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EPA-450/ -89-

CANCER RISK FROM OUTDOOR EXPOSURE TO AIR TOXICS

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

External Review Draft

September 1989

TABLE 2-6 (concluded)

UNIT RISK FACTORS USED TO COMPARE CANCER RISK

POLLUTANT	EPA CLASSIFICATION[a]	UNIT RISK FACTORS $(\mu g/m3)^{-1}$	REFERENCE
76. 1,1,2,2-Tetrachloroethane	C	5.8×10^{-5}	3
77. Thiourea	B2	5.5×10^{-4}	3
78. Toxaphene	B2	3.2×10^{-3}	3
79. 1,1,2-Trichloroethane	C	1.6×10^{-5}	3
80. Trichloroethylene	B2	1.7×10^{-6}	2
81. 2,4,6-Trichlorophenol	B2	5.7×10^{-6}	3
82. Vinyl chloride	A	4.1×10^{-6}	2[c]
83. Vinylidene chloride	C	5.0×10^{-5}	1

[a] For a discussion of how EPA evaluates suspect carcinogens and more information on these classifications, refer to "Guidelines for Carcinogen Risk Assessment" (51 Federal Register 33992). The EPA classifications used in this report are:

A = proven human carcinogen

B = probable human carcinogen (B1 indicates limited evidence from human studies; B2 indicates sufficient evidence from animal studies but inadequate evidence from human studies)

C = possible human carcinogen

[b] Based on inhalation study. Oral study suggests a unit risk factor of 3.3×10^{-3}.

[c] Oral studies suggest a unit risk factor of 4.2×10^{-5}. U.S. Environmental Protection Agency, Office of Research and Development, Office of Health and Environmental Assessment. Health Effects Assessment Summary Tables First Quarter FY89. January 1989.

References

1. Integrated Risk Information System.
2. Office of Health and Environmental Assessment.
3. U.S. Environmental Protection Agency. Hazardous Waste TSDF - Background Information for Proposed RCRA Air Emission Standards, Volume II - Appendices. Preliminary Draft. March 1988. pp. E-8 through E-13.
4. Draft Supplemental Rule for Hazardous Waste Incinerators. Appendix B, Unit Risks for Carcinogenic Constituents.
5. IEMP-Philadelphia. Developed from EPA's Drinking Water Criteria Document. 3/2/84.
6. U.S. EPA, Office of Solid Waste.
7. Southeast Chicago Study.

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TABLE 3-27

COMPARISON OF UNIT RISK FACTORS

POLLUTANT	May 1985	June 1988	% Change
Acrylamide	1.7×10^{-5}	1.1×10^{-3}	+6400
Benzene	6.9×10^{-6}	8.3×10^{-6}	+20
BaP	3.3×10^{-3}	1.7×10^{-3}	-48
Beryllium	4.0×10^{-4}	2.4×10^{-3}	+500
1,3-Butadiene	4.6×10^{-7}	2.8×10^{-4}	+60770
Cadmium	2.3×10^{-3}	1.8×10^{-3}	-22
Chloroform	1.0×10^{-5}	2.3×10^{-5}	+130
Carbon tetrachloride	2.3×10^{-5}	1.2×10^{-4}	+445
Ethylene dibromide	5.1×10^{-4}	2.2×10^{-4}	-57
Ethylene oxide	3.6×10^{-4}	1.0×10^{-4}	-72
Formaldehyde	6.1×10^{-6}	1.3×10^{-5}	+113
Gasoline vapors	7.5×10^{-7}	6.6×10^{-7}	-12
Methyl chloride	1.4×10^{-7}	3.6×10^{-6}	+2,470
Methylene chloride	1.8×10^{-7}	4.7×10^{-7}	+161
Nickel (subsulfide)	3.3×10^{-4}	4.8×10^{-4}	+45
Perchloroethylene	1.7×10^{-6}	5.8×10^{-7}	-66
Propylene oxide	1.2×10^{-6}	3.7×10^{-8}	-97
Styrene	2.9×10^{-7}	5.7×10^{-7}	+97
Trichloroethylene	4.1×10^{-6}	1.7×10^{-6}	-59
Vinyl chloride	2.6×10^{-6}	4.1×10^{-6}	+58
Vinylidene chloride	4.2×10^{-5}	5.0×10^{-5}	+19