

Office of Environmental Health Hazard Assessment
Proposition 65 No Significant Risk Levels (NSRLs) for Carcinogens and
Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity

Below is a list of NSRLs and MADLs that provide "safe harbor" for businesses subject to the requirements of Proposition 65. These NSRLs and MADLs are established in regulation in Title 27, Cal. Code of Regulations, Sections 25705, 25709 and 25805. These safe harbor levels do not preclude the use of alternative levels that can be demonstrated by their users as being scientifically valid. A hyperlink is provided for those NSRLs or MADLs for which the documentation of their derivation is electronically available.

Chemical	NSRL (µg/day) ^a	MADL (µg/day) ^a
A-alpha-C (2-Amino-9H-pyrido[2,3-b]indole)	2	
Acetaldehyde	90 (inhalation)	
Acetamide	10	
2-Acetylaminofluorene	0.2	
Acrylamide	0.2	140
Acrylonitrile	0.7	
Actinomycin D	0.00008	
AF-2;[2-(2-furyl)-3-(5-nitro-2-furyl)]acrylamide	3	
Aldrin	0.04	
2-Aminoanthraquinone	20	
o-Aminoazotoluene	0.2	
4-Aminobiphenyl (4-aminodiphenyl)	0.03	
3-Amino-9-ethylcarbazole hydrochloride	9	
1-Amino-2-methylantraquinone	5	
2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole	0.04	
Amitrole	0.7	
Aniline	100	
o-Anisidine	5	
o-Anisidine hydrochloride	7	
Aramite	20	
Arsenic (inorganic arsenic compounds)	0.06 (inhalation) 10 (except inhalation)	
Asbestos	100 fibers/day (inhalation)	
Auramine	0.8	
Avermectin B1 (Abamectin)		4.4
Azaserine	0.06	
Azathioprine	0.4	
Azobenzene	6	
Benz[a]anthracene	0.033 (oral)	
Benzene	6.4 (oral) 13 (inhalation)	24 (oral) 49 (inhalation)
Benzidine [and its salts]	0.001	
Benzo[b]fluoranthene	0.096 (oral)	
Benzo[j]fluoranthene	0.11 (oral)	
Benzofuran	1.1	

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Benzo[a]pyrene	0.06	
Benzyl chloride	4	
Benzyl violet 4B	<u>30</u>	
Beryllium	0.1	
Beryllium oxide	0.1	
Beryllium sulfate	0.0002	
Bis(2-chloroethyl)ether	0.3	
Bis(chloromethyl)ether	0.02	
Bisphenol A (BPA)		<u>3 (dermal exposure from solid materials)</u>
Bromodichloromethane	5	
Bromoethane	<u>96</u>	
Bromoform	<u>64</u>	
1,3-Butadiene	0.4	
Butylated hydroxyanisole	4000	
Butyl benzyl phthalate ^b		
beta-Butyrolactone	<u>0.7</u>	
Cadmium	0.05 (inhalation)	<u>4.1 (oral)</u>
Captafol	<u>5</u>	
Captan	<u>300</u>	
Carbazole	<u>4.1</u>	
Carbon tetrachloride	5	
N-Carboxymethyl-N-nitrosourea	<u>0.70</u>	
Chlorambucil	<u>0.002</u>	
Chlordane	0.5	
Chlordecone (Kepone)	<u>0.04</u>	
Chlorendic acid	<u>8</u>	
Chlorinated paraffins (Average chain length, C12; approximately 60 percent chlorine by weight)	<u>8</u>	
p-Chloroaniline	<u>1.5</u>	
p-Chloroaniline hydrochloride	<u>1.9</u>	
Chloroethane (Ethyl chloride)	<u>150</u>	
Chloroform	20 (oral) 40 (inhalation)	
Chloromethyl methyl ether (technical grade)	<u>0.3</u>	
3-Chloro-2-methylpropene	<u>5</u>	
4-Chloro-o-phenylenediamine	<u>40</u>	
Chlorothalonil	<u>41</u>	
p-Chloro-o-toluidine	<u>3</u>	
p-Chloro-o-toluidine, hydrochloride	<u>3.3</u>	
Chlorozotocin	<u>0.003</u>	
Chromium (hexavalent compounds)	0.001 (inhalation)	

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Chemical	NSRL (µg/day) ^a	MADL (µg/day) ^a
Chrysene	0.35 (oral)	
C.I. Basic Red 9 monohydrochloride	3	
C.I. Direct Blue 218	50	
Cinnamyl anthranilate	200	
Coke oven emissions	0.3	
p-Cresidine	5	
Cupferron	3	
Cyanide salts that readily dissociate in solution (expressed as cyanide) ^b		9.8 (oral)
Cyclophosphamide (anhydrous)	1	
Cyclophosphamide (hydrated)	1	
D&C Red No. 9	100	
Dacarbazine	0.01	
Daminozide	40	
Dantron (Chrysazin; 1,8-Dihydroxyanthraquinone)	9	
2,4-D butyric acid		910
DDD, DDE, DDT (in combination)	2	
DDVP (Dichlorvos)	2	
2,4-Diaminoanisole	30	
2,4-Diaminoanisole sulfate	50	
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	5	
2,4-Diaminotoluene	0.2	
Dibenz[a,h]anthracene	0.2	
7H-Dibenzo[c,g]carbazole	0.0030 (oral)	
Dibenzo[a,h]pyrene	0.0054 (oral)	
Dibenzo[a,i]pyrene	0.0050 (oral)	
1,2-Dibromo-3-chloropropane (DBCP)	0.1	3.1 (oral) 4.3 (inhalation)
p-Dichlorobenzene	20	
3,3'-Dichlorobenzidine	0.6	
1,1-Dichloroethane	100	
	50	
Dichloromethane (Methylene chloride)	200 (inhalation)	
1,2-Dichloropropane	9.7	
Dieldrin	0.04	
Di(2-ethylhexyl)phthalate (DEHP)	310	
Adult ^c		4200 (intravenous)
Infant boys, age 29 days - 24 mos. ^c		600 (intravenous)
Neonatal infant boys, age 0 - 28 days ^c		210 (intravenous)
Adult ^c		410 (oral)
Infant boys, age 29 days - 24 mos. ^c		58 (oral)
Neonatal infant boys, age 0 - 28 days ^c		20 (oral)
Diethylstilbestrol (DES)	0.002	

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Chemical	NSRL (µg/day) ^a	MADL (µg/day) ^a
Diglycidyl resorcinol ether (DGRE)	0.4	
Dihydrosafrole	20	
Di-isodecyl phthalate (DIDP)		2200
Diisononyl phthalate (DINP)	146	
3,3'-Dimethoxybenzidine (o-Dianisidine)	0.15	
3,3'-Dimethoxybenzidine dihydrochloride	0.19	
4-Dimethylaminoazobenzene	0.2	
trans-2-[(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)vinyl]-1,3,4-oxadiazole	2	
7,12-Dimethylbenz(a)anthracene	0.003	
3,3'-Dimethylbenzidine (ortho-Tolidine)	0.044	
3,3'-Dimethylbenzidine dihydrochloride	0.059	
Dimethylcarbamoyl chloride	0.05	
1,2-Dimethylhydrazine	0.001	
Dimethylvinylchloride	20	
Di-n-butyl phthalate (DBP)		8.7
Di-n-hexyl phthalate (DnHP)		2200 (oral)
m-Dinitrobenzene		38
2,4-Dinitrotoluene	2	
1,4-Dioxane	30	
Direct Black 38 (technical grade)	0.09	
Direct Blue 6 (technical grade)	0.09	
Direct Brown 95 (technical grade)	0.1	
Disodium cyanodithioimidocarbonate		56 (oral) 170 (oral) as 32% pesticidal formulation
Disperse Blue 1	200	
Epichlorohydrin	9	
Estradiol 17B	0.02	
Ethylbenzene	54 (inhalation) 41 (oral)	
Ethyl dipropylthiocarbamate		700 (oral and inhalation) 6700 (dermal)
Ethyl-4,4'-dichlorobenzilate	7	
Ethylene dibromide	0.2 (oral) 3 (inhalation)	
Ethylene dichloride (1,2-Dichloroethane)	10	
Ethylene glycol monoethyl ether		750 (oral) 960 (inhalation)
Ethylene glycol monoethyl ether acetate		1100 (oral) 1400 (inhalation)
Ethylene glycol monomethyl ether		63 (oral)
Ethylene glycol monomethyl ether acetate		98 (oral)

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Ethyleneimine	0.01	
Ethylene oxide	2	20
Ethylene thiourea	20	
Folpet	200	
Formaldehyde (gas)	40	
2-(2-Formylhydrazino)-4-(5-nitro-2-furyl)thiazole	0.3	
Furmecycloz	20	
Glu-P-1 (2-Amino-6-methyldipyrido[1,2- a:3',2'-d]imidazole)	0.1	
Glu-P-2 (2-Aminodipyrido[1,2-a:3',2'-d]imidazole)	0.5	
Glycidol	0.54	
Gyromitrin (Acetaldehyde methylformylhydrazone)	0.07	
HC Blue 1	10	
Heptachlor	0.2	
Heptachlor epoxide	0.08	
Hexachlorobenzene	0.4	
Hexachlorocyclohexane (technical grade)	0.2	
Hexachlorocyclohexane (alpha isomer)	0.3	
Hexachlorocyclohexane (beta isomer)	0.5	
Hexachlorocyclohexane (gamma isomer)	0.6	
Hexachlorodibenzodioxin	0.0002	
Hexachloroethane	20	
Hydramethylnon		120 (oral)
Hydrazine	0.04	
Hydrazine sulfate	0.2	
Hydrazobenzene (1,2-Diphenylhydrazine)	0.8	
Hydrogen cyanide ^b		10 (oral)
Imazalil	11	
IQ (2-Amino-3-methylimidazo[4,5-f] quinoline)	0.5	
Isobutyl nitrite	7.4	
Lasiocarpine	0.09	
Lead	15 (oral)	0.5
Lead acetate	23 (oral)	
Lead phosphate	58 (oral)	
Lead subacetate	41 (oral)	
Linuron		460
Me-A-alpha-C (2-Amino-3-methyl-9H-pyrido[2,3-b]indole)	0.6	
MeIQ (2-Amino-3,4-dimethylimidazo[4,5-f]quinolin	0.46	
MeIQx (2-Amino-3,8-dimethylimidazo[4,5-f]quinoxaline)	0.41	
Melphalan	0.005	

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Chemical	NSRL (µg/day) ^a	MADL (µg/day) ^a
Methanol		47,000 (inhalation) 23,000 (oral)
2-Methylaziridine (Propyleneimine)	0.028	
Methyl bromide, as a structural fumigant		810 (inhalation)
Methyl carbamate	160	
3-Methylcholanthrene	0.03	
5-Methylchrysene	0.0084 (oral)	
4,4'-Methylene bis(2-chloroaniline)	0.5	
4,4'-Methylene bis(N,N-dimethyl)benzenamine	20	
4,4'-Methylene bis(2-methylaniline)	0.8	
4,4'-Methylenedianiline	0.4	
4,4'-Methylenedianiline dihydrochloride	0.6	
	0.058 (oral)	
Methylhydrazine	0.090 (inhalation)	
Methylhydrazine sulfate	0.18	
4-Methylimidazole	29	
Methyl methanesulfonate	7	
2-Methyl-1-nitroanthraquinone (of uncertain purity)	0.2	
N-Methyl-N'-nitro-N-nitrosoguanidine	0.08	
		3200 (inhalation) 17000 (dermal)
N-Methylpyrrolidone		
Methylthiouracil	2	
Michler's ketone	0.8	
Mirex	0.04	
Mitomycin C	0.00009	
Monocrotaline	0.07	
5-(Morpholinomethyl)-3-[(5-nitrofurfurylidene)-amino]-2-oxazolidinone	0.18	
MX (3-chloro-4-dichloromethyl-5-hydroxy-2(5H)-furanone)	0.11	
Nalidixic acid	28	
Naphthalene	5.8	
2-Naphthylamine	0.4	
Nickel refinery dust from the pyrometallurgical process	0.8	
Nickel subsulfide	0.4	
Nitrilotriacetic acid	100	
Nitrilotriacetic acid, trisodium salt monohydrate	70	
5-Nitroacenaphthene	6	
Nitrofen (technical grade)	9	
Nitrofurazone	0.5	
1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	0.4	
N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	0.5	

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Nitromethane	39	
N-Nitrosodiethanolamine	0.3	
N-Nitrosodiethylamine	0.02	
N-Nitrosodimethylamine	0.04	
N-Nitrosodi- <i>n</i> -butylamine	0.06	
N-Nitrosodi- <i>n</i> -propylamine	0.1	
p-Nitrosodiphenylamine	30	
N-Nitrosodiphenylamine	80	
4-(N-Nitrosomethylamino)-1-(3-pyridyl)1-butanon	0.014	
N-Nitrosomethylethylamine	0.03	
N-Nitrosomorpholine	0.1	
N-Nitroso-N-ethylurea	0.03	
N-Nitroso-N-methylurea	0.006	
N-Nitroso-N-methylurethane	0.006	
N-Nitrosonorcotine	0.5	
N-Nitrosopiperidine	0.07	
N-Nitrosopyrrolidine	0.3	
Pentachlorophenol	40	
Phenacetin	300	
Phenazopyridine	4	
Phenazopyridine hydrochloride	5	
Phenesterin	0.005	
Phenobarbital	2	
Phenoxybenzamine	0.2	
Phenoxybenzamine hydrochloride	0.3	
o-Phenylenediamine	26	
o-Phenylenediamine dihydrochloride	44	
Phenyl glycidyl ether	5	
Phenylhydrazine	1	
Phenylhydrazine hydrochloride	1.4	
o-Phenylphenate, sodium	200	
Polybrominated biphenyls	0.02	
Polychlorinated biphenyls	0.09	
Polygeenan	1200	
Ponceau MX	200	
Ponceau 3R	40	
Potassium bromate	1	
Potassium cyanide ^b		25 (oral)
Potassium dimethyldithiocarbamate		720
Procarbazine	0.05	
Procarbazine hydrochloride	0.06	
1,3-Propane sultone	0.3	
beta-Propiolactone	0.05	

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Propylthiouracil	<u>0.7</u>	
Quizalofop-ethyl		<u>590</u>
Reserpine	<u>0.06</u>	
Safrole	<u>3</u>	
Sodium cyanide ^b		<u>19 (oral)</u> <u>23 (oral)</u>
Sodium dimethyldithiocarbamate		<u>58 (oral) as a 40% pesticidal formulation</u>
Sterigmatocystin	<u>0.02</u>	
Streptozotocin (streptozocin)	<u>0.006</u>	
Styrene oxide	<u>4</u>	
Sulfallate	<u>4</u>	
Sulfur dioxide ^b		<u>10,000</u>
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TCDD)	0.000005	
1,1,2,2-Tetrachloroethane	<u>3</u>	
Tetrachloroethylene (Perchloroethylene)	14	
Tetranitromethane	<u>0.059</u>	
Thioacetamide	<u>0.1</u>	
4,4'-Thiodianiline	<u>0.05</u>	
Thiophanate methyl		<u>600 (oral)</u>
Thiourea	<u>10</u>	
Toluene		7000 ^d
Toluene diisocyanate	<u>20</u>	
o-Toluidine	<u>4</u>	
o-Toluidine hydrochloride	<u>5</u>	
Toxaphene (Polychlorinated camphenes)	0.6	
Trichloroethylene	<u>14 (oral)</u> <u>50 (inhalation)</u>	
2,4,6-Trichlorophenol	10	
Trimethyl phosphate	<u>24</u>	
2,4,6-Trinitrotoluene (TNT)	<u>8.2</u>	
Tris(1-aziridiny)phosphine sulfide (Thiotepa)	<u>0.06</u>	
Tris(2,3-dibromopropyl)phosphate	<u>0.3</u>	
Tris(1,3-dichloro-2-propyl) phosphate (TDCPP)	<u>5.4</u>	
Trp-P-1 (Tryptophan-P-1)	<u>0.03</u>	
Trp-P-2 (Tryptophan-P-2)	<u>0.2</u>	
Urethane (Ethyl carbamate)	0.7	
Vinyl chloride	3	
Vinyl trichloride (1,1,2-Trichloroethane)	<u>10</u>	
2,6-Xylidine (2,6-Dimethylaniline)	<u>110</u>	

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^a Where a source or product results in exposures by multiple routes, the total exposure must be considered. For example, the MADL for benzene is exceeded when the absorbed dose exceeds 24 µg/day. If only inhalation and oral exposure occurs, the benzene MADL is exceeded when: (oral dose ÷ 24 µg/day) + (inhalation dose ÷ 49 µg/day) > 1.0.

^b Butyl benzyl phthalate MADL was adopted June 25, 2013, Sulfur dioxide MADL was adopted July 11, 2013, Hydrogen cyanide and cyanide salts MADLs were adopted August 8, 2013; however, in accordance with Government Code section 11343.4 the MADLs will become effective October 1, 2013.

^c Levels for male children and adolescents were calculated by application of the default bodyweights specified in Section 25703(a)(8) to the procedure specified in Sections 25801 and 25803, Title 27, California Code of Regulations.

^d Level represents absorbed dose (rounded from 6,525 µg/day). Since 100% of ingested toluene is absorbed, oral dose is equivalent to administered dose. It is assumed that roughly 50% of the dose administered by the inhalation route is absorbed. Therefore the MADL for inhaled toluene is 13,000 µg/day (rounded from 13,050 µg/day), corresponding to an absorbed dose of 6,525 µg/day.