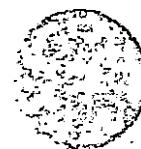
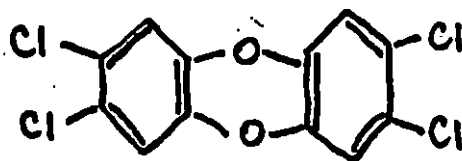


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Division of Health Advisory on Health Effects of Dioxin

"Dioxin" is the term used to describe a number of chemical substances characterized by two phenol rings linked together through two oxygen atoms. When halogenated (the addition of chlorine or bromine atoms to the phenol rings), these dioxins can be extremely toxic to animals and humans. The most important of these dioxins is 2, 3, 7, 8 - tetrachlorodibenzodioxin, illustrated as:



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This compound is the most toxic of the dioxin group and has been shown to have severe acute and chronic effects on health.

Acute toxicity of 2, 3, 7, 8 - TCDD, as determined in laboratory animals, is exceeded only by botulinum, tetanus and diphtheria toxin. In other words, 2, 3, 7, 8 - TCDD is 2000 times more toxic than strychnine and 150,000 times more toxic than cyanide. As compared to other poisons, very small amounts of 2, 3, 7, 8 - TCDD can be lethal.

Chronic effects of 2, 3, 7, 8 - TCDD can be many and varied. From past incidents, these effects may include: (1) dermatologic syndromes, for example, chloracne and porphyria cutanea tarda; (2) hepatic (liver) problems, for example, necrosis, insufficiency and bile duct hyperplasia and increased levels of serum bilirubin and alkaline phosphatase which indicate some damage to the liver; (3) renal (kidney) problems, for example, decreased kidney function and excretion; (4) endocrine (hormone) effects, for example, acne, hirsutism (increased hair growth) and loss of libido (sex drive); (5) immunologic effects, for example, increased

susceptibility to bacteriological infection; (6) hematologic (blood) effects, for example, anemia, thrombocytopenia (increased clotting time) and leukopenia (decreased white blood cells); (7) gastrointestinal (stomach and intestine) effects, for example, decreased absorption of nutrients; and, (8) neuropsychiatric (mental and nerve) effects, for example, behavioral changes (increased irritability and restlessness) and weakness and pain or lack of sensation in the lower extremities. Additionally, low-level exposure to 2, 3, 7, 8 - TCDD may involve teratogenic (birth defects) and fetotoxic (spontaneous abortion or stillbirth) effects; carcinogenic (cancer causing) activity has been observed in animal studies.

The Division of Health advises you to avoid exposure to known sources of dioxin; the Division also advised you to contact your family physician if you think you have suffered any of the above listed symptoms as a result of past exposure to dioxin-containing material. The Division of Health will consult with your physician, if requested.