APPENDIX I-A

List of Compounds and their Associated Unit Risk Factors (URF)

Hot Spots Unit Risk and Cancer Potency Values June 9, 1999 *

Chemical		Chemical Abstract Service (CAS) Number	Source	Unit Risk $(\mu g/m^3)^{-1}$	Slope Factor $(mg/kg\text{-}day)^{-1}$	US EPA Class[C]	IARC Class[C]
Acetaldehyde		75-07-0	TAC	2.7 E-6	1.0 E-2	B2	2B
Acetamide		60-35-5	RCHAS-E	2.0 E-5	7.0 E-2	NC	2B
Acrylamide		79-06-1	IRIS	1.3 E-3	4.5 E+0	B2	2A
Acrylonitrile		107-13-1	RCHAS-S	2.9 E-4	1 .0 E+0	B1	2A
Allyl chloride		107-05-1	RCHAS-S	6.0 E-6	2.1 E-2	C	3
2-Aminoanthraquinone		117-79-3	RCHAS-E	9.4 E-6	3.3 E-2	NC	3
Aniline		62-53-3	IRIS	1.6 E-6	5.7 E-3	B2	3
Arsenic (inorganic)	(inhalation)	7440-38-2	TAC	3.3 E-3	1.2 E+1	A	1
	(oral)		IRIS		1.5 E+0		
Asbestos		1332-21-4	TAC	6.3 E-2	NA	A	1
				1.9 E-4#			
Benz[*a*]anthracene[BaP]	(inhalation)	56-55-3	TAC	1.1 E-4	3.9 E-1	B2	2A
	(oral)				1.2 E+0		
Benzene		71-43-2	TAC	2.9 E-5	1.0 E-1	A	1
Benzidine		92-87-5	RCHAS-S	1.4 E-1	5.0 E+2	A	1
Benzo[*a*]pyrene	(inhalation)	50-32-8	TAC	1.1 E-3	3.9 E+0	B2	2A
	(oral)				1.2 E+1		
Benzo[*b*]fluoranthrene[BaP]	(inhalation)	205-99-2	TAC	1.1 E-4	3.9 E-1	B2	2B
	(oral)				1.2 E+0		
Benzo[*j*]fluoranthrene[BaP]	(inhalation)	205-82-3	TAC	1.1 E-4	3.9 E-1	NC	2B
	(oral)				1.2 E+0		
Benzo[*k*]fluoranthrene[BaP]	(inhalation)	207-08-9	TAC	1.1 E-4	3.9 E-1	B2	2B
	(oral)				1.2 E+0		
Benzyl chloride		100-44-7	IRIS	4.9 E-5	1.7 E-1	B2	2B
Beryllium		7440-41-7	IRIS	2.4 E-3	8.4 E+0	B2	1
Bis(2-chloroethyl) ether		111-44-4	RCHAS-S	7.1 E-4	2.5 E+0	B2	3
Bis(chloromethyl)ether		542-88-1	RCHAS-S	1.3 E-2	4.6 E+2	A	1
1,3-Butadiene		106-99-0	TAC	1.7 E-4	6.0 E-1	B2	2A
Cadmium (and compounds)		7440-43-9	TAC	4.2 E-3	1.5 E+1	B1	1
Carbon tetrachloride		56-23-5	TAC	4.2 E-5	1.5 E-1	B2	2B
Chlorinated dibenzo-*p*-dioxins[A]		1746-01-6	TAC			B2	2B
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin				3.8 E+1	1.3 E+5		
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin				1.9 E+1	6.5 E+4		
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin				3.8 E+0	1.3 E+4		
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin				3.8 E+0	1.3 E+4		
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin				3.8 E+0	1.3 E+4		

Footnotes

A see Appendix A
BaP see benzo[*a*]pyrene TAC document
C see Appendix C
D Listed by ARB as "Particulate Matter from Diesel-Fueled Engines"; Scientific Review Panel unit risk "reasonable estimate" = 3.0 E-4 $(\mu g/m^3)^{-1}$.
Range of unit risks in TAC document was 1.3 E-4 - 1.5 E-3 $(\mu g/m^3)^{-1}$.
N1 Nickel refinery dust and nickel subsulfide are in Class A; nickel carbonyl is in Class B2
N2 Nickel compounds are in Class 1; metallic nickel is in Class 2B
NA not available
NC not classified
[100 PCM fibers/m3]-1 ; see Appendix D
* can be calculated using PEF factors contained in the benzo[*a*]pyrene TAC document
P1 For use in cases where congeners with more than four chlorines do not comprise less than one-half percent of total PCBs
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RCHAS-E Expedited Proposition 65 document, OEHHA
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* Technical Support Document for Using Cancer Potency Factors, OEHHA, http://www.oehha.ca.gov/scientific/hsca2.htm, downloaded November 2, 1999

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1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin				3.8 E-1	1.3 E+3		
1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin				3.8 E-2	1.3 E+2		
Chlorinated dibenzofurans[A]		5120-73-19	TAC			B2	NC
2,3,7,8-Tetrachlorodibenzofuran				3.8 E+0	1.3 E+4		
1,2,3,7,8-Pentachlorodibenzofuran				1.9 E+0	6.5 E+3		
2,3,4,7,8-Pentachlorodibenzofuran				1.9 E+1	6.5 E+4		
1,2,3,4,7,8-Hexachlorodibenzofuran				3.8 E+0	1.3 E+4		
1,2,3,6,7,8-Hexachlorodibenzofuran				3.8 E+0	1.3 E+4		
1,2,3,7,8,9-Hexachlorodibenzofuran				3.8 E+0	1.3 E+4		
2,3,4,6,7,8-Hexachlorodibenzofuran				3.8 E+0	1.3 E+4		
1,2,3,4,6,7,8-Heptachlorodibenzofuran				3.8 E-1	1.3 E+3		
1,2,3,4,7,8,9-Heptachlorodibenzofuran				3.8 E-1	1.3 E+3		
1,2,3,4,5,6,7,8-Octachlorodibenzofuran				3.8 E-2	1.3 E+2		
Chlorinated paraffins		108171-26-2	RCHAS-E	2.5 E-5	8.9 E-2	NC	2B
Chloroform		67-66-3	TAC	5.3 E-6	1.9 E-2	B2	2B
4-Chloro-*o*-phenylenediamine		95-83-0	RCHAS-E	4.6 E-6	1.6 E-2	NC	2B
p-Chloro-*o*-toluidine		95-69-2	RCHAS-E	7.7 E-5	2.7 E-1	NC	2A
Chromium (hexavalent)	(inhalation)	18540-29-9	TAC	1.5 E-1	5.1 E+2	A	1
	(oral)		RCHAS-S		4.2 E-1		
Chrysene[BaP]	(inhalation)	218-01-9	TAC	1.1 E-5	3.9 E-2	B2	3
	(oral)				1.2 E-1		
Creosote		8001-58-9	ATES	*	*	B1	2A
p-Cresidine		120-71-8	RCHAS-E	4.3 E-5	1.5 E-1	NC	2B
Cupferron		135-20-6	RCHAS-E	6.3 E-5	2.2 E-1	NC	NC
2,4-Diaminoanisole		615-05-4	RCHAS-E	6.6 E-6	2.3 E-2	NC	2B
2,4-Diaminotoluene		95-80-7	RCHAS-E	1.1 E-3	4.0 E+0	NC	2B
Dibenz[*a,h*]acridine[BaP]	(inhalation)	226-36-8	TAC	1.1 E-4	3.9 E-1	NC	2B
	(oral)				1.2 E+0		
Dibenz[*a,j*]acridine[BaP]	(inhalation)	224-42-0	TAC	1.1 E-4	3.9 E-1	NC	2B
	(oral)				1.2 E+0		
Dibenz[*a,h*]anthracene[BaP]		53-70-3	RCHAS-E	1.2 E-3	4.1 E+0	B2	2A
Dibenzo[*a,e*]pyrene[BaP]	(inhalation)	192-65-4	TAC	1.1 E-3	3.9 E+0	NC	2B
	(oral)				1.2 E+1		
Dibenzo[*a,h*]pyrene[BaP]	(inhalation)	189-64-0	TAC	1.1 E-2	3.9 E+1	NC	2B
	(oral)				1.2 E+2		

Footnotes

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Range of unit risks in TAC document was 1.3 E-4 - 1.5 E-3 $(\mu g/m^3)^{-1}$.
N1 Nickel refinery dust and nickel subsulfide are in Class A; nickel carbonyl is in Class B2
N2 Nickel compounds are in Class 1; metallic nickel is in Class 2B
NA not available
NC not classified
[100 PCM fibers/m3]-1 ; see Appendix D
* can be calculated using PEF factors contained in the benzo[*a*]pyrene TAC document
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Chemical		Chemical Abstract Service (CAS) Number	Source	Unit Risk $(\mu g/m^3)^{-1}$	Slope Factor $(mg/kg\text{-}day)^{-1}$	US EPA Class[C]	IARC Class[C]
Dibenzo[*a,l*]pyrene[BaP]	(inhalation)	189-55-9	TAC	1.1 E-2	3.9 E+1	NC	2B
	(oral)				1.2 E+2		
Dibenzo[*a,l*]pyrene[BaP]	(inhalation)	191-30-0	TAC	1.1 E-2	3.9 E+1	NC	2B
	(oral)				1.2 E+2		
7H-Dibenzo[*c,g*]carbazole[BaP]	(inhalation)	194-59-2	TAC	1.1 E-3	3.9 E+0	NC	2B
	(oral)				1.2 E+1		
1,2-Dibromo-3-chloropropane		96-12-8	RCHAS-S	2.0 E-3	7.0 E+0	NC	2B
1,4-Dichlorobenzene		106-46-7	RCHAS-S	1.1 E-5	4.0 E-2	NC	2B
3,3'-Dichlorobenzidine		91-94-1	RCHAS-S	3.4 E-4	1.2 E+0	B2	2B
1,1-Dichloroethane		75-34-3	RCHAS-E	1.6 E-6	5.7 E-3	C	NC
Diesel exhaust		NA	TAC	3.0 E-4[D]	1.1 E+0	NC	2A
Diethylhexylphthalate		117-81-7	PETS	2.4 E-6	8.4 E-3	B2	2B
p-Dimethylaminoazobenzene		60-11-7	RCHAS-E	1.3 E-3	4.6 E+0	NC	2B
7,12-Dimethylbenz[*a*]anthracene[BaP]		57-97-6	RCHAS-E	7.1 E-2	2.5 E+2	NC	NC
1,6-Dinitropyrene[BaP]	(inhalation)	4239-76-48	TAC	1.1 E-2	3.9 E+1	NC	2B
	(oral)				1.2 E+2		
1,8-Dinitropyrene[BaP]	(inhalation)	4239-76-59	TAC	1.1 E-3	3.9 E+0	NC	2B
	(oral)				1.2 E+1		
2,4-Dinitrotoluene		121-14-2	RCHAS-S	8.9 E-5	3.1 E-1	NC	2B
1,4-Dioxane		123-91-1	RCHAS-S	7.7 E-6	2.7 E-2	B2	2B
Epichlorohydrin		106-89-8	RCHAS-S	2.3 E-5	8.0 E-2	B2	2A
Ethylene dibromide		106-93-4	TAC	7.1 E-5	2.5 E-1	B2	2A
Ethylene dichloride		107-06-2	TAC	2.2 E-5	7.0 E-2	B2	2B
Ethylene oxide		75-21-8	TAC	8.8 E-5	3.1 E-1	NC	1
Ethylene thiourea		96-45-7	RCHAS-E	1.3 E-5	4.5 E-2	UR	2B
Formaldehyde		50-00-0	TAC	6.0 E-6	2.1 E-2	B1	2A
Hexachlorobenzene		118-74-1	RCHAS-S	5.1 E-4	1.8 E+0	B2	2B
Hexachlorocyclohexanes (technical grade)		608-73-1	RCHAS-S	1.1 E-3	4.0 E+0	B2	2B
Hydrazine	(inhalation)	302-01-2	IRIS	4.9 E-3	1.7 E+1	B2	2B
	(oral)				3.0 E+0		
Indeno[1,2,3-*cd*]pyrene[BaP]	(inhalation)	193-39-5	TAC	1.1 E-4	3.9 E-1	B2	2B
	(oral)				1.2 E+0		
Lead and lead compounds	(inhalation)	7439-92-1	TAC	1.2 E-5	4.2 E-2	B2	2B
	(oral)				8.5 E-3		
Lindane		58-89-9	RCHAS-S	3.1 E-4	1.1 E+0	NC	2B

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3-Methylcholanthrene[BaP]		56-49-5	RCHAS-E	6.3 E-3	2.2 E+1	NC	NC
5-Methylchrysene[BaP]	(inhalation)	3697-24-3	TAC	1.1 E-3	3.9 E+0	NC	2B
	(oral)				1.2 E+1		
4, 4'-Methylene bis(2-chloroaniline)	(MOCA)	101-14-4	RCHAS-E	4.3 E-4	1.5 E+0	NC	2A
Methylene chloride	(inhalation)	75-09-2	TAC	1.0 E-6	3.5 E-3	B2	2B
4,4'-Methylenedianiline		101-77-9	RCHAS-E	4.6 E-4	1.6 E+0	NC	2B
Michler's ketone		90-94-8	RCHAS-E	2.5 E-4	8.6 E-1	NC	NC
Nickel (and compounds)		7440-02-0	TAC	2.6 E-4	9.1 E-1	A, B2[N1]	1,2B[N2]
5-Nitroacenaphthene[BaP]		602-87-9	RCHAS-E	3.7 E-5	1.3 E-1	NC	2B
6-Nitrochrysene[BaP]	(inhalation)	7496-02-8	TAC	1.1 E-2	3.9 E+1	NC	2B
	(oral)				1.2 E+2		
2-Nitrofluorene[BaP]	(inhalation)	607-57-8	TAC	1.1 E-5	3.9 E-2	NC	2B
	(oral)				1.2 E-1		
1-Nitropyrene[BaP]	(inhalation)	5522-43-0	TAC	1.1 E-4	3.9 E-1	NC	2B
	(oral)				1.2 E+0		
4-Nitropyrene[BaP]	(inhalation)	57835-92-4	TAC	1.1 E-4	3.9 E-1	NC	2B
	(oral)				1.2 E+0		
N-Nitroso-n-dibutylamine		924-16-3	RCHAS-S	3.1 E-3	1.1 E+1	B2	2B
N-Nitroso-N-methylethylamine		10595-95-6	IRIS	6.3 E -3	3.7 E+0	B2	2B
N-Nitrosodi-*n*-propylamine		621-64-7	IRIS	2.0 E-3	7.0 E+0	B2	2B
N-Nitrosodiethylamine		55-18-5	RCHAS-S	1.0 E-2	3.6 E+1	B2	2A
N-Nitrosodimethylamine		62-75-9	RCHAS-S	4.6 E-3	1.6 E+1	B2	2A
N-Nitrosodiphenylamine		86-30-6	RCHAS-S	2.6 E-6	9.0 E-3	B2	3
p-Nitrosodiphenylamine		156-10-5	RCHAS-E	6.3 E-6	2.2 E-2	NC	3
N-Nitrosomorpholine		59-89-2	RCHAS-E	1.9 E-3	6.7 E+0	NC	2B
N-Nitrosopiperidine		100-75-4	RCHAS-E	2.7 E-3	9.4 E+0	NC	2B
N-Nitrosopyrrolidine		930-55-2	IRIS	6.0 E-4	2.1 E+0	B2	2B
Pentachlorophenol		87-86-5	RCHAS-S	5.1 E-6	1.8 E-2	B2	2B
Perchloroethylene	(inhalation)	127-18-4	TAC	5.9 E-6	2.1 E-2	NC	2A
	(oral)		RCHAS-S		5.1 E-2		
Polychlorinated biphenyls (PCBs)	(high risk)[P1]	1336-36-3	IRIS	5.7 E-4	2.0 E+0	B2	2A
	(low risk)[P2]			2.0 E-5	7.0 E-2		
Potassium bromate		7758-01-2	RCHAS-E	1.4 E-4	4.9 E-1	NC	2B
1,3-Propane sultone		1120-71-4	RCHAS-E	6.9 E-4	2.4 E+0	NC	2B

Footnotes

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N1 Nickel refinery dust and nickel subsulfide are in Class A; nickel carbonyl is in Class B2
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Propylene oxide	(inhalation)	75-56-9	IRIS	3.7 E-6	1.3 E-2	B2	2B
	(oral)				2.4 E-1		
1,1,2,2-Tetrachloroethane		79-34-5	IRIS	5.8 E-5	2.0 E-1	C	3
Thioacetamide		62-55-5	RCHAS-E	1.7 E-3	6.1 E+1	NC	2B
2,4-Toluene diisocyanate		584-84-9	RCHAS-E	1.1 E-5	3.9 E-2	NC	2B
2,6-Toluene diisocyanate		91-08-7	RCHAS-E	1.1 E-5	3.9 E-2	NC	2B
1,1,2-Trichloroethane (vinyl trichloride)		79-00-5	IRIS	1.6 E-5	5.7 E-2	C	3
Trichloroethylene	(inhalation)	79-01-6	TAC	2.0 E-6	1.0 E-2	NC	2A
	(oral)		RCHAS-S		1.5 E-2		
2,4,6-Trichlorophenol		88-06-2	RCHAS-S	2.0 E-5	7.0 E-2	B2	2B
Urethane		51-79-6	RCHAS-S	2.9 E-4	1.0 E+0	NC	2B
Vinyl chloride		75-01-4	TAC	7.8 E-5	2.7 E-1	NC	1

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N2 Nickel compounds are in Class 1; metallic nickel is in Class 2B
NA not available
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