

Reference values
for metabolites of:
organophosphorus (DMP, DMTP, DEP),
pyrethroid (*cis*-Cl₂CA, *trans*-Cl₂CA, 3-PBA)

| Parameter and Matrix [bibliographical data] | Population group / period of life | Year of the study | Reference value ^a |
|---|--|-------------------|------------------------------|
| DMP in urine [2003, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 75 µg/l |
| | General population (but not a strictly representative reference sample) ² | 1998 | 135 µg/l |
| DMTP in urine [2003, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 100 µg/l |
| | General population (but not a strictly representative reference sample) ² | 1998 | 160 µg/l |
| DMDTP in urine [2003, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 10 µg/l |
| DEP in urine [2003, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 30 µg/l |
| | General population (but not a strictly representative reference sample) ³ | 1998 | 16 µg/l |
| DETP in urine [2003, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 10 µg/l |
| <i>cis</i>-Cl₂CA in urine [2005, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 1 µg/l |
| | General population (but not a strictly representative reference sample) ² | 1998 | |
| <i>trans</i>-Cl₂CA in urine [2005, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 2 µg/l |
| | General population (but not a strictly representative reference sample) ² | 1998 | |
| 3-PBA in urine [2005, 2009] | Children (3 to 14 years) ¹ | 2003-2006 | 2 µg/l |
| | General population (but not a strictly representative reference sample) ³ | | |

[xy] bibliographical data see [publication: http://www.uba.de/gesundheits-e/publikationen/index.htm#khh](http://www.uba.de/gesundheits-e/publikationen/index.htm#khh)

^a: when applying reference values the analytical uncertainty must be taken into account;

¹ Source: German Environmental Survey on Children 2003-2006 (GerES IV);

² Source: Health offices, Frankfurt am Main;

³ Source: based on published data

DMP: dimethylphosphate, DMTP: dimethylthiophosphate, DMDTP: dimethyldithiophosphate, DEP: diethylphosphate, DETP: diethylthiophosphate,
cis-Cl₂CA and *trans*-Cl₂CA: *cis*- and *trans*-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylic acid, 3-PBA: 3-phenoxybenzoic acid