

Your lab results: PHTHALATES in urine

Your urine specimen was tested for 16 different phthalate metabolites, or break-down products. Phthalates are chemicals that are added to plastics to make them softer, more flexible, and harder to break. Please refer to the phthalates fact sheet in the pages that follow to learn about exposure sources, possible health effects from excessive exposure, and possible actions one can take to reduce excessive exposure to phthalates. There is significant uncertainty about what the health risks of phthalates are.

Who and what can I compare the concentration of phthalates in my urine to?

- **The U.S. population.** These results are from the National Health and Nutrition Examination Survey (NHANES). This program measures phthalate metabolites in urine samples from a representative sample of the U.S.
 - o **50th percentile in the U.S.** In all of the urine testing, half had phthalate metabolite concentrations below this level, and half had concentrations above this level.
 - o **95th percentile in the U.S.** In all of the urine samples, 95% had phthalate concentrations below this specific phthalate metabolite level.

IMPORTANT: Comparisons to the U.S. population cannot tell us what concentration of phthalate metabolites in urine is of concern. These are provided so that you can compare your results to those of others in the U.S., and others in your community.

What can I do?

Please see the following pages, as well as the Phthalates fact sheet, to see what products commonly contain phthalates and how you can reduce your exposure.

Test Results Are on the Next Page

Phthalate Metabolite		Your result*	50th percentile in the U.S.*	95th percentile in the U.S.*
Benzylbutyl phthalate				
Mono-benzyl phthalate	«Corr_MBzP»	4.96		26.7
Dibutyl phthalate & Di-isobutyl phthalate				
Mono- <i>n</i> -butyl phthalate	«Corr_MnBP»	9.04		41.2
Mono-isobutyl phthalate	«Corr_MiBP»	6.77		27.5
Diethyl phthalate				
Mono-ethyl phthalate	«Corr_MEP»	34.4		541
Dimethyl phthalate				
Mono-methyl phthalate	«Corr_MMP»	1.32		11
Di-2-ethylhexyl phthalate				
Mono-2-ethylhexyl phthalate	«Corr_MEHP»	1.46		8.47
Mono-(2-ethyl-5-hydroxyhexyl) phthalate	«Corr_MEHHP»	8.46		37.7
Mono-(2-ethyl-5-oxohexyl) phthalate	«Corr_MEOHP»	5.51		23.4
Mono-(2-ethyl-5-carboxypentyl) phthalate	«Corr_MECPP»	14.1		59.8
Di-isononylphthalate& Di-isodecyl phthalate				
Mono-isononyl phthalate	«Corr_MiNP»	1.08		17.6
Mono-(carboxyoctyl) phthalate	«Corr_MCOP»	20.4		194
Mono-(carboxynonyl) phthalate	«Corr_MCNP»	2.50		14.6
Di-<i>n</i>-octyl phthalate				
Mono- <i>n</i> -octyl phthalate	«Corr_MOP»	<LOD		5.93
Mono-(3-carboxypropyl) phthalate	«Corr_MCPP»	2.86		36.6
1,2-Cyclohexane dicarboxylic acid diisononyl ester				
Monocarboxy isooctyl ester	«Corr_MCOCH»	N/A**		N/A**
Mono(hydroxy-isononyl) ester	«Corr_MHNCH»	<LOD		1.57

*The units for all results are µg/g creatinine.

** This metabolite has not been tested by NHANES.

In what types of products can I find each of these phthalates?

Benzylbutyl phthalate

Benzylbutyl phthalate (BzBP) is a solvent and additive used in products such as adhesives, vinyl tile, sealants, car care products, and to a lesser extent, some personal care products.

Dibutyl phthalate & Di-isobutyl phthalate

Dibutyl phthalates (both di-n-butyl and di-isobutyl phthalates, referred to as DBP) are industrial solvents or additives used in many personal care products such as nail polish and cosmetics, and also in some printing inks, pharmaceutical coatings, and insecticides.

Diethyl phthalate

Diethyl phthalate (DEP) is commonly used to make plastics more flexible. Because DEP is not a part of the chain of chemicals (polymers) which makes up the plastics, it can be released fairly easily from these products. These plastics are found in products such as toothbrushes, automobile parts, tools, toys, medical tubing, some drink containers, and food packaging. DEP is also used as a solvent and/or fragrance in perfumes, cosmetics, personal care products, and nail polishes. It is also used in some insecticides and some medication coatings.

Dimethyl phthalate

Dimethyl phthalate (DMP) is used in manufacturing solid rocket propellant and consumer products such as insect repellents and plastics.

Di-2-ethylhexyl phthalate

Di-2-ethylhexyl phthalate (DEHP) is a manufactured chemical that is commonly added to plastics to make them flexible. It is present in many plastics, especially vinyl materials, which may contain up to 40% DEHP, although lower levels are common. DEHP is present in plastic products such as wall coverings, tablecloths, floor tiles, furniture upholstery, shower curtains, garden hoses, swimming pool liners, rainwear, baby pants, dolls, some toys, shoes, automobile upholstery and tops, some drink containers, packaging film and sheets, sheathing for wire and cable, medical tubing, and blood storage bags. DEHP has been removed from or replaced in most toys and food packaging in the United States.

Di-isononyl phthalate & Di-isodecyl phthalate and 1,2-Cyclohexane dicarboxylic acid diisononyl ester

Di-isononyl phthalate (DiNP), Di-isodecyl phthalate (DiDP), and 1,2-Cyclohexane dicarboxylic acid diisononyl ester (DINCH) are primarily used to produce flexible plastics and have replaced di-2-ethylhexyl phthalate (DEHP) in some plastics, though not in medical products. DiNP, DiDP, and DINCH are widely used in such products as toys, flooring, gloves, drinking straws, some drink containers, garden hoses, heat resistant electrical cords, car interiors, and in sealants used for food packaging.

Di-n-octyl phthalate

Di-n-octyl phthalate (DnOP) is added to polyvinyl chloride resins used in diverse products including floorings, carpet tiles, vinyl gloves, garden hoses, wire and cable insulation, and adhesives. In addition, DnOP may be added to polyvinyl chloride with food applications, such as package sealants and bottle cap liners.