

# **PROPOSITION 65 SAFE HARBOR LEVELS:**

No Significant Risk Levels for  
Carcinogens and Maximum  
Allowable Dose Levels for  
Chemicals Causing Reproductive  
Toxicity

**August 2006**

Reproductive and Cancer Hazard  
Assessment Branch  
Office of Environmental Health Hazard  
Assessment  
California Environmental Protection  
Agency



## TABLE OF CONTENTS

<b>Proposition 65 Safe Harbor Levels Development.....</b>	<b>1</b>
<b>A. No Significant Risk Levels (NSRLs) Adopted in Regulation for Carcinogens.....</b>	<b>2</b>
<b>B. Maximum Allowable Dose Levels (MADLs) Adopted in Regulation for Chemicals Causing Reproductive Toxicity.....</b>	<b>9</b>
<b>C. Priority List for the Development of NSRLs for Carcinogens.....</b>	<b>11</b>
<b>D. Priority List for the Development of MADLs for Chemicals Causing Reproductive Toxicity.....</b>	<b>17</b>

## Proposition 65 Safe Harbor Levels Development

The Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency is the lead agency for the implementation of the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65 or the Act). In that role, OEHHA has developed Proposition 65 safe harbor levels -- no significant risk levels (NSRLs) for carcinogens and maximum allowable dose levels (MADLs) for chemicals that cause reproductive toxicity. The NSRL is the daily intake level calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime (70-year) exposure at the level in question. The MADL is the level at which the chemical would have no observable adverse reproductive effect assuming exposure at 1,000 times that level. The NSRLs and MADLs are promulgated in Title 22, California Code of Regulations<sup>1</sup>, sections 12705 and 12805 respectively to assist interested parties in determining whether warnings are required for exposures to listed chemicals, and whether discharges to sources of drinking water are prohibited.

Safe harbor levels may be based on risk assessments conducted outside OEHHA, as provided for in Sections 12705(b), 12705(c), and 12805. In some cases, this can expedite safe harbor development. However, it should be noted that the process of review and consideration of existing risk assessments can be a lengthy one, and will depend on the complexity of the scientific information underlying the assessment, as well as on available resources.

This document provides the status of the development and adoption of intake levels calculated for all chemicals on the Proposition 65 list. In units of micrograms per day ( $\mu\text{g}/\text{day}$ ), Part A reports NSRLs adopted in regulation for carcinogens and Part B reports MADLs adopted in regulation for chemicals that cause reproductive toxicity.

Parts C and D of this document give priority levels for development of dose response assessments for chemicals that cause cancer and reproductive toxicity, respectively. Interested parties are invited to recommend changes in priority levels. OEHHA retains the right to change priorities in response to the nature and availability of scientific information, and resources available, and requests from the public and the Attorney General's office.

Parts C and D include safe harbor levels that are have been proposed for adoption in regulation.

This report will be updated on a regular basis.

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<sup>1</sup> All further section references are to Title 22 of the California Code of Regulations unless otherwise indicated.

## A. No Significant Risk Levels (NSRLs) Adopted in Regulation for Carcinogens

The table below lists NSRLs for Proposition 65 carcinogens in regulation (Sections 12705 and 12709). These levels are intended to provide “safe harbors” for persons subject to the Act, and do not preclude the use of alternative levels that can be demonstrated by their users as being scientifically valid.

A three-tiered procedure for development of NSRLs is currently in place. NSRLs may be based on a *de novo* dose response assessment conducted or reviewed by OEHHA (Section 12705(b)), an assessment conducted by another state or federal agency (Section 12705(c)), or an expedited process conducted by OEHHA (Section 12705(d)). The last column of the table below indicates which of these processes was used to develop the NSRL for each chemical. NSRLs represent the daily intake level calculated to result in a cancer risk of one excess case of cancer in 100,000 individuals exposed over a 70-year lifetime.

NSRLs for chemicals in bold have been adopted since the last report. As chemicals are removed from the Proposition 65 list, the regulatory process to remove the safe harbor level from regulation will be initiated.

Carcinogen	Level (µg/day)	Section
<b>A-alpha-C (2-Amino-9H-pyrido[2,3-b]indole)</b>	<b>2</b>	12705(d)
Acetaldehyde	90 (inhalation)	12705(c)
Acetamide	10	12705(d)
2-Acetylaminofluorene	0.2	12705(d)
Acrylamide	0.2	12705(c)
Acrylonitrile	0.7	12705(b)
Actinomycin D	0.00008	12705(d)
AF-2; [2-(2-furyl)-3(5-nitro-2-furyl)acrylamide]	3	12705(d)
Aldrin	0.04	12705(b)
2-Aminoanthraquinone	20	12705(d)
<i>o</i> -Aminoazotoluene	0.2	12705(d)
4-Aminobiphenyl	0.03	12705(d)
3-Amino-9-ethylcarbazole hydrochloride	9	12705(d)
1-Amino-2-methylantraquinone	5	12705(d)
2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole	0.04	12705(d)
Amitrole	0.7	12705(d)
Aniline	100	12705(c)
<b><i>o</i>-Anisidine</b>	<b>5</b>	12705(d)
<i>o</i> -Anisidine hydrochloride	7	12705(d)
Aramite	20	12705(d)
Arsenic	0.06 (inhalation)	12705(b)
	10 (except inhalation)	12709
Asbestos	100 fibers/day (inhalation)	12705(b)
NSRL for fibers ≥ 5 micrometers (mm) long and 0.3 wide, with a length/width ratio ≥ 3:1 as measured by phase contrast microscopy.		
Auramine	0.8	12705(d)
Azaserine	0.06	12705(d)
Azathioprine	0.4	12705(d)
Azobenzene	6	12705(c)

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Carcinogen	Level (µg/day)	Section
Benz[a]anthracene	0.033 (oral)	12705(b)
Benzene	6.4 (oral)	12705(b)
	13 (inhalation)	12705(b)
Benzidine	0.001	12705(b)
Benzo[b]fluoranthene	0.096 (oral)	12705(b)
Benzo[j]fluoranthene	0.11 (oral)	12705(b)
Benzofuran	1.1	12705(b)
Benzo[a]pyrene	0.06	12705(c)
Benzyl chloride	4	12705(c)
Benzyl violet 4B	30	12705(d)
Beryllium	0.1	12709
Beryllium oxide	0.1	12705(c)
Beryllium sulfate	0.0002	12705(c)
Bis(2-chloroethyl)ether	0.3	12705(b)
Bis(chloromethyl)ether	0.02	12705(b)
Bromodichloromethane	5	12705(c)
Bromoform	64	12705(b)
1,3-Butadiene	0.4	12705(c)
Butylated hydroxyanisole	4000	12705(b)
beta-Butyrolactone	0.7	12705(d)
Cadmium	0.05 (inhalation)	12705(b)
Captafol	5	12705(d)
Captan	300	12705(d)
Carbazole	4.1	12705(d)
Carbon tetrachloride	5	12705(b)
N-Carboxymethyl-N-nitrosourea	0.70	12705(b)
Chlorambucil	0.002	12705(d)
Chlordane	0.5	12705(c)
Chlordecone (Kepone)	0.04	12705(d)
Chlorendic acid	8	12705(d)
Chlorinated paraffins (Ave. chain length C12; approx. 60% chlorine by weight)	8	12705(d)
Chloroethane (Ethyl chloride)	150	12705(b)
Chloroform	20 (oral)	12705(c)
	40 (inhalation)	12705(c)
Chloromethyl methyl ether (technical grade)	0.3	12705(d)
3-Chloro-2-methylpropene	5	12705(d)
4-Chloro-ortho-phenylenediamine	40	12705(d)
Chlorothalonil	200	12705(d)
<i>p</i> -Chloro-ortho-toluidine	3	12705(d)
<i>p</i> -Chloro- <i>o</i> -toluidine, hydrochloride	3.3	12705(d)
Chlorozotocin	0.003	12705(d)
Chromium (hexavalent)	0.001 (inhalation)	12705(b)
Chrysene	0.35 (oral)	12705(b)
C.I. Basic Red 9 monohydrochloride	3	12705(d)
Cinnamyl anthranilate	200	12705(d)
Coke oven emissions	0.3	12705(c)

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Carcinogen	Level (µg/day)	Section
<i>p</i> -Cresidine	5	12705(d)
Cupferron	3	12705(d)
Cyclophosphamide (anhydrous)	1	12705(d)
Cyclophosphamide (hydrated)	1	12705(d)
D&C Red No. 9	100	12705(d)
Dacarbazine	0.01	12705(d)
Daminozide	40	12705(d)
Dantron (Chrysin; 1,8-Dihydroxyanthraquinone)	9	12705(d)
DDT, DDE, DDD (in combination)	2	12705(b)
DDVP (Dichlorvos)	2	12705(c)
2,4-Diaminoanisole	30	12705(d)
2,4-Diaminoanisole sulfate	50	12705(d)
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	5	12705(d)
2,4-Diaminotoluene	0.2	12705(d)
Dibenz[a,h]anthracene	0.2	12705(d)
7H-Dibenzo[c,g]carbazole	0.0030 (oral)	12705(b)
Dibenzo[a,h]pyrene	0.0054 (oral)	12705(b)
Dibenzo[a,i]pyrene	0.0050 (oral)	12705(b)
1,2-Dibromo-3-chloropropane	0.1	12705(b)
<i>p</i> -Dichlorobenzene	20	12705(b)
3,3'-Dichlorobenzidine	0.6	12705(b)
1,1-Dichloroethane	100	12705(d)
1,2-Dichloroethane (Ethylene dichloride)	10	12705(b)
Dichloromethane (Methylene chloride)	200 (inhalation)	12705(b)
	50	12705(c)
1,2-Dichloropropane	9.7	12705(b)
Dieldrin	0.04	12705(b)
Di(2-ethylhexyl)phthalate (DEHP)	310	12705(b)
Diethylstilbesterol	0.002	12705(d)
Diglycidyl resorcinol ether (DGRE)	0.4	12705(d)
Dihydrosafrole	20	12705(d)
3,3'-Dimethoxybenzidine ( <i>o</i> -Dianisidine)	0.15	12705(b)
3,3'-Dimethoxybenzidine dihydrochloride	0.19	12705(b)
4-Dimethylaminoazobenzene	0.2	12705(d)
trans-2-[(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)vinyl]-1,3,4-oxadiazole	2	12705(d)
7,12-Dimethylbenz(a)anthracene	0.003	12705(d)
3,3'-Dimethylbenzidine ( <i>o</i> -Tolidine)	0.044	12705(b)
3,3'-Dimethylbenzidine dihydrochloride	0.059	12705(b)
Dimethylcarbamoyl chloride	0.05	12705(d)
1,2-Dimethylhydrazine	0.001	12705(d)
Dimethylvinylchloride	20	12705(d)
2,4-Dinitrotoluene	2	12705(c)
1,4-Dioxane	30	12705(b)
Direct Black 38 (technical grade)	0.09	12705(d)
Direct Blue 6 (technical grade)	0.09	12705(d)
Direct Brown 95 (technical grade)	0.1	12705(d)
Disperse Blue 1	200	12705(d)

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Carcinogen	Level (µg/day)	Section
Epichlorohydrin	9	12705(b)
Estradiol 17b	0.02	12705(d)
Ethyl-4,4'-dichlorobenzilate (Chlorobenzilate)	7	12705(d)
Ethylene dibromide	0.2 (oral)	12705(b)
	3 (inhalation)	12705(b)
Ethylene oxide	2	12705(b)
Ethylene thiourea	20	12705(d)
Ethyleneimine	0.01	12705(d)
Folpet	200	12705(c)
Formaldehyde (gas)	40	12705(c)
2-(2-Formylhydrazino)-4-(5-nitro-2-furyl)thiazole	0.3	12705(d)
Furmecyclox	20	12705(c)
Glu-P-1 (2-Amino-6-methyldipyrido[1,2-a:3',2'-d]imidazole)	0.1	12705(d)
Glu-P-2 (2-Aminodipyrido[1,2-a:3',2'-d]-imidazole)	0.5	12705(d)
Gyromitrin (Acetaldehyde methylformylhydrazone)	0.07	12705(d)
HC Blue 1	10	12705(d)
Heptachlor	0.2	12705(c)
Heptachlor epoxide	0.08	12705(c)
Hexachlorobenzene	0.4	12705(b)
Hexachlorocyclohexane		
alpha isomer	0.3	12705(c)
beta isomer	0.5	12705(c)
gamma isomer	0.6	12705(c)
technical grade	0.2	12705(b)
Hexachlorodibenzodioxin	0.0002	12705(b)
Hexachloroethane	20	12705(d)
Hydrazine	0.04	12705(c)
Hydrazine sulfate	0.2	12705(c)
Hydrazobenzene (1,2-Diphenylhydrazine)	0.8	12705(d)
IQ (2-Amino-3-methylimidazo[4,5-f]quinoline)	0.5	12705(d)
Isobutyl nitrite	7.4	12705(d)
Lasiocarpine	0.09	12705(d)
Lead	15 (oral)	12705(b)
Lead acetate	23 (oral)	12705(b)
Lead phosphate	58 (oral)	12705(b)
Lead subacetate	41 (oral)	12705(b)
Me-A-alpha-C (2-Amino-3-methyl-9H-pyrido[2,3-b]indole)	0.6	12705(d)
MeIQ (2-amino-3,4-dimethylimidazo-[4,5-f]quinoline)	0.46	12705(d)
MeIQx (2-Amino-3,8-dimethylimidazo[4,5-f]quinoxaline)	0.41	12705(d)
Melphalan	0.005	12705(d)
2-Methylaziridine (Propyleneimine)	0.028	12705(b)
Methyl carbamate	160	12705(d)

Carcinogen	Level (µg/day)	Section
3-Methylcholanthrene	0.03	12705(d)
5-Methylchrysene	0.0084 (oral)	12705(b)
4,4'-Methylene bis(2-chloroaniline)	0.5	12705(d)
4,4'-Methylene bis(N,N-dimethyl)benzeneamine	20	12705(c)
4,4'-Methylene bis(2-methylaniline)	0.8	12705(d)
4,4'-Methylenedianiline	0.4	12705(d)
4,4'-Methylenedianiline dihydrochloride	0.6	12705(d)
Methylhydrazine	0.058 (oral)	12705(b)
	0.090 (inhalation)	12705(b)
Methylhydrazine sulfate	0.18	12705(b)
Methyl methanesulfonate	7	12705(d)
2-Methyl-1-nitroanthraquinone (of uncertain purity)	0.2	12705(d)
N-Methyl-N'-nitro-N-nitrosoguanidine	0.08	12705(d)
Methylthiouracil	2	12705(d)
Michler's ketone	0.8	12705(d)
Mirex	0.04	12705(d)
Mitomycin C	0.00009	12705(d)
Monocrotaline	0.07	12705(d)
5-(Morpholinomethyl)-3-[(5-nitrofurfurylidene)-amino]-2-oxazolidinone	0.18	12705(b)
MX (3-chloro-4-(dichloromethyl)-5-hydroxy-2(5H)-furanone)	0.11	12705(b)
Nalidixic acid	28	12705(d)
Naphthalene	5.8	12705(b)
2-Naphthylamine	0.4	12705(d)
Nickel refinery dust	0.8	12705(c)
Nickel subsulfide	0.4	12705(c)
Nitrilotriacetic acid	100	12705(d)
Nitrilotriacetic acid, trisodium salt monohydrate	70	12705(d)
5-Nitroacenaphthene	6	12705(d)
5-Nitro- <i>o</i> -anisidine	10	12705(d)
Nitrofen (technical grade)	9	12705(d)
Nitrofurazone	0.5	12705(d)
1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	0.4	12705(d)
N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	0.5	12705(d)
N-Nitrosodi-n-butylamine	0.06	12705(b)
N-Nitrosodiethanolamine	0.3	12705(c)
N-Nitrosodiethylamine	0.02	12705(b)
N-Nitrosodimethylamine	0.04	12705(b)
<i>p</i> -Nitrosodiphenylamine	30	12705(d)
N-Nitrosodiphenylamine	80	12705(b)
N-Nitrosodi-n-propylamine	0.1	12705(b)
N-Nitroso-N-ethylurea	0.03	12705(b)
4-(N-Nitrosomethylamino)-1-(3-pyridyl)-1-butanone	0.014	12705(d)
N-Nitrosomethylethylamine	0.03	12705(c)
N-Nitroso-N-methylurea	0.006	12705(b)
N-Nitroso-N-methylurethane	0.006	12705(d)
N-Nitrosomorpholine	0.1	12705(d)
N-Nitrosornicotine	0.5	12705(d)
N-Nitrosopiperidine	0.07	12705(d)
N-Nitrosopyrrolidine	0.3	12705(c)



Carcinogen	Level (µg/day)	Section
Pentachlorophenol	40	12705(c)
Phenacetin	300	12705(d)
Phenazopyridine	4	12705(d)
Phenazopyridine hydrochloride	5	12705(d)
Phenesterin	0.005	12705(d)
Phenobarbital	2	12705(d)
Phenoxybenzamine	0.2	12705(d)
Phenoxybenzamine hydrochloride	0.3	12705(d)
<i>o</i> -Phenylenediamine	26	12705(d)
<i>o</i> -Phenylenediamine dihydrochloride	44	12705(d)
Phenyl glycidyl ether	5.0	12705(b)
Phenylhydrazine	1.0	12705(b)
Phenylhydrazine hydrochloride	1.4	12705(b)
<i>o</i> -Phenylphenate, sodium	200	12705(d)
Polybrominated biphenyls	0.02	12705(b)
Polychlorinated biphenyls	0.09	12705(c)
Polygeenan	1200	12705(b)
Ponceau MX	200	12705(d)
Ponceau 3R	40	12705(d)
Potassium bromate	1	12705(d)
Procarbazine	0.05	12705(d)
Procarbazine hydrochloride	0.06	12705(d)
1,3-Propane sultone	0.3	12705(d)
beta-Propiolactone	0.05	12705(d)
Propylthiouracil	0.7	12705(d)
Reserpine	0.06	12705(d)
Safrole	3	12705(d)
Sterigmatocystin	0.02	12705(d)
Streptozotocin	0.006	12705(d)
Styrene oxide	4	12705(d)
Sulfallate	4	12705(d)
2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin	0.000005	12705(b)
1,1,2,2-Tetrachloroethane	3	12705(d)
Tetrachloroethylene	14	12705(c)
Tetranitromethane	0.059	12705(b)
Thioacetamide	0.1	12705(d)
4,4'-Thiodianiline	0.05	12705(d)
Thiourea	10	12705(d)
Toluene diisocyanate	20	12705(d)
ortho-Toluidine	4	12705(d)
ortho-Toluidine hydrochloride	5	12705(d)
Toxaphene	0.6	12705(b)
Trichloroethylene	50 (oral) 80 (inhalation)	12705(b) 12705(b)
2,4,6-Trichlorophenol	10	12705(b)
Trimethyl phosphate	24	12705(d)

Carcinogen	Level (µg/day)	Section
Tris(1-aziridinyl)phosphine sulfide (Thiotepa)	0.06	12705(d)
Tris(2,3-dibromopropyl)phosphate	0.3	12705(d)
Trp-P-1 (Tryptophan-P-1)	0.03	12705(d)
Trp-P-2 (Tryptophan-P-2)	0.2	12705(d)
Urethane (Ethyl carbamate)	0.7	12705(b)
Vinyl chloride	3	12705(b)
Vinyl trichloride (1,1,2-Trichloroethane)	10	12705(d)
2,6-Xylidine	110	12705(b)

## B. Maximum Allowable Dose Levels (MADLs) Adopted in Regulation for Chemicals Causing Reproductive Toxicity

The following table is a compilation of MADLs in regulation (Section 12805) for Proposition 65 chemicals that cause reproductive toxicity. These levels represent the no observable effect level (NOEL) for the chemical, divided by 1,000. NOELs are set in accordance with procedures specified in Section 12803. MADLs for chemicals in bold have been adopted since the last report.

Chemical Listed as Causing Reproductive Toxicity	Level (µg/day) <sup>a</sup>
Benzene	24 (oral) 49 (inhalation)
Cadmium	4.1 (oral)
2,4-DB (2,4-dichlorophenoxybutyric acid)	910
1,2-Dibromo-3-chloropropane (DBCP)	3.1 (oral) 4.3 (inhalation)
<b>Di(2-ethylhexyl)phthalate (DEHP), for intravenous exposures only</b>	<b>4200 (adults)</b> <b>600 (infant boys, age 29 days- 24 months)</b> <b>210 (neonatal infant boys, age 0-28 days) [Levels for male children and adolescents can be calculated by application of the default bodyweights specified in Section 12703(a)(8) to the procedure specified in Sections 12801 and 12803]</b>
<b>Di(2-ethylhexyl)phthalate (DEHP), for oral exposures only</b>	<b>410 (adults)</b> <b>58 (infant boys, age 29 days-24 months)</b> <b>20 (neonatal infant boys, age 0-28 days) [Levels for male children and adolescents can be calculated by application of the default bodyweights specified in Section 12703(a)(8) to the procedure specified in Sections 12801 and 12803]</b>

Chemical Listed as Causing Reproductive Toxicity	Level (µg/day) <sup>a</sup>
<i>m</i> -Dinitrobenzene	38
Disodium cyanodithiomidocarbonate	56 (oral)
	[170 (oral) for a 32% pesticidal formulation]
Ethyl dipropylthiocarbamate	700 (oral and inhalation)
	6700 (dermal)
Ethylene glycol monomethyl ether	63 (oral)
Ethylene glycol monomethyl ether acetate	98 (oral)
Ethylene oxide	20
Hydramethylnon	120 (oral)
Lead	0.5
Linuron	460
Methyl bromide as a structural fumigant	810 (inhalation)
N-Methylpyrrolidone	3200 (inhalation)
	17000(dermal)
Quizalofop-ethyl	590
Sodium dimethyldithiocarbamate	23 (oral)
	[58 (oral) for a 40% pesticidal formulation]
Thiophanate-methyl	600 (oral)
Toluene	7000 <sup>b</sup>

<sup>a</sup> 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:

$$(\text{oral dose} \div 24 \mu\text{g/day}) + (\text{inhalation dose} \div 24 \mu\text{g/day}) > 1.0$$

<sup>b</sup> 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.

## C. Priority List for the Development of NSRLs for Proposition 65 Carcinogens

OEHHA has developed the following priority list, which classifies into four priorities carcinogens for which dose-response assessments have not been completed. Priority levels reflect the availability and quality of scientific data for dose-response assessments, potential for exposure, resources available to perform the assessment, commitments made in settlement of the case of AFL-CIO v. Deukmejian (Sacramento Superior Court Case No. 3481295) and input from the public and Attorney General's office. OEHHA anticipates proposing NSRLs for the majority of chemicals in the first priority group within the next two years, and for second priority chemicals within the next two to four years. It is unlikely that NSRLs for third and fourth priority chemicals would be released within the next three years.

Any interested party may submit recommendations to OEHHA for revising the priority assignment for any of the chemicals listed. Recommendations should be accompanied by appropriate documentation supporting the alternative priority assignment suggested. OEHHA expects changes in priorities resulting from the availability of scientific information and resources, and requests from the public and Attorney General's office.

If a level is currently being proposed for adoption in regulation, it is given below. Chemicals in bold font have been added to the Proposition 65 list or changed in priority status since the last report.

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### 1. First Priority for NSRL Development

Acetochlor  
Acifluorfen  
Alachlor  
1-Amino-2,4-dibromoanthraquinone  
Aniline hydrochloride  
Antimony oxide  
Azacitidine  
  
Benzo[k]fluoranthene  
Benzotrichloride  
2,2-Bis(bromomethyl)-1,3-propanediol  
Bromate  
  
Chlordimeform  
*p*-Chloroaniline  
*p*-Chloroaniline hydrochloride  
C. I. Acid Red 114  
C.I. Direct Blue 15  
C.I. Direct Blue 218  
C.I. Solvent Yellow 14  
Dibenz[a,h]acridine  
Dibenz[a,j]acridine  
Dibenzo[a,e]pyrene  
Dibenzo[a,l]pyrene  
3,3'-Dichlorobenzidine dihydrochloride  
1,3-Dichloropropene  
Diepoxybutane  
Diethyl sulfate  
Dimethyl sulfate

1,1-Dimethylhydrazine (UDMH)  
1,6-Dinitropyrene  
1,8-Dinitropyrene  
2,6-Dinitrotoluene

Estragole  
Ethylbenzene  
Ethinylestradiol

Furan

Glycidol  
Griseofulvin

2,4-Hexadienal (89% trans, trans isomer;  
11% cis, trans isomer)  
Hexamethylphosphoramide

Indeno[1,2,3-cd]pyrene  
Isoprene

Lactofen

Methyleugenol  
Methylmercury compounds\*  
N-Methylolacrylamide  
Metronidazole

Nafenopin  
Nickel carbonyl  
o-Nitroanisole  
Nitrobenzene  
4-Nitrobiphenyl  
6-Nitrochrysene  
2-Nitrofluorene  
2-Nitropropane  
1-Nitropyrene  
4-Nitropyrene  
N-Nitrosomethylvinylamine  
N-Nitrososarcosine

Ochratoxin A  
Oxazepam

o-Phenylphenol  
PhiP  
Progesterone  
Propylene glycol mono-*t*-butyl ether  
Pronamide  
Pyridine

Selenium sulfide

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\* For explanation of priority levels see discussion above.

1,2,3-Trichloropropane  
Tris(2-chloroethyl)phosphate

Vinyl bromide

4-Vinylcyclohexene

First priority for changes to NSRLs currently in regulation:

Acrylamide  
Chromium (VI)  
Ethylene thiourea  
*o*-Phenylphenate, sodium  
Pentachlorophenol  
Safrole

2. Second Priority for NSRL Development

Aflatoxins  
*p*-Aminoazobenzene  
Bis(2-chloro-1-methylethyl)ether, technical grade  
Bromoethane  
Cacodylic acid  
Catechol  
Ceramic fibers (airborne particles of respirable size)  
1-Chloro-4-nitrobenzene  
Chloroprene  
5-Chloro-*o*-toluidine and its strong acid salts  
Cobalt metal powder  
Cobalt [II] oxide  
Cobalt sulfate  
Cobalt sulfate heptahydrate  
Diaminotoluene (mixed)  
Diazoaminobenzene  
2,3-Dibromo-1-propanol  
Dichloroacetic acid  
1,4-Dichloro-2-butene  
Diesel engine exhaust  
Di-*n*-propyl isocinchomeronate (MGK Repellent 326)  
Diuron  
Ethoprop  
Fenoxycarb  
Fumonisin B<sub>1</sub>  
Indium phosphide  
1-Hydroxyanthraquinone  
Iprodione  
Isoxafutole  
Isosafrole  
Metham sodium  
Methyl iodide  
1-Naphthylamine  
Nickel and nickel compounds  
**Nitrapyrin**  
Nitromethane

*o*-Nitrotoluene  
Oxadiazon  
Oxythioquinox  
Polychlorinated dibenzo-*p*-dioxins  
Primidone  
Propachlor  
**Propoxur**  
Quinoline and its strong acid salts  
Radionuclides  
Salicylazosulfapyridine  
Silica, crystalline (airborne particles of respirable size)  
Testosterone and its esters  
*p*-a,a,a-Tetrachlorotoluene  
Tetrafluoroethylene  
Thiouracil  
2,4,5-Trimethylaniline and its strong acid salts  
Triphenyltin hydroxide  
Trypan blue (commercial grade)  
Vanadium pentoxide (orthorhombic crystalline form)  
4-Vinyl-1-cyclohexene diepoxide

3. Third Priority for NSRL Development

Adriamycin (Doxorubicin hydrochloride)  
**Areca nut**  
Benzidine-based dyes  
**Betel quid without tobacco**  
N,N-Bis(2-chloroethyl)-2-naphthylamine  
Bischloroethyl nitrosourea (BCNU) (Carmustine)  
1,4-Butanediol dimethanesulfonate (Busulfan)  
Carbon black (airborne, unbound particles of respirable size)  
Chloramphenicol  
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU)  
1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea  
Chlorotrianisene  
Ciclosporin (Cyclosporin A; Cyclosporine)  
Cidofovir  
Cisplatin  
Clofibrate  
Daunomycin  
N,N'-Diacetylbenzidine  
3,3'-Dichloro-4,4'-diaminodiphenyl ether  
Dienestrol  
1,2-Diethylhydrazine  
Diisopropyl sulfate  
2,4-/2,6-Dinitrotoluene mixture  
Diphenylhydantoin (Phenytoin)  
Diphenylhydantoin (Phenytoin), sodium salt  
3,3'-Dimethoxybenzidine-based dyes metabolized to 3,3'-dimethoxybenzidine  
3,3'-Dimethylbenzidine-based dyes metabolized to 3,3'-dimethylbenzidine  
Estrogens, steroidal  
Estrone  
Estropipate  
Ethyl acrylate



Furazolidone  
Fusarin C  
Ganciclovir sodium  
Gasoline engine exhaust (condensates/extracts)  
Gemfibrozil  
Glasswool fibers (airborne particles of respirable size)  
Glycidaldehyde  
Mancozeb  
Maneb  
Medroxyprogesterone acetate  
Merphalan  
Mestranol  
Metiram  
Mustard Gas  
Niridazole  
Nitrogen mustard (Mechlorethamine)  
Nitrogen mustard hydrochloride (Mechlorethamine HCl)  
Norethisterone (Norethindrone)  
Oxymetholone  
Panfuran S  
Polychlorinated dibenzofurans  
Procymidone  
Propargite  
Propylene oxide

Spironolactone  
Stanozolol  
Strong inorganic acid mists containing sulfuric acid  
Tamoxifen and its salts  
Terrazole  
Thiodicarb  
Thorium dioxide  
Tresulfan  
Trichlormethine (Trimustine hydrochloride)  
Uracil mustard  
Vinclozolin  
Vinyl fluoride  
Zileuton

4. Fourth Priority for NSRL Development

Alcoholic beverages  
2-Aminofluorene  
4-Amino-2-nitrophenol  
Analgesic mixtures containing phenacetin  
Aristolochic acid  
Betel quid with tobacco  
Bitumens, extracts of steam-refined  
Bracken fern  
Caffeic acid  
Carbon-black extracts  
Certain combined chemotherapy for lymphomas  
Citrus Red No. 2  
Conjugated estrogens

Creosotes  
Cycasin  
Cytembena  
D&C Orange No. 17  
D&C Red No. 8  
D&C Red No. 19  
3,7-Dinitrofluoranthene  
3,9-Dinitrofluoranthene  
Erionite  
Ethyl methanesulfonate  
Herbal remedies containing plant species of the genus Aristolochia  
Iron dextran complex  
Lynestrenol  
8-Methoxypsoralen with ultraviolet A therapy  
5-Methoxypsoralen with ultraviolet A therapy  
Methylazoxymethanol  
Methylazoxymethanol acetate  
Nitrogen mustard N-oxide  
Nitrogen mustard N-oxide hydrochloride  
3-(N-Nitrosomethylamino)propionitrile  
Norethnodrel  
Oil Orange SS  
Oral contraceptives, combined  
Oral contraceptives, sequential  
Palygorskite fibers  
Phenolphthalein  
Residual (heavy) fuel oils  
Riddelliine  
Shale-oils  
Soots, tars, and mineral oils  
Talc containing asbestiform fibers  
Tobacco, oral use of smokeless products  
Tobacco smoke  
Tris(aziridiny)-para-benzoquinone (Triaziquone)  
Unleaded gasoline (wholly vaporized)

## D. Priority List for the Development of MADLs for Chemicals Causing Reproductive Toxicity

OEHHA has developed the following priority list, which divides chemicals causing reproductive toxicity for which dose-response assessments have not been completed into three priorities. Priority levels reflect the availability and quality of scientific data for dose-response assessments, potential for exposure, resources available to perform the assessment, and input from the public and the Attorney General's office. OEHHA anticipates proposing MADLs for the majority of chemicals in the first priority group within the next two years, and for several chemicals in the second priority within the next two to four years. It is unlikely that MADLs for chemicals in the third priority group would be released within the next three years.

Any interested party may submit recommendations to OEHHA on revising the priority assignment for any of the chemicals listed. Recommendations should be accompanied by appropriate documentation supporting the alternative priority assignment suggested. OEHHA expects changes in priorities resulting from the availability of scientific information and resources and requests from the public and Attorney General's office.

If a level is currently being proposed for adoption in regulation, it is given below. Chemicals in bold font have been added to the Proposition 65 list or changed in priority status since the last report.

### 1. First Priority for MADL Development

Arsenic (inorganic oxides)  
1-Bromopropane  
2-Bromopropane  
**Butyl benzyl phthalate (BBP)**  
Carbon disulfide  
**Di-n-butyl phthalate (DBP)**  
**Di-n-hexyl phthalate (DnHP)**  
Ethylene glycol monoethyl ether  
Ethylene glycol monoethyl ether acetate  
Mercury and mercury compounds  
Metham sodium  
Methyl mercury  
Nicotine  
Triphenyl tin hydroxide  
Vinclozolin

### 2. Second Priority for MADL Development

Amitraz  
Bromacil lithium salt  
Bromoxynil  
Bromoxynil octanoate  
1,3-Butadiene  
Chinomethionat (Oxythioquinox)  
Chlorsulfuron  
Cocaine  
Cycloate  
Dichlorophene  
Diclofop methyl  
Ethylene thiourea  
Fenoxaprop ethyl

Fluazifop butyl  
Fluvalinate  
Methazole  
Metiram  
Myclobutanil  
Nabam  
Nitrapyrin  
Oxadiazon  
Oxydemeton methyl  
Potassium dimethyldithiocarbamate  
Propargite  
Resmethrin  
Sodium fluoroacetate  
Terbacil  
2,3,7,8-Tetrachlorodibenzo-para-dioxin (TCDD)  
Triadimefon  
Tributyltin methacrylate  
Triforine

3. Third Priority for MADL Development

Acetazolamide  
Acetohydroxamic acid  
Actinomycin D  
All-trans retinoic acid  
Alprazolam  
Altretamine  
Amantadine hydrochloride  
Amikacin sulfate  
Aminoglutethimide  
Aminoglycosides  
Aminopterin  
Amiodarone hydrochloride  
Amoxapine  
Anabolic steroids  
Angiotensin converting enzyme (ACE) inhibitors  
Anisindione  
Aspirin  
Atenolol  
Auranofin  
Azathioprine  
Barbiturates  
Beclomethasone dipropionate  
Benomyl  
Benzphetamine hydrochloride  
Benzodiazepines  
Bischloroethyl nitrosourea (BCNU) (Carmustine)  
Butabarbital sodium  
1,4-Butanediol dimethanesulfonate (Busulfan)  
Carbamazepine  
Carbon monoxide  
Carboplatin  
Chenodiol  
Chlorambucil

Chlorcyclizine hydrochloride  
 Chlordecone (Kepone)  
 Chlordiazepoxide  
 Chlordiazepoxide hydrochloride  
 1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU) (Lomustine)  
 Cidofovir  
 Cladribine  
 Clarithromycin  
 Clobetasol propionate  
 Clomiphene citrate  
 Clorazepate dipotassium  
 Codeine phosphate  
 Colchicine  
 Conjugated estrogens  
 Cyanazine  
 Cycloheximide  
 Cyclophosphamide (anhydrous)  
 Cyclophosphamide (hydrated)  
 Cyhexatin  
 Cytarabine  
 Dacarbazine  
 Danazol  
 Daunorubicin hydrochloride  
*o,p'*-DDT  
*p,p'*-DDT  
 Demeclocycline hydrochloride (internal use)  
 Diazepam  
 Diazoxide  
 Dichlophenamide  
 Dicumarol  
 Diethylstilbestrol (DES)  
 Diflunisal  
 Dihydroergotamine mesylate  
 Diltiazem hydrochloride  
*o*-Dinitrobenzene  
*p*-Dinitrobenzene  
 2,4-Dinitrotoluene  
 2,6-Dinitrotoluene  
 Dinitrotoluene (technical grade)  
 Dinocap  
 Dinoseb  
 Diphenylhydantoin (Phenytoin)  
 Doxorubicin hydrochloride  
 Doxycycline (internal use)  
 Doxycycline calcium (internal use)  
 Doxycycline hyclate (internal use)  
 Doxycycline monohydrate (internal use)  
 Endrin  
**Environmental tobacco smoke (ETS)**  
 Epichlorohydrin  
 Ergotamine tartrate  
 Estropipate  
 Ethionamide  
 Ethyl alcohol in alcoholic beverages

Ethylene dibromide  
Etodolac  
Etoposide  
Etreinat  
Filgrastim  
Flunisolide  
Fluorouracil  
Fluoxymesterone  
Flurazepam hydrochloride  
Flurbiprofen  
Flutamide  
Fluticasone propionate  
Ganciclovir sodium  
Gemfibrozil  
Goserelin acetate  
Halazepam  
Halobetasol propionate  
Haloperidol  
Halothane  
Heptachlor  
Hexachlorobenzene  
Hexamethylphosphoramide  
Histrelin acetate  
Hydroxyurea  
Idarubicin hydrochloride  
Ifosfamide  
Iodine-131  
Isotretinoin  
Leuprolide acetate  
Levodopa  
Levonorgestrel implants  
Lithium carbonate  
Lithium citrate  
Lorazepam  
Lovastatin  
Mebendazole  
Medroxyprogesterone acetate  
Megestrol acetate  
Melphalan  
Menotropins  
Meprobamate  
Mercaptopurine  
Methacycline hydrochloride  
Methimazole  
Methotrexate  
Methotrexate sodium  
Methyl chloride  
Methyltestosterone  
Midazolam hydrochloride  
Minocycline hydrochloride (internal use)  
Misoprostol  
Mitoxantrone hydrochloride  
Nafarelin acetate  
Neomycin sulfate (internal use)

Netilmicin sulfate  
Nickel carbonyl  
Nifedipine  
Nimodipine  
Nitrofurantoin  
Nitrogen mustard (Mechlorethamine)  
Nitrogen mustard hydrochloride (Mechlorethamine hydrochloride)  
Norethisterone (Norethindrone)  
Norethisterone acetate (Norethindrone acetate)  
Norethisterone (Norethindrone)/Ethinyl estradiol  
Norethisterone (Norethindrone)/Mestranol  
Norgestrel  
Oxazepam  
Oxymetholone  
Oxytetracycline (internal use)  
Oxytetracycline hydrochloride (internal use)  
Paclitaxel  
Paramethadione  
Penicillamine  
Pentobarbital sodium  
Pentostatin  
Phenacemide  
Phenprocoumon  
Pimozide  
Pipobroman  
Plicamycin  
Polybrominated biphenyls  
Polychlorinated biphenyls  
Pravastatin sodium  
Prednisolone sodium phosphate  
Procarbazine hydrochloride  
Propylthiouracil  
Prymethamine  
Quazepam  
Retinol/retinyl esters, when in daily dosages in  
excess of 10,000 IU, or 3,000 retinol equivalents.  
Ribavirin  
Rifampin  
Secobarbital sodium  
Sermorelin acetate  
Streptomycin sulfate  
Streptozocin (streptozotocin)  
Sulfasalazine  
Sulindac  
Tamoxifen citrate  
Temazepam  
Teniposide  
Testosterone cypionate  
Testosterone enanthate  
Tetracycline (internal use)  
Tetracyclines (internal use)  
Tetracycline hydrochloride (internal use)  
Thalidomide  
Thioguanine

Tobacco smoke (primary)  
Tobramycin sulfate  
Triazolam  
Trientine hydrochloride  
Trilostane  
Trimethadione  
Trimetrexate glucuronate  
Uracil mustard  
Urethane  
Urofollitropin  
Valproate (Valproic acid)  
Vinblastine sulfate  
Vincristine sulfate  
Warfarin  
Zileuton