

| Jahr der Auswahl | Stoffname (CAS-Nr.)                                                                         | Biomarker                       | Methode; Bestimmungsgrenze (BG)                             | Proben-<br>volumen                                       |
|------------------|---------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------|----------------------------------------------------------|
| 2010             | DINCH<br>Di-iso-nonylcyclohexan-1,2-<br>dicarbonsäureester<br>(166412-78-8 Isomerengemisch) | OH-MINCH<br>cx-MINCH            | Online-SPE-LC-<br>MS/MS<br>BG: beide 0,05 µg/l              | 0,3 mL<br>Urin                                           |
|                  | DPHP<br>Di(2-propyl heptyl)phthalat<br>(53306-54-0)                                         | oxo-MPHP<br>OH-MPHP<br>cx-MPHxP | GC/HRMS<br>BG: 0,25 µg/L;<br>BG: 0,3 µg/L;<br>BG: 0,15 µg/L | 1,0 mL<br>Urin                                           |
|                  | HBCDD<br>Hexabromcyclododecan<br>(25637-99-4)                                               | α-HBCD<br>β-HBCD<br>γ-HBCD      | UPLC-MS/MS<br>BG:<br>jeweils 0,03 µg/L                      | 1,0 mL<br>Plasma                                         |
|                  | 4-Nonylphenol, verzweigt<br>(84852-15-3)                                                    | 4-Nonylphenol,<br>verzweigt     | UPLC-MS/MS<br>BG: 1,0 µg/L                                  | 0,5 mL<br>Urin<br>Gleich-<br>zeitige                     |
|                  | 4-tert-Octylphenol<br>(140-66-9)                                                            | <b>4-tert-<br/>Octylphenol</b>  | UPLC-MS/MS<br>BG: 1,0 µg/L                                  | Bestim-<br>mung von<br>Nonyl-<br>und<br>Octyl-<br>phenol |

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| 2011             | 4-MBC<br>3-(4-Methylbenzyliden) –<br>campher<br>(36861-47-9)     | MBC-cx (=3-4CBC)<br>3-(4-Carboxy-<br>benzyliden)<br>campher<br>MBC-OH<br>(=3-4CBHC)<br>3-(4-Carboxy-<br>benzyliden)-6-<br>hydroxy-campher | UPLC-MS/MS<br>BG: 0,15 µg/l<br><br>BG: 0,3 µg/l          | 0,5 mL<br>Urin                                                                    |
|                  | MDI<br>Methyldiphenyldiisocyanat<br>(101-68-8 und<br>26447-40-5) | MDA-Val-Hyd<br>5-Isopropyl-3[4-(4-<br>amino-benzyl)<br>phenyl] hydantoin<br>(Häm. Addukt)                                                 | GC-HRMS-NCI<br>BG :<br>0,05 ng MDA-Val-<br>Hyd /g Globin | 5 mL<br>EDTA-<br>stabili-<br>siertes<br>Blut                                      |
|                  | 2-MBT<br>2-Mercaptobenzothiazol<br>(149-30-4)                    | MBT                                                                                                                                       | UPLC-MS/MS<br>BG: 1,0 µg/L                               | 0,5 mL<br>Urin                                                                    |
|                  | NMP<br>N-methyl-2-pyrrolidon<br>(872-50-4)                       | 5-HNMP<br>(5-Hydroxy- <i>N</i> -<br>methyl-2-<br>pyrrolidon)<br>2-HMSI<br>(2-Hydroxy- <i>N</i> -<br>methyl-succinimid)                    | GC-EI-MS/MS<br><br>BG:<br>jeweils 2,5 µg/L               | 1,0 mL<br>Urin<br><br>Gleich-<br>zeitige<br>Bestim-<br>mung von<br>NMP und<br>NEP |
|                  | NEP<br>N-ethyl-2-pyrrolidon<br>(2687-91-4)                       | 5-HNEP<br>(5-Hydroxy- <i>N</i> -<br>ethylpyrrolidon)<br>2-HESI<br>(2-Hydroxy- <i>N</i> -<br>ethylsuccinimid)                              | GC-EI-MS/MS<br><br>BG: jeweils 2,5                       |                                                                                   |

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|------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------|
| 2012             | C(M)IT/MIT (3:1)<br>5-Chloro-2-methyl-3-isothiazolinon<br>/ 2-Methylisothiazol-3(2H)-on<br>(55965-84-9) | <b>NMMA</b><br>(N-Methylmalon-<br>säure (3-<br>methylamino-3-<br>oxo-propionsäure)                                                                                                                                                                                                                                                    | GC/EI/MS/MS<br>BG: 0,5 µg/L                                                                              | 0,1 mL<br>Urin     |
|                  | Geraniol<br>(106-24-1)                                                                                  | 8-Carboxygeraniol<br>Hildebrandtsäure<br>3-Hydroxy-<br>citronellsäure<br>Geransäure                                                                                                                                                                                                                                                   | UPLC-MS/MS<br>BG: 1,50 µg/L<br>BG: 2,65 µg/L<br>BG: 2,66 µg/L<br><br>BG: 1,80 µg/L                       | 1,0 mL<br>Urin     |
| 2013             | DEHTP<br>(od. DEHT, DOTP)<br>Diethylhexyl-<br>terephthalat<br>(6422-86-2)                               | 5cx-MEPTP<br>5OH-MEHTP<br>2cx-MMHTP<br>5oxo-MEHTP                                                                                                                                                                                                                                                                                     | Online-SPE-LC-<br>MS/MS<br>BG: 0,2 µL<br>BG: 0,3 µL<br>BG: 0,4 µL<br>BG: 0,2 µL                          | 0,3 mL<br>Urin     |
|                  | BHT<br>2,6 Di-tert-butyl-p-kresol<br>(Butylated Hydroxy-Toluene)<br>(128-37-0)                          | BHT-Säure                                                                                                                                                                                                                                                                                                                             | LC-MS/MS<br><br>BG: 0,2 µL                                                                               | 0,5 mL<br>Urin     |
|                  | TOTM<br>Tri(2-ethylhexyl) trimellitat<br>(3319-31-1)                                                    | 1-MEHTM<br>(1-mono-(2-<br>ethylhexyl)<br>trimellitat)<br>2-MEHTM<br>(2-mono-(2-<br>ethylhexyl)<br>trimellitat)<br>5OH-1-MEHTM<br>(1-mono-(2-ethyl-<br>5-hydroxyhexyl)<br>trimellitat)<br>5OH-2-MEHTM<br>(2-mono-(2-ethyl-<br>5-hydroxyhexyl)<br>trimellitat)<br>5cx-1-MEPTM<br>(1-mono-(2-ethyl-<br>5-Carboxy-pentyl)<br>trimellitat) | LC-MS/MS<br>BG: 4,6 µg/L<br><br>BG: 3,1 µg/L<br><br>BG: 2,6 µg/L<br><br>BG: 1,5 µg/L<br><br>BG: 1,6 µg/L | 1,0 mL<br>Urin     |

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| 2014             | Lysmeral<br>2-(4-tert-Butylbenzyl)propionaldehyd<br>(80-54-6)                     | TBBA (Tert-Butylbenzoic Acid)<br>Lysmerylsäure<br>Lysmerol<br>OH-Lysmerylsäure                                                                                               | LC-MS/MS<br>BG: 0,42 µg/L;<br><br>BG: 0,36 µg/L<br>BG: 0,10 µg/L<br>BG: 0,45 µg/L | 1,0 mL<br>Urin     |
|                  | OC<br>Octocrylen,<br>2-Ethylhexyl 2-cyano-3,3-diphenyl-2-propenoat<br>(6197-30-4) | CPA<br>(2-cyano-3,3-diphenyl-Acrylsäure)<br>DOCCA<br>(2-(carboxymethyl)butyl 2-cyano-3,3-diphenyl Acrylat<br>5OH-OC<br>(2-ethyl-5-hydroxyhexyl 2-cyano-3,3-diphenyl Acrylat) | Online-SPE-LC-MS/MS<br>BG: 0,5 µg/L<br><br>BG: 0,05 µg/L<br><br>BG: 0,015 µg/L    | 0,3 mL<br>Urin     |
|                  | DEHA<br>Di-(2-ethylhexyl)adipat<br>103-23-1                                       | 5OH-MEHA<br>(mono-2-ethyl-5-hydroxyhexyl adipate)<br>5oxo-MEHA<br>(mono-2-ethyl-5-oxohexyl adipate),<br>5cx-MEPA<br>(mono-5-carboxy-2-ethylpentyl adipate)                   | online-SPE-HPLC-MS/MS<br>BG: 0.05 µg/L<br><br>BG: 0.1 µg/L<br><br>BG: 0.05 µg/L   | 0,3 mL<br>Urin     |

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| 2015             | 7-Hydroxycitronellal<br>(107-75-5)                                                | 7-Hydroxycitronellylsäure                                                                                                                                                   | UPLC-MS/MS<br>BG: 0,5 µL                                                         | 1,0 mL<br>Urin     |
|                  | EHS<br>Ethylhexylsalicylat (Octisalal)<br>(118-60-5)                              | 5OH-EHS<br>(2-ethyl-5-hydroxyhexyl 2-hydroxybenzoate)<br>5oxo-EHS<br>(2-ethyl-5-oxohexyl 2-hydroxybenzoate)<br>5cx-EHS<br>(5-(((2-hydroxybenzoyl)oxy)methyl)heptanoic acid) | online-SPE-HPLC-MS/MS<br>BG: 0,05 µg/L<br><br>BG: 0,15 µg/L<br><br>BG: 0,01 µg/L | 0,3 mL<br>Urin     |
| 2016             | TDCPP<br>Tris(2-chlor-1-(chlormethyl)ethyl)phosphat<br>(13674-87-8)               | BDCPP<br>(Bis(1,3-dichloropropyl)phosphat)                                                                                                                                  | LC-MS/MS<br>BG: 0,2µg/L                                                          | 5,0 mL<br>Urin     |
|                  | DHBB<br>Uvinul A Plus<br>Diethylamino-hydroxybenzoylhexylbenzoat<br>(302776-68-7) | AHB<br>(Amino-hydroxybenzoylbenzoesäure)<br>EHB<br>(Ethylamino-hydroxybenzoylhexylbenzoesäure)<br>DHB<br>(Diethylamino-hydroxybenzoylbenzoesäure)                           | LC-MS/MS<br>BG: 0,1 µg/L<br><br>BG: 0,1 µg/L<br><br>BG: 0,05 µg/L                | 1,0 mL<br>Urin     |