

Di(2-ethylhexyl)phthalate (DEHP) - ToxFAQs™

What is DEHP?

Di(2-ethylhexyl)phthalate (DEHP) is a man-made chemical. It is a colorless liquid with a slight odor.

DEHP is added to plastics to make them flexible. It can be present in many common items such as wall coverings, floor tiles, upholstery, rainwear, packaging film and sheets, medical tubing, and blood storage bags. Due to health concerns, the United States has discontinued use of DEHP in children's toys, childcare items (e.g., pacifiers, rattles, teethingers), and food packaging produced in this country. Many companies have started using alternatives to DEHP when making medical equipment.



What happens to DEHP in the environment?

DEHP is found throughout the environment at low levels. It gets into the environment mostly through the disposal of plastic waste in landfills. Most DEHP in the environment is found in sediments and soil. It sticks strongly to soil and breaks down slowly when it is near the surface. Indoors, DEHP can also stick to dust particles. DEHP stuck to particles in the air can return to the ground or bodies of water via rain or snow. DEHP does not usually evaporate into the air or easily dissolve in water. It can build up in fish and other water-dwelling species.

How can I be exposed to DEHP?

The most likely way you can be exposed to DEHP is by eating food that is contaminated with it. DEHP can get into your food if stored in plastic containers made using DEHP. People, especially children, may also be exposed by swallowing contaminated dust particles. Certain medical procedures, such as blood transfusions, kidney dialysis, and use of respirators can increase your exposure if the plastic tubing contains DEHP. People living near hazardous waste disposal sites or municipal landfills may be exposed to low levels of DEHP from the air and drinking water.

DEHP is found in many plastic products. The developing fetus and male reproductive system are targets of DEHP toxicity.

How can DEHP affect my health?

In men, increased exposure to DEHP has been linked with decreased testosterone and sperm motility, although no evidence of fertility problems has been seen in people. Some studies have shown that exposure of pregnant women to higher levels of DEHP during pregnancy might lead to effects in their children (preterm birth, altered timing of puberty in boys and girls, delayed mental development, and testicles that do not descend properly).

Adult animals that ate DEHP showed decreased fertility, damage to the testes, and liver and kidney damage. Pre-sensitized animals that ate or breathed DEHP showed increased allergies. When animals were exposed to DEHP during pregnancy or early life, many effects were noted, including altered blood sugar and impaired development or function of the reproductive, kidney, liver, or nervous systems.

DEHP

Can DEHP cause cancer?

It is not known if DEHP can cause cancer in people.

Rats and mice that ate DEHP for a long period of time developed liver cancer. Some animals developed pancreatic and testicular cancer.

The [U.S. Department of Health and Human Services \(DHHS\)](#) classified DEHP as reasonably anticipated to be a human carcinogen (a substance that can cause cancer in people).

The [U.S. Environmental Protection Agency \(EPA\)](#) has determined that DEHP is a probable human carcinogen.

The [International Agency for Research on Cancer \(IARC\)](#) has classified DEHP as possibly carcinogenic to humans.

Can I get a medical test to check for DEHP?

There are medical tests that can measure the breakdown products of DEHP in your urine. These tests cannot tell the exact amount you were exposed to or predict whether you will have health problems.

How can I protect myself and my family from DEHP?

Try to limit the amount of food you eat that is packaged or stored in plastic containing DEHP. Do not allow babies and children to chew on plastic objects not made for that purpose. Keep children from playing near hazardous waste sites.

Follow your state's health advisories that tell you how much fish or wildlife caught in contaminated areas is safe to eat.

For more information:

Call **CDC-INFO** at 1-800-232-4636, or submit your question online at <https://wwwn.cdc.gov/dcs/ContactUs/Form>

Go to ATSDR's Toxicological Profile for di(2-ethylhexyl)phthalate: <https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=684&tid=65>

Go to ATSDR's Toxic Substances Portal: <https://wwwn.cdc.gov/TSP/index.aspx>

Find & contact your ATSDR Regional Representative at http://www.atsdr.cdc.gov/DRO/dro_org.html

