



## Phthalates factsheet



### What are phthalates?

Phthalates are a class of substances comprising salts and esters of phthalic acid. They are mostly colourless and almost odourless liquids of low volatility.

### Occurrence of phthalates

Phthalates are synthetic compounds which are used industrially in the production of plastics. Phthalates are found in numerous consumer goods. They are mainly used as "plasticizers", e.g. in PVC (polyvinyl chloride) and other plastics. Use of these additives makes plastics flexible, stretchable and elastic. Typical applications include foils, floor coverings, tubing, cables, paints and varnishes, but also cosmetic products such as nail varnish and hairsprays. They are also used as synthetic lubricants and solvents, as vehicles in pesticides, cosmetics and perfumes, and as pharmaceutical excipients.

### Toxicity

Phthalates generally exhibit low acute toxicity. With chronic or repeated exposure, certain phthalates may be toxic to reproduction or teratogenic. For several phthalates, endocrine effects have been demonstrated in animals.

### Potential sources of phthalates exposure

Because phthalates are very widely used, they are ubiquitous in the environment. Phthalate additives are not chemically bound to plastics; they can therefore evaporate or leach out on contact with liquids or fats. Human exposure occurs via food, packaging materials, drinking water and consumer articles (e.g. PVC gloves, toys) and also via indoor air (outgassing from flooring and plastic-coated furnishings). Children can be expected to have additional exposure as they have a higher food intake-to-bodyweight ratio than adults and they place plastic objects (e.g. toys) in their mouths. Phthalate residues in house dust are another potential source – especially for children playing on floors.

### Human biomonitoring of phthalates

Phthalate concentrations are generally measured in blood or urine. Most phthalates are rapidly transformed in the body and excreted as metabolites in the urine. For this reason, human biomonitoring (HBM) normally involves measurement of urinary metabolites. Given the wide variety of phthalates, HBM focuses on the most widespread phthalates and their metabolites.

Measurable concentrations of phthalates or their metabolites in blood or urine are not necessarily an indication of adverse health effects.

### Risk management/measures to reduce phthalates exposure

Exposure to phthalates can be reduced by careful handling of the above-mentioned consumer goods and by regular dusting.

### Further information (Only available in German, French and Italian)

<http://www.bag.admin.ch/themen/chemikalien/00228/01378/index.html>