

D I O X I N **CONFIDENTIAL**
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Dioxin is a general term for a group of chemicals which have certain characteristics. Simply speaking, the material contains two benzene ring structures which are linked by two oxygens and have chlorine atoms in variable locations. The location and number of the chlorine atoms determines how toxic or poisonous the material is. Some of the forms of dioxin have only low to moderate toxicity. On the other hand, one particular form which is called 2,3,7,8-tetrachlorodibenzoparadioxin (or TCDD) is indeed very highly toxic. It is one of the most toxic substances known when one considers the very small, minute doses which have an effect in certain laboratory animals.

However, unlike common poisons such as cyanide, there are certain peculiarities about TCDD which are somewhat difficult to understand. While it is extremely toxic for some forms of laboratory animals, it is not nearly so toxic for others. In addition the experience of humans who have been exposed to this material supports the view that the toxicity of TCDD to man is much lower than its toxicity to many common laboratory animals. In those situations in which human populations have been exposed to TCDD, the only consistent finding has been the development of a specific type of skin problem called chloracne. A special committee of the American Medical Association has recently studied the dioxin problem and determined that chloracne is the hallmark of significant exposure to toxic forms of dioxin. In other words, when humans have been exposed either through heavy skin contact, ingestion of dioxin contaminated materials or possibly through inhalation of dioxin contaminated particles, a number of effects have been described. These include skin rashes and

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chloracne, gastrointestinal upset, and possible temporary irritability of some muscles and nerves. Of these, the only prolonged or persistent effect observed has been the chloracne. It should be noted that other materials also can cause chloracne.

A number of long-term studies are currently underway to study of whether or not there are any long-range effects from exposure to TCDD beyond those which have been seen so far.

In the meantime, it is important to remember that while TCDD is highly toxic to animals, the general public will not be exposed to this chemical in its pure form. Since TCDD occurs as an unwanted contaminant, it is not isolated as a pure chemical except by research scientists. Nevertheless, some general precautions would be prudent where there is a likelihood of contamination from this material.

Dust contaminated with the material should be avoided and humans and domestic animals should avoid eating food, forage or other materials which are likely to be contaminated by sprayed material or on which dust particles contaminated with dioxin may have settled. If soil containing dioxin is stirred up, the contamination may spread to adjacent areas, but the distance that such particles are likely to travel is not very great. Since TCDD is virtually insoluble in water, it is not likely to contaminate drinking water, although it may be found absorbed onto sediment. There does not appear to be much likelihood that it has become involved in the food chain.

If you have a problem which you feel might be related to exposure to dioxins, the most reasonable approach is to see your family physician

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been described. These include skin rashes and chloracne, gastrointestinal upset, and possible temporary irritability of some muscles and nerves. Of these, the only prolonged or chronic effect observed has been the chloracne.

A number of long-term studies are currently underway to further evaluate the possibility of whether or not any long-range effects which have not yet been seen might indeed exist.

In the meantime, it is important to know ^{that} while this material should be considered highly toxic, the likelihood of exposure for the general population is not very great. Special precautions, however, would be prudent where the likelihood of contamination from this material is present. It is a somewhat heavy (oily) ^{ranging from crystalline to} type of material, ^{oily or watery} which does not (readily) dissolve in water. It would be considered a contaminant in certain chlorinated, oily, waste industrial processes. The likelihood of its getting involved in the food chain (at this point,) does not appear to be much of a problem. Dust contaminated with the material should be avoided and humans and domestic animals should avoid eating food, forage or other materials which are likely to be contaminated by sprayed material or settling dust particles which have a likelihood of being contaminated with dioxin. If soil containing dioxin is stirred up, there is a possibility of spread through dust particles to adjacent areas, but the distance that such particles are likely to travel is not very great because of the weight of the dioxin.

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If you have a problem which you feel might be related to exposure to dioxins, the most reasonable approach is to see your family physician, an internist, or a dermatologist.

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