleum), heavy catalytic reformed ¹	64741-68-0	
Benzene, c10-c16 alkyl derivatives ¹	68648-87-3	X	Naphthalenesulfonic acid, bis(1-methylethyl)-, compd. with cyclohexanamine (1:1) ¹	68425-61-6	
Benzene, tetrapropylene- ¹	25265-78-5		Nonylphenol polyethylene glycol ether ¹	127087-87-0	X
Benzenesulfonic acid, 4-methyl-, potassium salt ¹	16106-44-8		Octamethylcyclotetrasiloxane	556-67-2	X
Benzenesulfonic acid, C10-16-alkyl derivs	68584-22-5	X	Petroleum distillates ¹	68990-35-2	
Benzenesulfonic acid, c10-16-alkyl derivs., compds. with 2-propanamine ¹	68584-24-7		Phosphonic acid ¹	13598-36-2	
Benzenesulfonic acid, C10-16-alkyl derivs., compds. with cyclohexylamine ¹	255043-08-4		Pine oil ¹	9/3/8002	X
Benzenesulfonic acid, c10-16-alkyl derivs., compds. with triethanolamine ¹	68584-25-8		Polydimethyl diallyl ammonium chloride ¹	26062-79-3	
Benzenesulfonic acid, C10-16-alkyl derivs., potassium salts ¹	68584-27-0		Polyethylene glycol monostearate ¹	9004-99-3	
Bis(isopropyl)naphthalene	38640-62-9		Polyoxyethylene dinonylphenol ¹	9014-93-1	X
C13-16 Isoparaffin ¹	68551-20-2		Polypropylene ¹	9003-07-0	X
Calcium lignosulfonate	8061-52-7		Prolonium chloride ¹	55636-09-4	X
Cyclohexamine sulfate ¹	19834-02-7		Quinaldine ¹	91-63-4	X
Cyclohexasiloxane, 2,2,4,4,6,6,8,8,10,10,12,12-dodecamethyl-	540-97-6	X	Quinoline	91-22-5	X
Cyclopentasiloxane, 2,2,4,4,6,6,8,8,10,10-decamethyl-	541-02-6	X	Siloxanes and silicones, dimethyl, reaction products with silica ¹	67762-90-7	X

Chemical Name	CASRN	Used in City of LA	Chemical Name	CASRN	Used in City of LA
Cymene ¹	25155-15-1		Sodium aminotris(methylenephosphonate)	20592-85-2	X
Diethylenetriaminepenta(methylenephosphonic) acid	15827-60-8		Sodium dichloroisocyanurate	2893-78-9	
Diisopropyl naphthalenesulfonic acid ¹	28757-00-8		Sodium dodecylpoly(oxyethylene) sulfate ¹	9004-82-4	
Dimethyl siloxanes and silicones ¹	63148-62-9	X	Sodium erythorbate	6381-77-7	
Ethanesulfonic acid, 2-[methyl[(9z)-1-oxo-9-octadecen-1-yl]amino]-, sodium salt (1:1) ¹	137-20-2	X	Sodium lignosulfonate ¹	8061-51-6	X
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives, residues	68909-77-3		Trimethylbenzenes ¹	25551-13-7	
Etidronic acid	2809-21-4				

1. Biodegradability estimated using U.S. EPA EPISuite™ BOWIN™ module

Table A.9. Estimated Hazard Metric values for chronic inhalation for entire SCAQMD.

Chemical Name	CASRN	Frequency of use (wells)	Median Mass Used (lbs)	RfV (mg/m ³)	EHM	Used in City of LA
Crystalline silica (quartz)	14808-60-7	547	42300	3.00E-03	7.71E+09	X
Hydrochloric acid	7647-01-0	1050	14501	9.00E-03	1.69E+09	X
Calcium oxide	1305-78-8	301	52226	2.38E-02	6.61E+08	X
Hydrofluoric acid	7664-39-3	835	10575	1.40E-02	6.31E+08	X
Glutaraldehyde	111-30-8	285	143.65	8.00E-05	5.12E+08	X
Portland cement	65997-15-1	306	63732	5.95E-02	3.28E+08	X
Phosphogypsum	13397-24-5	305	56024	5.95E-02	2.87E+08	X
Mica	12001-26-2	261	38400	3.57E-02	2.81E+08	X
Limestone	1317-65-3	279	57246	5.95E-02	2.68E+08	X
Barite	7727-43-7	294	44820	5.95E-02	2.21E+08	X
Naphthalene	91-20-3	617	72	2.94E-04	1.51E+08	X
Magnesium oxide	1309-48-4	303	44764	1.19E-01	1.14E+08	X
Formaldehyde	50-00-0	924	74	1.66E-03	4.12E+07	X
Crystalline silica (cristobalite)	14464-46-1	61	1476	3.00E-03	3.00E+07	X
Mullite	1302-93-8	17	4713	3.00E-03	2.67E+07	
Non-crystalline silica (impurity)	7631-86-9	276	5587	7.14E-02	2.16E+07	X
Boron sodium oxide	1330-43-4	11	21516	1.19E-02	1.99E+07	
Aluminum oxide	1344-28-1	274	4218	5.95E-02	1.94E+07	X
Iron oxide	1309-37-1	271	3774	5.95E-02	1.72E+07	X
Ethylbenzene	100-41-4	533	80	4.00E-03	1.07E+07	X
Ammonium chloride	12125-02-9	926	1333	1.19E-01	1.04E+07	X
Formic acid	64-18-6	15	183	3.00E-04	9.15E+06	X
Tetrasodium pyrophosphate	7722-88-5	36	7308	5.95E-02	4.42E+06	
Propargyl alcohol	107-19-7	920	74	2.38E-02	2.86E+06	X
Phosphoric acid	7664-38-2	42	300.6	7.00E-03	1.80E+06	X
Cellulose, microcrystalline	9004-34-6	138	750	5.95E-02	1.74E+06	X
Crystalline silica (tridymite)	15468-32-3	234	20.47	3.00E-03	1.60E+06	X
Nitrilotriacetic acid	139-13-9	37	185	6.66E-03	1.03E+06	X
2-Butoxyethanol	111-76-2	461	141.1	8.20E-02	7.93E+05	X
Aluminum	7429-90-5	176	21	5.00E-03	7.39E+05	X
Sepiolite	63800-37-3	1	1782	3.00E-03	5.94E+05	
Acetic acid	64-19-7	210	626.5	2.98E-01	4.42E+05	X
Monoethanolamine	141-43-5	6	3792.5	7.14E-02	3.19E+05	
Calcium hydroxide	1305-62-0	51	250	5.95E-02	2.14E+05	
Ethylene oxide	75-21-8	19	1	1.13E-04	1.68E+05	
Diethylene glycol mono-n-butyl ether	112-34-5	1	15.846	1.00E-04	1.58E+05	
Sodium hydroxide	1310-73-2	20	182.05	2.38E-02	1.53E+05	X
Acrylamide	79-06-1	10	0.11	7.69E-06	1.43E+05	
Graphite	7782-42-5	4	742.5	2.38E-02	1.25E+05	

Chemical Name	CASRN	Frequency of use (wells)	Median Mass Used (lbs)	RfV (mg/m ³)	EHM	Used in City of LA
Starch	9005-25-8	2	3075	5.95E-02	1.03E+05	
1,2,4-Trimethylbenzene	95-63-6	133	40	6.00E-02	8.87E+04	X
Xylenes	1330-20-7	544	83.89	7.00E-01	6.52E+04	X
Cumene	98-82-8	376	64	4.00E-01	6.02E+04	X
Solvent naphtha, petroleum, light arom.	64742-95-6	135	40	1.00E-01	5.40E+04	X
Benzene	71-43-2	55	0.24	3.44E-04	3.84E+04	
Sulfuric acid	7664-93-9	29	1.17	1.00E-03	3.39E+04	X
Calcium sulfate	7778-18-9	19	89	5.95E-02	2.84E+04	X
Plaster of paris	26499-65-0	1	1537	5.95E-02	2.58E+04	
Methanol	67-56-1	1319	75	4.00E+00	2.47E+04	X
Thioglycolic acid	68-11-1	1	720	4.76E-02	1.51E+04	
Hydrogen peroxide	7722-84-1	3	41.2	1.67E-02	7.42E+03	
Toluene	108-88-3	163	7.2	3.00E-01	3.91E+03	X
Ethylene glycol	107-21-1	40	27	4.00E-01	2.70E+03	X
Sodium tetraborate decahydrate	1303-96-4	1	143	5.95E-02	2.40E+03	
Morpholine	110-91-8	7	271	8.33E-01	2.28E+03	
Acetic anhydride	108-24-7	5	90	2.38E-01	1.89E+03	
Potassium hydroxide	1310-58-3	70	0.44	2.38E-02	1.29E+03	X
Tributyl phosphate	126-73-8	1	29.1	2.62E-02	1.11E+03	
Zirconium dichloride oxide	7699-43-6	1	42	5.95E-02	7.06E+02	
Magnesium silicate hydrate (talc)	14807-96-6	4	0.5	3.00E-03	6.67E+02	
1,3,5-Trimethylbenzene	108-67-8	67	0.48	6.00E-02	5.36E+02	X
Triethanolamine	102-71-6	1	29.55	5.95E-02	4.97E+02	
1,2,3-Trimethylbenzene	526-73-8	67	0.4	6.00E-02	4.47E+02	X
Hexylene glycol	107-41-5	1	326.8	1.49E+00	2.20E+02	
Glycerol	56-81-5	60	0.11	5.95E-02	1.11E+02	
Acetone	67-64-1	165	19	3.08E+01	1.02E+02	X
Isobutylmethylcarbinol	108-11-2	55	4.75	3.00E+00	8.71E+01	
Diethanolamine	111-42-2	9	0.017	3.00E-03	5.29E+01	
Ethanol	64-17-5	203	3.5	2.26E+01	3.14E+01	X
Isopropanol	67-63-0	241	0.79	7.00E+00	2.72E+01	X
n-Butyl alcohol	71-36-3	4	8	1.79E+00	1.79E+01	
1-Methoxy-2-propanol	107-98-2	168	0.7	7.00E+00	1.68E+01	X
Petroleum distillate-mineral oil grade	8002-05-9	1	250.2	1.67E+01	1.50E+01	
Stoddard solvents	8052-41-3	1	3.16	4.17E+00	7.61E-01	
Methyl isobutyl ketone	108-10-1	1	2.27	3.00E+00	7.58E-01	
Cyclohexanol	108-93-0	32	0.02	2.38E+00	2.69E-01	

Table A.10. Estimated Hazard Metric values for acute inhalation for entire SCAQMD.

Chemical Name	CASRN	Frequency of use (wells)	Median Mass Used (lbs)	Acute Toxicity Criteria	EHM	Used in City of LA
Hydrofluoric acid	7664-39-3	835	10575	25	3.53E+05	X
Hydrochloric acid	7647-01-0	1050	14501	200	7.61E+04	X
Potassium chloride	7447-40-7	532	23691	200	6.30E+04	X
Petroleum distillates	64741-44-2	1	1019114	25	4.08E+04	
Naphthalene	91-20-3	617	72	2.5	1.78E+04	X
Glutaraldehyde	111-30-8	285	143.6	2.5	1.64E+04	X
Phosphoric acid	7664-38-2	42	300	2.5	5.05E+03	X
Formaldehyde	50-00-0	924	74	25	2.74E+03	X
Non-crystalline silica (impurity)	7631-86-9	276	5587	1150	1.34E+03	X
Glyoxal	107-22-2	286	675	200	9.65E+02	X
Boric acid	10043-35-3	22	47.8	2.5	4.21E+02	
Paraffinic petroleum distillate, hydrotreated light	64742-55-8	10	7981	200	3.99E+02	
Propargyl alcohol	107-19-7	920	74	200	3.40E+02	X
2-Butoxyethanol	111-76-2	461	141.1	200	3.25E+02	X
Thioglycolic acid	68-11-1	1	720	2.5	2.88E+02	
Boron sodium oxide	1330-43-4	11	21516	1150	2.06E+02	
2-Ethylhexan-1-ol	104-76-7	37	120	25	1.78E+02	X
Sodium carbonate	497-19-8	250	675	1150	1.47E+02	X
Hydrotreated Light Petroleum Distillate	64742-47-8	417	64	200	1.33E+02	X
Hexylene glycol	107-41-5	1	326.8	2.5	1.30E+02	
Glycolic acid	79-14-1	3	98	2.5	1.18E+02	X
2,2 Dibromo-3-nitrilopropionamide	10222-01-2	6	32.5	2.5	7.80E+01	
Lithium hydroxide	1310-65-2	2	947.5	25	7.58E+01	
Mullite	1302-93-8	17	4713	1150	6.97E+01	
Peracetic acid	79-21-0	3	55.9	2.5	6.71E+01	
Sodium tetraborate decahydrate	1303-96-4	1	143	2.5	5.72E+01	
Xylenes	1330-20-7	544	83.89	1150	3.97E+01	X
Ethylbenzene	100-41-4	533	80	1150	3.71E+01	X
5-Chloro-2-methyl-3(2H)-isothiazolone	26172-55-4	11	60	25	2.64E+01	
Cumene	98-82-8	376	64	1150	2.09E+01	X
Graphite	7782-42-5	4	742.5	200	1.49E+01	
Formic acid	64-18-6	15	183	200	1.37E+01	X
Lithium carbonate	554-13-2	2	947.5	200	9.48E+00	
Hydrogen peroxide	7722-84-1	3	41.2	25	4.94E+00	

Chemical Name	CASRN	Frequency of use (wells)	Median Mass Used (lbs)	Acute Toxicity Criteria	EHM	Used in City of LA
Solvent naphtha, petroleum, light arom.	64742-95-6	135	40	1150	4.70E+00	X
1,2,4-Trimethylbenzene	95-63-6	133	40	1150	4.63E+00	X
Polyethylene, polypropylene ether glycol copolymer	9003-11-6	1	11.36	2.5	4.55E+00	
Acetic anhydride	108-24-7	5	90	200	2.25E+00	
Sulfuric acid	7664-93-9	29	1.17	25	1.36E+00	X
Ethylene oxide	75-21-8	19	1	25	7.60E-01	
Ethyl lactate	97-64-3	2	347.7	1150	6.05E-01	
Tetrakis hydroxymethyl phosphonium sulfate	55566-30-8	3	13.5	200	2.03E-01	
1-Methoxy-2-propanol	107-98-2	168	0.7	1150	1.02E-01	X
Triethylene glycol	112-27-6	1	18.51	200	9.26E-02	X
Glycerol	56-81-5	60	0.11	200	3.30E-02	
n-Butyl alcohol	71-36-3	4	8	1150	2.78E-02	
Stoddard solvents	8052-41-3	1	3.16	200	1.58E-02	
Methyl isobutyl ketone	108-10-1	1	2.27	200	1.14E-02	
Cyclohexanol	108-93-0	32	0.02	200	3.20E-03	
Acrylamide	79-06-1	10	0.11	1150	9.57E-04	