

How Many Fold Lower Is Human Exposure Than the Dose That Gave Rodents Cancer: Margin of Exposure, MOE (Rodent Cancer Dose/Human Exposure)

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- **Margin of Exposure (MOE)** indicates how many times lower the average human exposure is than the dose to give tumors to 10% of rats or mice in cancer tests (**LTD₁₀** in mg/kg/day). For example, an **MOE** of 10,000 indicates that the human exposure (mg/kg/day) is 10,000 fold lower than the LTD₁₀ in rodents (mg/kg/day). MOE values are reported for all rodent carcinogens in the CPDB for which both concentration data and average US exposure were available, and for which human exposure could be chronic for a lifetime. The table is ordered by MOE. Human exposures to rodent carcinogens are ordered from greatest possible cancer hazard at the top to least possible hazard at the bottom.
- **Average daily US human exposure** indicates a daily exposure for a lifetime in a food, a drug, an occupational exposure, or at home or outdoors.
- **For methods to estimate human exposure**, see <http://potency.berkeley.edu/MOEexposure.html>
- **Human intake of rodent carcinogen** is given as the **intake amount per day**, which is then divided by 70 kg human body weight, to give a human intake in **mg/kg/day**.
- **LTD₁₀** is the lower 95% confidence limit on the TD₁₀ from chronic animal cancer tests. Values in rats and mice used in the **MOE** are averages calculated by taking the harmonic mean of the LTD₁₀ values of positive tests in each species from the Carcinogenic Potency Database (CPDB). For details on harmonic mean, see <http://potency.berkeley.edu/ltd10harmonicmean.html>. For details on LTD₁₀, see <http://potency.berkeley.edu/ltd10.html>. The LTD₁₀ value used to calculate MOE is the more potent (lower) value between rats and mice. A number in parentheses indicates an LTD₁₀ value not used in the **MOE** calculation because LTD₁₀ is less potent than in the other species. (-) = negative in cancer tests in that species; (+) = a positive cancer test but not suitable for calculating a LTD₁₀; "." = no data for the species in CPDB.
- **For a sample calculation of MOE**, see: <http://potency.berkeley.edu/MOEsample.html>.
- **Based on evaluation of metabolism and effects of a chemical on cells:** "↓↓" indicates that results in rodents are not relevant to human cancer risk. "↓" indicates that results in rodents would only be relevant to humans at toxic levels.
- **Carcinogenic to humans** at this MOE is indicated by "**". Human carcinogenicity evaluation is based on International Agency for Research on Cancer (IARC).

Human exposures to chemicals that occur naturally in food from plants or products of cooking are in green.

MOE values are colored as they are in the graphic to indicate the type of exposure: Occupational Exposure to Workers, Drugs (Recommended Dose), Natural Chemicals in the Diet, Air Pollutants in California, Food Additives, and Pesticide Residues and Pollutants. See graphic at <http://potency.berkeley.edu/MOE.html>

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A pdf of this page is at <http://potency.berkeley.edu/MOEtabel.pdf>.

MOE (LTD ₁₀ /Human Exposure)	Average Daily US Exposure	Human Intake of Rodent Carcinogen		Rodent Cancer Dose LTD ₁₀ [mg/kg/day]		References for Human Exposure (Full References Follow Table)
		Amount per Day	[Amount in mg/kg/day]	Rats	Mice	
0.01	Vinyl chloride polymerization workers, 1955-1960 *	Vinyl chloride, 3.85 g	[55 mg/kg/day]	0.517	(2.34)	(Barnes 1976)
0.08	EDB: production workers (high exposure before 1977)	Ethylene dibromide, 150 mg	[2.14 mg/kg/day]	0.170	(0.764)	(Ott <i>et al.</i> 1980; Ramsey <i>et al.</i> 1978)
0.5	Clofibrate ↓↓	Clofibrate, 2 g	[28.6 mg/kg/day]	15.7	(-)	(Havel and Kane 1982)
0.8	Vinyl chloride polymerization workers, 1975	Vinyl chloride, 48.2 mg	[0.688 mg/kg/day]	0.517	(2.34)	(Barnes 1976)

0.8	Phenobarbital, 1 sleeping pill ↓↓	Phenobarbital, 60 mg [0.857 mg/kg/day]	(+)	0.704	(American Medical Association Division of Drugs 1983)
1	Gemfibrozil ↓↓	Gemfibrozil, 1.2 g [17.1 mg/kg/day]	19.0	(-)	(Arky 1998)
1	Butadiene-styrene rubber industry workers (1978-86) *	1,3-Butadiene, 66.0 mg [0.943 mg/kg/day]	(28.2)	1.38	(Matanoski <i>et al.</i> 1993)
2	Formaldehyde: production workers (1979) *	Formaldehyde, 6.1 mg [0.0871 mg/kg/day]	0.145	(2.72)	(Siegal <i>et al.</i> 1983)
2	Comfrey-pepsin tablets, 9 daily; FDA has issued an advisory against use	Comfrey root, 2.7 g [38.6 mg/kg/day]	72.0	.	(Culvenor <i>et al.</i> 1980; Hirono <i>et al.</i> 1978)
2	Acrylonitrile: production workers (1960-1986)	Acrylonitrile, 28.4 mg [0.406 mg/kg/day]	(1.74)	0.759	(Blair <i>et al.</i> 1998)
2	Diet pills containing <i>Aristolochia fangchi</i>, 2 years *	Aristolochic acid, 1.08 mg [0.0154 mg/kg/day]	0.000941	.	(Cosyns <i>et al.</i> 1998; Nortier <i>et al.</i> 2000)
2	Tetrachloroethylene: dry cleaners with dry-to-dry units (1980-90)	Tetrachloroethylene, 433 mg [6.19 mg/kg/day]	13.9	(17.9)	(Andrasik and Cloutet 1990)
3	Alcoholic beverages, all types	Ethyl alcohol, 22.8 ml [326 mg/kg/day]	930	(-)	(Nephew <i>et al.</i> 2000)
4	Vinyl fluoride polymer production workers (1980)	Vinyl fluoride, 14.2 mg [0.203 mg/kg/day]	(1.99)	0.912	(Oser 1980)
5	Trichloroethylene: vapor degreasing (before 1977)	Trichloroethylene, 1.02 g [14.6 mg/kg/day]	67.9	(171)	(Page and Arthur 1978)
6	Beer, 229 ml	Ethyl alcohol, 11.7 ml [167 mg/kg/day]	930	(-)	(Beer Institute 1999)
6	Comfrey-pepsin tablets, 9 daily; FDA has issued an advisory against use	Symphytine, 1.8 mg [0.0257 mg/kg/day]	0.146	.	(Culvenor <i>et al.</i> 1980; Hirono <i>et al.</i> 1978)
6	Ethylene oxide: sterilization workers	Ethylene oxide, 29.2 mg [0.417 mg/kg/day]	0.00242	(0.00615)	(Steenland <i>et al.</i> 1991)
10	Methylene chloride: workers, industry average (1940s-80s)	Methylene chloride, 471 mg [6.73 mg/kg/day]	76.7	(126)	(CONSAD Research Corporation 1990)
20	Dehydroepiandrosterone (DHEA)	DHEA supplement, 25 mg [0.357 mg/kg/day]	6.27	.	
20	Wine, 20.8 ml	Ethyl alcohol, 3.67 ml [52.4 mg/kg/day]	930	(-)	(Wine Institute 2001)
30	Formaldehyde: manufactured home air (12 hours/day)	Formaldehyde, 351 μg [0.00501 mg/kg/day]	0.145	(2.72)	(Air Resources Board 2005)
40	Fluvastatin	Fluvastatin, 20 mg [0.286 mg/kg/day]	12.1	.	(Arky 1998)
50	Omeprazole	Omeprazole, 20 mg [0.286 mg/kg/day]	13.6	(-)	(Arky 1998)
80	Formaldehyde: conventional home air (12 hours/day)	Formaldehyde, 133 μg [0.0019 mg/kg/day]	0.145	(2.72)	(Air Resources Board 2005)
90	Coffee, 11.6 g	Caffeic acid, 20.8 mg [0.297 mg/kg/day]	26.8	(437)	(Clarke and Macrae 1988; Coffee Research Institute 2001)
100	d-Limonene in food ↓↓	d-Limonene, 15.5 mg [0.221 mg/kg/day]	22.0	(-)	(Stofberg and Grundschober 1987)
100	Mushroom (<i>Agaricus bisporus</i>), 5.34 g	Mixture of hydrazines, etc. (whole mushroom) [76.3 mg/kg/day]	(-)	966	(Matsumoto <i>et al.</i> 1991; Toth and Erickson 1986; U.S. Food and Drug Administration 2002)
100	Gasoline station workers (1997)	MTBE, 24.2 mg [0.346 mg/kg/day]	45.7	(615)	(Brown 1997)
200	Lovastatin	Lovastatin, 20 mg [0.286 mg/kg/day]	(-)	55.7	(Arky 1998)
200	Bread, 79 g	Ethyl alcohol, 293 mg [4.19 mg/kg/day]	930	(-)	(Logan and Distefano 1998; Smiciklas-Wright <i>et al.</i> 2002)

200	Lettuce, 14.9 g	Caffeic acid, 7.90 mg [0.113 mg/kg/day]	26.8	(437)	(Herrmann 1978; Technical Assessment Systems 1989)
300	Comfrey herb tea, 1 cup (1.5 g root); FDA has issued an advisory against use	Symphytine, 38 µg [0.000543 mg/kg/day]	0.146	.	(Culvenor <i>et al.</i> 1980)
300	Safrole in spices	Safrole, 1.2 mg [0.0171 mg/kg/day]	(40.1)	5.24	(Hall <i>et al.</i> 1989)
300	Tomato, 88.7 g	Caffeic acid, 5.46 mg [0.078 mg/kg/day]	26.8	(437)	(Schmidlein and Herrmann 1975a; Technical Assessment Systems 1989)
400	Orange juice, 138 g	<i>d</i> -Limonene, 4.28 mg [0.0611 mg/kg/day]	22.0	(-)	(Schreier <i>et al.</i> 1979; Technical Assessment Systems 1989)
400	Furfural in food	Furfural, 3.64 mg [0.052 mg/kg/day]	(41.4)	18.9	(Adams <i>et al.</i> 1997)
400	Pepper, black, 500 mg	<i>d</i> -Limonene, 4.00 mg [0.0571 mg/kg/day]	22.0	(-)	(Hasselstrom <i>et al.</i> 1957; Stofberg and Grundschober 1987)
500	Coffee, 11.6 g	Catechol, 1.16 mg [0.0166 mg/kg/day]	9.07	(22.9)	(Coffee Research Institute 2001; Rahn and König 1978; Tressl <i>et al.</i> 1978)
600	Apple, 32.0 g	Caffeic acid, 3.40 mg [0.0486 mg/kg/day]	26.8	(437)	(Mosel and Herrmann 1974; U.S. Environmental Protection Agency. Office of Pesticide Programs 1989)
800	BHA in total diet (1975)	BHA, 4.6 mg [0.0657 mg/kg/day]	50.1	(317)	(U.S. Food and Drug Administration 1991a)
900	Acrylamide in total diet	Acrylamide, 28 µg [0.0004 mg/kg/day]	0.365	.	(DiNovi and Howard 2004)
1,000	Vinyl acetate production workers (1968)	Vinyl acetate, 1.74 mg [0.0249 mg/kg/day]	27.5	(349)	(Deese and Joyner 1969; Santodonato 1985)
1,000	Beer (before 1979), 229 ml	Dimethylnitrosamine, 646 ng [0.00000923 mg/kg/day]	0.0104	(0.0190)	(Beer Institute 1999; Fazio <i>et al.</i> 1980; Preussmann and Eisenbrand 1984)
1,000	Aflatoxin in total diet (1984-89)	Aflatoxin, 18 ng [0.00000257 mg/kg/day]	0.000318	(+)	(U.S. Food and Drug Administration 1992)
1,000	Celery, 14 g	Caffeic acid, 1.51 mg [0.0216 mg/kg/day]	26.8	(437)	(Smiciklas-Wright <i>et al.</i> 2002; Stöhr and Herrmann 1975)
2,000	<i>d</i> -Limonene ↓↓	Food additive, 1.01 mg [0.0144 mg/kg/day]	22.0	(-)	(Lucas <i>et al.</i> 1999)
2,000	Coffee, 11.6 g	Furfural, 783 µg [0.0112 mg/kg/day]	(41.4)	18.9	(Coffee Research Institute 2001; Silwar <i>et al.</i> 1987)
2,000	Coffee, 11.6 g	Hydroquinone, 290 µg [0.00414 mg/kg/day]	8.08	(22.1)	(Coffee Research Institute 2001; Heinrich and Baltes 1987; Tressl <i>et al.</i> 1978)
2,000	Saccharin in total diet (1977) ↓↓	Saccharin, 7 mg [0.1 mg/kg/day]	199	(-)	(National Research Council 1979)
2,000	Potato, 54.9 g	Caffeic acid, 867 µg [0.0124 mg/kg/day]	26.8	(437)	(Schmidlein and Herrmann 1975b; Technical Assessment Systems 1989)
2,000	Bread, 79 g	Furfural, 584 µg [0.00834 mg/kg/day]	(41.4)	18.9	(Smiciklas-Wright <i>et al.</i> 2002; Stofberg and Grundschober 1987)
4,000	Methyleugenol in food	Methyleugenol, 40.0 µg [0.000571 mg/kg/day]	(2.11)	2.03	(Smith <i>et al.</i> 2002)
4,000	Cinnamon, 21.9 mg	Coumarin, 65.0 µg [0.000929 mg/kg/day]	3.70	(10.5)	(Poole and Poole 1994)
5,000	BHA in total diet (1987)	BHA, 700 µg [0.01 mg/kg/day]	50.1	(317)	(U.S. Food and Drug Administration 1991a)
5,000	Carrot, 12.1 g	Caffeic acid, 374 µg [0.00534 mg/kg/day]	26.8	(437)	(Stöhr and Herrmann 1975; Technical Assessment Systems 1989)
5,000	Nutmeg, 17.6 mg	<i>d</i> -Limonene, 299 µg [0.00427 mg/kg/day]	22.0	(-)	(Bejnarowicz and Kirch 1963; U.S. Department of Agriculture 2000)
6,000	Coffee, 11.6 g	4-Methylcatechol, 378 µg [0.0054 mg/kg/day]	29.9	.	(Coffee Research Institute 2001; Heinrich and Baltes 1987; International Agency for Research on Cancer 1991)
6,000	French fries (restaurant), 12.2 g	Acrylamide, 4.06 µg [0.000058 mg/kg/day]	0.365	.	(DiNovi and Howard 2004)
6,000	DDT in total diet (before 1972 ban) ^b	DDT, 13.8 µg [0.000197 mg/kg/day]	(8.44)	1.26	(Duggan and Corneliussen 1972)
7,000	Ethylene thiourea in total diet	Ethylene thiourea, 9.51 µg [0.000136 mg/kg/day]	0.924	(2.38)	(U.S. Environmental Protection Agency 1991)

	(1990) ↓↓				
7,000	Coffee, 11.6 g	Acrylamide, 3.69 µg [0.0000527 mg/kg/day]	0.365	.	(Andzejewski et al., 2004; Coffee Research Institute, 2001)
7,000	Pear, 3.7 g	Caffeic acid, 270 µg [0.00386 mg/kg/day]	26.8	(437)	(Mosel and Herrmann 1974; U.S. Environmental Protection Agency 1997)
7,000	French fries (oven baked), 5.12 g	Acrylamide, 3.57 µg [0.000051 mg/kg/day]	0.365	.	(DiNovi and Howard 2004)
8,000	Plum, 1.7 g	Caffeic acid, 235 µg [0.00336 mg/kg/day]	26.8	(437)	(Mosel and Herrmann 1974; U.S. Environmental Protection Agency 1997)
8,000	Estragole in spices	Estragole, 54.0 µg [0.000771 mg/kg/day]	.	6.38	(Smith et al. 2002)
8,000	Breakfast cereal, 22.7 g	Acrylamide, 3.01 µg [0.000043 mg/kg/day]	0.365	.	(DiNovi and Howard 2004)
9,000	Mushroom (<i>Agaricus bisporus</i> , 5.34 g)	Glutamyl- <i>p</i> -hydrazinobenzoate, 224 µg [0.0032 mg/kg/day]	.	28.0	(Chauhan et al. 1985; U.S. Food and Drug Administration 2002)
9,000	Potato chips, 5.26 g	Acrylamide, 2.87 µg [0.000041 mg/kg/day]	0.365	.	(DiNovi and Howard 2004)
10,000	Bacon, 19 g	Diethylnitrosamine, 19 ng [0.000000271 mg/kg/day]	0.00269	(+)	(Sen et al. 1979; Smiciklas-Wright et al. 2002)
10,000	Allspice, 2.08 mg	Methyleugenol, 13.9 µg [0.000199 mg/kg/day]	(2.11)	2.03	(Smith et al. 2002)
10,000	Nutmeg, 17.6 mg	Methyleugenol, 13.7 µg [0.000196 mg/kg/day]	(2.11)	2.03	(Smith et al. 2002)
10,000	[UDMH in total diet (1988)]	[UDMH, 2.82 µg (from Alar)] [0.0000403 mg/kg/day]	(-)	0.421	(U.S. Environmental Protection Agency. Office of Pesticide Programs 1989)
10,000	Toxaphene in total diet (before 1982 ban) ^b	Toxaphene, 6.43 µg [0.0000919 mg/kg/day]	(-)	0.996	(Podrebarac 1984)
10,000	Professional vehicle drivers (1997)	MTBE, 262 µg [0.00374 mg/kg/day]	45.7	(615)	(Brown 1997)
10,000	Bacon, 19 g	Dimethylnitrosamine, 57.0 ng [0.000000814 mg/kg/day]	0.0104	(0.0190)	(Sen et al. 1979; Smiciklas-Wright et al. 2002)
10,000	Benzene: home air (12 hours/day)	Benzene, 45.5 µg [0.00065 mg/kg/day]	(18.5)	8.50	(Air Resources Board 2005)
10,000	Bacon, 19 g	<i>N</i> -Nitrosopyrrolidine, 324 ng [0.00000463 mg/kg/day]	(0.0877)	0.0624	(Smiciklas-Wright et al. 2002; Tricker and Preussmann 1991)
10,000	DDE in total diet (before 1972 ban) ^b	DDE, 6.91 µg [0.0000987 mg/kg/day]	(-)	1.43	(Duggan and Corneliussen 1972)
10,000	Basil, 18.7 mg	Methyleugenol, 9.7 µg [0.000139 mg/kg/day]	(2.11)	2.03	(Smith et al. 2002)
20,000	Tap water, 1 liter (1987-92) ↓	Chloroform, 51 µg [0.000729 mg/kg/day]	(26.7)	11.8	(American Water Works Association. Government Affairs Office 1993; McKone 1987, 1993)
20,000	Basil, 18.7 mg	Estragole, 27.0 µg [0.000386 mg/kg/day]	.	6.38	(Smith et al. 2002)
20,000	Methyleugenol	Food additive, 6.41 µg [0.0000916 mg/kg/day]	(2.11)	2.03	(Smith et al. 2002)
30,000	Celery, 14 g	8-Methoxypsoralen, 8.56 µg [0.000122 mg/kg/day]	3.33	(-)	(Beier et al. 1983; Smiciklas-Wright et al. 2002)
30,000	Tap water, 1 liter (1987-92)	Bromodichloromethane, 13 µg [0.000186 mg/kg/day]	(8.59)	5.24	(American Water Works Association. Government Affairs Office 1993)
30,000	Carbaryl in total diet (1990)	Carbaryl, 2.6 µg [0.0000371 mg/kg/day]	1.05	(-)	(U.S. Food and Drug Administration 1991b)
30,000	EDB in total diet (before 1984 ban) ^b	EDB, 420 ng [0.000006 mg/kg/day]	0.170	(0.764)	(U.S. Environmental Protection Agency. Office of Pesticide Programs February 8, 1984)
30,000	TCDD in total diet (1994)	TCDD, 5.4 pg [0.000000000771 mg/kg/day]	0.00000223	(0.0000144)	(U.S. Environmental Protection Agency 2000)
30,000	Mustard, 18.9 mg	Allyl isothiocyanate, 17.4 µg [0.000249 mg/kg/day]	8.22	(-)	(Lucas et al. 1999)
40,000	Furfural	Food additive, 36.4 µg [0.00052 mg/kg/day]	(41.4)	18.9	(Lucas et al. 1999)

40,000	Mango, 1.0 g	<i>d</i> -Limonene, 40.0 µg [0.000571 mg/kg/day]	22.0	(-)	(Engel and Tressl 1983; U.S. Environmental Protection Agency 1997)
40,000	Fennel, 18.7 mg	Estragole, 10.5 µg [0.00015 mg/kg/day]	.	6.38	(Smith <i>et al.</i> 2002)
50,000	Beer (1994-95), 229 ml	Dimethylnitrosamine, 16 ng [0.000000229 mg/kg/day]	0.0104	(0.0190)	(Beer Institute 1999; Glória <i>et al.</i> 1997)
50,000	Canned black olives, 641 mg	Acrylamide, 490 ng [0.000007 mg/kg/day]	0.365	.	(DiNovi and Howard 2004)
50,000	Hamburger, pan fried, 85 g	PhIP, 176 ng [0.00000251 mg/kg/day]	0.132 ^a	(2.49) ^a	(Knize <i>et al.</i> 1994; Technical Assessment Systems 1989)
50,000	Mushroom (<i>Agaricus bisporus</i>), 5.34 g	<i>p</i> -Hydrazinobenzoate, 58.6 µg [0.000837 mg/kg/day]	.	45.6 ^a	(Chauhan <i>et al.</i> 1985; U.S. Food and Drug Administration 2002)
50,000	Allyl isothiocyanate	Food additive, 10.5 µg [0.00015 mg/kg/day]	8.22	(-)	(Lucas <i>et al.</i> 1999)
60,000	Tetrachloroethylene: home air (12 hours/day)	Tetrachloroethylene, 17.0 µg [0.000243 mg/kg/day]	13.9	(17.8)	(Air Resources Board 2005)
70,000	Benzene: outdoor air (2 hours/day)	Benzene, 8.84 µg [0.000126 mg/kg/day]	(18.5)	8.50	(Air Resources Board 2005)
80,000	Estragole	Food additive, 5.79 µg [0.0000827 mg/kg/day]	.	6.38	(Lucas <i>et al.</i> 1999)
80,000	Anise, 2.44 mg	Estragole, 5.65 µg [0.0000807 mg/kg/day]	.	6.38	(Smith <i>et al.</i> 2002)
100,000	Toxaphene in total diet (1990) ^b	Toxaphene, 595 ng [0.0000085 mg/kg/day]	(-)	0.996	(U.S. Food and Drug Administration 1991b)
100,000	Toast, 79 g	Urethane, 948 ng [0.0000135 mg/kg/day]	(4.12)	1.74	(Canas <i>et al.</i> 1989; Smiciklas-Wright <i>et al.</i> 2002)
100,000	Beer, 229 ml	Furfural, 9.50 µg [0.000136 mg/kg/day]	(41.4)	18.9	(Beer Institute 1999; Lau and Lindsay 1972; Tressl 1976; Wheeler <i>et al.</i> 1971)
200,000	DDE/DDT in total diet (1990) ^b	DDE, 659 ng [0.00000941 mg/kg/day]	(-)	1.43	(U.S. Food and Drug Administration 1991b)
200,000	Parsnip, 48.8 mg	8-Methoxypsoralen, 1.42 µg [0.0000203 mg/kg/day]	3.33	(-)	(Ivie <i>et al.</i> 1981; U.S. Environmental Protection Agency 1997)
200,000	1,4-Dichlorobenzene: home air (12 hours/day)	1,4-Dichlorobenzene, 10.8 µg [0.000154 mg/kg/day]	(58.1)	34.3	(Air Resources Board 2005)
200,000	Tetrachloroethylene: outdoor air (2 hours/day)	Tetrachloroethylene, 4.30 µg [0.0000614 mg/kg/day]	13.9	(17.8)	(Air Resources Board 2005)
200,000	PCBs in total diet (1984-86)	PCBs, 98 ng [0.0000014 mg/kg/day]	0.346	(0.893)	(Gundersen 1995)
300,000	Parsley, 257 mg	8-Methoxypsoralen, 928 ng [0.0000133 mg/kg/day]	3.33	(-)	(Chaudhary <i>et al.</i> 1986; U.S. Environmental Protection Agency 1997)
300,000	Hamburger, pan fried, 85 g	MeIQx, 38.1 ng [0.000000544 mg/kg/day]	0.164	(2.49)	(Knize <i>et al.</i> 1994; Technical Assessment Systems 1989)
400,000	Dicofol in total diet (1990)	Dicofol, 544 ng [0.00000777 mg/kg/day]	(-)	3.14	(U.S. Food and Drug Administration 1991b)
1,000,000	Hamburger, pan fried, 85 g	IQ, 6.38 ng [0.000000911 mg/kg/day]	0.0936 ^a	(2.07)	(Knize <i>et al.</i> 1994; Technical Assessment Systems 1989)
1,000,000	Beer, 229 ml	Urethane, 102 ng [0.00000146 mg/kg/day]	(4.12)	1.74	(Beer Institute 1999; Canas <i>et al.</i> 1989)
1,000,000	1,4-Dichlorobenzene: outdoor air (2 hours/day)	1,4-Dichlorobenzene, 1.67 µg [0.0000239 mg/kg/day]	(58.1)	34.3	(Air Resources Board 2005)
2,000,000	Trichloroethylene: home air (12 hours/day)	Trichloroethylene, 3.09 µg [0.0000441 mg/kg/day]	67.9	(171)	(Air Resources Board 2005)
2,000,000	Hexachlorobenzene in total diet (1990) ^b	Hexachlorobenzene, 14 ng [0.0000002 mg/kg/day]	0.423	(6.68)	(U.S. Food and Drug Administration 1991b)
5,000,000	Banana, 273 mg	Methyleugenol, 30 ng [0.000000429 mg/kg/day]	(2.11)	2.03	(Smith <i>et al.</i> 2002)
7,000,000	Lindane in total diet (1990)	Lindane, 32 ng [0.000000457 mg/kg/day]	(-)	3.02	(U.S. Food and Drug Administration 1991b)
10,000,000	Trichloroethylene: outdoor air (2 hours/day)	Trichloroethylene, 478 ng [0.00000683 mg/kg/day]	67.9	(171)	(Air Resources Board 2005)

20,000,000	PCNB in total diet (1990)	PCNB (Quintozene), 19.2 ng [0.000000274 mg/kg/day]	(-)	6.51	(U.S. Food and Drug Administration 1991b)
90,000,000	Chlorobenzilate in total diet (1989) ^b	Chlorobenzilate, 6.4 ng [0.0000000914 mg/kg/day]	(-)	8.46	(U.S. Food and Drug Administration 1990)
100,000,000	Captan in total diet (1990) ↓	Captan, 115 ng [0.00000164 mg/kg/day]	159	(241)	(U.S. Food and Drug Administration 1991b)
1,000,000,000	Folpet in total diet (1990)	Folpet, 12.8 ng [0.000000183 mg/kg/day]	(-)	184	(U.S. Food and Drug Administration 1991b)
>1,000,000,000	Chlorothalonil in total diet (1990) ↓↓	Chlorothalonil, <6.4 ng [0.0000000914 mg/kg/day]	87.8 ^c	(-)	(U.S. Environmental Protection Agency 1987; U.S. Food and Drug Administration 1991b)

^a LTD₁₀ harmonic mean was estimated for the base chemical from the hydrochloride salt.

^b No longer contained in any registered pesticide product (U.S. Environmental Protection Agency 1998).

^c Additional data from the EPA that is not in the CPDB were used to calculate this LTD₁₀ harmonic mean.

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