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## **2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN**

CASRN: 1746-01-6

Polychlorinated dibenzo-p-dioxins occur as 75 different isomers. There are 22 possible tetrachlorodibenzo-p-dioxin isomers, but only one isomer that contains chlorines at the 2,3,7, and 8 positions. [WHO; Environmental Health Criteria 88. Polychlorinated dibenzo-p-dioxins and dibenzofurans. Available from, as of May 10th, 2004: <http://www.inchem.org/pages/ehc.html> ]

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### **Synonyms :**

**Dioksyny (Polish)**

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### **Body Burden :**

The concn of 2,3,7,8-tetrachlorodibenzo-p-dioxin in whole blood samples were as follows (concn as parts per trillion lipid): Ho Chi Minh City, Vietnam, 3.4 (N=50); Don Nai, Vietnam (N=33), 12.0; Hanoi, Vietnam (N=32), <2.4; Germany, 3.6 (N=102); Baikalsk, Russia, 3.7 (N=8); St. Petersburg, Russia, 4.5; Guam, USA, 4.07(1). The concn of 2,3,7,8-tetrachlorodibenzo-p-dioxin in tissue and fluid samples from 5 mothers women living in Upstate NY were as follows (sample, concn in pg/g lipid): adipose tissue, 1.3; pre-delivery blood, 1.7; placenta, 2.7; cord blood, 1.3; post-pardum blood, 1.5; breast milk, 1.4(2). Concns of 2,3,7,8-tetrachlorodibenzo-p-dioxin in plasma lipids of individuals residing in Quebec on the North Shore of the St. Lawrence River (fishing people; N=25) and in urban centers (N=30) were 13.8 and 2.2 ng/kg, respectively(3). Mean levels of 2,3,7,8-tetrachlorodibenzo-p-dioxin in blood plasma from subjects living in Tarragona, Spain (non-occupationally exposed) were 1.9 pg I-TEQ (International toxicity equivalents)/g lipid (N=20; range, 0.9-5.3 pg I-TEQ/g lipid)(4). Blood levels of 2,3,7,8-tetrachlorodibenzo-p-dioxin in residents of Mataro, Spain (North of Barcelona) were 1.6 and 1.5 parts per trillion/g fat wt in male and female residents, respectively, for samples collected in March-June 1995(5). Blood sampled in 1993 from men and women (non-occupationally exposed) living in the vicinity of a municipal waste incinerator (MWI) in Schwandorf, Germany contained 2,3,7,8-tetrachlorodibenzo-p-dioxin at concns ranging from <0.3-3.6 (mean, 1.3) and 0.4-3.3 (mean, 1.4) pg/g lipid, respectively(6). Human milk from women in this study had 2,3,7,8-tetrachlorodibenzo-p-dioxin levels ranging from 0.6-2.0 pg/g milk fat (avg, 1.1 pg/g milk fat)(6). Whole blood samples collected from German individuals in 1994 contain 2,3,7,8-tetrachlorodibenzo-p-dioxin at a mean concn of 2.9 pg/g lipid (N=134; range, 1.0-7.8 pg/g lipid)(7). Blood samples from 3 groups of men living in Norway (Fjord area) contained 2,3,7,8-tetrachlorodibenzo-p-dioxin at avg concns as follows (group, concn in pg/g fat): reference, 3.6 (N=10; range, 0.2-7.0); moderate crab intake, 7.7 (N=15; range, 3-13.6); high crab intake, 11.0 (N=9; range, 6.3-22.4)(8). Between the period of 1989-1990, 2,3,7,8-tetrachlorodibenzo-p-dioxin mean levels in plasma samples from Finish workers were reported as follows (industry group; concns in pg/g lipid): control 4.1 (N=14; 1.3-10); bleaching plant, 5.7 (N=14; range, 0.6-22); paper mill, 3.1 (N=20; range, 0.2-9.3)(9). The concn of 2,3,7,8-tetrachlorodibenzo-p-dioxin in blood samples collected between the years 1993-1994 from Japanese women (age, approx 20 yo) ranged from 0.77-3.4 pg/g lipid basis (N=50; avg, 1.8 pg/g lipid basis)(10).

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[ (1) Schecter A et al; Environ Health Perspect 102 (Suppl 1): 159-71 (1994) (2) Schecter A et al; Chemosphere 37: 1817-23 (1998) (3) Ryan JJ et al; Arch Environ Health 52: 309-16 (1997) (4) Schuhmacher M et al; Chemosphere 38: 1123-33 (1999) (5) Gonzalez CA et al; Chemosphere 39: 419-26 (1998) (6) Deml E et al; Chemosphere 33: 1941-50 (1996) (7) Papke O et al; Chemosphere 32: 575-82 (1996) (8) Johansen HR et al; Environ Health Perspect 104: 756-64 (1996) (9) Rosenberg C et al; Chemosphere 31: 3933-44 (1995) (10) Iida T et al; Chemosphere 38: 3497-502 (1999)]  
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Notice the body burden of Agent Orange dioxin (2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN) of the people from Guam is higher than the people from Ho Chi Minh City (Saigon), Vietnam

