



1,2-DICHLOROBENZENE, 1,3-DICHLOROBENZENE, 1,4-DICHLOROBENZENE (DCBs)

What are 1,2-DICHLOROBENZENE, 1,3-DICHLOROBENZENE and 1,4-DICHLOROBENZENE (DCBs)?

1,2-Dichlorobenzene, 1,3-Dichlorobenzene and 1,4-Dichlorobenzene are three forms of dichlorobenzene. They are also called DCBs. These chemicals are man-made and do not occur in nature.

1,2-Dichlorobenzene is a liquid that ranges from colorless to pale yellow. 1,3-Dichlorobenzene is a colorless liquid. 1,4-Dichlorobenzene is the most commonly used of these chemicals. 1,4-Dichlorobenzene is a white or colorless solid with a strong, sharp odor like mothballs. When exposed to air, it changes to a vapor.

Where are dichlorobenzenes found and how are they used?

1,2-Dichlorobenzene is used to make herbicides. These products control insects in plants. It can sometimes be detected in air. 1,3-Dichlorobenzene is also used to make herbicides, insecticides, medicine and dyes.

1,4-Dichlorobenzene is used to make mothballs and solid deodorant blocks for garbage cans and restrooms. It is also used to control odors in places where animals are held. It has been used as an insecticide on fruit, and to control mold and mildew on tobacco seeds, leather and some fabrics. 1,4-Dichlorobenzene is sent into the air by plants that make or use it and a small amount is released to soil and water. This chemical can also be detected in indoor air where products containing 1,4-Dichlorobenzene are used.

How can people be exposed to dichlorobenzenes?

You could be exposed to dichlorobenzenes through:

Breathing dichlorobenzenes in air, if you work where they are made or used. You can also breathe dichlorobenzenes if you live near a plant or waste site with high dichlorobenzene levels. You may have a higher exposure to 1,4-Dichlorobenzene if you work or live where solid air fresheners, toilet block deodorants or mothballs are used.

Drinking water contaminated with dichlorobenzenes.

Touching products that contain 1,4-Dichlorobenzene. These include air fresheners, mothballs or toilet deodorizer blocks. You can also touch DCBs if you work where they are used or made.

Eye Contact by touching eyes with hands that contacted dichlorobenzenes. You can also get dichlorobenzene vapors in your eyes.

Eating dichlorobenzenes in foods containing them. Such foods can include meat, chicken, eggs or fish.

How do dichlorobenzenes work and how can they affect my health?

Breathing high levels of 1,2-Dichlorobenzene and 1,4-Dichlorobenzene irritates the eyes and nose. It can also cause burning and tearing of the eyes. Coughing, trouble breathing and nausea can also be caused by exposure to dichlorobenzenes.

Exposure to 1,4-Dichlorobenzene can cause the eyes, hands and feet to swell. Exposure to high levels of 1,2-Dichlorobenzene and 1,4-Dichlorobenzene can cause a headache or make you feel dizzy. Repeated exposure to 1,2-Dichlorobenzene or 1,4-Dichlorobenzene can harm the nervous system, blood cells, lungs, liver and kidneys. Touching 1,4-Dichlorobenzene can cause a burning feeling. Very little is known about the health effects of 1,3-Dichlorobenzene; however, they are likely to be similar.

How is dichlorobenzene poisoning treated?

There is no treatment just for dichlorobenzenes. A doctor will treat the symptoms.

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What should I do if exposed to dichlorobenzenes?

If you breathe dichlorobenzenes, move to an area with fresh air. Get medical help right away. If needed, rescue breathing and CPR should be performed.

If you get dichlorobenzenes in your eyes, flush eyes right away with large amounts of water. Flush for at least 15 minutes. Lift the upper and lower lids from time to time. Get medical help right away.

If you touch dichlorobenzenes, quickly remove contaminated clothing. Wash skin right away with large amounts of soap and water.

If you eat or drink dichlorobenzenes, get medical help quickly.

What factors limit use or exposure to dichlorobenzenes?

For most people, exposure to dichlorobenzenes will occur in the home. This can result from using mothballs and solid deodorizers containing 1,4-Dichlorobenzene. Exposure can be reduced by using products that do not contain this chemical.

Is there a medical test to show if I've been exposed to dichlorobenzenes?

A urine test can test for exposure that occurred in the previous day or two. A blood test may also be used.

Technical information for dichlorobenzenes

CAS Numbers: 1,2-Dichlorobenzene - 95-50-1 1,3-Dichlorobenzene - 541-73-1
1,4-Dichlorobenzene - 106-46-7

Chemical Formulas: 1,2-Dichlorobenzene - C₆H₄Cl₂ 1,3-dichlorobenzene - C₆H₄Cl₂
1,4-dichlorobenzene - C₆H₄Cl₂

Carcinogenicity (EPA): EPA's current designation for 1,2-Dichlorobenzene and 1,3-Dichlorobenzene is that they are not classifiable as to human carcinogenicity. The carcinogenicity of 1,4-Dichlorobenzene has not undergone a complete evaluation and determination under U.S. EPA's IRIS program for evidence of human carcinogenic potential.

MCL (Drinking Water): The MCL for 1,2-Dichlorobenzene is 0.6 mg/L. There is no MCL for 1,3-Dichlorobenzene. The MCL for 1,4-Dichlorobenzene is 0.075 mg/L.

OSHA Standards: There is no OSHA PEL for 1,2-Dichlorobenzene. The OSHA ceiling exposure limit is 50 ppm (300 mg/m³). There are no OSHA standards for 1,3-Dichlorobenzene. The OSHA PEL standard for 1,4-Dichlorobenzene is 75 ppm (450 mg/m³).

NIOSH Standards: There is no NIOSH TWA for 1,2-Dichlorobenzene. The NIOSH ceiling exposure limit is 50 ppm (300 mg/m³). There are no NIOSH standards for 1,3-Dichlorobenzene. The NIOSH standard for 1,4-Dichlorobenzene in the work place is the lowest feasible concentration.

References and Sources

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