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Phthalates 101 Fact Sheet

What are Phthalates?

Phthalates are a family of colorless, oily, man-made liquids. Most phthalates are used to make vinyl plastics more flexible and resilient and are often referred to as plasticizers. A number of consumer products use phthalates: cosmetics, food packaging, adhesives, building materials, pesticides, medical devices, and personal care products. Examples include vinyl flooring, garden hoses, detergents, raincoats, some children's toys, nail polish, hair sprays, soaps, lotions, and perfumes.

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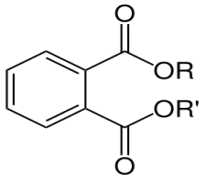
Health Effects of Phthalates

Human health effects of phthalates are not yet fully known. Phthalates are endocrine disruptors, and affect hormonal systems and can increase developmental abnormalities. The EPA classifies some phthalates as probable human carcinogens.

Chronic, repeated exposure has been linked to changes in sex hormones, low sperm count and quality, obesity, reduced female fertility, preterm birth/birth defects, low birth weight, and altered behavior in toddlers.

Pregnant women and those with immune disorders are more vulnerable to phthalate exposure. Males with immature reproductive systems have higher sensitivity levels to phthalates resulting in increased waist circumference, and insulin resistance.

Chemical Structure:



Properties of Phthalates

Phthalates are oily liquids at room temperature. They have low to moderate vapor pressure, which means they do not evaporate easily in air, and can moderately dissolve in soil and water systems.

Phthalates & The Environment

They can be released into the environment from a multitude of sources including industrial processing, industrial waste, municipal solid waste, and land application of sewage sludge. Studies have shown high bioaccumulation in animal tissue and freshwater organisms.

Phthalates do not readily break down and can be found in groundwater and in drinking water following the water treatment process. They have an even slower rate of decomposition in soil.

Phthalate Exposure Pathways

Potential phthalate exposure pathways include inhalation, ingestion, intravenous injection tubing and solutions, and skin absorption. They can cross the placenta and have been found in breast milk.

Human urine tested throughout the world has been found to contain phthalate metabolites, which are the products the remain after phthalate is broken down by the body. Females tend to have higher levels than males.