NORWEGIAN ENVIRONMENT AGENCY

COWI

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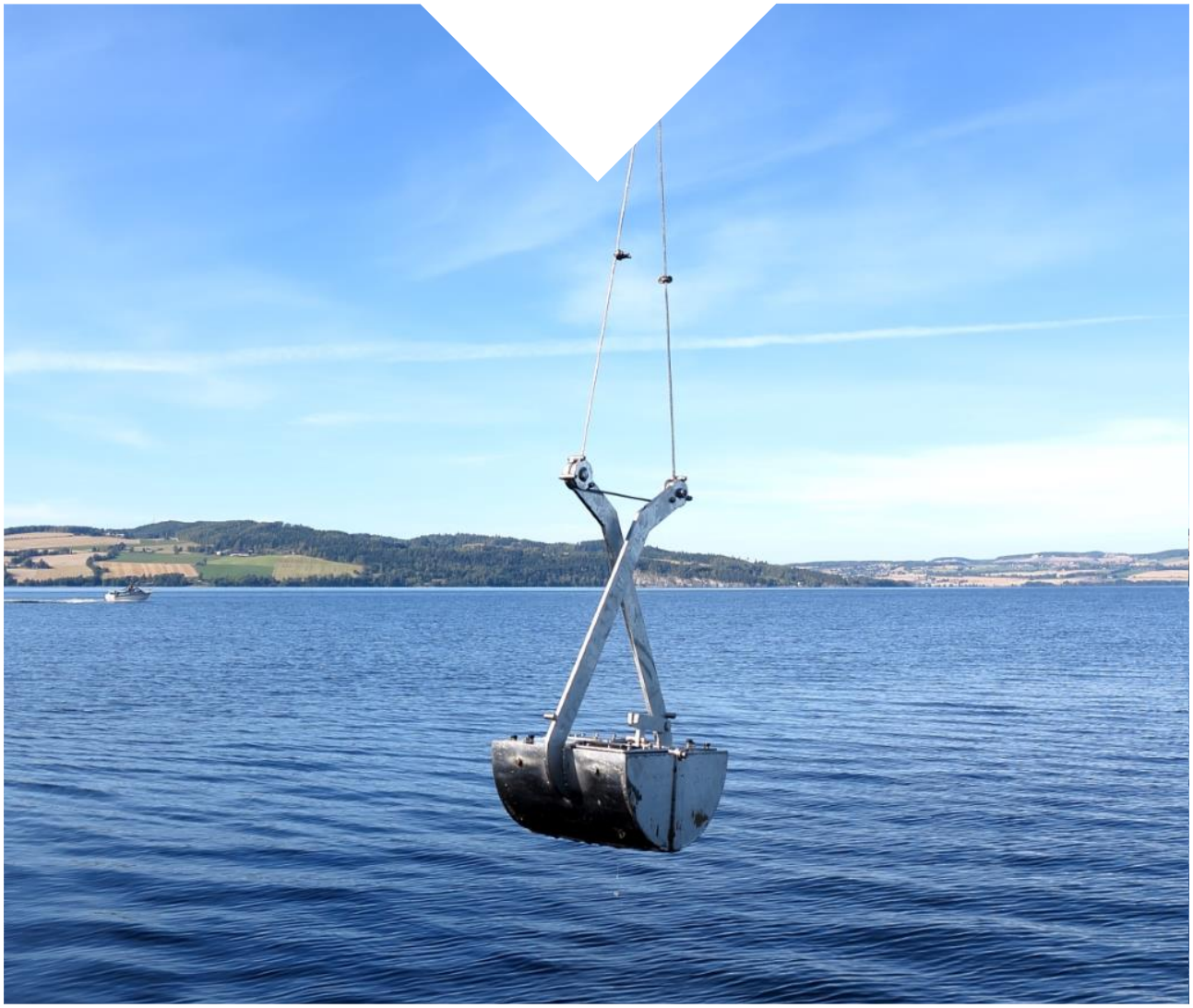
# Screening programme 2016

## Suspected PBT compounds



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**Title - Norwegian and English**

Screeningprogram 2016: Mistenkte PBT-forbindelser
Screening programme 2016: Suspected PBT compounds

**Summary - sammendrag**

This report summarizes the findings of a screening study into the occurrence of selected PBT compounds in wastewater treatment plant effluent and sludge, landfill run-off, sediments, biota and indoor dust.

Denne rapporten oppsummerer resultatene av en screeningundersøkelse for forekomst av utvalgte PBT-stoffer i avløpsvann, avløpsslam, sigevann fra deponi, sedimenter, biota og husstøv.

**4 emneord**

Screening, miljøgifter, Oslofjorden, Mjøsa

**4 subject words**

Screening, pollutants, Oslo fjord, Lake Mjøsa

**Front page photo**

Sampling of sediment in Lake Mjøsa, September 2016. Photo: COWI AS, Håkon Dalen

# Content

**Attachments:**

*Attachment 1:* Results from the screening programme 2016 (Part 2), 60 pages.

# Summary

In the screening programme for 2016 (Part 2), the occurrence of approximately 50 suspected PBT compounds were measured in various matrices throughout the environment. Several of the targeted compounds were detected in wastewater, sludge, landfill run-off, sediment, land based and aquatic biota as well as indoor dust. Samples were collected from locations within the Oslofjord area, Lake Mjøsa and in the vicinity of the City of Oslo.

Among the heteroaromatic group, benzotriazoles/benzothiazols (BTRs/BTHs) were widely detected in the environment, with moderate to high amounts detected in wastewater and sludge from both wastewater treatment plants (WWTPs) and the landfill run-off water. Extreme concentrations on the µg/L (ppb) level were recorded for the compound ***2(3H)-benzothiazolone*** in the landfill run-off. This compound**,** used in tire rubber manufacturing, also had a single occurrence in the Lake Mjøsa sediment, close to the HIAS WWTP outlet. In general, the sewage entering the WWTP appears to be a major source of BTRs and BTHs, that partly end up in the WWTP sludge.

However, as much as 30–35 % of ***1H-benzotriazole***, a dominating compound in sewage rats (up to 9,9 mg/kg), and the dissolved heteroaromatics in the WWTP may enter the environment and become available for bioaccumulation. This may explain the observed occurrence of ***benzothiazole*** which was present in all biota samples (liver and fillet from cod, perch and other fish species, crabs, snails and rat liver), with an average concentration (n=35) of 216 µg/kg d.w. (ppb). Furthermore, periwinkles appeared to be an alternative matrix to the traditionally used cod liver in illustrating bioaccumulation of **BTRs/BTHs** in the marine environment.

Two out of 7 targeted compounds within the group UV-filters were quantified in the study: ***Homosalate*** and ***Ensulizole/2-Phenyl-5-benzimidazole sulfonic acid***. The latter compound was found in concentrations of 450–570 ng/l in the VEAS inlet (passive sampler) and 230-500 ng/l in the outlet, and slightly higher (570–780 ng/l) at the HIAS outlet.The highest concentrations (820–1400 ng/l) were detected in the ROAF run-off. ***Homosalate*** was recorded in the landfill run-off, however, in quite high concentrations (between 7 700 and 10 000 ng/l), and in the sludge from both WWTPs in concentrations of 2230–2930 µg/kg d.w. (at VEAS) and 1490-2210 µg/kg d.w. (at HIAS).

Following the discharge of ***Homosalate*** into the recipient water of Lake Mjøsa, obvious bioaccumulation in perch livers was seen with concentrations in the range of 620–5800 µg/kg d.w. No bioaccumulation of the two UV-filters were recorded in the marine environment or in land based rats. However, ***Homosalate*** was found in the indoor dust samples from both screening locations, with concentration in the range of 270–590 µg/kg d.w.

Other screened PBTs which occurred in trace amounts included brominated flame-retardant ***Tetrabromobisphenol A bis (dibromopropyl ether)***. This compound was found in the VEAS wastewater and sediments from both recipients. Further, antioxidants within the alkyl-phenol group were quantified in the screened samples, including ***AO246*** (***2,2'-methylenebis(6-tert-butyl-4-methylphenol)),*** ***AO2246*** (***4,4'-methylenebis(2,6-di-tert-butylphenol)),*** and ***AO22E46*** (***4,4'-butylidenebis(6-tert-butyl-3-methylphenol))***. Only ***AO246*** was found in outlet wastewater from the two WWTPs and the landfill run-off. The compounds did not

appear in the passive samplers, indicating dispersion in a particulate phase. Appearance of ***all three compounds*** mentioned above appearing in the WWTP sludge supports this assumption. One magnitude higher of the summed concentrations was recorded in the ROAF run-off water, indicating landfills as an important additional source for this type of contaminants.

The effect of the discharge of the antioxidants into the aquatic environment can also be determined high due to the detected presence in almost 70% of the cod livers and trace amounts in periwinkle. Additionally, antioxidants were discovered accumulated in freshwater perch livers.

Two of the prioritized compounds belonging to the group chlorinated pesticides were found in the WWTP sludge and landfill run-off. Trace amounts of ***dichlorophene bis(5-chloro-2-hydroxyphenyl)methane*** was found in run-off water and ***chloroxylenol*** in the sewage sludge from both WWTPs.

Additional screening of selected contaminant groups included musk compound, PFCs and PCBs. The dominating compounds present throughout were the synthetic musks ***Galaxoide*** and ***Tonalide***, highest in WWTP sludge. The occurrence of these synthetic musks at HIAS was twice that of VEAS, possibly due to different treatment processes. The levels in fish filet from Lake Mjøsa may also support this finding. These compounds were also discovered in rat livers and indoor dust, both in fairly high levels.

Screening of PFCs showed that ***perfluorohexane sulfonate*** (***PFHxS)*** was the most abundant compound found in wastewater passive samplers. The highest levels of PFHxS in biota was seen in rat livers; in the marine environment only trace amount was recorded in both cod liver, common crabs and periwinkle.

The general level of PCB-7 found in the project was 5-42 µg/kg d.w., exceeding to the extreme of more than 5000 µg/kg d.w. on average in cod livers. It could be suggested that liver concentration of PCB-7 was related to fish size, due to long time exposure and accumulation. However, liver concentration and fish size have showed a poor correlation in literature (Gewurtz, Bhavsar and Fletcher, 2011).

A total of 11 compounds were targeted in a full scan LC - full scan analysis by HRMS/DIA method, combined with a data independent MS/MS. This was performed on most matrices. The most noticeable compound was the oligomeric hindered amine UV light stabilizer ***poly(4-hydroxy-2,2,6,6-tetra methyl-1-piperidine ethanol-alt-1,4-butanedioic acid***). This compound was found in wastewater, with broad appearance in biota, mostly in rat livers, cod livers, crabs and periwinkles, freshwater fish filets, including the juvenile fish samples. The latter indicating recent exposure.

PNEC values (Predicted No Effect Concentration) for 21 of the 80 substances were found in the ECHA database. These values were compared with the measured environmental concentration (MEC). The MEC/PNEC ratio were calculated based on PNECs for freshwater, marine water, sediment and passive samplers. The MEC water concentrations analysed were from the outlets of the WWTPs. The MEC/PNEC relationships were calculated for 13 water (freshwater and marine), 16 sediment samples and 13 passive samplers. Both freshwater and marine ratios were calculated. MEC/PNEC>1 was calculated for only two of the substances (***1H-benzotriazole*** and ***methyl-1H-benzotriazole***). This was due to the lower detection limit

(LOD) for the sediment analysis being higher than PNEC. However, the substances were not detected in the sediment samples.

The additional screening included 48 pharmaceuticals and most of them were found on various levels in the different matrices. The four most frequent pharmaceutical groups included analgetica (pain killers), antidepressants, antihypertensia (blood regulators) and antibiotics.

# Sammendrag

I Miljødirektoratets screeningprogram for 2016 del 2 ble tilstedeværelsen av ca. 50 mistenkte PBT-stoffer målt i prøvemateriale fra mange forskjellige steder utendørs og innendørs. Flere av disse stoffene ble funnet i kommunalt avløpsvann og avløpsslam, avrenningsvann fra deponi, sediment, terrestrisk og akvatisk biota og i innendørs støv, hentet fra steder i og ved Oslofjorden, Mjøsa og i og i nærheten av Oslo by.

Blant de heteroaromatiske gruppene ble benzotriazoles/benzothiazols (BTRs/BTHs) funnet å være vidt utbredt i miljøet, med moderate til høye konsentrasjoner i avløpsvann og slam fra begge de to avløpsrenseanleggene og fra deponiet som var med i undersøkelsen. Ekstreme konsentrasjoner, på µg/L-nivå, ble målt for stoffet ***2(3H)-benzothiazolone*** i sigevann fra ROAFs deponi. Dette stoffet, brukt ved produksjon av gummidekk, ble også funnet i en enkelt prøve av sediment i Mjøsa, nært utslippspunktet fra HIAS avløpsrenseanlegg. Generelt ser det ut til at kommunalt avløpsvann er en stor kilde til BRR-er og BTH-er, som delvis ender opp i avløpsslammet.

Det kan være slik at 30–30 % av de oppløste heteroaromatiske stoffene fra avløpsvannet slippes ut i det ytre miljøet, og blir tilgjengelig for bioakkumulasjon. Dette kan forklare den observerte tilstedeværelsen av ***benzothiazole*** som var til stede i alle biotaprøvene (lever og filet fra torsk, abbor og annen fisk, krabber, snegl og lever fra rotte), med en gjennomsnittlig konsentrasjon (n=35) på 216 µg/kg tørrvekt. Videre var ***1H-benzotriazole*** et dominerende stoff i kloakkrotter (opptil 9,9 mg/kg). I tillegg ser strandsnegl ut til å være et bedre prøvemateriale for å illustrere bioakkumulasjon av BTR-er/BTH-er i det marine miljøet enn torskelever, som tradisjonelt er brukt for slik undersøkelse.

Bare to stoff i gruppen UV-filter ble kvantifisert i denne undersøkelsen: ***Homosalate*** og ***Ensulizole*** eller ***2-Phenyl-5-benzimidazole sulfonic acid***. ***Ensulizole*** ble funnet I konsentrasjoner av 450–570 ng/l i innløpet til VEAS avløpsrenseanlegg (passiv prøvetaking) og 230–500 ng/l i utslippet, noe høyere i utslippet fra HIAS (570–780 ng/l), og høyest konsentrasjon i sigevannet fra ROAF ((820–1400 ng/l). ***Homosalate*** ble bare målt i sigevann fra deponiet, men da i ganske høye konsentrasjoner, mellom 7 700 og 10 000 ng/l, og i slam fra begge avløpsrenseanleggene, i konsentrasjoner av 2230–2930 µg/kg tørrvekt (VEAS) and 1490–2210 µg/kg tørrvekt (HIAS).

En åpenbar bioakkumulasjon av ***Homosalate*** i ble observert i lever fra abbor, ved at stoffet ble målt i konsentrasjoner av 620–5800 µg/kg tørrvekt i disse prøvene. Det ble ikke registrert noen bioakkumulasjon av de tu UV-filtrene i det marine miljøet eller i rotter. Men ***Homosalate*** ble funnet i innendørs støv fra to forskjellige lokaliteter, i konsentrasjoner av 270–590 µg/kg tørrvekt.

Andre screenede PBT-stoffer som gjennomgående ble funnet i små konsentrasjoner var blant annet den bromerte flammehemmeren ***Tetrabromobisphenol A bis (dibromopropyl ether)***. Dette stoffet ble funnet I avløpsvann fra VEAS og i sediment fra begge resipientene. Videre ble antioksidanter innen alkyl-fenol-gruppen kvantifisert i de screenede prøvene, blant andre

***AO246*** eller ***2,2'-methylenebis(6-tert-butyl-4-methylphenol)*** ***AO2246*** eller ***4,4'-methylenebis(2,6-di-tert-butylphenol)*** og ***AO22E46*** eller ***4,4'-butylidenebis(6-tert-butyl-3-methylphenol)***. Bare ***AO246*** ble funnet i utløpsvannet fra de to renseanleggene og i avrenningsvannet fra deponiet. Det at stoffene ikke ble funnet ved passiv prøvetaking indikerer spredning i en partikulær fase. Tilstedeværelse i avløpsslammet av alle tre stoffene nevnt ovenfor støtter denne antakelsen. En størrelsesorden høyere (summert konsentrasjon) ble målt i avrenningsvann fra ROAF, noe som indikerer at deponier er en viktig kilde for tilførsel av disse stoffene til det ytre miljøet.

En virkning av utslipp av disse antioksidantene til akvatisk miljø var høy konsentrasjon i nesten 70 % av torskeleverne, og små konsentrasjoner i strandsnegl. I tillegg ble disse antioksidantene akkumulert i abbor i ferskvann.

To av de prioriterte stoffene som hører til gruppen klorinerte pesticider ble funnet i avløpsslam og i avrenningsvann fra deponi. Små mengder ***dichlorophene bis(5-chloro-2-hydroxyphenyl)methane*** ble funnet i deponiavrenningsvann, og ***chloroxylenol*** ble funnet i avløpsslam fra begge renseanleggene.

Grupper med tilleggsstoffer i denne screeningen inkluderte blant annet muskstoffer, PFC-er og PCB-er. Stoffer som gjennomgående var til stede i prøvematerialet var muskstoffene ***Galaxoide*** og ***Tonalide***, med høyest konsentrasjoner i avløpsslammet. Konsentrasjon av disse stoffene ved HIAS var dobbelt så stor som ved VEAS, mulig som følge av ulike renseprosesser ved anleggene. Nivåene i fiskefilet fra Mjøsa kan støtte denne antakelsen. Disse stoffene ble også funnet i rottelever og i innendørs støv, med relativt høye nivåer i begge disse prøvetypene.

Screening av PFC-er viser at ***perfluorohexane sulfonate*** eller ***PFHxS*** var det stoffet med høyest tilstedeværelse i de passive prøvetakerne plassert i avløpsvann. Det høyeste nivå i biota ble sett i rottelever, mens stoffet i det marine miljøet ble funnet i små mengder både i torskelever, strandkrabbe og strandsnegl.

Nivået av PCB-7 ble gjennomgående målt til 5–42 µg/kg tørrvekt, men med økning til ekstreme verdier i torskelever, hvor gjennomsnittskonsentrasjonen var høyere enn 5000 µg/kg tørrvekt. Det er antydet at leverkonsentrasjon av PCB-7 kan ha sammenheng med kroppsvekt, pga. langtids eksponering og akkumulering. Men her hadde leverkonsentrasjon og fiskestørrelse dårlig korrelasjon (Gewurtz, Bhavsar and Fletcher, 2011).

Totalt 11 stoff ble målt ved den utførte full scan LC – full scan analyse med HRMA/DIA-metode, kombinert med en datauavhengig MS/MS, utført på de fleste matriksene. Det mest interessante stoffet var UV-stabilisatoren ***poly(4-hydroxy-2,2,6,6-tetra methyl-1-piperidine ethanol-alt-1,4-butanedioic acid***). Dette stoffet ble funnet i avløpsvann, og hadde bred tilstedeværelse i biota: i de fleste rotteleverne, torskeleverne, krabbene, strandsneglene og i fiskefiletene fra ferskvann, inkludert prøvene fra juvenil fisk. Det at stoffet ble funnet i juvenil fisk indikerer nylig eksponering.

PNEC-verdier (Predicted No Effect Concentration, forventet nulleffektkonsentrasjon) for 21 av de 80 stoffene ble funnet i ECHA-databasen. Disse verdiene ble sammenlignet med målte miljøkonsentrasjoner (MEC = measured environmental concentration). MEC/PNEC-forholdet ble beregnet ut fra PNEC for ferskvann, sjøvann, sediment og passive prøvetakere. MEC-vannkonsentrasjonene som ble brukt, var fra renset utløpsvann fra avløpsrenseanlegg. MEC/PNEC-forholdet ble beregnet for 13 vannprøver, 16 sedimentprøver og 13 passive

prøvetakere. Både ferskvanns- og sjøvannsforhold ble beregnet. MEC/PNEC>1 ble beregnet for kun to av stoffene (***1H-benzotriazol*** og ***metyl-1H-benzotriazol***). Dette skyldtes at den nedre deteksjonsgrensen (LOD) for sedimentanalysene var høyere enn PNEC. Stoffene ble imidlertid ikke påvist i sedimentprøvene.

Tilleggsstoffene i screeningen inkluderte 48 farmasøytiske stoffer, og de fleste av dem ble funnet i ulike nivå i de forskjellige matriksene. Gruppert ut fra medisinsk funksjon, og hver gruppe summert, de fire gruppene som ble mest funnet i prøvematerialet var smertestillende, antidepressiva, blodregulerende midler og antibiotika.

# 1. Background and introduction

## 1.1 General

The Norwegian Environment Agency selected several groups of compounds for target analysis for inclusion in Part 2 of its annual screening programme in 2016. The compound groups included 80 prioritized compounds within heteroaromatics (BTRs and BTHs derivatives), UV-filters, brominated flame-retardants (BFRs), phenols- and polyphenols, various fluorinated compounds along with perfluoroalkyl acids, sulfonic acids and phosphate esters (PAPs) and other selected PBT compounds were suggested. Additionally 125 more traditionally known PBT and POPs were added in the screening, including PFCs, PCBs, VOCs, SVOCs, pesticides, musk compounds and numerous pharmaceuticals.

The objective of the project was to screen the occurrence of these chemicals in the Norwegian marine and freshwater environments, as well as ambient air with particular focus on their potential sources. The results on the occurrence of new potential harmful chemicals in the Norwegian environment presented in this report will contribute to future national or international legislation on an EU (REACH) or global level (UNEP).

## 1.2 Compounds of interest

The target for the 2016 screening programme is a heterogeneous group of suspected PBT and other selected compounds consisting of 80 prioritized and 125 supplementary compounds. Due to a lack of proper analytical standards, approximately 40 of these compounds were quantified, and 11 compounds were surveyed by suspect screening. The compounds of interest summarized in the following chapters are categorized according to chemical structure and/or application. Some of the substances are applicable to more than one category, but are only included once. ID-numbers presented in this report corresponds to internal ID-numbers in the attached results table.

The Log $K_{ow}$-values are collected from the web site *www.chemSpider.com* or calculated from US EPA Epi Suite (given in parenthesis in Table 1–8).

### 1.2.1 Heteroaromatic compounds

Heteroaromatic compounds are aromatic compounds, which contain heteroatoms (e.g. O, N, S) as part of the cyclic conjugated system. Heterocyclic compounds are widely distributed in nature and are essential to life in various ways. The substances included in this screening are all man-made.

#### Benzotriazoles

Benzotriazoles (BTRs) are primarily used as corrosion inhibitors for copper and copper alloys. They are additionally used as anticorrosive agents in aircraft de-icing and antifreeze fluids, in addition to dishwasher detergents.

UV-substances belonging to the benzotriazole group are used to protect various types of plastic and paints against radiation from the sun. Studies have shown that these substances are only slightly biodegradable. The compounds can be both toxic and bio accumulative. Another main use of benzotriazoles are in various photographic applications (Table 1).

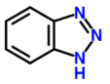
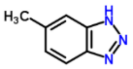
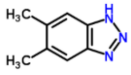
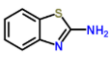
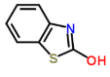
### Benzothiazoles

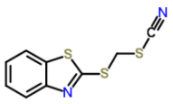
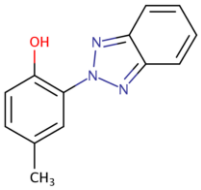
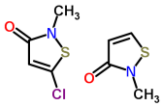
Benzothiazole have varied biological activities and are of great scientific interest. They are widely found in bio-organic and medicinal chemistry with application in drug discovery. Benzothiazole moieties are part of the compound group showing numerous biological activities such as anti-microbial, anti-cancer, anthelmintic, anti-diabetic activities, etc. They are also used in industrial applications such as anti-oxidants and vulcanisation accelerators (Table 1).

### Isothiazolinones

Methylisothiazolinone is a powerful synthetic biocide and preservative within the group of isothiazolinones, which is used in numerous personal care products and a wide range of industrial applications (Table 1).

**Table 1. Heteroaromatic compounds selected for the screening programme 2016. ID-numbers corresponds to internal ID-numbers in the attached result table.**

| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 28 | 1H-Benzotriazole |  | 95-14-7 | Benzo-triazole/ BTR | Photo emulsion, corrosion inhibitor, drug precursor, antifreeze, heat/cool systems, hydraulic fluid, vapour phase inhibitor | 0,80 - 1.61 |
| 29 | Methyl-1H-benzotriazole/ Tolyltriazole |  | 29385-43-1 | Benzo-triazole/ BTR | A potential labelled nitrification inhibitor of urea fertilizer | (1.71) |
| 30 | 4- and 5-methyltriazole |  | 136-85-6 | Benzo-triazole/ BTR | A potential labelled nitrification inhibitor of urea fertilizer | 0,68 - 1.71 |
| 31 | Xylyltriazole or 5,6-dimethyl-1H-benzotriazole |  | 4184-79-6 | Benzo-triazole/ BTR | | (2,26) |
| 32 | Benzothiazole |  | 95-16-9 | Benzo-thiazole/ BTH | Organic synthesis | 1.12 - 2.47 |
| 33 | 2-Benzothiazolamine |  | 136-95-8 | Benzo-thiazole/ BTH | Preparation of azo dyes | 0.62 - 2.00 |
| 34 | 2(3H)-Benzothiazolone |  | 934-34-9 | Benzo-thiazole/ BTH | Tire rubber manufacturing | 0.89 - 2.59 |

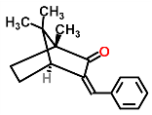
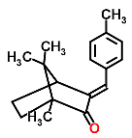
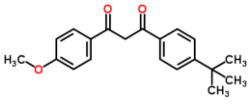
| | | | | | | |
|---|---|---|---|---|---|---|
| 35 | 2-(Thiocyanatomethyl-thio-benzothiazole)<br><br>(TCMTB) |  | 21564-17-0 | Benzo-thiazole/ BTH | Antibacterial, biocide, fungicide, nematicide | 2.13 - 3.12 |
| 36 | Drometrizole or 2-(2H-benzotriazol-2-yl)-4-methyl-phenol |  | 2440-22-4 | Benzo-triazole/ BTR | UV light absorber | 1.67 - 3.27 |
| 37 | Methylisothia zolinone (MI or MIT) |  | 2682-20-4 | Isothiazo linones | Biocide, cosmetics | -0.83 - 0.75 |
| 38 | Methylisothia zolinone (CMI/MI) |  | 55965-84-9 | Isothiazo linones | Biocide, cosmetics | -0,83 - -0,34 |

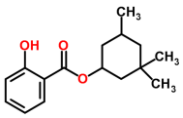
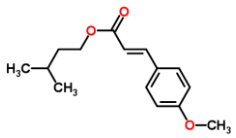
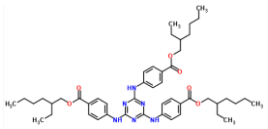
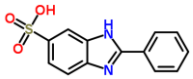
### 1.2.2 UV-filters

A selection of organic UV-filters are shown in Table 2. Organic UV-filters are used in personal care products and cosmetics such as sunscreen to protect skin from UV radiation. The organic UV-filter works by absorbing the UV radiation.

None of the listed UV-filters below is expected to be readily biodegradable. Except for ensulizole, the substances are lipophilic thus indicating that they may have potential for bioaccumulation.

**Table 2. Organic UV-filters selected for the screening programme 2016.**

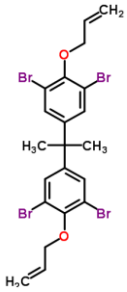
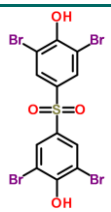
| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 39 | 3 Benzylidene camphor<br><br>(3-BC) |  | 15087-24-8 | Cinnamate | UV-filter | (5.37) |
| 40 | 4-Methylbenzylidene camphor<br><br>(4-MBC) |  | 36861-47-9 | Cinnamate | UV-filter | 3.63 - 5.47 |
| 41 | Butyl methoxy-dibenzoylmethane<br><br>(BDM, Avobenzone) |  | 70356-09-1 | Debenzoyl-methane | UV-filter | 3.56 - 4.75 |

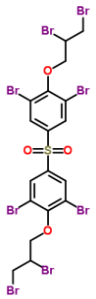
| | | | | | | |
|---|---|---|---|---|---|---|
| 42 | Homosalate<br><br>(HS) |  | 118-56-9 | Benzoyl-methane | UV-filter | 3.92 - 6.16 |
| 43 | Isoamyl p-methoxycinnamate<br><br>(IMC) |  | 71617-10-2 | Cinnamate | UV-filter | 2.73 - 4.41 |
| 44 | Phenylbenzimidazole sulphonic acid<br><br>(PBS) |  | 88122-99-0 | | UV-filter | (17.05) |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid/Octyl triazone<br><br>(Ensulizole) |  | 27503-81-7 | Benzo-phenone | UV-filter | -1.14 - 1.19 |

### 1.2.3 Brominated flame retardants

Table 3 summarizes the compounds labelled as brominated flame-retardants (BFR). The substances include various brominated bisphenol A and bisphenol S substances. The BFRs all have high log $K_{ow}$ and are expected to be persistent and bioaccumulate in the environment.

**Table 3. Brominated flame retardants selected for the screening programme 2016.**

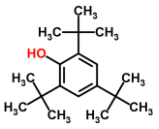
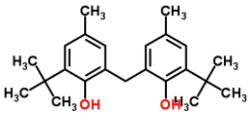
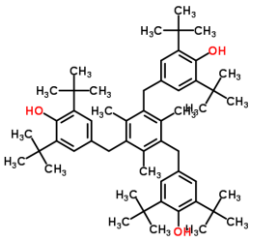
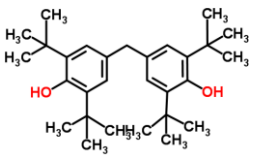
| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether)<br><br>(TBBPA/S derivates) |  | 21850-44-2 | BFR | Flame retardant, UV-stable | 6.21 - 11.5 |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether<br><br>(TBBPA/S derivates) |  | 25327-89-3 | BFR | Flame retardant, UV-stable | 7.05 - 10.0 |
| 48 | 4,4'-Sulphonylbis (2,6-dibromophenol)<br><br>(TBBPA/S derivates) |  | 39635-79-5 | BFR | Flame retardant, UV-absorber | 3.53 - 6.54 |

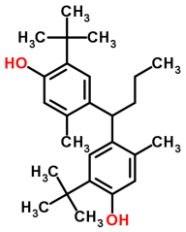
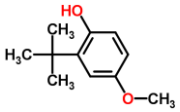
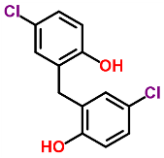
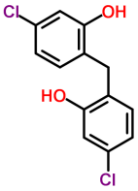
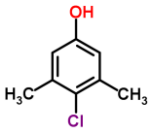
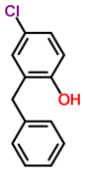
| | | | | | | |
|---|---|---|---|---|---|---|
| 49 | Octabromobisphenol-S<br><br>(TBBPA/S derivates) |  | 42757-55-1 | BFR | Flame retardant | 6.17 - 9.52 |

## 1.2.4 Phenols- and polyphenols

The investigated phenols, polyphenols and chlorinated phenols are summarized in Table 4. The substances have anti-oxidizing properties and the applications include cosmetics, fuel additives, plastic stabilizers, pharmaceuticals and biocides. All the substances have log $K_{ow}$ >3 and can be expected to bioaccumulate.

**Table 4. Phenol- and polyphenols selected for the screening programme 2016.**

| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 50 | 2,4,6-tri-tert-butylphenol (BHA) |  | 732-26-3 | | Cosmetics | 5.44 - 6.39 |
| 51 | 2,2′-Methylenebis(6-tert-butyl-4-methylphenol) (AO 2246) |  | 119-47-1 | | Antioxidant/fuel additive | 5.32 - 7.97 |
| 52 | 4,4',4"-[(2,4,6-Trimethylbenzene-1,3,5-triyl)tris(methylene)]tris(2,6-di-tert-butylphenol)<br><br>(DTBSBP) |  | 1709-70-2 | Phenols | Stabilizator for PVC and plastic | 8.28 - 17.2 |
| 53 | 4,4'-Methylenebis(2,6-di-tert-butylphenol)<br><br>(AO 2246) |  | 118-82-1 | Phenols | Fuel add | 6.23 - 8.99 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 54 | 4,4'-(Butane-1,1-diyl)bis(2-tert-butyl-5-methylphenol)<br><br>(AO 22E46) |  | 85-60-9 | Phenols | Antioxydant/fuel additive | 6.57 - 9.09 |
| 55 | 2-tert-Butyl-4-methoxyphenol<br><br>(BHT-guinol) |  | 121-00-6 | | Pharma | 3.20 - 3.54 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl) methane)<br><br>(Chlorophene) |  | 97-23-4 | | Anticestodal, fungicide, germicide, antimicrobial agent | 3.16 - 4.53 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol)<br><br>(Chlorophene) |  | 1215-74-3 | | | 3.07 - 4.34 |
| 61 | Chloroxylenol<br><br>(Chloroxylenol) |  | 88-04-0 | | Biocide, cosmetics, antiseptic and disinfectant | 2.23 - 3.29 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol)<br><br>(Dichlorophene) |  | 120-32-1 | | Biocide, cosmetics | 3.04 - 4.26 |

## 1.2.5 Fluorinated compounds

Perfluorinated and/or polyhalogenated substances have many different uses and applications. Fluorocarbons and their derivatives can be used as fluoropolymers, refrigerants, solvents and anesthetics. Other examples of use is as a substitute for insulating oil in high voltage electronics (e.g. perfluorooctane) and in deacidification of paper as a medium carrying powdered magnesium oxide (e.g. perfluoroheptane). Other uses include in medicine, such as perfluamine, which is used as a blood substitute or as diagnostic agent.

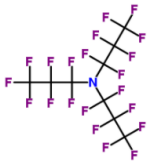
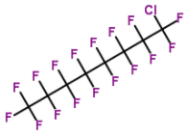
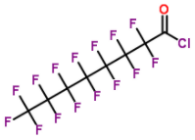
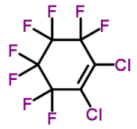
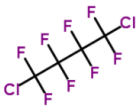
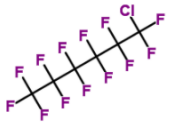
The perfluorinated organic chemicals are defined as a chemically related group of substances containing only carbon, fluorine and at most one oxygen and/or nitrogen atom. All of these chemicals have similar physicochemical properties including high vapour pressure and low water solubility relative to the hydrocarbon analogues (e.g., hexanes vs. perfluorohexanes), and also lack any chemically reactive groups. The perfluorinated organic compounds are fully fluorinated, meaning that fluorine, rather than hydrogen, is bound to all carbon atoms in the

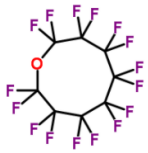
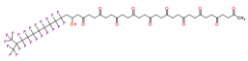
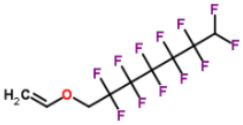
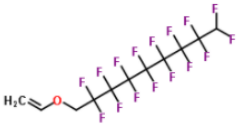
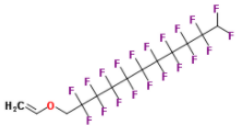
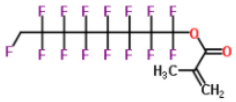
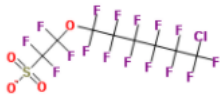
molecule. Fluorine is the most electronegative of the elements. This electronegativity is expected to dominate over all other aspects of substance chemistry and is the underlying basis for similarity of substances in this category.

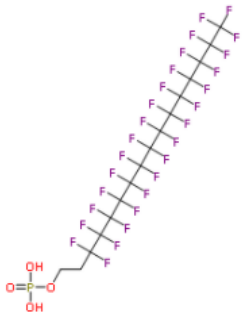
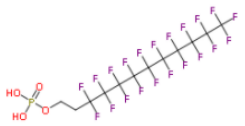
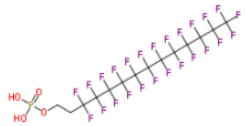
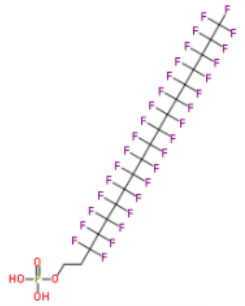
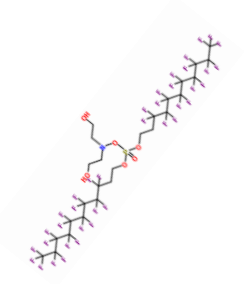
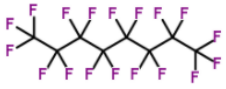
Table 5 has listed some of the fluorinated substances investigated in this screening project. More fluorinated substances are discussed in Chapter 1.2.6 and 1.2.7.

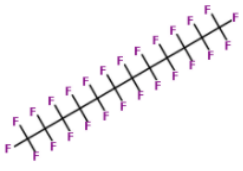
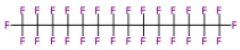
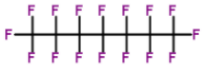
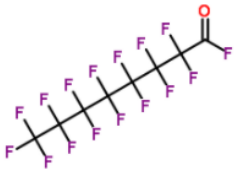
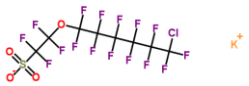
Some of the substances also have substituted one or more fluorine atoms with chlorine atoms. These substances may be formed as a by-product in the synthesis of the perfluorinated substances. Dehydrochlorinations of chlorinated fluoroalkenes are often used for synthesizing fluoroalkanes. The elimination of hydrogen fluoride only occasionally takes place in preference to that of hydrogen chloride.

**Table 5. Per- and poly-fluorinated compounds selected for the screening programme 2016.**

| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 1 | Perfluorotripropylamin<br><br>(Perfluamine) |  | 338-83-0 | N-PFC | Blood substitute | 4.69 - 7.08 |
| 2 | 1-Chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8 -heptadeca-fluorooctane |  | 307-33-5 | Cl-PFC | | 3.60 - 8.26 |
| 3 | Pentadeca-fluoro-octanoyl chloride |  | 335-64-8 | Cl-PFC | | 3.00 - 6.00 |
| 4 | 1,2-Di-chloro-octa- fluoro-cyclohex-1-en |  | 336-19-6 | Cl-PFC | | 4.05 - 5.96 |
| 5 | 1,4-Di-chloro-octa- fluoro-butane |  | 355-24-8 | Cl-PFC | | 4.17 - 4.95 |
| 6 | 1-Chloro-perfluoro-hexane |  | 355-41-9 | Cl-PFC | | 3.71 - 6.33 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | Per-fluoro-oxacyclononan |  | 1978-24-1 | Keton-PFC | | 3.02 - 4.82 |
| 8 | 33,33,34,34,35,35,36,36, 37,37,38,38,39,39 ,40,40, 41,42,42,42- Icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone |  | 93776-10-4 | Keton-PFC | | |
| 9 | Ethyl per-fluoro-heptanoate |  | 41430-70-0 | Ether-PFC | | 3.64 - 6.11 |
| 10 | 7-Ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6 -dodecafluoroheptane |  | 78971-81-0 | Ether-PFC | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7, 7,8,8-Hexadecafluoro-9-(vinyloxy)nonane |  | 71726-31-3 | Ether-PFC | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7, 7,8,8,9,9,10,10-Icosafluoro-11-(vinyloxy)undecane |  | 94231-58-0 | Ether-PFC | | 4.65 - 9.42 |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat |  | 3934-23-4 | Ether-PFC | | 3.29 - 7.98 |
| 14 | F-53 Potassium 1,1,2,2-tetrafluoro-2- (per-fluoro-hexyloxy)-etan sulfonate | | 754925-54-7 | PFC | | |
| 15 | F 53B Potassium 2-(6-chloro- 1,1,2,2,3,3,4,4,5, 5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonate |  | 73606-19-6 | PFC | | |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) |  | 62037-80-3 | PFC | | |

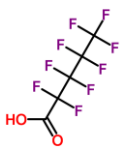
| | | | | | | |
|---|---|---|---|---|---|---|
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nonacosafluorodihydrogenfosfat (9CI) |  | 94200-54-1 | PFC/ PAPs | | 6.24 - 13.2 |
| 18 | 1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogen phosphate (9CI) |  | 57678-05-4 | PFC/PAPs | | 4.70 - 9.38 |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosa fluoro-dihydrogen phosphate (9CI) |  | 57678-07-6 | PFC/PAPs | | (8,34) |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18, 18-tritriacontafluorodihydrogen phosphate |  | 94200-55-2 | PFC/PAPs | | 6.91 - 9.39 |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,17-nonadecafluoro-3- (2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-nona-decafluoroundecyl)oxy]-5-oxide<br><br>(9CI) |  | 101896-22-4 | PFC/PAPs | | 8.44 - 14.8 |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-Octadecafluorooctane<br><br>(Perfluorooctane) |  | 307-34-6 | PFC/ F-alkan? | Substitute for insulating oil in high voltage electronics. Breathable fluid in partial liquid ventilation | 3.76 - 7.95 |

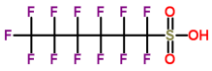
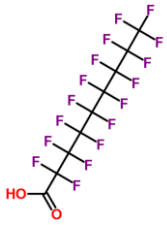
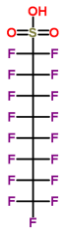
| | | | | | | |
|---|---|---|---|---|---|---|
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-Hexacosafluorododecane<br><br>(Perfluorododecane) |  | 307-59-5 | PFC/ F-alkan? | | 4.50 - 11.8 |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-Triacontafluorotetradecane |  | 307-62-0 | PFC/ F-alkan? | | 4.44 - 13.8 |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7- Hexadecafluoro-heptane<br><br>(Perfluoroheptane) |  | 335-57-9 | PFC/ F-alkan? | Deacidification of paper as a medium carrying powdered magnesium oxide | 3.96 - 6.99 |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-Pentadecafluorooctanoylfluoride<br><br>(Pentadecafluorooctanoyl fluoride) |  | 335-66-0 | PFC/ F-alkan? | | 3.06 - 5.43 |
| 27 | 6:2 Fluorotelomermercapto alkylamidosulphonate<br><br>(FTSAs) |  | 73606-19-6 | PFC | | |

## 1.2.6 Perfluoroalkyl acids and sulfonic acids

The perfluorinated acids are stronger by several pKa units compared with their corresponding carboxylic acids. They exhibit great hydrophobic character and the longer chain perfluorinated carboxylic acids (e.g. with five to nine carbons) are useful fluorosurfactants and emulsifiers used in the production of Teflon and related fluoropolymers. PFOS and PFOA are some of the most well-known perfluorinated environmental pollutants.

**Table 6. Perfluoroalkyl acids and sulfonic acids selected for the screening programme 2016.**

| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 70 | Nonafluoropentanoic acid<br>(PFPeA) |  | 2706-90-3 | | | 2.78 - 3.40 |
| 71 | Undecafluorohexanoic acid | | 307-24-4 | | | 2.64 - 4.37 |

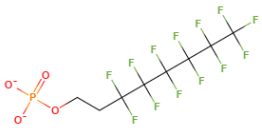
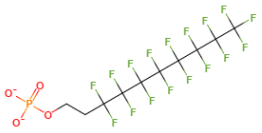
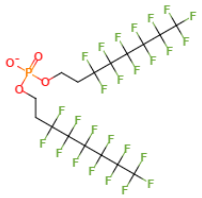
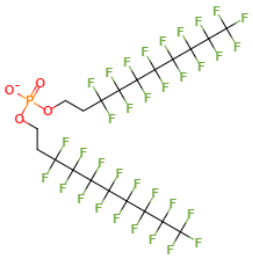
| | | | | | | |
|---|---|---|---|---|---|---|
| | (PFHxA) |  | | | | |
| 72 | Tridecafluoroheptanoic acid<br><br>(PFHpA) |  | 375-85-9 | | | 3.37 - 5.33 |
| 73 | Tridecafluorohexane-1-sulfonic acid<br><br>(PFHxS) |  | 355-46-4 | | firefighting foams, paints, carpets, textiles, wood preservatives, electronics and non-stick cookware | 2.18 - 4.34 |
| 74 | Pentadecafluorooctanoic acid<br><br>(PFOA) |  | 335-67-1 | | Teflon, Firefighting foam | 3.75 - 6.30 |
| 75 | Heptadecafluorononanoic acid<br><br>(PFNA) |  | 375-95-1 | | Surfactant, biodegradation product of 8:2 fluorotelomer alcohol | 3.26 - 7.27 |
| 76 | Heptadecafluorooctane-1-sulfonic acid<br><br>(PFOS) |  | 1763-23-1 | | Fabric protector, stain repellents, Firefighting foam | 2.32 - 6.28 |

### 1.2.7 Polyfluoroalkyl phosphate esters (PAPs)

Mono- and di-polyfluoroalkyl phosphate esters (mono- and di-PAPs) are used to water-proof and grease-proof food packaging materials, and these chemicals are known precursors to perfluoroalkyl carboxylic acids (PFCAs).

PAPs have the ability to degrade into persistent per-fluoralkyl and poly-fluoroalkyl substances (PFCAs). The PAPs are not water soluble and are expected to bioaccumulate and not to biodegrade (Table 7).

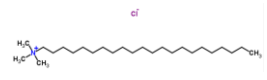
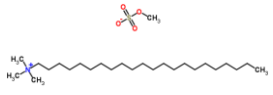
**Table 7. Perfluoroalkyl esters (PAPs) selected for the screening programme 2016.**

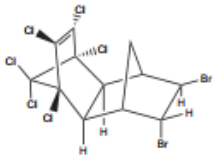
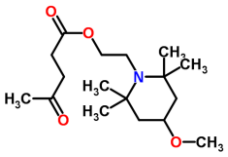
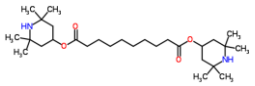
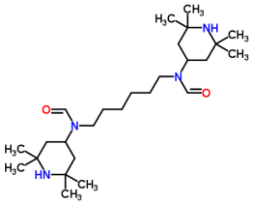
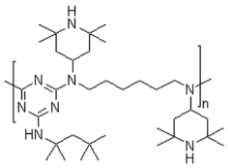
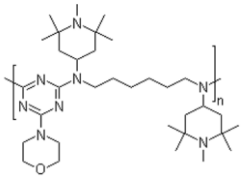
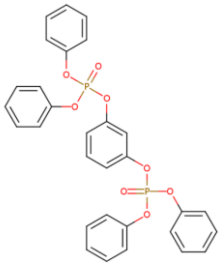
| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 77 | 6:2 Perfluoroalkyl phosphate monoester<br><br>(6:2 monoPAP) |  | - | | Food packing | (4,33) |
| 78 | 8:2 Perfluoroalkyl phosphate monoester<br><br>(8:2 monoPAP) |  | (57678-03-2) | | Food packing | (5,66) |
| 79 | 6:2 Perfluoroalkyl phosphate diester<br><br>(6:2 diPAP) |  | - | | Food packing | (9,42) |
| 80 | 8:2 Perfluoroalkyl phosphate diester<br><br>(8:2 diPAP) |  | - | | Food packing | (12,10) |

## 1.2.8 Other compounds

The rest of the other prioritized compounds are shown in Table 8. These are substances used in cosmetics, light stabilizers, flame retardants, etc.

**Table 8. Other compounds selected for the screening programme 2016.**

| ID | Compound | Structure | CAS no. | Function | Use/occurrence | Log $K_{ow}$ |
|---|---|---|---|---|---|---|
| 56 | Behentrimonium chloride |  | 17301-53-0 | | Cosmetics | |
| 57 | Behentrimonium methosulfate |  | 81646-13-1 | | Cosmetics | 3.90 - 4.25 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 58 | Dibromoaldrin |  | Not available | | EFRs Experimental Flame Retardants | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) |  | 65447-77-0 | | Sterically hindered amine light stabilizers | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate |  | 52829-07-9 | | Sterically hindered amine light stabilizers | 3.89 - 6.50 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide |  | 124172-53-8 | | Sterically hindered amine light stabilizers | 2.90 - 3.98 |
| 66 | (Poly[[6-[(1,1,3,3-tetramethylbutyl)amino]-s-triazine-2,4-diyl]-[(2,2,6,6-tetramethyl-4-piperidyl)imino]-hexamethylene-[(2,2,6,6-tetramethyl-4-piperidyl)imino])<br><br>(Chimassorb 9441) |  | 71878-19-8 | | Sterically hindered amine light stabilizers | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine |  | 193098-40-7 | | Sterically hindered amine light stabilizers | |
| 68 | 1,3-Propandiamin N,N"-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | | 136504-96-6 | | Sterically hindered amine light stabilizers | |
| 69 | Resorcinol bis(bifenylfosfat)<br><br>(PBDPP) |  | 57583-54-7 | PFAS | Phosphor-phosphate based flame retardent | 3.91 - 7.41 |

# 2. Materials and methods

## 2.1 Sampling

### 2.1.1 General

The sampling for the screening programme was carried out at four different areas/localities:

1) VEAS wastewater treatment plant and its adjacent recipient Oslofjorden, mostly close to the discharge point from WWTP, about 18 km southwest of Oslo (Figure 1)

2) Three different buildings in the town of Oslo – dust and indoor air samples

3) ROAF landfill and waste treatment plant, about 21 km northeast of Oslo

4) HIAS wastewater treatment plant and adjacent recipient Lake Mjøsa close to the discharge point from WWTP (Figure 2).

The map coordinates for most of the sampling places are shown in Table 9. If other information is not given, the sampling was performed by COWI personnel.

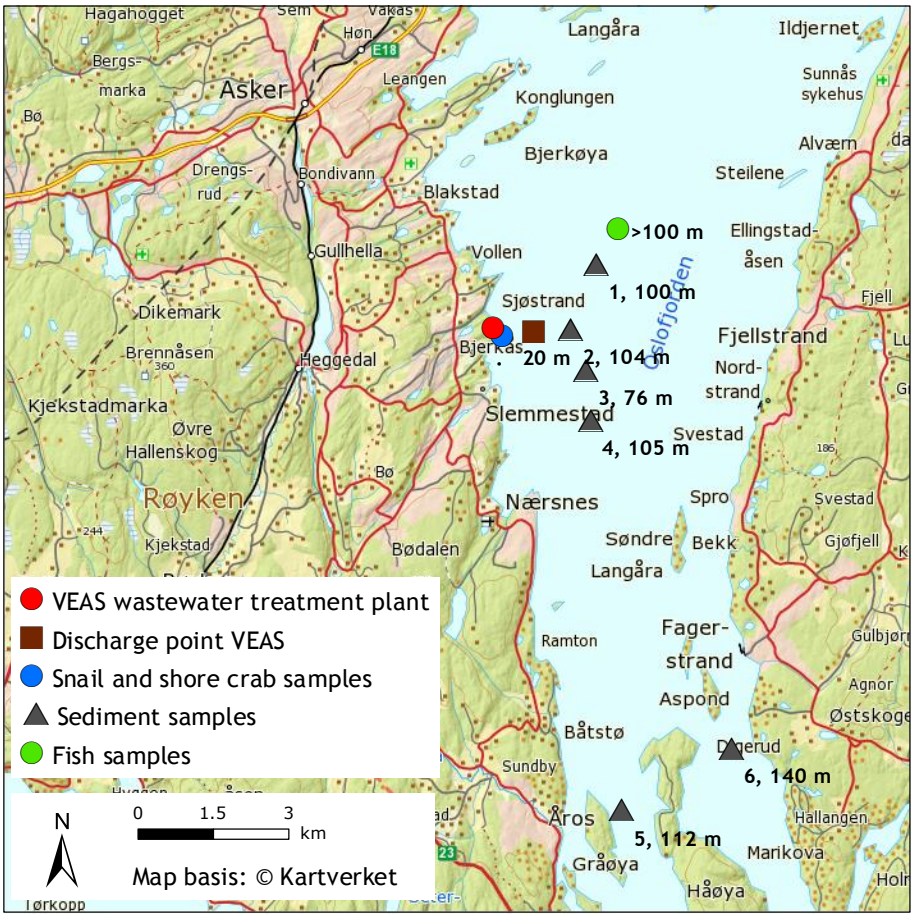



*Figure 1. Map showing sampling sites for wastewater, sludge, snails, shore crabs, sediment and fish in or nearby Oslofjorden. For sediment the station number is shown by each station, and for discharge point, sediment and fish the water depth (m) is shown.*

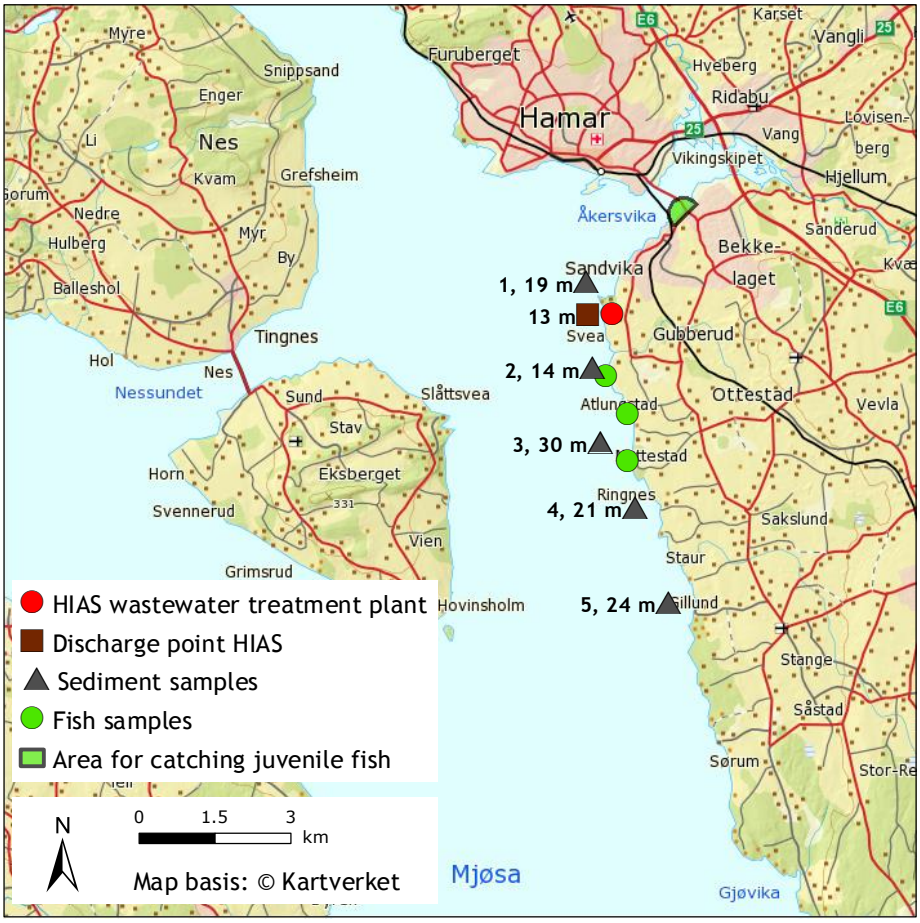



*Figure 2. Map showing sampling sites for wastewater, sludge, sediment and fish in or nearby Lake Mjøsa. For sediment samples the station number is shown by each station, and for discharge point and sediment the water depth (m) is shown.*

## Table 9. Map coordinates for most of the different sampling sites, and water depth (m) for some of the sites.

| Site | UTM32 Euref89 east | UTM32 Euref89 north | Depth (m) |
|---|---|---|---|
| **Fish Oslofjorden** | 586666 | 6631342 | >100 |
| **Fish Lake Mjøsa 1** | 613104 | 6737353 | - |
| **Fish Lake Mjøsa 2** | 613547 | 6736603 | - |
| **Fish Lake Mjøsa 3** | 613543 | 6735680 | - |
| **Snails and shore crab, Oslofjorden** | 584347 | 6629217 | - |
| **VEAS wastewater treatment plant** | 584178 | 6629364 | - |
| **Discharge point VEAS** | 584995 | 6629299 | 40 |
| **HIAS wastewater treatment plant** | 613232 | 6738578 | - |
| **Discharge point HIAS** | 612758 | 6738552 | 13 |
| **ROAF landfill and waste treatment plant** | 615143 | 6654091 | - |
| **Sediment Lake Mjøsa 1** | 612697 | 6739203 | 19 |

| | | | |
|---|---|---|---|
| **Sediment Lake Mjøsa 2** | 612828 | 6737502 | 14 |
| **Sediment Lake Mjøsa 3** | 612989 | 6736026 | 30 |
| **Sediment Lake Mjøsa 4** | 613679 | 6734749 | 21 |
| **Sediment Lake Mjøsa 5** | 614320 | 6732871 | 24 |
| **Sediment Oslofjorden 1** | 586206 | 6630642 | 100 |
| **Sediment Oslofjorden 2** | 585708 | 6629343 | 104 |
| **Sediment Oslofjorden 3** | 586005 | 6628531 | 76 |
| **Sediment Oslofjorden 4** | 586093 | 6627539 | 105 |
| **Sediment Oslofjorden 5** | 586714 | 6619784 | 112 |
| **Sediment Oslofjorden 6** | 588902 | 6621016 | 140 |
| **Air and dust 1,2 and 3** | 3 different buildings in the city of Oslo | | - |

### 2.1.2 Municipal wastewater and runoff water from landfill

**Municipal wastewater from wastewater treatment plants**

Municipal wastewater was collected from the outlet of VEAS and HIAS wastewater treatment plants. The outlet water from VEAS was taken from the outlet of one of the eight process halls. At HIAS the sample was taken from the outlet just before the wastewater leaves the plant.

VEAS is the largest wastewater treatment plant in Norway and is situated at Bjerkås in Asker municipality. The plant receives water from more than 600 000 residents in Bærum, Asker, Oslo, Røyken and Nesodden municipalities. Wastewater is treated mechanically, chemically and biologically (nitrogen removal) before being discharged to Oslofjorden at a depth of 20 m at a distance of around 650 m from the shore. The annual water treatment and discharge from VEAS is 100-110 mill. $m^3$.

HIAS receives wastewater from approximately 52 000 people from the municipalities of Hamar, Løten, Ringsaker, and Stange. The plant is located at Ottestad by Lake Mjøsa with the discharge point at a depth of 13 m into Lake Mjøsa, approximately 225 m from the shore. Wastewater is treated mechanically, biologically (not N removal) and chemically.

Flow proportional samples of the outlet water from VEAS and HIAS were collected over a period of 24 hours (day mix sample) using the plants automatic sampling equipment. This means that sub-samples are collected at intervals depending on the flow rate at the sampling point. The sampling procedure was the same as the plants use for their accredited sampling (ISO17025 and NA Dok 30a). Theses sampling points, equipment, and procedures are approved by *Norsk Akkreditering* to ensure representative samples. At VEAS, water from the day mix sample was transferred to sampling bottles by personnel from VEAS and collected by COWI. At HIAS it was personnel from COWI that transferred water from the day mix sample to the bottles.

The samples were stored at a temperature between 1–5°C during and after sampling. The samples were shipped to the laboratory within 24 hours.

The mix samples were taken during the following periods:

- From Monday 22/8 to Tuesday 23/8
- From Monday 5/9 to Tuesday 6/9
- From Monday 19/9 to Tuesday 20/9

**Run-off water from landfill**

Run-off water from a landfill was collected from ROAF, a land fill site from 1991. On 1 July 2009, the Ministry of the Environment decided to ban the disposal of biodegradable waste, which led to major changes in what could be deposited at the landfill. Today the landfill receives asbestos, solids and sand from waste water treatment plants, concrete contaminated soil, ash/slag from combustion, etc.

The total landfill area at ROAF waste disposal is approx. 2 100 000 $m^3$. Residual volume is approximately 800 000 $m^3$.

ROAF pre-treats the run-off water in two ABR-reactors before it discharges to the municipal sewer system. The water samples were taken from the suckback tank after the reactors.

The samples were taken as day mix samples taken during a period of 24 hours using the plants automatic sampling equipment. Personnel from COWI transferred water from the day mix sample to the bottles and sent them to the laboratory within 24 hours after sampling.

The samples were stored at a temperature between 1–5°C during and after sampling.

**Passive sampling**

Passive samplers were placed in inlet water and outlet water of VEAS and HIAS wastewater treatment plants. At the inlet the samplers were placed after sieving, but before sand trap and any further treatment. At the outlet, the samplers at VEAS were placed at the outlet of the denitrification step in process hall 4, that is, after the biological treatment. At HIAS the outlet samplers were placed at a spot just before the wastewater leaves the plant. In addition, passive samplers were placed in the outlet water from ROAF landfill, in the suckback tank after the reactors. The samplers were placed for two periods of 15 days.

In order to be able to detect all desired substances, two passive samplers were placed at each spot, one with SPMD (*Semi Permeable Membrane Device*) and one with POCIS (*Polar Organic Chemical Integrative Sampler*) membrane (Alvarez *et al.*, 2004). The SPMD were spiked with substances (internal standards) for the lab to calculate the average concentration of the desired substances at the sampling point during the exposure period. In addition, blind tests were done at each spot for each of the sampling periods. The blind test served as a reference at the lab for calibration of the results. At the placing of the membranes, membranes similar to the ones in the water were opened at the sampling sites and exposed to air for 5–10 minutes. The same procedure was followed at the collection of the samplers.

The periods of sampling at the different locations included the following:

- VEAS: August 22nd to September 5th 2016, and September 5th to September19th
- HIAS: August 23rd to September 6th 2016, and September 6th to September 20th
- ROAF: August 22nd to September 5th 2016, and September 5th to September 19th

After each sampling period, the membranes were put back in their original metal containers, and were stored at <-18°C until analysis.

### 2.1.3 Sludge from municipal wastewater

Sludge samples were collected as mixed samples collected during five consecutive days, Monday to Friday. The sampling was carried out by personnel from VEAS and HIAS using the same procedure as Norwegian Water BA (*Norsk Vann BA*) uses for their national screening for organic pollutions in sludge. The full sampling procedure is described in Blytt, Bruskeland and Stang (2013). The personnel was instructed not to use strongly perfumed hygiene products for 12 hours prior to sampling. The mixed sample were stored in Rilsan bags at <-18°C during the sampling period.

The samples were taken from the treated sludge before it left the plant to be used as fertilizers or other soil improvements

The sludge from VEAS has undergone anaerobic stabilization, including the addition of lime, hygienization and drying to over 45% dry matter.

The sludge from HIAS is treated by thermal hydrolysis (Cambiprocess at 160°C) prior to anaerobic digestion at 38°C.

Sampling periods included the following:
Week 35 (Monday August 29th to Friday September 2nd 2016)
Week 37 (Monday September 12th to Friday September 16th 2016)
Week 39 (Monday September 26th to Friday September 30th 2016)

### 2.1.4 Sediment

Sediment was sampled from six different locations in Oslofjorden August 25th 2016 (Figure 1), and from five different locations in Lake Mjøsa September 12th 2016 (Figure 2). In Oslofjorden, the sampling was performed by personnel from COWI together with personnel from Fishguard AS. Fishguard AS is accredited for sediment sampling, and the sampling was done according to NS-EN ISO 5667-19.

In Lake Mjøsa the sampling was also performed according to EN ISO 5667-19, but not accredited, since there is no accredited sampling procedures for sediment in freshwater in Norway. At both sites, a standard sediment claw of type Van Veen was used, and the upper 0-2 cm of sediment was sampled. The sediment was put in Rilsan bags, sealed and stored at <-18°C until analysis.

### 2.1.5 Biota I – fish, crustaceans and molluscs

The sampling of biota and preparation of samples follows the OSPAR guidelines (1997) as closely as possible, however, in a adapted version. A summary of biota sampling methods followed can be found in Green (2002).

The seawater fish species sampled in this screening programme is cod (*Gadus morhua*). The cod were caught in Oslofjorden 24 August 2016, by trawling from the ship F/F Trygve Braarud, owned and operated by the University of Oslo. After the fish was captured, it was killed by a blow to the head. Then the weight and length of each individual was measured, and the liver was removed and placed in a Rilsan bag.

The weight of the fish ranged from 1.1 to 6.2 kg (Table 10). The Rilsan bags were first stored for some hours on ice in insulated boxes, and then frozen at <-18 °C until analyses. The equipment that came in contact with the fish at the dissection was rinsed with ethanol prior to the dissection, and the personnel did the dissection with emphasis on avoiding contamination of the liver.

From Lake Mjøsa several different freshwater fish species were sampled: large (500–700 g) and small (100–150 g, whole weight) perch (*Perca fluviatilis*), roach (*Rutilus rutilus*), bream (*Abramis brama*), grayling (*Thymallus thymallus*) and whitefish (*Coregonus lavaretus*). The fish were caught by gillnets placed in the water on the evening August 29th 2016, and collected in the morning August 30th (Figure 2).

Most of the fish were alive when collected from the gillnets, and the fish were instantly killed by a blow to the head, and some of the sampled fish were already dead in the gillnets. The fish was first put in an insulated box with ice, and then transferred to Rilsan bags and frozen. Later, the fish was thawed, measured for length and weight, and dissected at COWI's lab in Oslo (Table 10).

For the large sized perch, the liver was saved for further analysis, and for the rest of the fish the fillet was used. The liver and the fillets were placed in Rilsan bags, sealed and stored at <-18 °C until analysis. The lab followed the same procedure as when the cod were dissected in order to avoid contamination.

At Lake Mjøsa we also sampled juvenile fish (approximately 5–10 g, about 20 fish per sample). This fish was caught by electrofishing in shallow water along the shoreline. Those fish which were not killed by the electricity were killed with a blow to the head, and the fish was stored in Rilsan bags at <-18°C. The species in the juvenile fish samples was perch, roach, ruffe (*Acerina cernua*) and pike (*Esox lucius*).

The sample material included batch samples of common shore crab (*Carcinus maenas*) and winkle (snail, *Littorina spp.*). These invertebrates were caught along the shoreline of Oslofjorden in the period from 24 August to 10 September 2016, in an area close to VEAS (Figure 1). The specimens were placed in Rilsan bags, put on ice in insulated boxes and within two to three hours frozen at <-18°C until analysis.

**Table 10. Length, weight and sex of the sampled fish. The length was measured from the tip of the head to the middle of the caudal fin.**

| Species | Sample no. | Length (cm) | Weight (g) | Sex (Female/Male) |
|---|---|---|---|---|
| **Cod** | 1 | 74.5 | 4140 | F |
| | 2 | 72.0 | 4280 | F |
| | 3 | 56.5 | 2520 | M |
| | 4 | 67.5 | 3140 | F |
| | 5 | 58.5 | 2320 | M |
| | 6 | 82.0 | 6180 | F |
| | 7 | 64.5 | 3020 | M |
| | 8 | 59.5 | 2140 | F |
| | 9 | 54.0 | 1560 | F |
| | 10 | 54.5 | 1500 | F |
| | 11 | 51.5 | 1300 | F |
| | 12 | 62.0 | 1820 | F |
| | 13 | 49.0 | 1140 | F |
| | 14 | 52.0 | 1260 | F |
| | 15 | 49.0 | 1260 | F |
| Perch, large | 1 | 35.0 | 500 | F |
| | 2 | 38.0 | 700 | F |
| | 3 | 33.5 | 500 | F |
| | 4 | 34.5 | 500 | F |
| | 5 | 34.0 | 500 | F |
| Perch, small | 1 | 22.0 | 153 | M |
| | 2 | 21.2 | 122 | F |
| | 3 | 20.8 | 124 | M |
| | 4 | 21.0 | 123 | F |
| | 5 | 21.5 | 134 | F |
| Roach | 1 | 27.0 | 347 | F |
| | 2 | 24.5 | 308 | F |
| | 3 | 30.0 | 481 | F |
| | 4 | 26.7 | 311 | F |
| | 5 | 25.0 | 225 | M |
| Bream | 1 | 46.0 | 1895 | F |
| Grayling | 1 | 32.5 | 444 | F |
| Whitefish | 1 | 30.0 | 312 | F |
| | 2 | 30.5 | 342 | M |

### 2.1.6 Biota II – rats

The rats used in the screening programme were captured from the sewage system of Oslo, from the streets of Oslo, and from indoor areas at the ROAF waste treatment plant. The rats were caught by traps, sealed in Rilsan bags, and stored at <-18°C prior to dissection. The liver was dissected from the rats at COWI's lab in Oslo, using the same procedure to avoid contamination as was performed for the fish. Then the livers were put in Rilsan bags, sealed and stored at <-18°C until analysis.

### 2.1.7 Ambient indoor dust

Indoor dust sampling was performed at 3 locations in Oslo during 17–19 October 2016. The locations included a furniture centre, a hotel and the indoor area of a large train station/shopping centre. 7 dust samples and 10 ambient air samples were collected in total at the 3 locations. In addition, one field blank for air and one for dust (3 membranes and 3 sorbent tubes in total) were prepared for each sample site used as background consideration in the chemical analysis.

Samples for ambient air were collected on SKC Sorbent Tubes Anasorb CSC, Coconut Charcoal no. 226-01, designed specifically for solvent extraction specified in many OSHA, NIOSH, ASTM, and non-agency methods. Two automatic aspirators types ASP 2IIP, no. 030043 and no. 020007 were used. Each new sampling real flow was controlled with Bios International Corp. calibrator type Defender 520-M, no. B/N 116250.

Samples for ambient dust were collected on polypropylene membrane filters type Fipro-25 using individual dosimetry technic with head containing seven holes for testing total dust. Two sample pumps (automatic aspirators) types Casella Cel. Apex I.S. no. 0591451 and Casella Cel. Apex Lite no. 4081054 were used. Each new sampling real flow through membrane was controlled with Bios International Corp. calibrator type Defender 520-M, no. B/N 116250. Some of the samples contained very small quantities of dust and were determined to be of insufficient quantity for analysis of all the targeted compounds. In these cases additional material was then collected from the sampling location (by extracting enough material from used vacuum cleaner bags at the site).

Sampling was performed by the environmental monitoring team "BALMAR" according to Polish and Norwegian standards. COWI personnel monitored all sampling performed by BALMAR. The tubes and filters were prepared by BALMAR and sent further for analysis.

### 2.1.8 Transport to the lab

All the samples were shipped from COWI to the labs in the Czech Republic by car, cooled in insulated boxes. The transport time did not exceed 24 hours. The only exception was the air samples which were shipped with a courier service to the lab.

# 2.2 Analysis

## 2.2.1 General

The samples were analysed at the *Laboratory of Environmental Chemistry and Biochemistry* (LECHB), *Faculty of Fisheries and Protection of Waters* (FFPW), *University of South Bohemia, České Budějovice* (USB CB) and the water laboratory Povodí Labe, státní podnik, in the Czech Republic. The latter laboratory provides complex laboratory services and expert advisory, both nationally and to the European Union (EU). Povodi labe additionally has the status and qualification as the reference laboratory for ring testing of substances in water within the EU. The laboratory chief analyst is additionally an advisory member of the EU PBT screening programme.

The laboratory follows the quality system in accordance with ČSN EN ISO / IEC 17025 and are accredited by certificate issued by the Czech Accreditation Institute (testing, sampling). It additionally hold a permit for measurement and evaluation of natural radionuclides content (SÚJB).

Target analytes could be separated to three groups according to their physicochemical properties; volatile compounds, semi-volatile nonpolar and polar compounds respectively. Principally different extraction and instrumental techniques were applied for analysis of compounds belonging to the mentioned categories. Polar compounds with low or no response in electrospray ionization (ESI) were analysed using atmospheric pressure chemical ionization and photoionization (APCI/APPI).

## 2.2.2 Water samples

VOCs in water samples were analysed by dynamic stripping of 25 ml sample in Purge&Trap (Tekmar 3000 with autosampler AquaTek 70) followed with GC-MS detection (Hewlett Packard 5890 with MSD 5971). Target compounds were separated using GC column (HP-VOC 30m x 0.20 mm ID and 1,12 µm film thickness) and detected in Scan mode. LOD and LOQ of individual analytes were calculated as 3 x S/N ratio and 9 x S/N ratio respectively.

Nonpolar semi-volatiles were extracted from 1 l of water by hexane; extracts were cleaned up using florisil column. Isotope labelled (13C PCB 153) and native (PCB 15) internal standards were added to the sample prior to the extraction step. Finally, the sample volume was reduced to about 500 µl. The amount of 20 µl of extract was injected (Large Volume Injector LVI) into GC column Select PAH 30 m x 0.25 mm ID and 0.15 µm film.

Target compounds were detected using Agilent GC-MS/MS 7890 with 7000C triple quadrupole mass spectrometer operated in SRM mode. PBDE 209 was analysed by gas chromatography with negative chemical ionization detection (GC-NCI-MS) on Agilent 7890 with 5975 MSD (methane as reagent gas) using GC column Restek Rtx-1 15 m x 0.25 mm ID with 0.1 um film thickness and (13C labelled internal standard). LOQ were calculated from lowest calibration point of a curve, where RSD of response factor was lower than 30 %.

For polar compounds 10 ml of the samples were filtered through syringe filters (regenerated cellulose 0.2 µm pores) to auto sampler vials and fortified with mixture of internal standards (13C labelled per-fluorinated acides and sulphonates (10), 13C and 2D labeled pharmaceuticals (10), pesticides (4) and triclosane).

The samples were analysed using combination of automatized in line SPE preconcentration (HypersilGold aQ column, 20 mm x 2.1 mm ID and 12 µm particles (Thermo Scientific), followed with separation on analytical column (HypersilGold aQ column 50 mm x 2.1 mm ID and 5 µm particles for pharmaceuticals, Hypersil Gold PFP 50 mm x 2.1 mm ID and 5 µm particles for PFCs and HypersilGold Phenyl 50 mm x 2.1 mm ID and 3 µm particles for APCI/APPI compounds). Gradient of acetonitrile in water was used for separation of ESI compounds while gradient of methanol in water was used for APCI/APPI detection.

ESI compounds were detected using QqQ tandem mass spectrometry (Quantiva, ThermoScientific) while high resolution product scan (QExactive hydride quadrupole/orbital trap mass spectrometer, ThermoScientific) was applied for detection APCI/APPI analytes. Internal standard method combined with matrix matching standards was used for quantification. LOQs were calculated from one half of the response of the lowest point in calibration curve, where RSD of response factor was lower than 30%.

### 2.2.3 Sediment and sludge samples

VOC analysis of solid samples was carried out by extraction of wet sample (1-3 grams) after spiking with internal standard (fluorobenzene) with 6 mL methanol in ultrasonic bath at 40°C for one hour. An aliquot of 1 mL of extract was transferred into 10 mL headspace vial with 6 mL of water and then followed Solid Phase Micro Extraction (SPME) with fiber Stableflex 85 µm Car/PDMS (Supelco) for 25 min at 35 °C using Gerstel MPS2 autosampler and GC-MS detection on Agilent 6890N with 5973 MSD.

Target compounds were separated using GC column (HP-VOC 30m x 0.20 mm ID and 1,12 µm film thickness) and detected in full scan mode. LOD and LOQ of individual analytes were calculated as 3 x S/N ratio and 9 x S/N ratio respectively.

Nonpolar semivolatiles were extracted from about 1-3 g of freeze dried samples by two step sonication in hexane:acetone (1:1 v:v) mixture. Isotope labelled (13C PCB 153) and native (PCB 15) internal standards were added prior extraction step to the sample. The extracts were cleaned using gel permeation chromatography followed with florisil column cleaning. Finally, the sample volume was reduced to about 500 µl. 20 µL of extract was injected (Large Volume Injector LVI) into GC column Select PAH 30m x 0.25 mm ID and 0.15 µm film.

Target compounds were detected using Agilent GC-MS/MS 7890 with 7000C triple quadrupole mass spectrometer operated in SRM mode. PBDE 209 was analysed by gas chromatography with negative chemical ionization detection (GC-NCI-MS) on Agilent 7890 with 5975 MSD (methane as reagent gas) using GC column Restek Rtx-1 15 m x 0.25 mm ID with 0.1 um film thickness and (13C labelled internal standard). LOQ were calculated from lowest calibration point of a curve, where RSD of response factor was lower than 30%.

Polar analytes were extracted using two steps extraction of wet samples (2g) with mixture water:acetonitrile:isopropanol (2 x 4 ml) after addition of IS (the same range as for water analysis). Aliquot of the sample was filtered through regenerated cellulose syringe filter (0.2 µm pore size) to autosampler vial. 10 µl of the extract were injected into the same analytical systems as a water samples.

ESI compounds were detected using QqQ tandem mass spectrometry (Quantiva, ThermoScientific) while high resolution product scan (QExactive hydride quadrupole/orbital trap mass spectrometer, ThermoScientific) was applied for detection APCI/APPI analytes. Internal standard method combined with matrix matching standards was used for quantification. LOQs were calculated from one half of the response of the lowest point in calibration curve, where RSD of response factor was lower than 30 %.

### 2.2.4 Biota samples

Nonpolar semivolatiles were extracted from about 1-3 g of freeze dried samples by two step sonication in hexane:acetone (1:1 v:v) mixture. Isotope labelled (13C PCB 153) and native (PCB 15) internal standards were added prior extraction step to the sample. The extracts were cleaned up using gel permeation chromatography followed with florisil column clean up. Finally, the sample volume was reduced to about 500 µl. 20 µL of extract was injected (Large Volume Injector LVI) into GC column Select PAH 30m x 0.25 mm ID and 0.15 µm film.

Target compounds were detected using Agilent GC-MS/MS 7890 with 7000C triple quadrupole mass spectrometer operated in SRM mode. PBDE 209 was analysed by gas chromatography with negative chemical ionization detection (GC-NCI-MS) on Agilent 7890 with 5975 MSD (methane as reagent gas) using GC column Restek Rtx-1 15 m x 0.25 mm ID with 0.1 um film thickness and (13C labelled internal standard). LOQ were calculated from lowest calibration point of a curve, where RSD of response factor was lower than 30 %.

Polar analytes were extracted using extraction freeze dried sample (0.5 g) with mixture water:acetonitrile:isopropanol (1x2 ml) after addition of IS (the same range as for water analysis). Aliquot of the sample was filtered through regenerated cellulose syringe filter (0.2 µm pore size) to autosampler vial. 10 µl of the extract were injected into the same analytical systems as a water samples. All polar analytes were detected with using high resolution product scan (QExactive hydride quadrupole/orbital trap mass spectrometer, ThermoScientific) due to higher selectivity of this method compared to QqQ. Internal standard method combined with matrix matching standards was used for quantification. LOQs were calculated from one half of the response of the lowest point in calibration curve, where RSD of response factor was lower than 30 %.

### 2.2.5 Air and dust samples

Air samples (sorption tubes with charcoal) were analysed after elution with carbon disulfide first (for volatile analytes) and second elution with hot toluene for semivolatiles analysis. Aliquot of carbon disulfide extracts was injected and analysed by GC-MS (Agilent 7890 with 5977) in scan mode. Toluene extracts were transferred into heptane and analysed in the same way like with solid samples.

Nonpolar semivolatiles were extracted from about 1 g of dust samples by two step sonication in hexane:acetone (1:1 v:v) mixture. Isotope labelled (13C PCB 153) and native (PCB 15) internal standards were added prior extraction step to the sample. Clean up and analysis steps were the same as in the case of biota or sediment samples.

Polar compounds were extracted and analysed the same way as biota samples using HRPS detection only.

### 2.2.6 Suspect screening analysis

The same extracts as for targeted analysis were used for screening analysis except water samples, which were analysed after direct injection of 100 µl of water. The screening was performed using combination of three analysis on the same analytical column (Kinetex EVO C18, 50 mm x 2.1 mm ID 3 µm particle size) with gradient of acetonitrile in water (buffered with 0.1 % of formic acid and 5 mM ammonium acetate).

Three different ESI/HRMS method were used to cover broad mass range in both positive and negative ionization modes. Full scan at resolution 70 000 FWHM was combined with DIA (data independent analysis) to achieve MS/MS information (MS/MS data were acquired at 17500 FWHM resolution).

TraceFinder software (ThermoScientific) was use for target screening of the compounds without available standard (Figure 3).

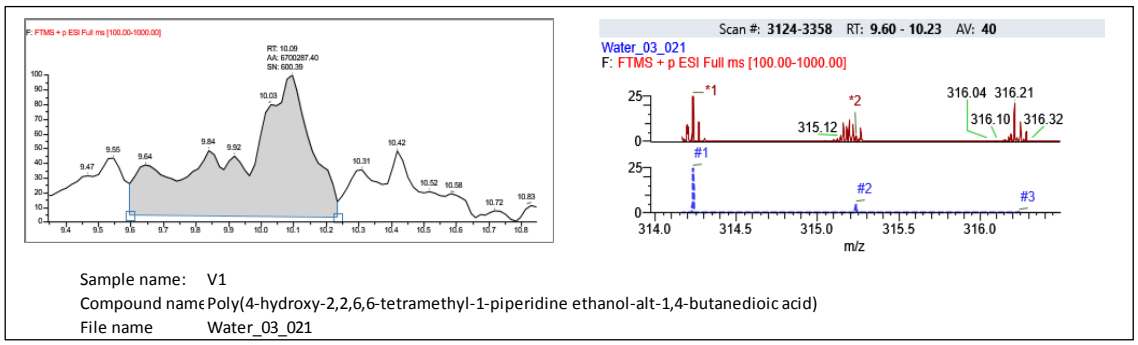



*Figure 3. Example of a result from target screening. In addition see chapter 3.7.*

# 3. Results and discussion

The screening programme for 2016 was comprised of a high number of compounds and grouped compounds. A considerable amount of these did not appear above the LODs and are not commented further upon in this report. Presented, discussed and illustrated in this chapter are the most significant screening results for the occurrence and distribution of individual compounds and compound groups. When significant, the new results are compared to the 2015 screening programme (Norwegian Environment Agency, 2016).

Originally, the Norwegian Environment Agency prioritized 80 compounds for screening. Due to a lack of proper analytical standards, approximately 40 of these compounds were quantified and 11 compounds by suspect screening. Unfortunately, ambient air samples were not analyzed for the prioritized compounds due to insufficient material quantity of the extracted samples. Instead, these were analyzed for a number of support compounds.

## 3.1 Wastewater, sludge and landfill run-off

### 3.1.1 Heteroaromatic compounds

This group of organic compounds were detected at various concentration levels in the traditional wastewater samples from both VEAS and HIAS WWTPs and the ROAF landfill run-off. Four of the five ***benzotrialsols*** (BTRs) occurred in the range of 15 ng/l to 3400 ng/l, with an average 688 ng/l (n=24). In general, this was one order of magnitude higher in the HIAS outlet wastewater, than in similar samples from VEAS. The rest of the targeted compounds, including ***benzothiazols*** (BTHs) were similar, but one order of magnitude lower in occurrence, ranging from 1.6 ng/l to 210 ng/l, with an average of 71 ng/l (n=18). However, the occurrence of BTHs were similar at the two WWTPs and are comparable to previously reported levels found in literature (Koepler, Jekel and Reemtsma, 2005).

The selected BTHs in the 2015 screening programme were not detected in the HIAS wastewater nor the corresponding sludge samples. Likewise, none of the BTHs occurred in the Rambekk WWTP sludge, except for the biocide compound ***2-benzothiazole*** (CAS-no. 934-34-9), which was found to have median concentration of 2.5 µg/l. This is considerably higher than what was seen for the selected BTHs in the 2015 screening (Norwegian Environment Agency, 2016).

When comparing the wastewater effluent to the ROAF landfill run-off water, heteroaromatic compounds were detected in similar concentrations to those found at the HIAS WWTP (between 20 ng/l and 3200 ng/l). This was true with the exception of the compound ***2(3H)-Benzothiazolone*** (CAS-no. 934-34-9). The concentration range found in the landfill runoff for this compound was 75 000-230 000 ng/l (0.08-0.23 ppm) indicating that the ROAF landfill may be a major source of this compound to the downstream environment.

Figure 4 compares the average concentrations of summed BTRs/BTHs in the wastewater and landfill run-off water. According to the concentrations in the passive samplers of the inlet water, it appears that the water treatment process at the VEAS is three times more effective than that of HIAS. The wastewater treatment system at ROAF does not seem to sufficiently

remove the BTRs/BTHs. Considerable amounts may reach both the downstream RA2 WWTP, and the stream "*Bølerbekken*" through wastewater overflow.

The results of the wastewater samples were confirmed by the results of the parallel-applied passive samplers in two periods (August and September 2016). The aforementioned benzotriazoles, occurred in time integrated dissolved concentrations between 15 ng/l and 2400 ng/l, with an average of 1488 ng/l (n=14). This was twice the concentration that was measured at VEAS. Likewise, the quantified concentrations at HIAS ranged between 12 ng/l and 5200 ng/l, with an average of 1945 ng/l (n=13). This was the same magnitude as was found in the VEAS wastewater. Additionally, the passive samplers identified the fifth targeted benzotriasole compound (it was not able to quantify it in the water samples) at the two WWTPs in the range of 3 ng/l to 44 ng/l, with an average of 22 ng/l (n=8).

The benzothiazols were found at an average dissolved concentration of 485 ng/l (n=16) in the passive samplers at both WWTPs. The compound ***2-benzothiazolamine*** (CAS-no. 136-95-8) was found in the traditional water samples from the two WWTPs. The compound was not quantified in the passive samples indicating that this contamination is purely particulate and should be present in the wastewater sludge. However, this was not the case and particulate ***2-benzothiazolamine*** may leave the WWTPs and enter the adjacent recipients.

The passive sampling of the landfill run-off mirrored the traditional water sampling; moreover, the benzotriazoles only accumulated in mid-September. This was likely due to increased run-off in the wet season. Likewise, high amounts of ***2(3H)-Benzothiazolone*** was found in the water samples. These accumulated in a two week time period at an integrated dissolved concentration of 42 000 ng/l in the passive sampler (Figure 4).

The compound ***2-Benzothiazolamine*** was found in the traditional water samples from the landfill run-off; however, not in the passive samples from the same water stream. This indicates that the contamination may be purely particulate, since the sampler only accumulates contaminants in the dissolved phase. Comparison of the results from wastewater and sludge in the WWTPs supports this fact. The isothiazolinone compounds were not detected above LOD in the wastewater or run-off water samples.

The WWTP sludge was collected and analysed for heteroaromatics three times and in parallel to the traditional water sampling. The aforementioned compounds, benzotrialsols and benzothiazols, occurred at the same concentration range in both of the WWTPs, from 5.7 µg/kg d.w. to 1300 µg/kg d.w., with an average of 354 µg/kg d.w.(n = 38).

The amount of ***2-(2H-benzotriazol-2-yl)-4-methyl-phenol*** (CAS-no. 2440-22-4) generally occurred at an order of magnitude higher than the rest of the compounds, and three orders of magnitude higher in the HIAS sludge than in the corresponding passive samplers for the wastewater. The average sums for BTHs/BTRs are shown in Figure 4.

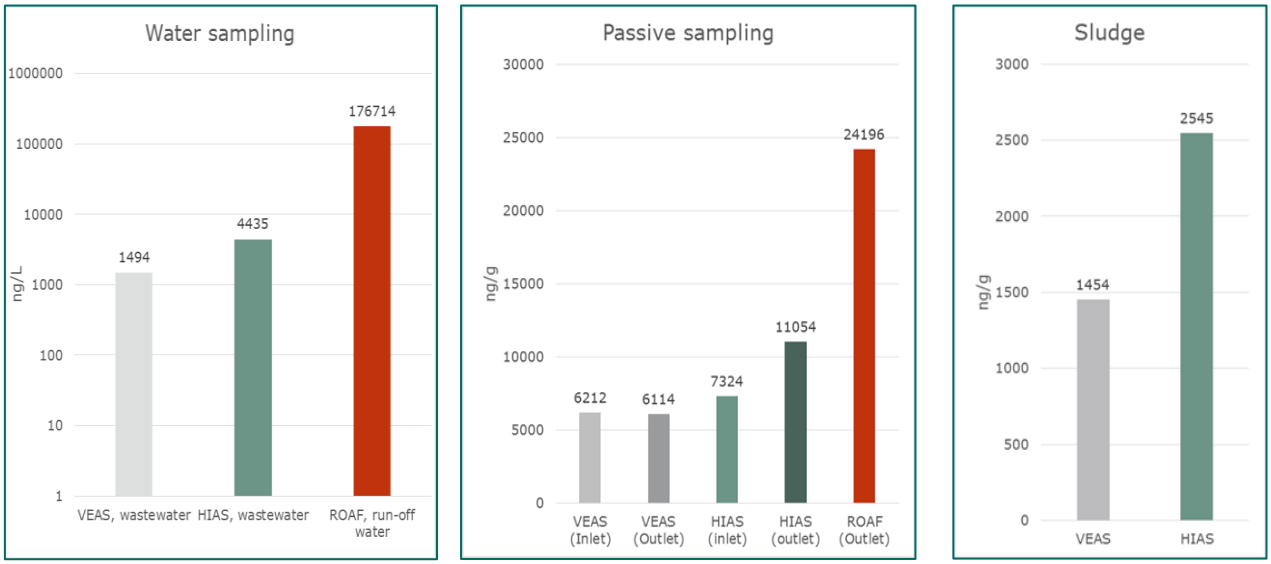



*Figure 4. Average of sum BTRs/BTHs concentrations (log-scale) in wastewater and run-off water, both traditional water samples and passive sampling, along with sewage sludge at VEAS, HIAS and ROAF from the screening programme 2016.*

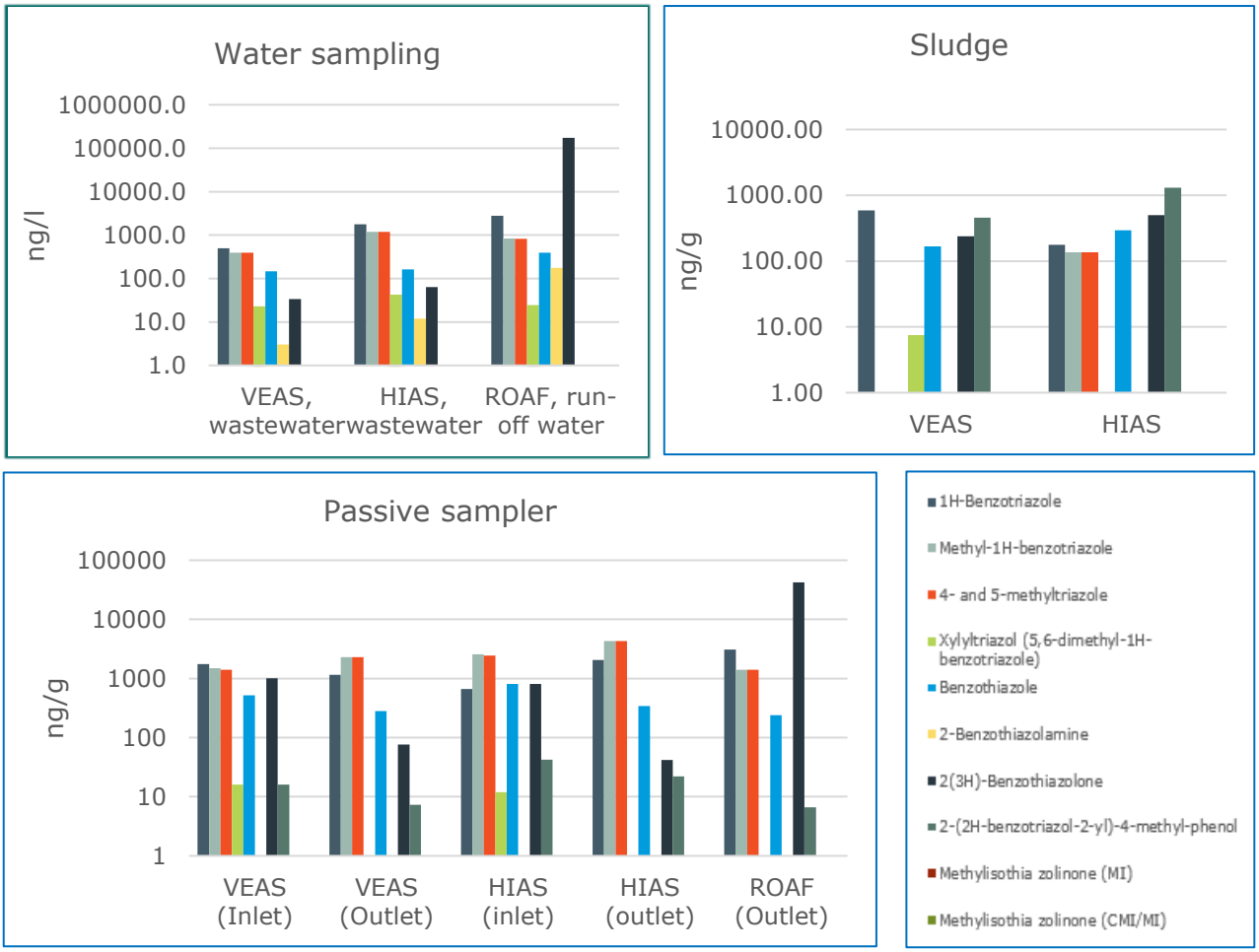



*Figure 5. The distribution of individual BTRs/BTHs concentrations on log-scale in wastewater samples, passive samplers and WWTP sludge in the screening programme 2016.*

There has only been a few studies of BTRs/BTHs in wastewater and sewage sludge performed previously. One such study of eight selected BTRs/BTHs was performed at a Greek WWTP (Asimakopoulos *et al.*, 2013). Some of the same compounds were included in the study and the results are applicable to the 2016 screening. The main results showed that all eight target compounds were detected in wastewater samples, some at significant concentrations to within a few µg/l of those found at VEAS and HIAS. In sludge samples, ***benzothiazole and tolyltriazole*** (CAS-no. 29385-43-1) were present at the highest concentrations (174 and 116 ng/g d.w., respectively) in the Greek study. For benzotriazole and tolyltriazole, the removal efficiency was below 68%, and for benzothiazoles, the removal efficiency was greater than 64% in the activated sludge treatment process. These calculations were based on analysis of both supplied and effluent water.

By comparison the maximum sludge concentration of benzothiazole at VEAS was 222 ng/g d.w. and 362 ng/g d.w. at HIAS. Tolyltriazole was not found in the VEAS wastewater, but was found between 110-170 ng/g d.w. at HIAS WWTP. The selected BTHs in the 2015 screening programme were not recorded above LOD in the WWTP sludge samples (Norwegian Environment Agency, 2016).

### 3.1.2 UV-filters and light stabilizers

Two compounds categorized and commonly used as UV-filters/absorbers were present in the screening matrix material, ***homosalate*** (CAS-no. 118-56-9) and ***ensulizole*** (CAS no 27503-81-7). However, they were found in different matrices, with ***ensulizole*** occurring in fair amounts in traditional water samples from the outlet wastewater at both WWTPs and the landfill run-off. Outlet water from VEAS contained 230-500 ng/l, HIAS contained 570-780 ng/l and ROAF was slightly higher with a concentration of 820-1400 ng/l.

The two week time integrated measurements using passive samplers shows that the VEAS inlet water contained on average 520 ng ensulizole/l (not detected in the outlet water) and 190 ng/l in the outlet water at HIAS (not detected in the inlet). Additionally, ensulizole was detected in a concentrations of 230 ng/l in the ROAF run-off water.

This distribution in wastewater and the slightly higher amounts in the inlet could indicate that ensulizole may be bound to the particulate phase. However, the compound was not found in the WWTP sludge.

***Homosalate*** was not quantified above LOD, in the wastewater from the WWTPs. Neither was it found in the traditional water samples nor passive samplers. However, this compound was found in WWTP sludge. The average concentration at VEAS was 2.64 µg/kg d.w., and at HIAS 1.76 µg/kg d.w. But on the other hand, ***homosalate*** was found in the range of 7.7-10 µg/l in the ROAF landfill run-off.

### 3.1.3 Other prioritized suspected PBT compounds

#### Brominated flame-retardants

The representative for the PBT compound group brominated flame-retardants (BFR); ***Tetrabromobisphenol A bis (dibromopropyl ether)*** (CAS-no. 21850-44-2) was recorded in trace concentrations at the VEAS WWTP outlet, by passive sampling, in the range of 19-22 ng/l.

#### Anti-oxidants and additives

The compound BHA or ***butylated hydroxyanisole*** has a broad range of applications, and is expected to appear widespread in the environment. Its most common applications are as antioxidant, food preservative, food packaging, animal feed, cosmetics, pharmaceuticals, rubber and petroleum products. However, the occurrence of this compounds was quite moderate, with low concentrations of 2.5-5.5 ng/l in the inlet water at both WWTPs, moderate concentrations of 30-120 ng/l in the landfill run-off, but fairly high concentrations of 5-47 µg/kg d.w. in sewage sludge (Figure 6).

Other anti-oxidants found within the alkyl-phenol group were ***AO246*** or ***2,2'-methylenebis(6-tert-butyl-4-methylphenol)*** (CAS-no. 119-47-1), ***AO2246*** or ***4,4'-methylenebis(2,6-di-tert-butylphenol)*** (CAS-no. 118-82-1) and ***AO22E46*** or ***4,4'-butylidenebis(6-tert-butyl-3-methylphenol)*** (CAS-no. 85-60-9).

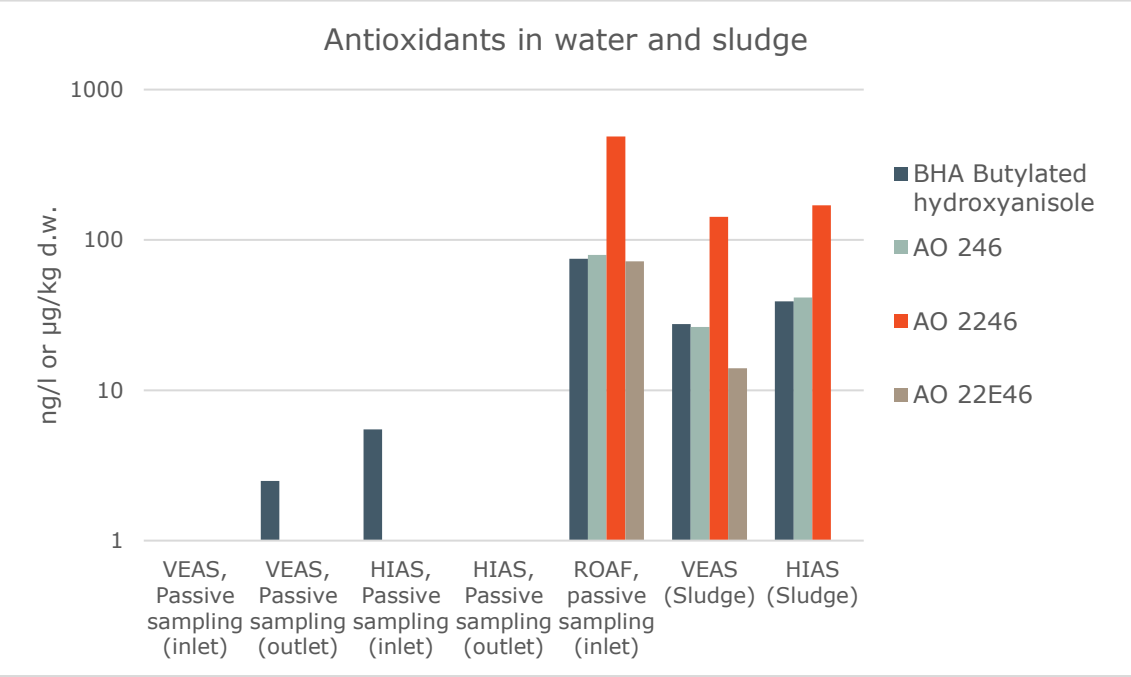



*Figure 6. Distribution of antioxidant concentrations found in different biota samples in the screening programme 2016.*

Of the three, only AO246 was found in outlet wastewater from the two WWTP and the landfill run-off, in levels between 7.1 ng/l and 93 ng/l. The compounds not appearing in the passive

samplers (two week time integrated dissolved sampling), indicate spreading in a particulate phase. This is supported by the appearance of ***all three compounds*** in the WWTP sludge, occurring from 8 µg/kg d.w. to 208 µg/kg d.w., with an average concentration of 61 µg/kg d.w. (n=18). Slightly higher concentrations were recorded in the ROAF run-off water in the range of 430-848 ng/l, one order of magnitude higher than the WWTP outlet water, indicating an important source for this type of antioxidants.

#### Pesticides

Two of the prioritized compounds belonging to the group of chlorinated pesticides were found in the WWTP sludge and landfill run-off. Trace amounts (1 ng/l) of ***dichlorophene bis(5-chloro-2-hydroxyphenyl)methane*** (CAS-no. 97-23-4) in run-off water and approx. 30 µg/kg d.w. of ***chloroxylenol*** (CAS-no. 88-04-0) in the sewage sludge from both WWTPs.

## 3.2 Sediments

### 3.2.1 Heteroaromatic compounds

The concentration of sum BTRs and BTHs in HIAS WWTP discharge water were in the range of 4.5-11 µg/l. However, the only record of heteroaromatics in sediments was as a single value of 12 µg/kg d.w. for ***2(3H)-Benzothiazolone*** in Lake Mjøsa. This indicates that the BTHs/BTRs are mainly discharged from the WWTPs in a dissolved phase.

### 3.2.2 UV-filters and light stabilizers

The UV compounds ***homosalate*** and ***ensulizole*** discussed above, did not appear in sediment adjacent to the WWTPs. However, an other light stabilizer compound ***bis(2,2,6,6-tetramethyl-4-piperidyl)sebacate*** (CAS-no. 52829-07-9) was found in the concentration range 13-33 µg/kg d.w. in the Oslofjord sediments. This compound was not found in the WWTP water or sludge samples, suggesting other origins for these derivatives.

A Canadian environmental screening programme from 2010 supports this, with a similar UV stabilizer; ***bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate*** (CAS-no. 41556-26-7). They estimated that the paved surface run-off to be 3.8%, WWTP discharge to be 6.2% and landfill run-off to be 71.7% for this compound. Spreading by incineration and recycling was estimated to 2.2% and 15.1% respectively (Environment Canada & Health Canada, 2010).

### 3.2.3 Other prioritized suspected PBT compounds

#### Brominated flame-retardants

***Tetrabromobisphenol A bis (dibromopropyl ether*** was quantified in the marine Oslofjord sediments in low concentrations within the range of 1.0-2. to 1 µg/kg d.w. and the same level in the fresh water Lake Mjøsa 1.3 µg/kg d.w.

# 3.3 Biota I - fish, crustaceans and molluscs

## 3.3.1 Heteroaromatic compounds

The result of screening the heteroaromatics in 15 cod livers from the Oslofjord yielded the occurrence of mainly ***benzothiazole*** (CAS-no. 95-16-9) in the concentration range of 86 µg/kg d.w. up to 330 µg/kg d.w., with an average of 202 µg/kg d.w. (n = 15). Additionally, low values of ***2(3H)-benzothiazolone*** and or ***2-(2H-benzotriazol-2-yl)-4-methyl-phenol*** in an average concentration of 17 µg/kg d.w. (n = 10) were found.

Liver samples from five specimens of perch found in Lake Mjøsa were almost similarly affected by the heteroaromatics as those found in the cod livers. Both ***1H-benzotriazole*** (CAS-no. 95-14-7) and ***benzothiazole*** occurred within the concentration range of 170 µg/kg d.w. and 450 µg/kg d.w., with an average of 274 (n = 7). Additionally scattered low values (2.2 – 63 µg/kg d.w.) of three other benzotriazoles and benzothiazols was recorded.

Three samples of common shore crabs (*Carcinus*) and two samples of common periwinkle (*Littorinidae*) were included in the screening program. Due to historical data on contaminant occurrences in crustaceans and molluscs in monitoring (in addition to their sensitivity), the occurrence of PBT compounds in this lower links in the food chain could be expected. Both groups of biota contain up to five different heteroaromatics in the concentration range of 2.2-110 µg/kg d.w. and 0.7 to 850 µg/kg d.w. respectively. The average concentration of all BTHs/BTRs in crabs was 32 µg/kg d.w. (n=13) and 135 µg/kg d.w. (n=11) in snails.

The maximum concentrations measured for the compounds ***benzothiazole***, ***1H-benzotriazole*** and ***5,6-dimethyl-1H-benzotriazole*** (CAS-no. 4184-79-6), indicate that the common periwinkle (right in Figure 7) may be a more cost-effective biotic parameter/matrix than traditional cod liver (left in Figure 7) for tracing heteroaromatics in the marine environment. Differences in levels are normally due to different exposures through feeding habits. The observed differences may alternatively be due to more effective metabolism of BTHs/BTRs in the fish liver. This observation is in contradiction to the log Kow level of the substances. According to the definition of log Kow, these substances are not bioaccumulative.

## 3.3.2 UV-filters and light stabilizers

This group of compounds was observed in biological samples. High levels of ***Homosalate*** was recorded in perch livers from Lake Mjøsa, ranging in concentration between 620 and 5 800 µg/kg d.w. Additionally, ***bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate*** was found at levels up to 18 µg/kg d.w. in cod liver and single occurrences of 120 µg/kg d.w. in marine periwinkles and 71 µg/kg d.w. in perch liver from Lake Mjøsa.


*Figure 7. Average of summed and distribution of individual BTRs/BTHs concentrations in ppb log scale found in different biota samples in the screening programme 2016.*

### 3.3.3 Other prioritized suspected PBT compounds

#### Antioxidants and additives

Aquatic occurrence observed for discharged BHA or ***butylated hydroxyanisole*** was recorded concentrations in 10 of 15 cod livers from the Oslofjord, ranging within 16-50 µg/kg d.w. Additionally the content in common crabs was 2.3 µg/kg d.w. and in periwinkles 0.9-2.0 µg/kg d.w. in periwinkles. More significant was the occurrences of the antioxidant compounds ***A0246***, ***A2246*** and ***AO22E46***. The samples of cod liver contained between 67-1400 µg/kg d.w. of A0246 8-110 µg/kg d.w. of A022E46. Additionally, trace of ***AO246*** was

found in marine periwinkle at concentration of 550 ng/kg d.w. Only ***AO246*** was recorded in the freshwater recipient in perch livers ranging between 1-75 µg/kg d.w. (Figure 8).

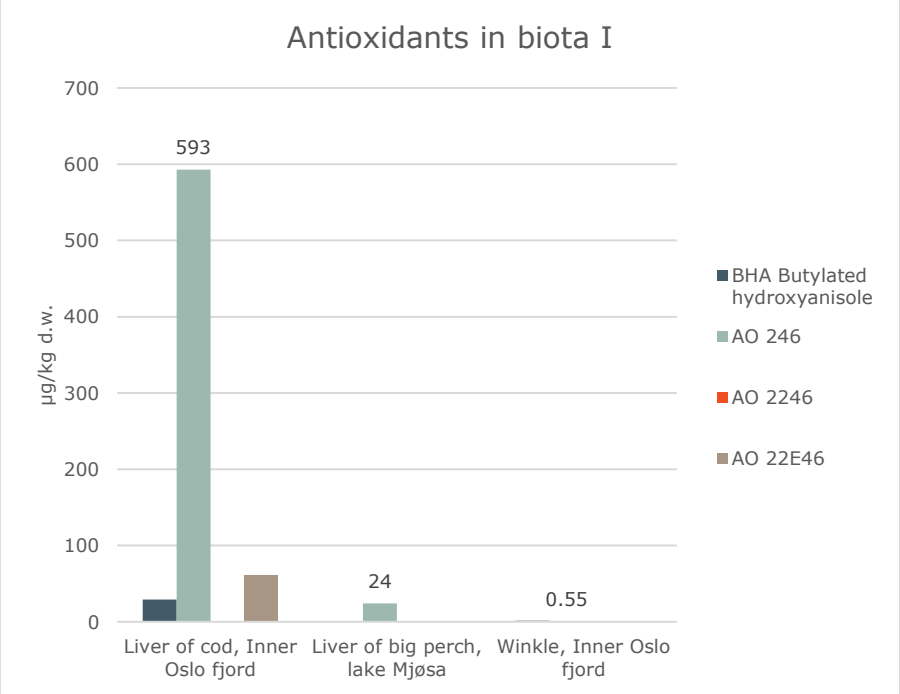



*Figure 8* ***Distribution of antioxidant concentrations found in different biota samples in the screening programme 2016.***

# 3.4 Biota II – rats

## 3.4.1 Heteroaromatic compounds

Samples of rat liver from the Oslo city sewage system (eight specimens) and from the ROAF landfill (three specimens) showed high concentrations of the two specific heteroaromatic compounds ***1H-benzotriazole***and ***benzothiazole***, *with the latter being* moderately lower.

The former compound showed a concentration range of 190-9900 µg/kg d.w. for sewage rats and 380-1300 µg/kg d.w. for landfill rats. The average concentration of 2 321 µg/kg d.w. was approx. three times higher in the sewage rats than for the landfill rats (Figure 9).

The occurrence of *benzothiazole* appeared more evenly distributed between sewage rats and landfill rats and was quantified within the range of 130 and 630 µg/kg d.w. with an average of 264 µg/kg d.w. (n = 11). Other heteroaromatics were scarcely found in rat liver in the range of 0.3 to 19 µg/kg d.w.

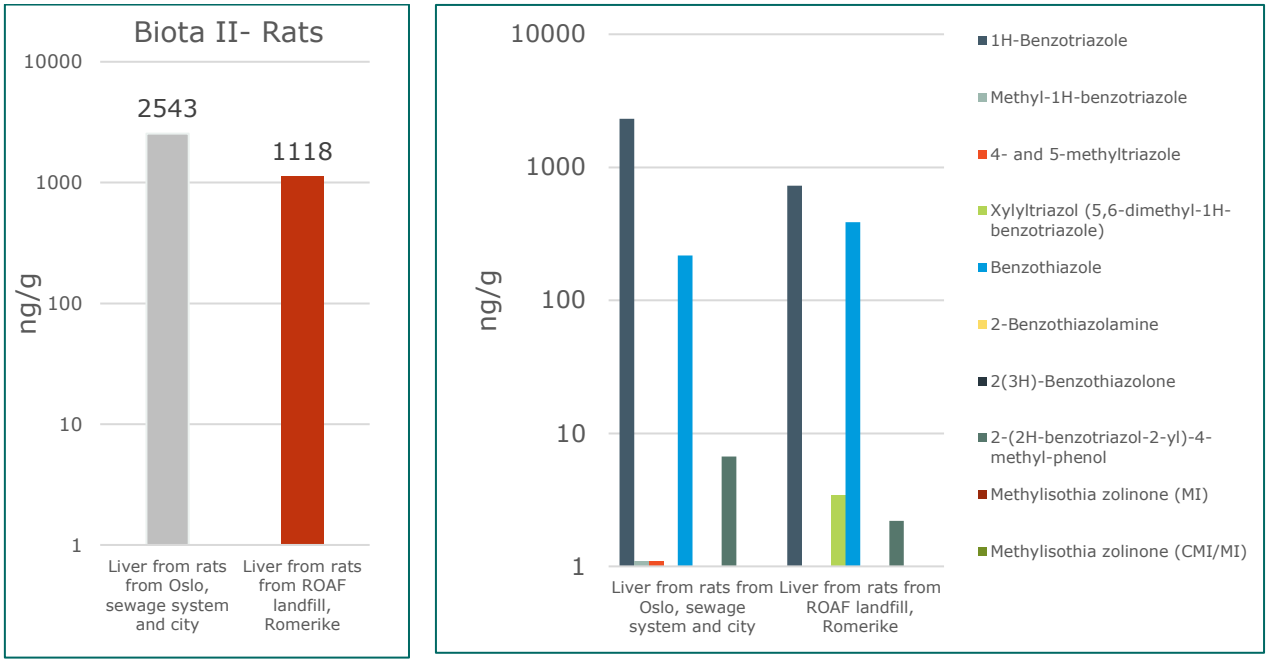



*Figure 9. Average of summed and distribution of individual BTRs/BTHs concentrations on log-scale in rat livers from the city of Oslo and the ROAF landfill from the screening programme 2016.*

### 3.4.2 UV-filters and light stabilizers

Only the compound ***bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate*** was recorded in rat livers, ranging from 2.4 µg/kg d.w. to 23 µg/kg d.w. On average, 10 µg/kg d.w. higher at the ROAF landfill site.

### 3.4.3 Other prioritized suspected PBT compounds

#### Antioxidant and additives

Among other prioritized components BHA or ***butylated hydroxyanisole*** and ***AO246*** was recorded in sewage rat livers in the concentration ranges of 28-40 µg/kg d.w. and 69-170 µg/kg d.w. respectively. Additionally, both the derivatives ***AO2246*** and ***AO22E46*** were found in the landfill rat livers, the former in a high concentration of 1 600 µg/kg d.w. and more moderate 86 µg/kg d.w. for the latter compound.

# 3.5 Ambient indoor air and dust

## 3.5.1 General

We managed to get valid dust samples from the furniture centre and from the hotel, but not from the train station/shopping centre. The results discussed below are therefore from dust collected at two different localities, not three.

## 3.5.2 UV-filters and light stabilizers

The compound ***Homosalate*** found in high concentrations in the landfill run-off and WWTP sludge was also detected in the indoor dust samples from both localities. The concentration range was 270-590 µg/

All of the targeted BTH/BTR compounds except ***Xylyltriazol*** and ***5,6-dimethyl-1H-benzotriazole*** (CAS-no. 4184-79-6) were detected in indoor dust from the two chosen sample locales. The highest summed concentration of 12.9 µg/g d.w. was found in the hotel location. (Figure 10). The UV-light absorber ***2-(2H-benzotriazol-2-yl)-4-methyl-phenol*** was the dominating compound here with concentrations up to 9.8 µg/g d.w.

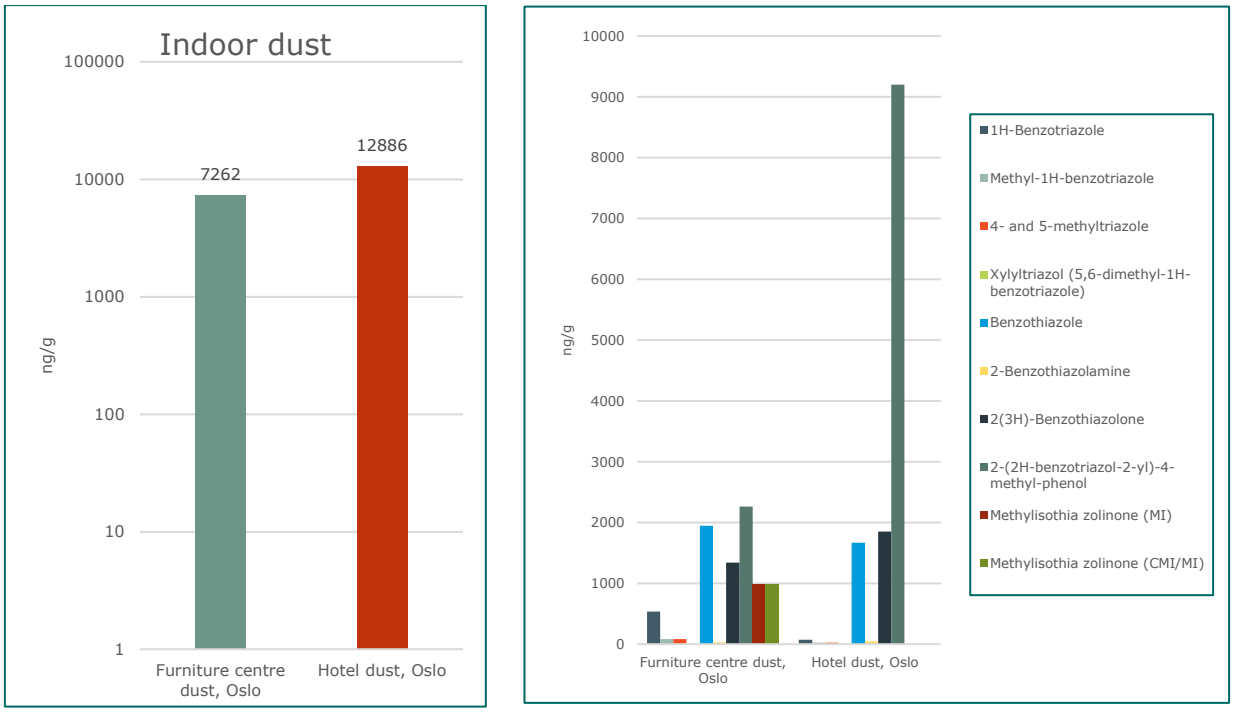



*Figure 10. Average of sum BTRs/BTHs concentrations ppb level in ambient in-door dust sampled from a furniture centre and a hotel locality from the screening programme 2016.*

Likewise, the highest summed concentration of BTHs/BTRs in the furniture centre was 10.9 µg/g d.w., also dominated by the above-mentioned UV light absorber. Other compounds found on the ppb (µg/kg) level were ***benzothiazole***, ***2(3H)-benzothiazolone*** and both ***methylisothiazolinones***.

Derivatives of BTRs, BTHs and benzophenone (BP) were found in indoor dust for the first time in 2013 (Wang *et al.*, 2013). All three groups were found in all the 158 samples from the U.S., China, Japan, and Korea. The average concentration of sum BTRs ranged from 20 to 90 µg/kg d.w. among the four countries, with a maximum of ~2000 µg/kg d.w. found in China. ***Tolyltriazole*** or ***methyl-1H-benzotriazole*** (CAS-no. 29385-43-1) was the major derivative of BTRs. Likewise, the average of sum BTHs ranged from 600 to 2000 µg/kg d.w. and 2-OH-BTH (not included in the 2016 screening) was the predominant BTH in dust from the U.S., Japan, and Korea. Compared to this, our findings were several times higher.

Another study of five BTRs in indoor air from New York compared 83 bulk samples of vapour and dust from various locales. The results showed a maximum occurrence of 492 ng/m$^3$ and that parking garages were a major source for benzotriazoles with a an average of 155 ng/m$^3$ (Jingchuan, Wan and Kannan, 2016). These levels reported internationally are one to two orders of magnitude higher than the occurrences in the 2016 screening. However, attention should be given to BTHs/BTRs in future air screening and monitoring.

### 3.5.3 UV-filters and light stabilizers

The compound ***Homosalate*** found in high concentrations in the landfill run-off and WWTP sludge was also detected in the indoor dust samples from both localities. The concentration range was 270-590 µg/kg d.w.

The UV-light stabilizer ***bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate*** found scattered in marine sediments, cod livers and rat livers, occurred in extreme amounts in the indoor dust samples from both localities in the concentration range of 17-55 mg/kg d.w. (ppm level).

### 3.5.4 Other prioritized suspected PBT compounds

#### Antioxidants and additives

Occurrences of BHA (***butylated hydroxyanisole***) in ambient dust samples occurred in concentrations at 4-14 µg/kg d.w. Additionally, indoor dust samples from the furniture centre contained ***AO246*** and ***AO22E46*** in concentrations 3-48 µg/kg d.w. and 190-210 µg/kg d.w. respectively. The occurrences in the hotel locale were higher with corresponding concentration ranges of 140-200 µg/kg d.w. and 180-290 µg/kg d.w.

#### Pesticides

The compound ***dichlorophene bis(5-chloro-2-hydroxyphenyl)methane*** was only recorded in the ROAF landfill run-off water (1 ng/l) and one sludge sample from VEAS WWTP (6 µg/kg d.w.), was also detected in the indoor dust samples. The concentration range was 17-43 µg/kg d.w. or 3-7 times (1-magnitude) higher at the furniture centre than in the VEAS sewage sludge.

# 3.6 Additional screening of PBT compounds

## 3.6.1 Musk compounds

Synthetic musk compounds were included in the additional screening in 2016. Two of those occurred in similar medium at high concentrations throughout the environmental matrices studied. The highest concentration of ***Galaxolide*** (HHCB) or ***1,3,4,6,7,8-hexahydro-4,6,6,7,8,8,-hexamethyl-cyclopenta[g]benzopyran*** (CAS-no. 1222-05-5) and ***Tonalide*** (AHTN) or ***6-Acetyl-1,1,2,4,4,7-hexamethyltetralin*** (CAS-no. 21145-77-7) were found in WWTP sludge. The HIAS sludge contained nearly twice the level as that found in VEAS sludge (Figure 11).

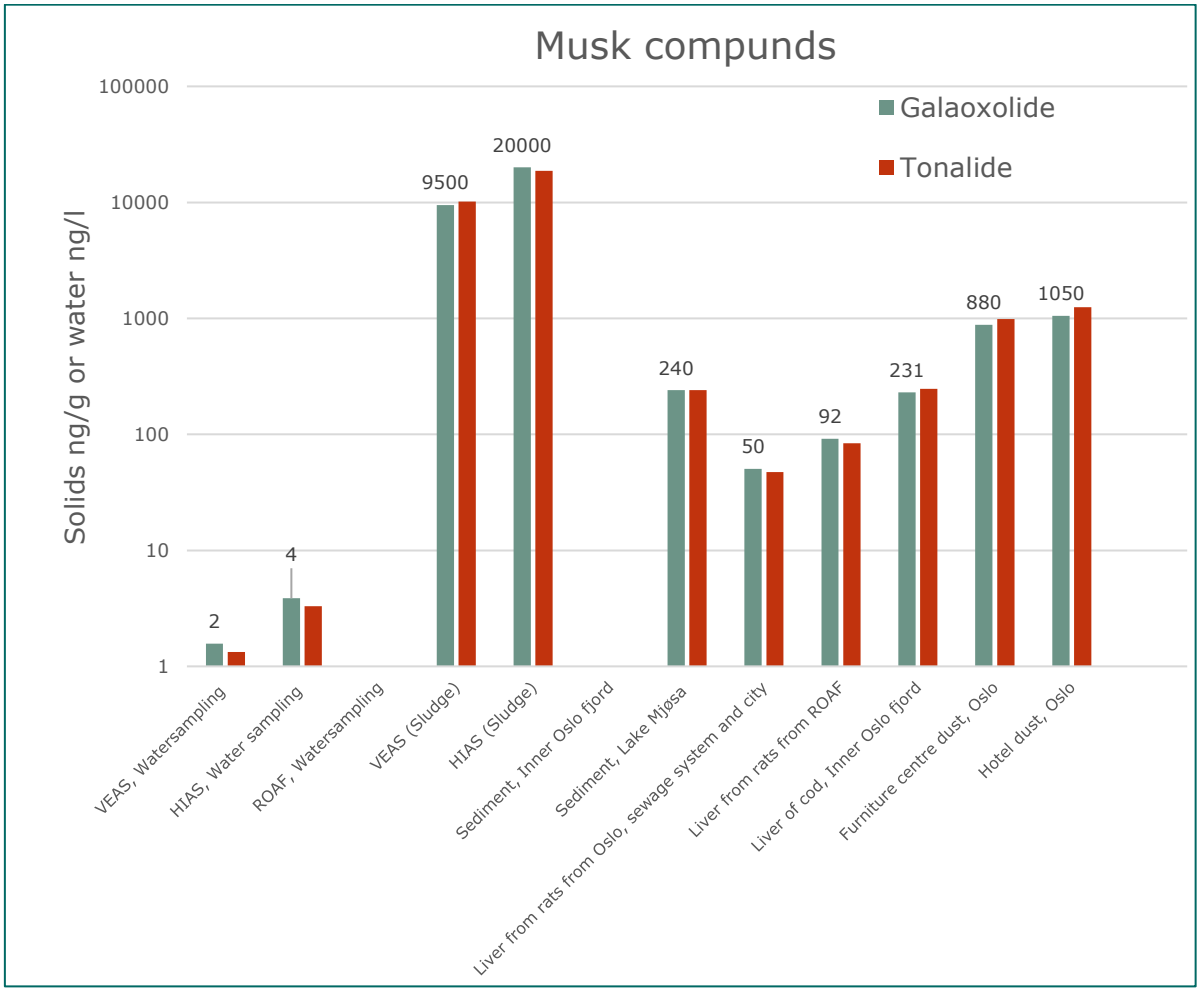


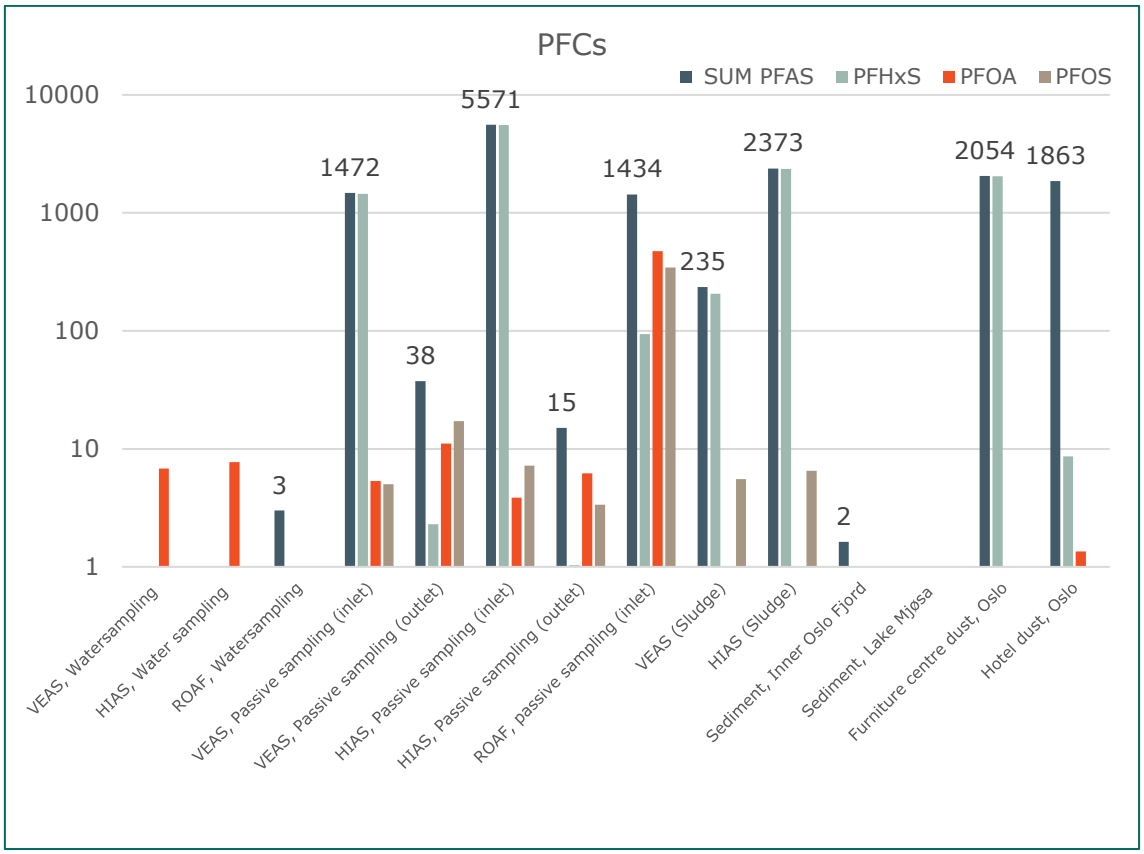

*Figure 11. Selected synthetic musk compounds on ng/g (solids) or ng/l (water) in various environmental matrices from the screening programme 2016.*

These polycyclic musks were not recorded in sediments or biota from the Oslofjord; however, they were found in all fish samples from Lake Mjøsa and those of the rat livers. Additionally, both HHCB and AHTN were found in the in-door dust samples at fairly high concentration ranges; 550-1500 µg/kg d.w.

### 3.6.2 Per-fluorinated and poly-fluorinated compounds - PFCs

PFC acid and sulfonate derivatives are widespread in nature and typical PBT compounds. The main screening programme prioritized a number of per-fluorinated and poly-fluorinated compounds such as nitro-PFCs and chlorinated-PFCs, perfluoroalkyl esthers, PFC-ketons and PFC–ethers, see Figure 12. The more common monitored compounds were included in the additional screening. Several different PFCs were recorded in wastewater, particulate matter and biological samples. Furthermore, noteworthy occurrences of ***PFHxS*** with high concentrations were found in wastewater passive samplers from the HIAS WWTP inlets with 5402-5689 ng/l and in-door dust from both sample sites with 1600-2300 µg/kg d.w. (Figure 12).

The highest biological accumulation was found in the rat livers exposed to sewage, with a concentration of 453 µg/kg d.w. for summed ***PFCs***. The corresponding levels in the marine environment showed concentrations 15-16 times lower in cod livers and crabs, along with trace amounts in periwinkle snails.



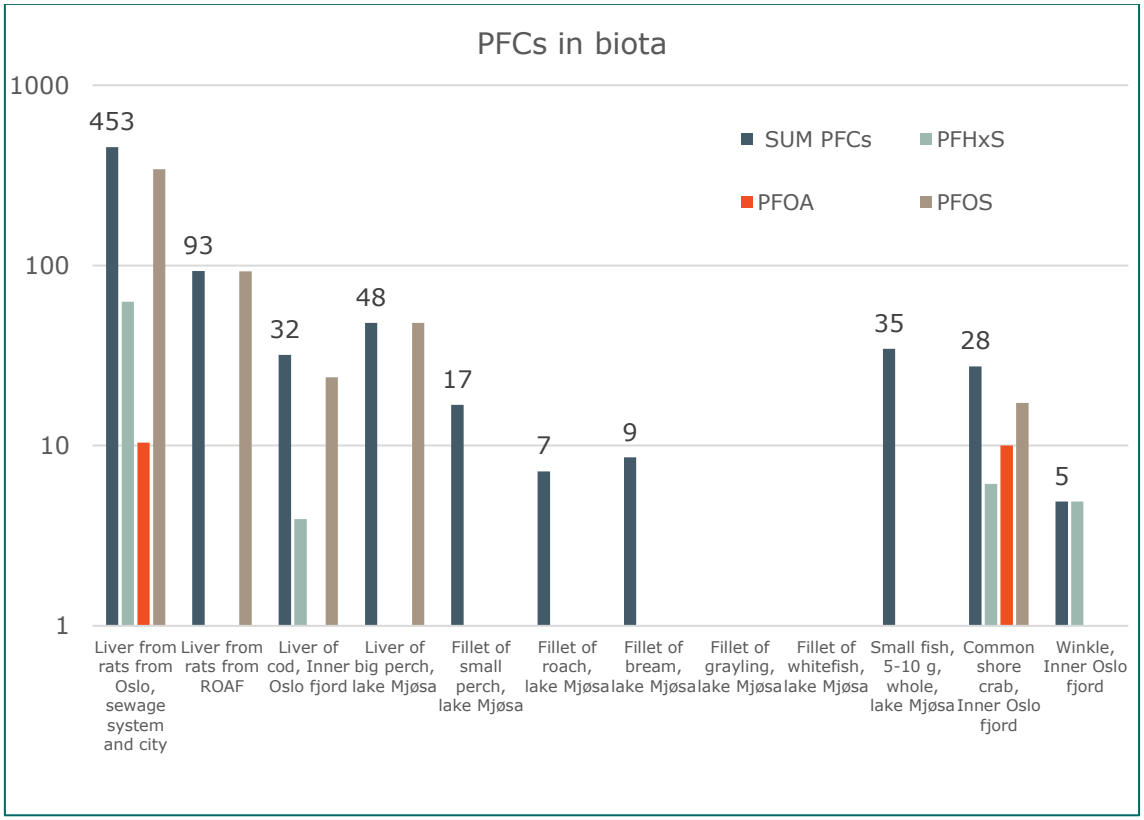




*Figure 12. Sum of PFC derivatives in various environmental matrices from the screening programme 2016.*

### 3.6.3 Polychlorinated biphenyls - PCBs

At present, low levels of polychlorinated biphenyls (PCBs) are expected in the environment, due to their ban in the early 1980's. The screening programme for PBT included selected PCBs as additional compounds The occurrence of PCB-7 (sum) in particulate matter and biota are illustrated in Figure 13.

The general level of PCB-7 was 5-42 µg/kg d.w. across the board, and in the case of cod having an exceedingly extreme value of more than on average 5000 µg/kg d.w. or 5 ppm (n=15) in their livers. It is suggested that PCB-7 liver concentration was related to fish size, due to long-term exposure and bioaccumulation.

The correlation between the fish weight and length was estimated and found to be good ($R^2$=0,928, upper right in Table 7). However, the maximum concentration of almost 21 mg/kg d.w. was recorded in a rather small specimen measuring 54 cm/1560g (sample no. 9 in Table 10).

This extreme concentration was almost seven times higher than the PCB-level in the largest specimen (sample no. 6 in Table 10). Checking the relation between size and PCB-7 concentrations in the liver showed, albeit poor correlation ($R^2$=0,0807, lower right in Figure 13). In Table 11, a comparison between PCB-7 level in cod liver from Norwegian waters is made.

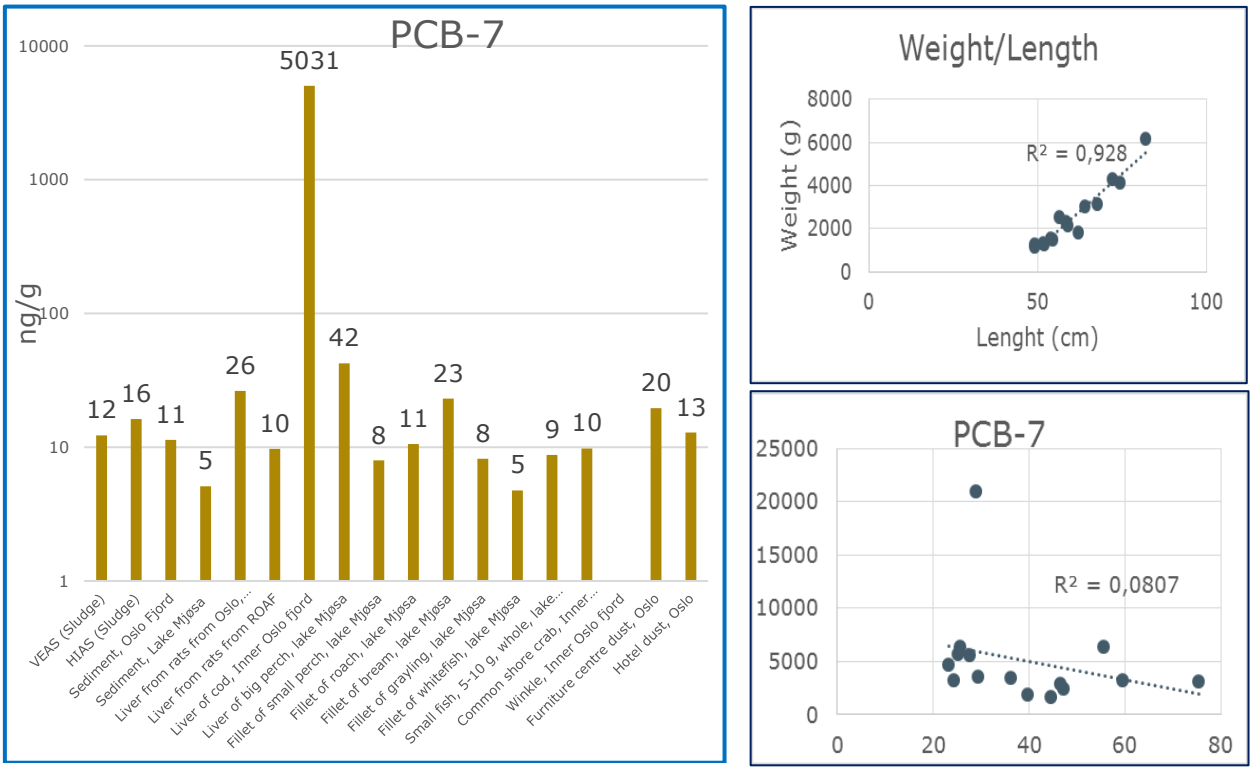



*Figure 13. Sum of polychlorinated biphenyls (PCBs) in various environmental matrices and correlation of fish size and cod liver concentration of sum PCB-7 from the screening programme 2016.*

**Table 11. Comparison of PCB-7 concentrations in cod livers from the screening 2016 and data from Norwegian waters (1997-2005) given in µg/kg w.w. (Bergfald & Co. AS, 2006).**

| Location | Samples | Average | Median | Min | Max |
|---|---|---|---|---|---|
| **Harbour areas Large city areas and industries** | 61 | 1736,8 | 1208,1 | 166,9 | 6584,6 |
| **Inner fjord areas Minor city areas and industries** | 66 | 1161,3 | 689,4 | 67,8 | 8030,8 |
| **Oslofjord VEAS area**[1] | 15 | 1006,1 | 698,4 | 333,2 | 4194,0 |

1) The w.w. estimated from d.w. by factor 20%.

### 3.6.4 Screened pharmaceuticals

The screening of 48 pharmaceuticals were included in the programme and most of them were found at various levels in the different matrices. All the components were grouped according to medical function, and each group was summarized within the different matrices. Selected occurrences are shown in Figure 14 and the most relevant results are discussed below. The four most frequent groups to be detected were: analgetica (pain killers), antidepressants, antihypertensia (blood regulators) and antibiotics.

#### Analgesics

The most dominant compound in the additional screening was the mild ***analgesics*** ***caffeine*** (CAS-no. 58-08-2) with expected high levels in wastewater. At VEAS, the inlet water contained, on average, 58 000 ng/l, and 7 200 ng/l at HIAS, which was considerably less due to the surrounding population at the two WWTPs. The corresponding average from the outlets at VEAS and HIAS contained 1 668 ng/l and 1 786 ng/l respectively, which left only insignificant amounts in the WWTP sludge.

The biological accumulation was seen in a few sewage rat livers at concentrations in the range of 110-2 800 µg/kg d.w. Additionally, caffeine was recorded in the indoor dust samples at close to 5 000 µg/kg d.w. in the furniture centre and at 14 000 µg/kg d.w. in the hotel location (Figure 14).

#### Antidepressants

A total of 11 ***antidepressant*** types were quantified in the studied matrices, all of them found in sewage water and 10 in the sewage sludge from the WWTPs. The most dominant substance was ***O-Desmethylvenlafaxine*** (CAS-no. 448904-47-0).

The passive samplers from the VEAS inlet contained two-weeks time integrated concentrations of 530 ng/l and 725 ng/l in the outlet. Likewise, at HIAS the range at the inlet was 1900-2300 ng/l and 800-970 ng/l at the outlet. No significant amounts left the WWTPs; however, insignificant amounts were found in sludge. None of the substances were detected in the biological material (Figure 15).


*Figure 14. Levels of selected pharmaceutical group analgesics in different matrices in the screening programme 2016.*

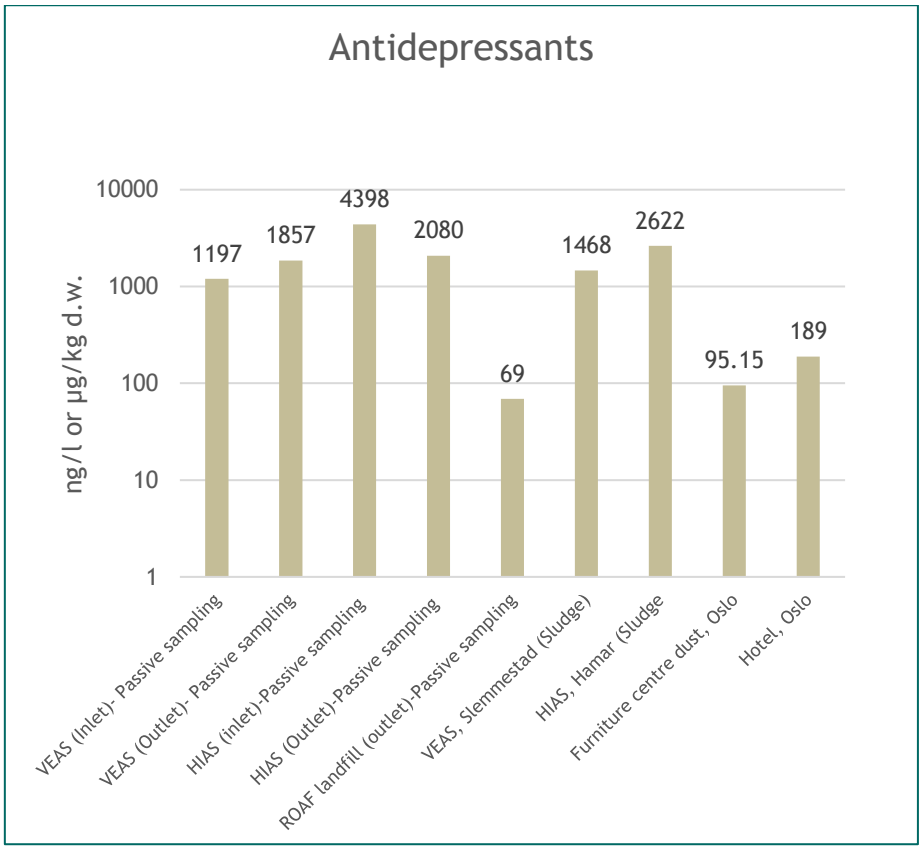



*Figure 15. Levels (log scale) of selected pharmaceutical group antidepressants in different matrices from the screening programme 2016.*

## Antibiotics

Nine ***antibiotics*** were screened for in the programme and, as expected, most were found in the wastewater samples ranging from trace amounts to concentrations of1200-1800 ng/l for single components. The two most common compounds found were ***Erythromycin*** (CAS-no. 114-07-8) and ***Trimethoprim*** or TMP (CAS-no. 738-70-5). The former is an strong antibiotic useful for the treatment of a number of bacterial infections such as respiratory tract infections, skin infections, chlamydia infections, pelvic inflammatory disease and syphilis. The latter is an antibiotic used mainly in the treatment of bladder infections and travellers' diarrhoea. Summed occurrences of antibiotics are shown in Figure 16.

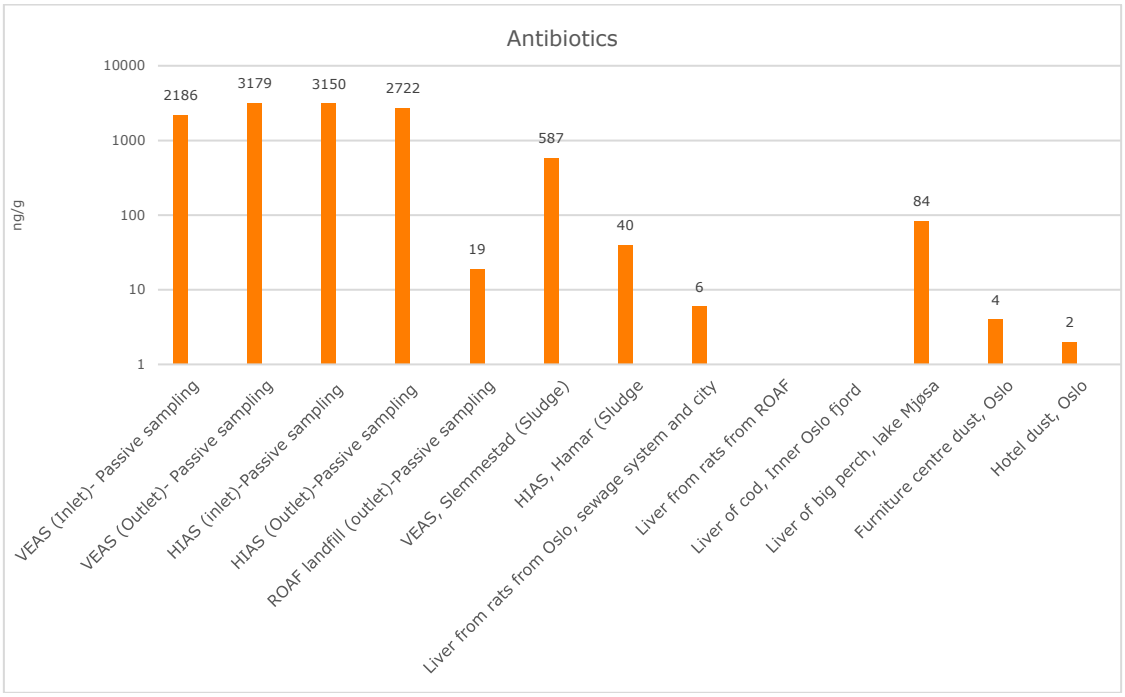



*Figure 16. Levels (log scale) of selected pharmaceutical group antibiotics in different matrices from the screening programme 2016.*

From these results the passive sampler appears to be the best method for collecting these types of pharmaceuticals. Having high bioaccumulation percentages, being water soluble and with half-life's ranging from two hours up to a maximum of four days, antibiotics were not expected to be found in sewage sludge or sediments and biota in the WWTP adjacent recipient waters. However, some scattered low concentrations were recorded in the VEAS sludge and adjacent sediment.

## Antihypertensia

The eight selected pharmaceuticals are within the group ***antihypertensia***. Among these are ß-blockers, which were included in the additional screening. All of these were recorded in all the wastewater samples, and all passive samplers from both WWTPs. From the summed concentrations it appears that the levels in the HIAS plant are somewhat higher than those in the VEAS WWTP (Figure 17).

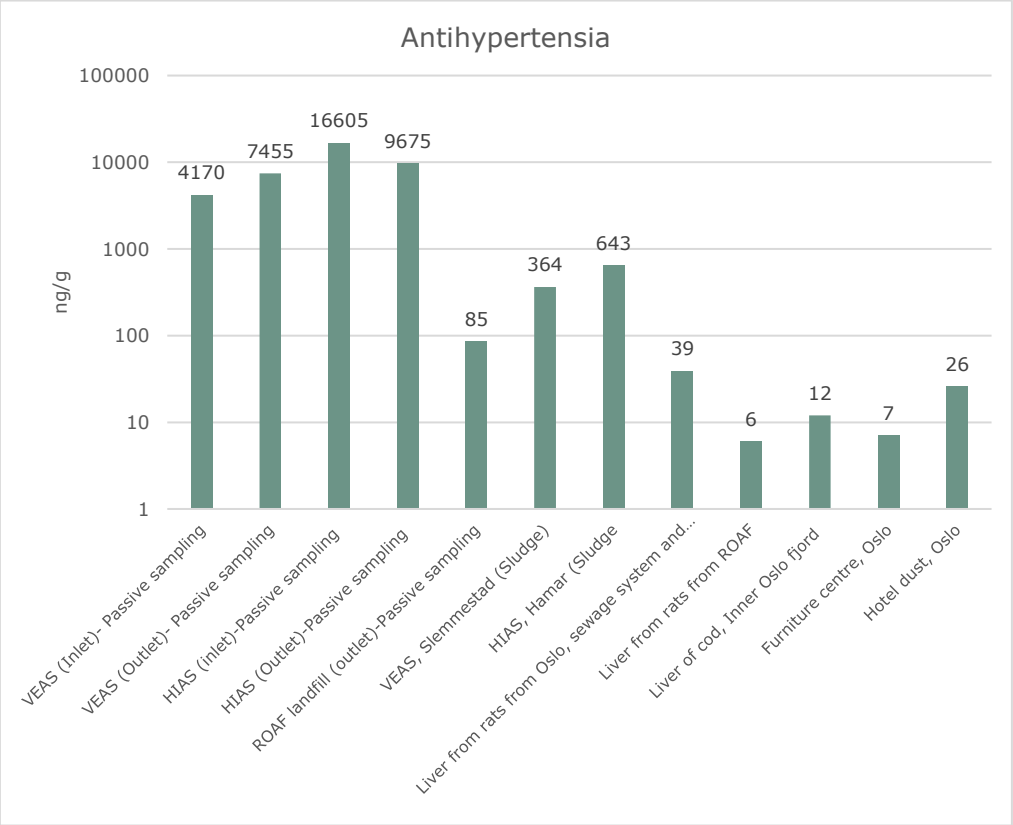



*Figure 17. Levels (log scale) of selected pharmaceutical group antibiotic in different matrices from the screening programme 2016.*

The single highest concentration was found for ***Valsartan*** (CAS-no. 137862-53-4) a blood pressure regulator with a concentration of 10 000 ng/l. No significant levels were found elsewhere, except maybe in the WWTP sludge.

## 3.7 Full scan screening

As part of the screening programme for 2016 a newly developed LC - full-scan analysis by HRMS/DIA method was deployed. This combined with a data independent MS/MS was performed on most matrices. This method is applicable to both target and non-target screening and quantification, and is adequate for many organic component groups and metabolites when sufficient standards are lacking (e.g. PFCs, pesticides, pharmaceuticals, etc.). This kind of screening is normally time consuming, and the outcome and success is not known, even though the basic data may be stored and used for later screening evaluations and purposes. A total of 11 compounds were targeted in the performed full scan, and the results are summarized in Table 13–Table 17 below. The results of the full scan screening are reported as "Confirmed", "Confirmation failed" or "Not found", as shown in the table below.

| | |
|---|---|
| Confirmed | Signal at m/z with difference < 5 ppm from theoretical m/z corresponding to elemental composition, S/N > 50 and isotope pattern score is higher than 70% |
| Confirmation failed | Signal at m/z with difference < 5 ppm from theoretical m/z corresponding to elemental composition, S/N > 50 but isotope pattern score is lower than 70% |
| Not found | No signal at m/z with difference < 5 ppm from theoretical m/z corresponding to elemental composition with and/or S/N < 50 |

### 3.7.1 Full scan of water samples

The total of five of the 11 targeted compounds were identified in the full scan performed on wastewater and land fill run off water. The scan included both traditional water samples and samples from passive sampling. The most noticeable was the oligomeric hindered amine UV light stabilizer (CAS-no. 65447-77-0) named *poly(4-hydroxy-2,2,6,6-tetra methyl-1-piperidine ethanol-alt-1,4-butanedioic acid).* This compound occurred in all traditional water samples collected and passive samples (Table 12). This indicates that the WWTP may be a source for the origin of the compound to the environment.

*Table 12.* Wastewater, run off water and passive samplers. Letter A, B, C indicate different sampling events, I = WW Inlet, O= WW outlet and F = WW Field Blank.

| ID-no | Compounds | CAS-no | VEAS WW | | | HIAS WW | | | ROAF Run off | | | VEAS Passive sampler | | | | | | HIAS Passiv sampler | | | | | | ROAF Passive sampler | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | A | B | C | A | B | C | I | O | F | I | O | F | I | O | F | I | O | F | O | F | O |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 75492 5-54-7 | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6, 7,7,8, 8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluoro-dihydrogenfosfat (9Cl) | 94200-54-1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6 7,7,8,8,9, 9, 10,10,11,11,12,12,12-heneicosa fluoro-dihydrogenfosfat (9Cl) | 57678-05-4 | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9, 9,10,10,11,11,12,12,13,13,14,14,14-penta cosafluoro-dihydrogen fosfat(9Cl) | 57678-07-6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12 ,12,13,13,14,14,15,15,16,16,17,17,18,18, 18-tritriaconta-fluoro-dihydrogenfosfat | 94200-55-2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 2,2'-Methylene bis(5-chlorophenol) | 1215-74-3 | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | Chlorophene (2-Benzyl-4-chloro-phenol) | 120-32-1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | | | | | | | | | | | | | | | | | | | | | | | | |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetra methyl-piperidin-4-yl) formamide | 12417 2-53-8 | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | | | | | | | | | | | | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2, 6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 19309 8-40-7 | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| *Compound confirmed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Confirmation failed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Compound not found* | *No signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, with S/N >50* |

In the traditional water samples from both the WWTPs, the compound (CAS-no. 1215-74-3) *2,2'-Methylene bis(5-chlorophenol)* was found. Additionally, the compound had accumulated in most of the passive samples at VEAS and HIAS, along with the ROAF landfill runoff (Table

13). The compound in question is a microbial degradation product from biphenyl-related compounds, an isomer of Dichlorophen. It is also used as a strong fungicide and antiseptic compound.

Moreover, the full scan revealed occurrences of the PFC group by two poly-fluorinated 3compounds CAS-nos. 57678-05-4 and 57678-07-6. The former in the ROAF landfill runoff water, and the latter in the HIAS wastewater (Table 12). The last compound of the five identified was a single occurrence of the UV-light stabilizer (CAS-no. 124172-53-8) named *N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetra methyl-piperidin-4-yl)formamide* in the passive sampler in the VEAS outlet (Table 12).

### 3.7.2 Full scan of solid sample matrix

A total of six out of the 11 compounds were identified in the full scan performed on solid matrices. The solid samples included sludge from both WWTPs, sediments from the Oslofjord and Lake Mjøsa and indoor dust samples from two localities. The compound with the most marked occurrence was *2,2'-Methylene Bis(5-chlorophenol)*, also identified in most of the abovementioned analysed water samples.

*Table 13. WW Sludge, freshwater and marine sediments and indoor dust. Letter A, B, C, D indicate different sampling events for sludge and numbers 1-7 are individual samples. White cells indicate that the substance is not analyzed.*

| ID-no | Compounds | CAS-no | VEAS sludge | | | | HIAS sludge | | | Oslofjord sediments | | | | | | | Mjøsa sediments | | | | | | Indoor dust | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | B | C | D | A | B | C | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 1 | 2 |
| 14 | F-53 Kalium 1,1,2,2-tetra-fluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluoro-dihydrogen fosfat (9Cl) | 94200-54-1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12 heneicosafluoro-dihydrogen fosfat (9Cl) | 57678-05-4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol,3,3,4,4, 5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosa fluorodihydrogen fosfat (9Cl) | 57678-07-6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17, 18,18,18-tri triacontafluorodihydrogen fosfat | 94200-55-2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | Chlorophene (2-Benzyl-4-chloro-phenol) | 120-32-1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetra-methyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl) formamide | 124172-53-8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis (2,2, 6,6-tetramethyl-4-piperi dinyl)-, polymer m/ morpholine -2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| *Compound confirmed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Confirmation failed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Compound not found* | *No signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, with S/N >50* |

All VEAS WWTP sludge samples (1 sample in HIAS), all sediment sample from Lake Mjøsa (scattered in the Oslofjord sediments), and all indoor dust samples scanned showed the presence of the compound. The oligomeric hindered amine UV-light stabilizer N,N'-1,6-hexanediylbis(N-(2,2, 6,6-tetramethyl-piperidin-4-yl) formamide, found in all water and passive samples (cf. chap. 3.7.1) was identified in sludge, Lake Mjøsa sediment and all indoor dust samples (Table 14).

Three per-fluorinated and poly-fluorinated compounds CAS-nos. 57678-05-4, 57678-07-6 and 754925-54-7 were identified at all sites. The compound *1-Tetradecanol,3,3,4,4, 5,5,6, 6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosa fluoro-dihydrogen phosphate* only in sludge from both WWTP and *1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12 heneicosafluoro-dihydrogen phosphate* in all marine sediment samples, four out of the six lake sediments and in two dust samples. The latter *Potassium 1,1,2,2-tetra-fluoro-2-(per-fluoro-hexyloxy)-etan sulfonat* (F-53) was only identified in HIAS sludge (Table 14). The last compound identified in the solid matrices was the UV-light stabilizer (CAS-no. 193098-40-7) *1,6-Hexanediamine N,N'-bis(2,2, 6,6-tetramethyl-4-piperidinyl)-, polymer m/ morpholine-2,4,6-trichloro-1,3,5-triazine* in HIAS WWTP sludge.

### 3.7.3 1.1.1 Marine biota samples

The only compound identified in the full scan analysis was the oligomeric hindered amine UV light stabilizer (CAS-no. 65447-77-0) named *poly(4-hydroxy-2,2,6,6-tetra methyl-1-piperidine ethanol-alt-1,4-butanedioic acid).* The compound was found in nine of the 15 cod liver samples in all three crab samples and one periwinkle sample Table 14.

*Table 14. Marine biota - cod liver, common crabs and periwinkle (snails). Heading numbers 1-15 represent the individual samples.*

| ID-no | Compounds | CAS-no | Cod liver | | | | | | | | | | | | | | | Crabs | | | Snails | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 1 | 2 | 3 | 1 | 2 |
| 14 | F-53Kalium 1,1,2,2-tetra fluoro-2-(perfluorohexyloxy)-etan sulfonat | 754925-54-7 | | | | | | | | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol,3,3,4,4,5,5,6,6, 7,7, 8,8,9,9,10,10,11,11,12,12,13,13,14, 14,15,15,16,16,16-nona-cosafluoro-dihydrogen fosfat (9Cl) | 94200-54-1 | | | | | | | | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6, 7,7, 8,8,9,9,10,10,11,11,12,12, 12-hene icosafluoro-dihydrogen fosfat (9Cl) | 57678-05-4 | | | | | | | | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4, 5,5,6, 6,7,7, 8,8,9,9,10,10,11,11,12, 12,13,13, 14, 14,14-pentacosafluoro-dihydrogen fosfat | 57678-07-6 | | | | | | | | | | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11, 12,12,13,13,14,14,15,15,16,16,17, 17,18,18,18-tri triacontafluoro-dihydrogen fosfat | 94200-55-2 | | | | | | | | | | | | | | | | | | | | |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | | | | | | | | | | | | | | | | | | | | |
| 62 | Chlorophene (2-Benzyl-4-chloro-phenol) | 120-32-1 | | | | | | | | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetra methyl-1-piperidine ethanol-alt-1,4-butane dioic acid) | 65447-77-0 | | | | | | | | | | | | | | | | | | | | |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl) formamide | 124172-53-8 | | | | | | | | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | | | | | | | | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-polymer m/ morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| *Compound confirmed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Confirmation failed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Compound not found* | *No signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, with S/N >50* |

### 3.7.4 Freshwater biota samples

In the scanned samples of freshwater fish filet and bulk juvenile fish two compounds were detected, the UV-light stabilizer *poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid)* and the fungicide Dichlorophen isomer 2,2'-Methylene Bis(5-chlorophenol) (
Table 15).

*Table 15. Freshwater biota - Fish filet from perch, roach, bream, grayling, whitefish and bulk samples of juvenile fish. Heading numbers 1-5 represent individual samples.*

| ID-no | Compounds | CAS-no | Perch filet | | | | | Roach filet | | | | Bream, grayling, whitefish filet | | | | | Fish juvenile | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 1 | 1 | 2 | 1 | 2 |
| 14 | F-53 Kalium 1,1,2,2-tetra fluoro-2-(per-fluoro-hexyloxy) -etan sulfonat | 754925-54-7 | | | | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4, 5,5,6,6,7,7,8,8,9,9,10,10,11, 11, 12,12,13,13,14,14,15,15,16,16,16-nona-cosafluoro-dihydrogenfosfat (9Cl) | 94200-54-1 | | | | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7, 8,8,9,9,10,10,11,11, 12,12,12-heneicosafluoro-dihydrogenfosfat (9Cl) | 57678-05-4 | | | | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5, 5,6,6,7,7, 8,8,9,9,10,10,11, 11,12,12,13,13, 14,14, 14-pentacosafluoro-dihydrogen fosfat (9Cl) | 57678-07-6 | | | | | | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14, 14,15,15,16,16,17,17,18,18,18-tritriaconta-fluoro-dihydrogenfosfat | 94200-55-2 | | | | | | | | | | | | | | | | |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | | | | | | | | | | | | | | | | |
| 62 | Chlorophene (2-Benzyl-4-chloro-phenol) | 120-32-1 | | | | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | | | | | | | | | | | | | | | | |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | | | | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | | | | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2, 6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | | | | | | | | | | | | | | | | |

| | |
|---|---|
| *Compound confirmed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Confirmation failed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Compound not found* | *No signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, with S/N >50* |

### 3.7.5 Land based biota samples

The full scan of 11 samples from the rat livers first and foremost confirmed the presence of the previously mentioned UV-light stabilizer compound *poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid)*, also abundant in wastewater, cod liver and other marine biota, i.e. freshwater fish filet and sediments, as well as with indoor dust samples. The compound was identified in all liver samples from both the Oslo city sewer and the ROAF landfill (Table 16).

*Table 16. Land based biota - Rat liver from Oslo city sewer and ROAF land fill. Heading numbers 1-11 represent individual samples.*

| ID-no | Compounds | CAS-no | Oslo rats | | | | | | | ROAF rats | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 14 | F-53 Kalium 1,1,2,2-tetra fluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14, 15, 15,16,16,16-nona-cosafluoro-dihydrogenfosfat (9Cl) | 94200-54-1 | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7, 8,8,9,9,10,10,11,11,12,12,12-heneicosafluoro-dihydrogenfosfat (9Cl) | 57678-05-4 | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5, 5,6,6,7,7, 8,8,9,9,10,10, 11,11,12,12,13,13, 14,14, 14-pentacosafluoro-dihydrogen fosfat (9Cl) | 57678-07-6 | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18, 18,18-tritriaconta-fluoro-dihydrogenfosfat (9Cl) | 94200-55-2 | | | | | | | | | | | |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | | | | | | | | | | | |
| 62 | Chlorophene (2-Benzyl-4-chloro-phenol) | 120-32-1 | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | | | | | | | | | | | |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2, 6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | | | | | | | | | | | |

| | |
|---|---|
| *Compound confirmed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Confirmation failed* | *Signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, S/N >50 and isotope pattern score is higher than 70%* |
| *Compound not found* | *No signal at m/z with difference <5ppm from theoretical corresponding to elemental composition, with S/N >50* |

# 4. Environmental risk

The environmental risk may be assessed by comparing the highest measured concentrations (MEC) of the compounds in outlet water from the waste water treatment plants and sediment with available PNEC values (Table 17) by calculating MEC/PNEC ratios (Table 18).

If the MEC/PNEC ratio is greater than 1, it generally indicates an environmental risk. In cases where the measured concentrations were below the LOD, a worst-case scenario was used in the MEC/PNEC calculations in order to assess whether the LOD is sufficiently low. As PNEC values were only available for a limited number of compounds, it was not possible to perform a complete environmental risk assessment.

Of the 80 substances, there were 21 that were registered in the European Chemical Agency database ECHA. The MEC/PNEC relationships were calculated for 13 water (freshwater and marine), 16 sediment samples and 13 passive samplers. Both freshwater and marine ratios were calculated.

The log Pow is also listed in Table 17. Substances with log Pow > 3 may have potential for bioaccumulation.

*Table 17. PNEC values from ECHA for freshwater (f), marine water (m) and sediment (s).*

| No | Parameter | CAS no. | $PNEC_f$ (ng/l) | $PNEC_m$ (ng/l) | $PNEC_{f.sed.}$ (µg/kg dw) | $PNEC_{m.sed.}$ (µg/kg dw) | Log Pow |
|---|---|---|---|---|---|---|---|
| 1 | Perfluorotripropylamin | 338-83-0 | 0 | 0 | n.e.e. | n.e.e | 4.69-7.08 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | 108 000 | 11 000 | 518 | 52 | |
| 28 | 1H-Benzotriazole | 95-14-7 | 19 000 | 19 000 | 4 | 4 | 0.80-1.61 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | 8 000 | 8 000 | 3 | 3 | 1.71 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | 0 | 0 | 136 | 14 | 1.67-3.27 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | 27 000 | 27 000 | 11 960 | 11 960 | 3.56-4.75 |
| 42 | Homosalate (HS) | 118-56-9 | 400 000* | 40 000* | 272 560 | 27 256 | 3.92-6.16 |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | 200 | 20 | 87 | 9 | 2.73-4.41 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | 80 000 | 8 000 | 2 300 | 3 410 000 | (17.1) |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid/Octyl triazone | 27503-81-7 | n.h.i. | n.h.i. | n.h.i. | n.h.i. | -1.14-1.19 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | n.h.i. | n.h.i. | 927 000 | 92 700 | 6.21-11.5 |
| 50 | BHA | 732-26-3 | 0 | 0 | 1 368 | 137 | 5.44-6.39 |
| 51 | AO 2246 | 119-47-1 | n.h.i. | n.h.i. | n.h.i. | n.h.i. | 5.32-7.97 |
| 52 | DTBSBP | 1709-70-2 | 1 000 000 | 100 000 | | | 8.28-17.2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 53 | AO 2246 | 118-82-1 | n.h.i. | n.h.i. | n/i.d.a | n/i.d.a | 6.23-8.99 |
| 54 | AO 22E46 | 85-60-9 | 100 000 | 10 000 | 48 520 | 4 850 | 6.57-9.09 |
| 55 | BHT-guinol | 121-00-6 | 2 000 | 0 | 28 539 | 28 539 | 3.20-3.54 |
| 57 | Behentrimonium methosulfate | 81646-13-1 | 13 000 | 1 300 | 1 250 | 125 | 3.90-4.25 |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | 19 000 | 2 000 | 29 000 | 2 900 | 3.89-6.50 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | 236 000 | 24 000 | 325 000 | 32 500 | 2.90-3.98 |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | 420 | 42 | 520 | 50 | 3.91-7.41 |

* = n.h.i.
n.h.i. = No hazard identified
n.e.e = No exposure expected
n/i.d.a. = No or insufficient data available or present

*Table 18. Calculated MEC/PNEC ratios for freshwater (f), marine water (m), sediment (s) and passive samplers (PS). Ratios above 1 is indicative of environmental risk and are shown in bold. *LOD used as MEC. All PNEC values were obtained from ECHA, The MEC water concentrations are from the outlets of the WWTPs.*

| | | **Highest measured concentrations (MEC)** | | | | | | **MEC/PNEC** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **No** | **CAS no.** | **f** | **m** | **f.s.** | **m.s.** | **f.PS** | **m.PS** | **f** | **m** | **f.s.** | **m.s.** | **f.PS** | **m.PS** |
| | **Unit** | **ng/l** | **ng/l** | **µg/kg dw** | **µg/kg dw** | **ng/l** | **ng/l** | | | | | | |
| 1 | 338-83-0 | | | | | | | | | | | | |
| 16 | 62037-80-3 | | | | | | | | | | | | |
| 28 | 95-14-7 | 3400 | 570 | 12* | 12* | 2500 | 1300 | 0.179 | 0.030 | **3.000*** | **3.000*** | 0.132 | 0.068 |
| 29 | 29385-43-1 | 1400 | 500 | 11* | 10* | 5000 | 2400 | 0.175 | 0.063 | **3.667*** | **3.333*** | 0.625 | 0.300 |
| 36 | 2440-22-4 | 1.2* | 0.9* | 8.3* | 8.6* | 27 | 8.9 | | | 0.061 | 0.614 | | |
| 41 | 70356-09-1 | | | | | | | | | | | | |
| 42 | 118-56-9 | | | 100* | 59* | 430* | 410* | | | 0.000 | 0.002 | 0.001 | 0.010 |
| 43 | 71617-10-2 | 5.9* | 4.9* | 7.2* | 7.4* | 4.8* | 5* | 0.030 | 0.245 | 0.083 | 0.822 | 0.024 | 0.250 |
| 44 | 88122-99-0 | | | | | | | | | | | | |
| 45 | 27503-81-7 | 780 | 500 | 12* | 11* | 190 | 180* | | | | | | |
| 46 | 21850-44-2 | | | 1.3 | 2.1 | 17* | 22 | | | 0.000 | 0.000 | | |
| 50 | 732-26-3 | 5* | 5* | 1.9* | 1.1* | 3.1* | 2.9* | | | 0.001 | 0.008 | | |
| 51 | 119-47-1 | 23 | 93 | 2.1* | 6 | 2.5* | 2.4* | | | | | | |
| 52 | 1709-70-2 | | | | | | | | | | | | |
| 53 | 118-82-1 | 5* | 5* | 1.7* | 1* | 6.5* | 6.2* | | | | | | |
| 54 | 85-60-9 | 5* | 5* | 0.9* | 0.5* | 3.8* | 3.6* | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| 55 | 121-00-6 | | | | | | | | | | | | |
| 57 | 81646-13-1 | | | | | | | | | | | | |
| 64 | 52829-07-9 | 180* | 130* | 14 | 33 | 7.8* | 8* | 0.009 | 0.065 | 0.000 | 0.011 | 0.000 | 0.004 |
| 65 | 124172-53-8 | | | | | | | | | | | | |
| 69 | 57583-54-7 | 2.9* | 2.2* | 12* | 12* | 11* | 11* | 0.007 | 0.052 | 0.023 | 0.240 | 0.026 | 0.262 |

## 4.1 Heteroaromatic compounds

A comparison of the LOD values and PNEC for the compounds in Table 18 showed that the LOD was higher than the PNEC sediment for ***1H-Benzotriazole*** (CAS-no 95-14-7) and ***methyl-1H-benzotriazole*** (CAS-no 29385-43-1). Therefore, a potential environmental risk for sediment dwelling organisms from these compounds cannot be excluded even though the measured concentrations were below LOD. Moreover, the substances log $P_{OW}$ is <3 (Table 1) indicating that the substances are water soluble, and are not likely to bioaccumulate and will probably not end up in the sediment.

No environmental risk was identified at the highest measured concentrations of 2-(2H-benzotriazol-2-yl)-4-methyl-phenol in sediment. The PNEC for the water phase was stated to be zero. This value was excluded from the calculations.

Generally, low environmental risk was identified, based on the measured concentrations of the three heteroaromates. However, the LOD for 1H-benzotriazole and methyl-1H-benzotriazole in sediment samples were above PNEC sediment values, meaning that concentrations below LOD might still pose an environmental risk. The concentrations measured in fresh water and marine water posed low environmental risk.

## 4.2 UV-filters and light stabilizers

There was a PNEC available for four of the UV-filters in ECHA (butyl methoxydibenzoylmethane (CAS no 70356-09-1), homosalate (CAS no. 118-56-9), isoamyl p-methoxycinnamate (CAS no. 71617-10-2) and phenylbenzimidazole sulphonic acid (CAS no. 88122-99-0)). None of these substances were detected in the samples (outlet of WWTP and sediment). However, a fifth substance (2-phenyl-5-benzimidazolesulfonic acid, CAS no. 27503-81-7) was also registered with the comment "no hazard identified". This substance was detected in the water samples, but the concentrations are expected to be too low to pose environmental risk.

## 4.3 Phenols and polyphenols

There was a PNEC available for five of the phenols and polyphenols in ECHA (BHA (CAS no. 732-26-3), DTBSBP (CAS no. 1709-70-2), AO22E46 (CAS no 85-60-9), BHT-guinol (121-00-6) and Behentrimonium methosulfate (CAS no 81646-13-1)). None of these substances were detected in the samples. However, two more substances (AO246 (CAS no 119-47-1) and AO 2246 (CAS no 118-82-1)) were also registered with the comment "no hazard identified". The substance AO246 was detected in the water and sediment samples, but the concentrations are expected to be too low to pose an environmental risk.

## 4.4 Other prioritized PBT compounds

Two of the fluorinated compounds were registered in ECHA, e.g. perfluorotripropylamin (CAS no. 338-83-0) and ammonium per-fluoro(2-methyl-3-oxahexanoate) (CAS no. 62037-80-3). However, the substances were not quantified in any of the samples.

The brominated flame retardant tetrabromobisphenol A bis (dibromopropyl ether) (CAS no 21850-44-2) was also registered with sediment PNECs. The measured concentrations were much lower than the PNEC indicating no environmental risk.

Other substances such as bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate (CAS no. 52829-07-9) and PBDPP Resorcinol bis(bifenylfosfat) (CAS no. 57583-54-7) were also measured in concentrations lower than the PNECs for both the water and sediment matrices.

# 5. Conclusion

In the screening programme for 2016 (Part 2), the occurrence of approximately 50 suspected PBT compounds were measured on various matrices throughout the environment. Several of the targeted compounds were detected in wastewater, sludge, landfill runoff, sediment, land based and aquatic biota as well as indoor dust. Samples were collected from locations within the Oslofjord area, Lake Mjøsa and in the vicinity of the City of Oslo. The substances were organized into eight groups; heteroaromatic compounds, UV-filters, brominated flame retardants, phenols and poylphenols, fluorinated compounds, perfluoroalkyl acids and sulfonic acids, perfluorophosphate esters and other compounds. The most important findings are listed below.

- 2(3H)-benzothiazolone was recorded with concentrations in the µg/l (ppb) level in the landfill runoff.

- Benzothiazole was present in all biota samples with an average concentration of 216 µg/kg d.w. (ppb) (n=35).

- 1H-benzotriazole was a dominating compound in sewage rats (up to 9,9 mg/kg) and periwinkles. Periwinkles appeared to be a better matrix to illustrate bioaccumulation of BTRs/BTHs in the marine environment, than the traditionally used cod liver.

- Ensulizole (CAS-no. 27503-81-7) was found in concentrations of 450–570 ng/l in the VEAS inlet (passive sampler) and 230-500 ng/l at the outlet, and slightly higher (570–780 ng/l) at the HIAS outlet. Its highest concentrations of 820–1400 ng/l, were in the ROAF runoff.

- Homosalate was only recorded in the landfill runoff, however, in quite high concentrations (7 700 and 10 000 ng/l), and in the sludge from both WWTPs (2230–2930 µg/kg d.w. at VEAS and 1490-2210 µg/kg d.w. at HIAS). Homosalate was also found in the indoor dust samples from both of the screened locations (270–590 µg/kg d.w.) and in perch liver (620-5800 µg/kg d.w.)

# 6. References

Alvarez, D.A., J.D. Petty, J.N. Huckins, T.L. Jones-Lepp, G.T. Getting, J.P. Goddard and S.E. Manahan, 2004. Development of a passive in situ sampler for hydrophobic organic contaminants in aquatic environments. *Environmental Toxicology and Chemistry, 23, 1640-1648.*

Asimakopoulos A.G., A. Ajibola, K. Kannan and N.S. Thomaidis, 2013. Occurrence and removal efficiencies of benzotriazoles and benzothiazoles in a wastewater treatment plant in Greece. *Sci. Total Environ. 2013 May 1; 452-453: 163-71.*

Bergfald & Co. AS, 2006. Levels of PCB and dioxins in cod liver a compilation of dioxin, ortho-PCB and PCB-7 data from cod liver in Norwegian waters (translated). *Report; 25 pp.*

Blytt, L.D., Bruskeland, A.B. and Stang, P. 2013. Organiske miljøgifter i norsk avløpsslam -Resultater fra undersøkelsen i 2012/13. *Norsk Vann rapport 198. 100 pp.* (In Norwegian)

Environment Canada & Health Canada, 2010. Screening Assessment for the Challenge, Batch 9, CAS-no. 41556-26-7: Decanedioic acid, bis(1,2,2,6,6-pentamethyl-4-piperidinyl)-ester. *http://www.ec.gc.ca/ese-ees/.*

Gewurtz, S.B., Bhavsar, S.P. and R. Fletcher, 2011. Influence of fish size and sex on mercury/PCB concentration: Importance for fish consumption advisories. *Environment International, Volume 37, Issue 2, February 2011, 425-434.*

Giger, W; Schaffner, C; Kohler, HP (2006). "Benzotriazole and tolyltriazole as aquatic contaminants. 1. Input and occurrence in rivers and lakes". *Environmental Science & Technology, 40 (23): 7186-92.*

Green, N.W., 2002. Joint Assessment and Monitoring Programme in Norway 2002 Contaminants - Oslofjord area, Lista, Sørfjorden, Hardangerfjorden, Bømlo, Lofoten area and Varangerfjord. *Programme proposal for 2002, NIVA project 80106, 21.2.2002. 56 sider.*

Jingchuan X., Y. Wan and K. Kannan, 2016. Occurrence of benzotriazoles (BTRs) in indoor air from Albany, New York, USA, and its implications for inhalation exposure. *J. Toxicological & Environmental Chemistry, vol. 99, 2017, Issue 3, 402-414.*

Koepler A., M. Jekel and T. Reemtsma, 2005. Occurrence, Sources, and Fate of Benzothiazoles in Municipal Wastewater Treatment Plants. *Environ. Sci. Technol. 2005, 39, 3792-3798.*

Norwegian Environment Agency, 2016. Screening programme 2015. Benzothiazoles, siloxanes, pigments & PBT compounds. *Report M-596/2016, 49 pp.*

Wang L., A.G. Asimakopoulos, H.B. Moon, H. Nakata and K. Kannan, 2013. Benzotriazole, benzothiazole, and benzophenone compounds in indoor dust from the United States and East Asian countries. *Environ Sci Technol. 2013 May 7;47(9):4752-9.*

# Attachments

The next 60 pages contains results from the screening programme 2016 (Part 2), PBT compounds.

# Screening 2016 project 2, PBT substances, Norwegian Environment Agency

## Analysis results

**Summary**

| Matrix | Number of samples |
|---|---|
| Water | 9 |
| SPMD/POCIS | 15 |
| Sludge | 6 |
| Sediment | 11 |
| Biota rat | 11 |
| Biota fish liver | 15 |
| Biota fish fillet | 16 |
| Biota invertebrates | 5 |
| Indoor air | 10 |
| House dust | 6 |
| ***Total*** | ***104*** |

| Type of nalysis parameter | Number of parameters | Comments |
|---|---|---|
| Mandatory, basis | 80 | |
| Mandatory, final results, quantitative | 40 | Approximately. Varies from matrix to matrix |
| Mandatory, final results, target screening | 11 | Approximately. Varies from matrix to matrix |
| Additional parameters | 115 | Approximately. Varies from matrix to matrix |
| ***Sum final results*** | ***165*** | ***Approximately. Varies from matrix to matrix*** |

## Comments

- NA in the result tables means in this case that the compounds was analysed, but due to high matrix background, the peaks could not be detected.

- White and light grey blank cells in the results tables means that no analysis have been conducted due to lack of lab standards, or too small quantity of sample material (only valid for air samples).

- Target screening results are marked with green, dark grey and light red cells. See key below.

For target screening, this key is used:

| Target screening | Description |
|---|---|
| Signal at m/z with difference < 5 ppm from theoretical m/z corresponding to elemental composition, S/N > 50 and isotope pattern score is higher than 70% | Confirmed |
| Signal at m/z with difference < 5 ppm from theoretical m/z corresponding to elemental composition, S/N > 50 but isotope pattern score is lower than 70% | Confirmation failed |
| No signal at m/z with difference < 5 ppm from theoretical m/z corresponding to elemental composition with and/or S/N < 50 | Not found |

## Matrix: water samples of municipal waste water and of run-off water from landfill

| No. | Parameter | CAS-number | Unit of mearure | Site: VEAS, Slemmestad, wastewater | | | Site: HIAS, Hamar, wastewater | | | Site: ROAF landfill, run-off water | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | | | Sample date | | | Sample date | | |
| | | | | 23.08.16 | 06.09.16 | 20.09.16 | 23.08.16 | 06.09.16 | 20.09.16 | 23.08.16 | 06.09.16 | 20.09.16 |
| 1 | Perfluorotripropylamin | 338-83-0 | ng/L | | | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | ng/L | | | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | ng/L | | | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | ng/L | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.40 | <0.40 | <0.40 |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | ng/L | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.40 | <0.40 | <0.40 |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | ng/L | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.40 | <0.40 | <0.40 |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | ng/L | | | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | ng/L | | | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | ng/L | | | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | ng/L | | | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | ng/L | | | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | ng/L | | | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | ng/L | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.40 | <0.80 | <0.80 | <0.80 |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | ng/L | | | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | ng/L | <1.2 | <1.3 | <0.61 | <1.4 | <1.5 | <1.8 | <1.7 | <2.5 | <2.4 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | ng/L | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15 ,15,16,16,16-nona-cosafluorodihydrogenfosfat (9Cl) | 94200-54-1 | ng/L | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9Cl) | 57678-05-4 | ng/L | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9Cl) | 57678-07-6 | ng/L | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | ng/L | | | | | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10,11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9Cl) | 101896-22-4 | ng/L | | | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | ng/L | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.40 | <0.40 | <0.40 |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | ng/L | | | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-triacontafluorotetradecan | 307-62-0 | ng/L | | | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | ng/L | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.40 | <0.40 | <0.40 |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | ng/L | | | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | ng/L | <1.5 | <1.7 | <0.75 | <1.7 | <1.8 | <2.2 | <2.2 | <3.2 | <3 |
| 28 | 1H-Benzotriazole | 95-14-7 | ng/L | 540 | 570 | 390 | 3400 | 720 | 1200 | 2000 | 3200 | 3200 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | ng/L | 390 | 500 | 290 | 880 | 1400 | 1300 | 570 | 1100 | 830 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | ng/L | 390 | 500 | 290 | 860 | 1400 | 1300 | 560 | 1100 | 800 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | ng/L | 15 | 37 | 17 | 42 | 50 | 35 | 20 | 31 | 23 |
| 32 | Benzothiazole | 95-16-9 | ng/L | 160 | 200 | 82 | 120 | 160 | 210 | 290 | 380 | 510 |
| 33 | 2-Benzothiazolamine | 136-95-8 | ng/L | 3.2 | 4.3 | 1.6 | 11 | 12 | 13 | 100 | 300 | 130 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | ng/L | 16 | 29 | 56 | 68 | 69 | 54 | 75000 | 210000 | 230000 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | ng/L | <0.85 | <0.97 | <0.44 | <0.98 | <1.1 | <1.3 | <1.2 | <1.7 | <1.6 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | ng/L | <0.8 | <0.9 | <0.41 | <0.91 | <1 | <1.2 | <0.96 | <1.4 | <1.3 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | ng/L | < 5.3 | < 6.2 | < 3.4 | < 6.3 | < 7.5 | < 7.6 | < 8.2 | < 11 | < 12 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | ng/L | < 5.3 | < 6.2 | < 3.4 | < 6.3 | < 7.5 | < 7.6 | < 8.2 | < 11 | < 12 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | ng/L | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | ng/L | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | ng/L | | | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | ng/L | | | | | | | | | |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | ng/L | <4.7 | <4.9 | <2.4 | <4.8 | <5.3 | <5.9 | <5.3 | <4.9 | <7.2 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | ng/L | | | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | ng/L | 500 | 430 | 230 | 780 | 570 | 630 | 820 | 1400 | 1100 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | ng/L | | | | | | | | | |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | ng/L | | | | | | | | | |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | ng/L | | | | | | | | | |
| 49 | Octabromobisphenol-S | 42757-55-1 | ng/L | | | | | | | | | |
| 50 | BHA | 732-26-3 | ng/L | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| 51 | AO 246 | 119-47-1 | ng/L | 93 | 7.1 | <5.0 | 9.4 | 23 | <5.0 | 29 | 5.6 | 59 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52 | DTBSBP | 1709-70-2 | ng/L | | | | | | | | | |
| 53 | AO 2246 | 118-82-1 | ng/L | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| 54 | AO 22E46 | 85-60-9 | ng/L | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| 55 | BHT-guinol | 121-00-6 | ng/L | | | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | ng/L | | | | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | ng/L | | | | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | ng/L | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | ng/L | <1.3 | <1.1 | <1.1 | <1.1 | <0.94 | <0.89 | <1.4 | <1.4 | <1.4 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | ng/L | | | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | ng/L | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | ng/L | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | ng/L | | | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | ng/L | <120 | <130 | <61 | <130 | <150 | <180 | <250 | <370 | <340 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | ng/L | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | ng/L | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | ng/L | | | | | | | | | |
| 68 | 1,3-Propandiamin N,N"-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | ng/L | | | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | ng/L | <1.9 | <2.2 | <0.98 | <2.2 | <2.4 | <2.9 | <2.1 | <3.1 | <2.9 |
| 70 | PFPeA | 2706-90-3 | ng/L | <8.8 | <9.2 | <9.5 | <10 | <10 | <10 | 130 | 190 | 190 |
| 71 | PFHxA | 307-24-4 | ng/L | <10 | <11 | <11 | <12 | <12 | <12 | 410 | 620 | 660 |
| 72 | PFHpA | 375-85-9 | ng/L | <8.6 | <9 | <9.3 | <9.7 | <9.9 | <9.8 | 240 | 450 | 350 |
| 73 | PFHxS | 355-46-4 | ng/L | <11 | <11 | <11 | <11 | <11 | <11 | 88 | 110 | 120 |
| 74 | PFOA | 335-67-1 | ng/L | 8.5 | 6.4 | 5.5 | 8.4 | 8 | 6.7 | 520 | 580 | 490 |
| 75 | PFNA | 375-95-1 | ng/L | <7.6 | <7 | <5.8 | <6.8 | <5.7 | <4.8 | 8 | 12 | <4.8 |
| 76 | PFOS | 1763-23-1 | ng/L | <12 | <9.9 | <9.8 | <10 | <8.7 | <8.2 | 95 | 84 | 47 |
| 77 | 6:2 monoPAP | - | ng/L | | | | | | | | | |
| 78 | 8:2 monoPAP | - | ng/L | | | | | | | | | |
| 79 | 6:2 diPAP | - | ng/L | | | | | | | | | |
| 80 | 8:2 diPAP | - | ng/L | | | | | | | | | |
| | | | | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | ng/L | <0.32 | <0.36 | <0.17 | <0.42 | <0.46 | <0.52 | <0.41 | <0.55 | <0.48 |
| | Amitryptyline | 50-48-6 | ng/L | 11 | 17 | 8.9 | 21 | 24 | 26 | <2.3 | <3.4 | <3.1 |
| | Atorvastatin | 134523-00-5 | ng/L | 23 | 34 | 19 | 320 | 390 | 500 | <0.085 | <0.12 | <0.12 |
| | Azithromycin | 83905-01-5 | ng/L | 81 | 84 | 59 | <57 | <58 | <63 | <100 | <150 | <130 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bezafibrate | 41859-67-0 | ng/L | 5.4 | 4.1 | 2.8 | 11 | <1.1 | 9.1 | <2.5 | <3.6 | <3.4 |
| | Bisoprolol | 66722-44-9 | ng/L | 10 | 13 | 6.3 | 34 | 47 | 48 | <0.47 | <0.6 | <0.58 |
| | Caffeine | 58-08-2 | ng/L | 2400 | 1500 | 540 | 440 | 1500 | 890 | <22 | <27 | <23 |
| | Carbamazepine | 298-46-4 | ng/L | 120 | 170 | 88 | 340 | 320 | 390 | 62 | 78 | 120 |
| | Citalopram | 59729-33-8 | ng/L | 47 | 64 | 35 | 97 | 96 | 97 | <6.5 | <9.4 | <8.9 |
| | Clarithromycin | 81103-11-9 | ng/L | 41 | 62 | 25 | 11 | 14 | 23 | <4.9 | <6.9 | <6.2 |
| | Clemastine | 15686-51-8 | ng/L | 1.6 | 2.2 | 0.67 | 0.7 | 0.96 | 1.3 | <0.099 | <0.14 | <0.14 |
| | Clindamycin_sulfoxide | 22431-46-5 | ng/L | 45 | 72 | 35 | 82 | 75 | 76 | <0.23 | <0.33 | <0.29 |
| | Clindamycine | 18323-44-9 | ng/L | 53 | 77 | 31 | 25 | 32 | 31 | 6.8 | 8.5 | 11 |
| | Clomipramine | 303-49-1 | ng/L | <0.064 | <0.073 | <0.033 | <0.073 | <0.08 | <0.097 | <0.12 | <0.17 | <0.16 |
| | Clonazepam | 1622-61-3 | ng/L | <0.21 | <0.23 | <0.11 | <0.24 | <0.26 | <0.31 | <0.39 | <0.57 | <0.54 |
| | Diclofenac | 15307-86-5 | ng/L | 280 | 180 | 190 | 580 | 720 | 920 | 27 | 73 | 28 |
| | Diltiazem | 42399-41-7 | ng/L | 20 | 22 | 11 | 19 | 18 | 24 | <2.8 | <4.1 | <3.9 |
| | Diphenhydramine | 58-73-1 | ng/L | 18 | 29 | 12 | 5.7 | 6 | 3.8 | <3.2 | <4.6 | <4.3 |
| | Disopyramide | 3737-09-05 | ng/L | 3 | 3.3 | 1.4 | 24 | 17 | 21 | <0.46 | <0.61 | <0.54 |
| | Erythromycin | 114-07-8 | ng/L | 240 | 320 | 190 | 370 | 680 | 650 | 21 | <1.8 | <1.6 |
| | Fenofibrate | 49562-28-9 | ng/L | <0.59 | <0.67 | <0.3 | <0.67 | <0.74 | <0.89 | <0.83 | <1.2 | <1.1 |
| | Fexofenadine | 83799-24-0 | ng/L | 1000 | 1200 | 510 | 1300 | 1300 | 1500 | <7.1 | <10 | <9.7 |
| | Glibenclamide | 10238-21-8 | ng/L | <0.74 | <0.84 | <0.38 | <0.85 | <0.93 | <1.1 | <1.7 | <2.5 | <2.4 |
| | Glimepiride | 93479-97-1 | ng/L | 0.43 | 1.3 | <0.1 | 0.87 | 0.85 | 1.7 | <0.5 | <0.72 | <0.68 |
| | Haloperidol | 52-86-8 | ng/L | <1.7 | <1.9 | <0.88 | <2 | <2.1 | <2.6 | <3.1 | <4.5 | <4.2 |
| | Irbesartan | 138402-11-6 | ng/L | 270 | 360 | 190 | 720 | 880 | 1000 | 2.4 | 3 | <2.1 |
| | Loperamide | 53179-11-6 | ng/L | <1.4 | 1.7 | 0.9 | 1.8 | 2 | <2 | <1.7 | <2.5 | <2.3 |
| | Memantine | 19982-08-2 | ng/L | 5.7 | 7.7 | 4 | 23 | 26 | 29 | <1.7 | <2.3 | <2 |
| | Metoprolol | 51384-51-1 | ng/L | 340 | 480 | 230 | 910 | 1100 | 1200 | 9.3 | 15 | 13 |
| | Metoprolol acid | 56392-14-4 | ng/L | 1400 | 2000 | 1200 | 3000 | 3800 | 4300 | 500 | 950 | 1200 |
| | Mirtazapine | 61337-67-5 | ng/L | 16 | 23 | 13 | 43 | 51 | 55 | <0.88 | <1.2 | <1 |
| | N-Desmethylcitalopram | 144025-14-9 | ng/L | 17 | 28 | 15 | 41 | 43 | 42 | <0.11 | <0.16 | <0.15 |
| | Norsertraline | 87857-41-8 | ng/L | <1.1 | <1.2 | <0.57 | <1.3 | <1.4 | <1.7 | <3.2 | <4.6 | <4.3 |
| | O-Desmethylvenlafaxine | 93413-62-8 | ng/L | 230 | 290 | 150 | 460 | 470 | 600 | 22 | <2.1 | <2 |
| | Orphenadrine | 83-98-7 | ng/L | <1.3 | <1.5 | <0.68 | <1.5 | <1.7 | <2 | <2.8 | <4.1 | <3.9 |
| | Oxazepam | 604-75-1 | ng/L | 300 | 380 | 210 | 620 | 630 | 740 | <1.2 | <1.8 | <1.7 |
| | PFHxS | 355-46-4 | ng/L | <11 | <11 | <11 | <11 | <11 | <11 | 88 | 110 | 120 |
| | Propranolol | 287714-41-4 | ng/L | 14 | 16 | 7.8 | 31 | 31 | 32 | <2.7 | <3.5 | <3.3 |
| | Rosuvastatin | 80214-83-1 | ng/L | 25 | 31 | 18 | 110 | 110 | 170 | <0.25 | <0.36 | <0.34 |
| | Roxithromycin | 79617-96-2 | ng/L | <1.5 | <1.7 | <0.84 | <2.3 | <2.3 | <2.5 | <3.1 | <4.3 | <3.9 |
| | Sertraline | 57-68-1 | ng/L | 1.7 | 3 | 1.3 | 2 | 3 | 3.3 | <1.5 | <2.2 | <2 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | ng/L | <0.79 | <0.68 | <0.67 | <0.7 | <0.6 | <0.56 | <0.69 | <0.65 | <0.69 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sotalol | 959-24-0 | ng/L | 45 | 54 | 31 | 120 | 120 | 150 | <19 | <26 | <28 |
| | Sulfamethazine | 723-46-6 | ng/L | <12 | <13 | <6.4 | <16 | <17 | <20 | <18 | <24 | <21 |
| | Sulfamethoxazole | 144-83-2 | ng/L | 70 | 44 | 50 | 70 | 100 | 160 | <12 | <16 | <14 |
| | Sulfapyridine | 91161-71-6 | ng/L | 66 | 38 | 44 | 97 | 140 | 200 | <0.84 | <1.1 | <0.98 |
| | Tramadol | 27203-92-5 | ng/L | 140 | 200 | 98 | 430 | 500 | 630 | <38 | <53 | <54 |
| | Trimethoprim | 738-70-5 | ng/L | 170 | 250 | 130 | 340 | 350 | 370 | <2.7 | <3.6 | <3.1 |
| | Valsartan | 137862-53-4 | ng/L | 1000 | 1400 | 740 | 3300 | 3800 | 4600 | 100 | 250 | 230 |
| | Venlafaxine | 93413-69-5 | ng/L | 75 | 100 | 48 | 170 | 190 | 240 | <2.7 | <4 | <3.8 |
| | Verapamil | 52-53-9 | ng/L | 5.4 | 10 | 4.9 | 3.8 | 3.8 | 4 | <3.1 | <4.5 | <4.2 |
| | | | | | | | | | | | | |
| | PFBA | - | ng/L | <9.8 | <10 | <10 | <11 | <11 | <11 | 120 | 200 | 260 |
| | PFBS | - | ng/L | <13 | <13 | <13 | <13 | <13 | <13 | 260 | 810 | 400 |
| | PFDA | - | ng/L | <0.94 | <0.84 | <0.65 | <0.85 | <0.6 | <0.56 | <0.53 | <0.43 | <0.52 |
| | PFDS | - | ng/L | <2.2 | <1.9 | <1.9 | <2 | <1.7 | <1.6 | <0.81 | <0.76 | <0.81 |
| | PFHpS | - | ng/L | <9.4 | <9.7 | <9.4 | <9.5 | <9.6 | <9.4 | <10 | <11 | <11 |
| | PFUdA | - | ng/L | <1.3 | <1.1 | <0.87 | <1.1 | <0.8 | <0.75 | <0.54 | <0.44 | <0.53 |
| | 1,1-dichlorethen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | 1,2-dichlorbenzen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | 1,2-dichlorethan | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | 1,2-xylen | - | ug/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.20 | <0.20 |
| | 1,3-dichlorbenzen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | 1,4-dichlorbenzen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | 1,4-xylen | - | ug/l | 0.08 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.20 | <0.20 |
| | 2,2',3,4,4',5',6-heptabromdifenylether, PBDE 183 | - | ng/l | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| | 2,2',4,4'- tetrabromdifenylether, PBDE 47 | - | ng/l | 0.44 | 0.52 | 0.46 | 0.54 | 0.34 | 0.85 | 0.72 | 1.4 | 1.4 |
| | 2,2',4,4',5,5'-hexabromdifenylether, PBDE 153 | - | ng/l | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | 0.68 | 0.47 |
| | 2,2',4,4',5,6'-hexabromdifenylether, PBDE 154 | - | ng/l | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| | 2,2',4,4',5-pentabromdifenylether, PBDE 99 | - | ng/l | 0.41 | 0.59 | 0.43 | 0.49 | 0.34 | 0.78 | 0.75 | 1.3 | 1.3 |
| | 2,2',4,4',6-pentabromdifenylether, PBDE 100 | - | ng/l | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | 0.61 | 0.6 |
| | 2,4,4'-tribromdifenylether, PBDE 28 | - | ng/l | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| | Aldrin | - | ng/l | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| | Alfa-hexachlorcyklohexan | - | ng/l | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Benzen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Beta-hexachlorcyklohexan | - | ng/l | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | BTEX suma | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.13 | <0.20 | <0.20 |
| | Chlorbenzen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Chlorpyrifos-ethyl | - | ng/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| | Cis-1,2-dichlorethylen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Delta-hexachlorcyklohexan | - | ng/l | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Dichlormethan | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Dieldrin | - | ng/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| | Endrin | - | ng/l | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| | Ethylbenzen | - | ug/l | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.20 | <0.20 |
| | Galaxolide - HHCB | - | ng/l | 1100 | 1000 | 2600 | 2300 | 2300 | 7000 | 29 | 22 | 29 |
| | Gama-hexachlorcyklohexan (Lindan) | - | ng/l | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Hexachlorbenzen | - | ng/l | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Isodrin | - | ng/l | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| | Izopropylbenzen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Methoxychlor | - | ng/l | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| | Methyl(terc-butyl)ether, MTBE | - | ug/l | <0.10 | <0.10 | <0.10 | 0.14 | <0.10 | 0.69 | 62 | 80 | 45 |
| | Musk keton | - | ng/l | 7 | 8 | 56 | 7 | 6 | 100 | <5 | <5 | <5 |
| | Musk xylen | - | ng/l | <5 | <5 | 9 | <5 | <5 | 22 | <5 | <5 | <5 |
| | o,p - DDD | - | ng/l | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| | o,p - DDT | - | ng/l | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| | o,p-DDE | - | ng/l | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| | p,p-DDD | - | ng/l | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| | p,p-DDE | - | ng/l | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| | p,p-DDT | - | ng/l | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 | <3 |
| | PCB kongener 194 | - | ng/l | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| | PCB kongener 101 | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 118 | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 138 | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 153 | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 180 | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 28 | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 52 | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | Pentachlorbenzen | - | ng/l | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | Styren | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Tetrachlorethylen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Tetrachlormethan | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Toluen | - | ug/l | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 0.13 | <0.20 | <0.20 |
| | Tonalide | - | ng/l | 760 | 920 | 2300 | 1600 | 1600 | 6700 | 25 | 21 | 28 |
| | Trans-1,2-dichlorethylen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Trichlorethylen | - | ug/l | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.20 | <0.20 | <0.20 |
| | Trichlormethan | - | ug/l | 0.23 | 0.21 | 0.23 | 0.16 | 0.17 | 0.19 | <0.20 | <0.20 | <0.20 |
| | Xylen | - | ug/l | 0.08 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.20 | <0.20 |

## Matrix: passive sampling in municipal wastewater and in runoff water from landfill

| No. | Parameter | CAS-number | Unit of measure | Site: VEAS, Slemmestad, waste water | | | | | | Site: HIAS, Hamar, waste water | | | | | | Site: ROAF landfill, run-off water | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample period | | | | | | Sample period | | | | | | Sample period | | |
| | | | | 22.08-05.09.16 | | | 05.09.-19.09.16 | | | 23.08-06.09.16 | | | 06.09.-20.09.16 | | | 22.08-05.09.16 | | 05.09.-19.09.16 |
| | | | | Inlet | Outlet | Control | Inlet | Outlet | Control | Inlet | Outlet | Control | Inlet | Outlet | Control | Outlet | Control | Outlet |
| 1 | Perfluorotripropylamin | 338-83-0 | ng/sampler | | | | | | | | | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | ng/sampler | | | | | | | | | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | ng/sampler | | | | | | | | | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | ng/sampler | | | | | | | | | | | | | | | |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | ng/sampler | | | | | | | | | | | | | | | |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | ng/sampler | | | | | | | | | | | | | | | |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | ng/sampler | | | | | | | | | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | ng/sampler | | | | | | | | | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | ng/sampler | | | | | | | | | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | ng/sampler | | | | | | | | | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | ng/sampler | | | | | | | | | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | ng/sampler | | | | | | | | | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | ng/sampler | | | | | | | | | | | | | | | |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | ng/sampler | | | | | | | | | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | ng/sampler | < 0.14 | < 0.12 | < 0.1 | < 0.14 | < 0.11 | < 0.12 | < 0.19 | < 0.11 | < 0.099 | < 0.2 | < 0.11 | < 0.13 | < 0.16 | < 0.1 | < 0.15 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | ng/sampler | | | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluorodihydrogenfosfat (9Cl) | 94200-54-1 | ng/sampler | | | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9Cl) | 57678-05-4 | ng/sampler | | | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9Cl) | 57678-07-6 | ng/sampler | | | | | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | ng/sampler | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10, 11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9Cl) | 101896-22-4 | ng/sampler | | | | | | | | | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | ng/sampler | | | | | | | | | | | | | | | |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | ng/sampler | | | | | | | | | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13, 14,14,14-triacontafluorotetradecan | 307-62-0 | ng/sampler | | | | | | | | | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | ng/sampler | | | | | | | | | | | | | | | |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | ng/sampler | | | | | | | | | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | ng/sampler | < 0.39 | < 0.33 | < 0.28 | < 0.38 | < 0.29 | < 0.32 | < 0.51 | < 0.3 | < 0.27 | < 0.55 | < 0.31 | < 0.36 | < 0.43 | < 0.28 | < 0.42 |
| 28 | 1H-Benzotriazole | 94-14-7 | ng/sampler | 1700 | 1000 | < 5.8 | 1800 | 1300 | < 6.4 | 760 | 1600 | < 5.7 | 560 | 2500 | < 5.7 | < 6.8 | < 6.1 | 3100 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | ng/sampler | 1600 | 2200 | < 4.1 | 1400 | 2400 | < 5.8 | 3100 | 3600 | < 4.2 | 2000 | 5000 | < 4.5 | < 7 | < 4.6 | 1400 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | ng/sampler | 1500 | 2200 | < 4.2 | 1300 | 2400 | < 5.8 | 3000 | 3500 | < 4.2 | 1900 | 5100 | < 4.5 | < 7 | < 4.6 | 1400 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | ng/sampler | 15 | < 6.4 | < 4.3 | 17 | < 5.7 | < 4.8 | < 6.3 | < 6 | < 4.2 | 12 | < 7.4 | < 4.2 | < 3.8 | < 4.5 | < 6.4 |
| 32 | Benzothiazole | 95-16-9 | ng/sampler | 520 | 280 | 110 | 520 | 280 | 82 | 810 | 220 | 82 | 800 | 460 | 210 | 350 | 160 | 130 |
| 33 | 2-Benzothiazolamine | 136-95-8 | ng/sampler | < 360 | < 270 | < 180 | < 340 | < 240 | < 200 | < 300 | < 260 | < 170 | < 310 | < 320 | < 170 | < 160 | < 190 | < 270 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | ng/sampler | 1100 | 85 | 3.6 | 920 | 68 | < 2.7 | 930 | 50 | < 2.4 | 690 | 34 | < 2.4 | < 2.4 | < 2.6 | 42000 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | ng/sampler | < 6.3 | < 8.1 | < 6.1 | < 6.1 | < 7.6 | < 7.6 | < 7.2 | < 6.9 | < 5.9 | < 9.1 | < 7.9 | < 6.3 | < 7.4 | < 6.5 | < 6.3 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | ng/sampler | 13 | 5.7 | 2.9 | 19 | 8.9 | 2 | 44 | 17 | 1.9 | 41 | 27 | 3.1 | 3.4 | 3 | 9.8 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | ng/sampler | < 8.3 | < 7.7 | < 3.7 | < 8.1 | < 6.8 | < 3.9 | < 5.9 | < 7.3 | < 3.7 | < 5.9 | < 8.9 | < 3.8 | < 4.5 | < 4.2 | < 6.3 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | ng/sampler | | | | | | | | | | | | | | | |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | ng/sampler | | | | | | | | | | | | | | | |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | ng/sampler | | | | | | | | | | | | | | | |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | ng/sampler | | | | | | | | | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | ng/sampler | < 570 | < 410 | < 310 | < 760 | < 380 | < 390 | < 460 | < 430 | < 360 | < 870 | < 380 | < 450 | 7700 | < 400 | 10000 |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | ng/sampler | < 5.1 | < 5 | < 3.7 | < 4.9 | < 4.7 | < 4.6 | < 5.8 | < 4.2 | < 3.5 | < 7.3 | < 4.8 | < 3.8 | < 4.5 | < 3.9 | < 3.9 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | ng/sampler | | | | | | | | | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | ng/sampler | 570 | < 180 | < 170 | 450 | < 160 | < 190 | < 300 | 190 | < 170 | < 310 | < 210 | < 170 | < 100 | < 180 | 230 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | ng/sampler | < 22 | 22 | < 12 | < 29 | 19 | 33 | < 18 | < 17 | < 14 | < 34 | < 15 | < 17 | < 24 | < 15 | < 36 |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | ng/sampler | < 10 | < 7.5 | < 5.7 | < 14 | < 6.9 | < 7.2 | < 8.5 | < 7.8 | < 6.5 | < 16 | < 7 | < 8.3 | < 11 | < 7.3 | < 17 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | ng/sampler | < 8.4 | < 6 | < 4.6 | < 11 | < 5.6 | < 5.8 | < 6.9 | < 6.3 | < 5.3 | < 13 | < 5.7 | < 6.7 | < 9.2 | < 5.9 | < 14 |
| 49 | Octabromobisphenol-S | 42757-55-1 | ng/sampler | | | | | | | | | | | | | | | |
| 50 | BHA | 732-26-3 | ng/sampler | < 4.1 | < 2.9 | 2.5 | < 5.4 | < 2.7 | < 2.8 | 5.5 | < 3.1 | < 2.6 | < 6.3 | < 2.8 | < 3.2 | 30 | < 2.9 | 120 |
| 51 | AO 246 | 119-47-1 | ng/sampler | < 3.4 | < 2.4 | < 1.9 | < 4.5 | < 2.2 | 68 | < 2.7 | < 2.5 | < 2.1 | < 5.2 | < 2.3 | < 2.7 | 49 | < 2.4 | 110 |
| 52 | DTBSBP | 1709-70-2 | ng/sampler | | | | | | | | | | | | | | | |
| 53 | AO 2246 | 118-82-1 | ng/sampler | < 8.7 | < 6.2 | < 4.8 | < 12 | < 5.8 | < 6 | < 7.1 | < 6.5 | < 5.4 | < 13 | < 5.9 | < 6.9 | 315 | < 6.1 | 660 |
| 54 | AO 22E46 | 85-60-9 | ng/sampler | < 5 | < 3.6 | < 2.8 | < 6.7 | < 3.3 | < 3.5 | < 4.1 | < 3.8 | < 3.1 | < 7.7 | < 3.4 | < 4 | 66 | < 3.5 | 78 |
| 55 | BHT-guinol | 121-00-6 | ng/sampler | | | | | | | | | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | ng/sampler | | | | | | | | | | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | ng/sampler | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 58 | Dibromoaldrin | Dibromoaldrin | ng/sampler | | | | | | | | | | | | | | |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | ng/sampler | < 0.62 | < 0.52 | < 0.45 | < 0.6 | < 0.46 | < 0.5 | < 0.81 | < 0.47 | < 0.43 | < 0.88 | < 0.49 | < 0.57 | 0.7 | < 0.45 | 0.9 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | ng/sampler | | | | | | | | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | ng/sampler | < 99 | < 71 | < 54 | < 130 | < 66 | < 69 | < 81 | < 75 | < 62 | < 150 | < 67 | < 79 | 110 | < 70 | 190 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | ng/sampler | | | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | ng/sampler | | | | | | | | | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | ng/sampler | 43 | < 8 | < 5.9 | < 7.9 | < 7.5 | < 7.3 | < 9.3 | < 6.8 | < 5.7 | < 12 | < 7.8 | < 6 | < 7.2 | 13 | 33 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | ng/sampler | | | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | ng/sampler | | | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | ng/sampler | | | | | | | | | | | | | | | |
| 68 | 1,3-Propandiamin N,N"-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | ng/sampler | | | | | | | | | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | ng/sampler | < 5.7 | < 11 | < 4.1 | < 5.5 | < 11 | < 5.1 | < 6.5 | < 9.7 | < 4 | < 8.2 | < 11 | < 4.2 | < 10 | < 4.3 | < 8.8 |
| 70 | PFPeA | 2706-90-3 | ng/sampler | < 0.32 | < 0.36 | < 0.3 | < 0.32 | < 0.3 | < 0.35 | < 0.31 | < 0.3 | < 0.28 | < 0.34 | < 0.31 | < 0.4 | 10.4256 | < 0.29 | 6.404822137 |
| 71 | PFHxA | 307-24-4 | ng/sampler | 2.7 | 3.3 | < 0.069 | 1.7 | 2.4 | < 0.084 | < 0.13 | 2.9 | < 0.068 | < 0.16 | 3.5 | < 0.094 | 132.2 | < 0.072 | 141.1 |
| 72 | PFHpA | 375-85-9 | ng/sampler | 1.0 | 2.1 | < 0.55 | < 0.7 | 1.0 | < 0.67 | < 1 | < 0.62 | < 0.54 | < 1.3 | 0.7 | < 0.75 | 126.8 | < 0.58 | 149.9 |
| 73 | PFHxS | 355-46-4 | ng/sampler | 0.5 | 2.6 | < 0.11 | 2898.6 | 2.0 | 0.1 | 5402.5 | 1.1 | 0.2 | 5689.2 | 1.0 | < 0.12 | 92.8 | 0.2 | 95.6 |
| 74 | PFOA | 335-67-1 | ng/sampler | 6.8 | 13.0 | < 0.3 | 3.8 | 9.2 | < 0.37 | 5.6 | 5.8 | < 0.28 | 2.1 | 6.6 | < 0.37 | 481.7 | < 0.26 | 464.5 |
| 75 | PFNA | 375-95-1 | ng/sampler | < 2.7 | < 2.5 | < 2.6 | < 2.9 | < 2.3 | < 3.2 | < 3.2 | < 2.1 | < 2.3 | < 3.4 | < 2.2 | < 3.1 | < 3.2 | < 2.1 | < 2.8 |
| 76 | PFOS | 1763-23-1 | ng/sampler | 6.3 | 20.1 | < 0.3 | 3.7 | 14.2 | < 0.34 | 6.2 | 2.8 | < 0.29 | 8.2 | 4.0 | < 0.38 | 315.2 | < 0.3 | 373.3 |
| 77 | 6.2 monoPAP | - | ng/sampler | <0.44 | <0.49 | <0.38 | <0.43 | <0.41 | <0.37 | <0.81 | <0.44 | <0.35 | <0.85 | <0.39 | <0.41 | <0.79 | <0.41 | <0.97 |
| 78 | 8:2 monoPAP | - | ng/sampler | <3.2 | <3.6 | <2.8 | <3.2 | <3.0 | <2.7 | <5.9 | <3.2 | <2.6 | <6.2 | <2.9 | <3.0 | <5.8 | <3.0 | <7.1 |
| 79 | 6:2 diPAP | - | ng/sampler | <3.6 | <4.4 | <3.1 | <3.6 | <3.8 | <6.4 | <6.7 | <3.6 | <2.9 | <7.0 | <3.7 | <5.4 | <6.5 | <3.9 | <8.0 |
| 80 | 8:2 diPAP | - | ng/sampler | <5.2 | <5.8 | <4.5 | <5.1 | <4.8 | <4.4 | <9.6 | <5.2 | <4.1 | <10 | <4.6 | <4.8 | <9.3 | <4.8 | <11 |
| | | | | | | | | | | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | ng/sampler | 0.64 | 1.1 | < 0.068 | < 0.23 | 0.82 | < 0.076 | < 0.21 | < 0.13 | < 0.068 | < 0.21 | < 0.16 | < 0.067 | < 0.08 | < 0.072 | < 0.14 |
| | Amitryptyline | 50-48-6 | ng/sampler | 60 | 94 | 1.8 | 68 | 110 | 0.14 | 2.3 | 96 | < 0.058 | 3.2 | 160 | 1.5 | 1.4 | 0.45 | 1.7 |
| | Atorvastatin | 134523-00-5 | ng/sampler | 170.0 | 170.0 | < 0.088 | 210.0 | 180.0 | < 0.11 | 1300.0 | 910.0 | < 0.085 | 1100.0 | 1200.0 | < 0.09 | < 0.11 | < 0.093 | 0.3 |
| | Azithromycin | 83905-01-5 | ng/sampler | 190 | 290 | < 1.1 | 220 | 280 | < 1.4 | < 1.9 | 40 | < 1.1 | < 2.1 | 76 | < 1.1 | < 1.3 | < 1.2 | < 0.98 |
| | Bezafibrate | 41859-67-0 | ng/sampler | 8.8 | 10 | < 0.22 | 7.1 | 9.9 | < 0.28 | 2.6 | 2.8 | < 0.22 | 1.1 | 2.6 | < 0.23 | < 0.28 | 0.34 | < 0.24 |
| | Bisoprolol | 66722-44-9 | ng/sampler | 27 | 51 | < 0.04 | 30 | 53 | < 0.056 | 170 | 72 | < 0.041 | 2.3 | 94 | < 0.043 | < 0.067 | < 0.044 | 0.63 |
| | Caffeine | 58-08-2 | ng/sampler | 57000 | 2100 | 8 | 59000 | 1800 | 11 | 8500 | 2600 | 11 | 5700 | 3500 | 13 | 34 | 17 | 140 |
| | Carbamazepine | 298-46-4 | ng/sampler | 320 | 710 | < 0.18 | 330 | 730 | < 0.22 | 1500 | 700 | < 0.17 | 2200 | 740 | < 0.18 | < 0.51 | 0.49 | 65 |
| | Citalopram | 59729-33-8 | ng/sampler | 190 | 300 | 0.064 | 200 | 340 | 0.067 | 580 | 270 | 0.063 | 810 | 380 | 0.1 | 0.29 | 1.9 | 3.4 |
| | Clarithromycin | 81103-11-9 | ng/sampler | 87.0 | 180.0 | 0.7 | 95.0 | 180.0 | 0.9 | 59.0 | 26.0 | 0.7 | 63.0 | 54.0 | 0.7 | 1.6 | < 0.24 | < 0.38 |
| | Clemastine | 15686-51-8 | ng/sampler | < 0.19 | < 0.086 | < 0.033 | < 0.18 | < 0.081 | 0.13 | < 0.21 | < 0.073 | < 0.032 | < 0.27 | < 0.083 | < 0.034 | < 0.078 | < 0.036 | < 0.067 |
| | Clindamycin_sulfoxide | 22431-46-5 | ng/sampler | 100 | 150 | < 0.19 | 100 | 180 | < 0.24 | 330 | 110 | < 0.18 | 320 | 140 | < 0.19 | < 0.37 | < 0.21 | < 0.27 |
| | Clindamycine | 18323-44-9 | ng/sampler | 39 | 200 | < 0.1 | 38 | 210 | < 0.13 | 84 | 37 | < 0.098 | 120 | 55 | 0.11 | < 0.19 | < 0.11 | 9.9 |
| | Clomipramine | 303-49-1 | ng/sampler | 17 | 1.2 | < 0.04 | 12 | 1.4 | 0.12 | 2.8 | 0.85 | < 0.039 | 16 | 1.5 | < 0.041 | < 0.1 | < 0.042 | < 0.087 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Clonazepam | 1622-61-3 | ng/sampler | < 0.48 | < 0.47 | < 0.34 | 5.7 | 4.9 | < 0.43 | 12 | < 0.4 | < 0.33 | 13 | 3.5 | < 0.35 | < 0.43 | < 0.37 | 550 |
| | Diclofenac | 15307-86-5 | ng/sampler | 640 | 1100 | 0.35 | 730 | 1300 | 0.55 | 2700 | 1100 | < 0.24 | 2900 | 1400 | 0.38 | 0.42 | 0.92 | 53 |
| | Diltiazem | 42399-41-7 | ng/sampler | 45 | 81 | < 0.12 | 48 | 80 | < 0.15 | 160 | 57 | < 0.11 | 220 | 76 | < 0.12 | < 0.27 | < 0.13 | < 0.24 |
| | Diphenhydramine | 58-73-1 | ng/sampler | 36 | 73 | < 0.022 | 37 | 68 | 0.051 | 20 | 9.5 | < 0.022 | 22 | 12 | 0.035 | 0.092 | 0.034 | < 0.057 |
| | Disopyramide | 3737-09-05 | ng/sampler | 3 | 4.1 | < 0.064 | 2.8 | 4.8 | < 0.071 | 35 | 17 | < 0.063 | 37 | 20 | < 0.063 | < 0.074 | 0.14 | < 0.13 |
| | Erythromycin | 114-07-8 | ng/sampler | 480 | 890 | < 0.41 | 400 | 1200 | < 0.52 | 930 | 1200 | < 0.4 | 960 | 1800 | < 0.42 | < 2.2 | < 0.45 | < 1.6 |
| | Fenofibrate | 49562-28-9 | ng/sampler | 1.9 | 0.7 | < 0.19 | 1.3 | 0.7 | < 0.24 | 1.6 | 0.3 | < 0.18 | 1.6 | 0.3 | < 0.19 | < 0.23 | < 0.2 | 1.0 |
| | Fexofenadine | 83799-24-0 | ng/sampler | 1500 | 1800 | < 0.57 | 1600 | 1900 | < 0.71 | 3.5 | 1300 | < 0.56 | 1.3 | 1800 | < 0.59 | < 0.51 | < 0.61 | 4.8 |
| | Glibenclamide | 10238-21-8 | ng/sampler | 0.54 | 0.46 | < 0.22 | 1 | 0.27 | < 0.27 | 1.1 | < 0.21 | < 0.21 | < 0.44 | < 0.24 | < 0.23 | < 0.22 | < 0.23 | < 0.19 |
| | Glimepiride | 93479-97-1 | ng/sampler | 0.48 | 1.1 | < 0.22 | 0.94 | 100 | 8.2 | 1.2 | 1.3 | < 0.21 | 1.8 | 14 | < 0.22 | < 0.27 | < 0.23 | < 0.23 |
| | Haloperidol | 52-86-8 | ng/sampler | 12 | 0.83 | < 0.22 | 0.44 | 0.76 | < 0.28 | 0.99 | < 0.37 | < 0.22 | 1.8 | 0.74 | < 0.23 | < 0.39 | < 0.24 | < 0.34 |
| | Irbesartan | 138402-11-6 | ng/sampler | 720 | 910 | < 0.033 | 760 | 990 | < 0.041 | 4000 | 1300 | < 0.032 | 5700 | 1800 | 0.078 | 0.23 | < 0.035 | 1.7 |
| | Loperamide | 53179-11-6 | ng/sampler | 3.6 | 5.5 | < 0.085 | 2.9 | 5.5 | < 0.11 | 6.4 | 4.2 | < 0.083 | 5.7 | 5.3 | < 0.088 | < 0.19 | < 0.091 | < 0.17 |
| | Memantine | 19982-08-2 | ng/sampler | 13 | 13 | < 0.072 | 12 | 12 | < 0.08 | 70 | 24 | < 0.071 | 69 | 43 | < 0.071 | < 0.067 | < 0.075 | 3.2 |
| | Metoprolol | 51384-51-1 | ng/sampler | 1100 | 1900 | < 0.23 | 1200 | 2200 | < 0.32 | 7800 | 2400 | < 0.24 | 6700 | 3300 | < 0.25 | < 0.39 | < 0.26 | 26 |
| | Metoprolol acid | 56392-14-4 | ng/sampler | 110 | 330 | < 1.6 | 140 | 420 | < 1.7 | 54 | 210 | < 1.6 | 31 | 360 | < 1.7 | < 2 | < 1.8 | 50 |
| | Mirtazapine | 61337-67-5 | ng/sampler | 33 | 110 | < 0.049 | 6.4 | 110 | < 0.055 | 16 | 130 | < 0.048 | 20 | 190 | 0.077 | < 0.071 | < 0.051 | 76 |
| | N-Desmethylcitalopram | 144025-14-9 | ng/sampler | 94 | 140 | < 0.068 | 100 | 180 | < 0.085 | 350 | 130 | < 0.066 | 440 | 190 | < 0.07 | < 0.11 | < 0.072 | 5 |
| | Norsertraline | 87857-41-8 | ng/sampler | 13 | 13 | < 0.11 | 12 | 15 | < 0.14 | < 0.23 | 7.6 | < 0.11 | < 0.29 | 19 | < 0.11 | < 0.14 | < 0.12 | 34 |
| | O-Desmethylvenlafaxine | 93413-62-8 | ng/sampler | 540 | 710 | 1.3 | 520 | 740 | 1.1 | 1900 | 800 | 1.4 | 2300 | 970 | 1.8 | 2.3 | 2.4 | 3.7 |
| | Orphenadrine | 83-98-7 | ng/sampler | 1.2 | 2 | < 0.022 | 1.3 | 2 | 0.034 | 2 | 0.87 | < 0.022 | 1.8 | 0.83 | < 0.023 | < 0.056 | < 0.024 | < 0.048 |
| | Oxazepam | 604-75-1 | ng/sampler | 820 | 1700 | < 0.098 | 970 | 1900 | < 0.12 | 3100 | 1600 | < 0.095 | 4100 | 2200 | < 0.1 | < 0.12 | < 0.1 | 67 |
| | Propranolol | 287714-41-4 | ng/sampler | 40 | 72 | < 0.13 | 49 | 79 | < 0.18 | 170 | 75 | < 0.13 | 200 | 120 | < 0.14 | < 0.22 | 0.18 | 1.2 |
| | Rosuvastatin | 80214-83-1 | ng/sampler | 82 | 110 | < 0.34 | 80 | 130 | < 0.43 | 570 | 260 | < 0.33 | 630 | 370 | < 0.35 | < 0.42 | < 0.36 | 1.3 |
| | Roxithromycin | 79617-96-2 | ng/sampler | 1.3 | 3 | < 0.096 | 2.3 | 4.1 | < 0.12 | < 0.31 | 0.64 | < 0.093 | < 0.36 | 0.63 | < 0.098 | < 0.4 | < 0.1 | < 0.29 |
| | Sertraline | 57-68-1 | ng/sampler | 34 | 44 | < 0.22 | 27 | 49 | < 0.28 | 1.2 | 24 | < 0.22 | 1.8 | 43 | < 0.23 | < 0.36 | < 0.24 | 6.7 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | ng/sampler | < 0.15 | < 0.12 | < 0.11 | < 0.14 | < 0.11 | < 0.12 | < 0.19 | < 0.11 | < 0.1 | < 0.21 | < 0.12 | < 0.14 | < 0.17 | < 0.11 | < 0.16 |
| | Sotalol | 959-24-0 | ng/sampler | 110 | 76 | < 3.4 | 84 | 80 | < 3.5 | 110 | 110 | < 3.4 | 70 | 150 | < 3.5 | < 4.1 | < 3.8 | 19 |
| | Sulfamethazine | 723-46-6 | ng/sampler | < 2.2 | < 2.1 | < 1 | < 2 | < 1.9 | < 1.1 | < 1.8 | < 2 | < 1 | < 1.9 | < 2.4 | < 1 | < 1.2 | < 1.1 | 6.3 |
| | Sulfamethoxazole | 144-83-2 | ng/sampler | 400 | 280 | < 0.47 | 330 | 270 | < 0.54 | 150 | 170 | < 0.45 | 85 | 270 | 0.54 | < 1 | < 0.48 | 11 |
| | Sulfapyridine | 91161-71-6 | ng/sampler | 350 | 230 | 0.95 | 300 | 140 | 2.8 | 370 | 190 | 2.6 | 230 | 250 | 2.7 | 2.1 | 1.5 | 12 |
| | Tramadol | 27203-92-5 | ng/sampler | 400 | 310 | < 1.2 | 330 | 350 | < 1.4 | 1300 | 380 | < 1.2 | 1400 | 570 | < 1.2 | < 1.4 | < 1.3 | 3.6 |
| | Trimethoprim | 738-70-5 | ng/sampler | 420 | 530 | < 0.18 | 410 | 570 | < 0.2 | 1200 | 390 | < 0.18 | 1400 | 520 | < 0.18 | < 0.18 | 0.55 | 1.8 |
| | Valsartan | 137862-53-4 | ng/sampler | 2800 | 4400 | < 0.71 | 2500 | 5000 | < 0.89 | 10000 | 5500 | < 0.69 | 7500 | 6800 | < 0.73 | < 0.93 | < 0.75 | 72 |
| | Venlafaxine | 93413-69-5 | ng/sampler | 220 | 360 | < 0.13 | 210 | 370 | < 0.17 | 910 | 300 | < 0.13 | 1300 | 380 | < 0.14 | < 0.33 | < 0.14 | 1 |
| | Verapamil | 52-53-9 | ng/sampler | 28 | 40 | < 0.13 | 29 | 49 | < 0.16 | 22 | 11 | < 0.13 | 0.76 | 15 | < 0.13 | < 0.21 | < 0.14 | 1.7 |
| | | | | | | | | | | | | | | | | | | |
| | PFBA | - | ng/sampler | < 0.34 | < 0.37 | < 0.31 | < 0.33 | < 0.31 | < 0.36 | < 0.32 | < 0.31 | < 0.29 | < 0.35 | < 0.32 | < 0.41 | 2.4 | < 0.29 | 1.3 |
| | PFBS | - | ng/sampler | 11 | 1.6 | < 0.37 | 8.7 | 0.86 | < 0.43 | 19 | 0.85 | < 0.35 | 9.7 | 1.0 | < 0.5 | 163 | < 0.35 | 160 |
| | PFDA | - | ng/sampler | < 2.1 | < 2.1 | < 2.9 | < 2.8 | < 1.8 | < 3.6 | < 2.3 | < 1.8 | < 2.5 | < 2.5 | < 2 | < 3.4 | 32 | < 2.3 | 49 |
| | PFDoA | - | ng/sampler | < 5.9 | < 5.6 | < 4.9 | < 14.7 | < 3.9 | < 8.1 | < 4.9 | < 5.4 | < 5.1 | < 3.8 | < 4.8 | < 9.7 | < 9.1 | < 6.9 | < 8.1 |
| | PFDS | - | ng/sampler | < 0.49 | 1.6 | < 0.57 | < 0.67 | 1.3 | < 0.73 | < 0.51 | < 0.48 | < 0.56 | < 0.5 | < 0.48 | < 0.71 | 16 | < 0.5 | 18 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PFHpS | - | ng/sampler | < 0.42 | < 0.4 | < 0.31 | < 0.43 | < 0.33 | < 0.34 | 0.61 | < 0.35 | < 0.3 | < 0.58 | < 0.36 | < 0.37 | 5.0 | < 0.29 | 4.2 |
| | PFTeDA | - | ng/sampler | < 5 | < 4.8 | < 4.1 | < 12.5 | < 3.3 | < 6.9 | < 4.2 | < 4.6 | < 4.4 | < 3.3 | < 4.1 | < 8.2 | < 7.7 | < 5.9 | < 6.9 |
| | PFTrDA | - | ng/sampler | < 4.7 | < 4.5 | < 3.9 | < 11.9 | < 3.2 | < 6.6 | < 4 | < 4.3 | < 4.1 | < 3.1 | < 3.9 | < 7.8 | < 7.3 | < 5.6 | < 6.5 |
| | PFUdA | - | ng/sampler | < 2.9 | < 3 | < 3.4 | < 4 | < 2.2 | < 4.4 | < 3.1 | < 2.9 | < 3.3 | < 3 | < 2.9 | < 4.2 | 13 | < 3 | 16 |
| | | | | | | | | | | | | | | | | | | |

## Matrix: sludge from municipal waste water

| No. | Parameter | CAS-number | Unit of measure | Site: VEAS, Slemmestad | | | | Site: HIAS, Hamar | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample period | *Parallel analyses* | | | Sample period | | |
| | | | | 29.08.-02.09.1 | 12.09.-16.09.1 | 12.09.-16.09.1 | 26.09.-30.09.1 | 29.08.-02.09.1 | 12.09.-16.09.1 | 26.09.-30.09.16 |
| 1 | Perfluorotripropylamin | 338-83-0 | µg/kg DW | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | µg/kg DW | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | µg/kg DW | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | µg/kg DW | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | µg/kg DW | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | µg/kg DW | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | µg/kg DW | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | µg/kg DW | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | µg/kg DW | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | µg/kg DW | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | µg/kg DW | < 1.6 | < 1.5 | < 1.6 | < 2.1 | < 2.1 | < 2.1 | < 2.4 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | µg/kg DW | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluorodihydrogenfosfat (9CI) | 94200-54-1 | µg/kg DW | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9CI) | 57678-05-4 | µg/kg DW | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9Cl) | 57678-07-6 | µg/kg DW | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15, 15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | µg/kg DW | | | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10, 11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9Cl) | 101896-22-4 | µg/kg DW | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | µg/kg DW | <50 | <50 | - | <50 | <50 | <50 | <50 |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | µg/kg DW | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13, 14,14,14-triacontafluorotetradecan | 307-62-0 | µg/kg DW | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | µg/kg DW | <50 | <50 | - | <50 | <50 | <50 | <50 |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | µg/kg DW | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | µg/kg DW | < 13 | < 12 | < 13 | < 19 | < 19 | < 16 | < 23 |
| 28 | 1H-Benzotriazole | 94-14-7 | µg/kg DW | 620 | 560 | 580 | 590 | 270 | 170 | 89 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | µg/kg DW | < 26 | < 30 | < 33 | < 30 | 170 | 130 | 110 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | µg/kg DW | < 26 | < 30 | < 33 | < 30 | 170 | 130 | 110 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | µg/kg DW | 7.8 | 6.1 | 5.7 | 10 | < 7.5 | < 8 | < 7.9 |
| 32 | Benzothiazole | 95-16-9 | µg/kg DW | 142 | 142 | 222 | 162 | 202 | 362 | 322 |
| 33 | 2-Benzothiazolamine | 136-95-8 | µg/kg DW | < 34 | < 37 | < 40 | < 41 | < 75 | < 81 | < 79 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | µg/kg DW | 210 | 230 | 290 | 220 | 430 | 560 | 510 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | µg/kg DW | < 4.5 | < 5.2 | < 4.7 | < 4.9 | < 5.2 | < 6 | < 6.2 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | µg/kg DW | 370 | 490 | 530 | 430 | 1500 | 1100 | 1300 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | µg/kg DW | < 32 | < 35 | < 38 | < 39 | < 71 | < 77 | < 76 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | µg/kg DW | < 32 | < 35 | < 38 | < 39 | < 71 | < 77 | < 76 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | µg/kg DW | <30 | <30 | - | <30 | 80 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | µg/kg DW | 51 | 67 | - | 47 | 110 | 210 | 190 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | µg/kg DW | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | µg/kg DW | 2750 | 2930 | NA | 2230 | 2210 | 1570 | 1490 |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | µg/kg DW | < 29 | < 33 | < 30 | < 32 | < 33 | < 39 | < 40 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | µg/kg DW | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | µg/kg DW | < 48 | < 52 | < 57 | < 58 | < 110 | < 110 | < 110 |

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|---|---|---|---|---|---|---|---|---|---|---|
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | µg/kg DW | < 2.7 | < 3.2 | NA | < 3.7 | < 4.4 | < 4.6 | < 6.1 |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | µg/kg DW | < 3.1 | < 3.7 | NA | < 4.3 | < 5.1 | < 5.4 | < 7.1 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | µg/kg DW | < 3.9 | < 4.6 | NA | < 5.4 | < 6.4 | < 6.7 | < 8.9 |
| 49 | Octabromobisphenol-S | 42757-55-1 | µg/kg DW | | | | | | | |
| 50 | BHA | 732-26-3 | µg/kg DW | 5 | 16 | NA | 27 | 47 | 34 | 36 |
| 51 | AO 246 | 119-47-1 | µg/kg DW | 8.1 | 14.5 | NA | 12 | 44 | 39 | 41 |
| 52 | DTBSBP | 1709-70-2 | µg/kg DW | | | | | | | |
| 53 | AO 2246 | 118-82-1 | µg/kg DW | 81 | 166 | NA | 99 | 163 | 139 | 208 |
| 54 | AO 22E46 | 85-60-9 | µg/kg DW | 12 | 11 | NA | 12 | 21 | 15 | 13 |
| 55 | BHT-guinol | 121-00-6 | µg/kg DW | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | µg/kg DW | | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | µg/kg DW | | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | µg/kg DW | <2.0 | <2.0 | - | <2.0 | <2.0 | <2.0 | <2.0 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | µg/kg DW | 6 | < 4.6 | < 4.9 | < 6.2 | < 6.3 | < 6.3 | < 7.3 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | µg/kg DW | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | µg/kg DW | 23 | 32 | NA | 34 | 29 | 34 | < 41 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | µg/kg DW | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | µg/kg DW | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | µg/kg DW | < 40 | < 46 | < 42 | < 43 | < 46 | < 54 | < 55 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | µg/kg DW | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | µg/kg DW | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | µg/kg DW | | | | | | | |
| 68 | 1,3-Propandiamin N,N″-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | µg/kg DW | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | µg/kg DW | < 68 | < 78 | < 71 | < 74 | < 78 | < 91 | < 93 |
| 70 | PFPeA | 2706-90-3 | µg/kg DW | < 14 | < 16 | < 17 | < 20 | < 17 | < 17 | < 21 |
| 71 | PFHxA | 307-24-4 | µg/kg DW | < 1.2 | < 1.3 | < 1.3 | < 1.7 | < 1.8 | < 1.7 | < 2.2 |
| 72 | PFHpA | 375-85-9 | µg/kg DW | < 1 | < 1.1 | < 1.1 | < 1.4 | < 1.5 | < 1.4 | < 1.8 |
| 73 | PFHxS | 355-46-4 | µg/kg DW | 110 | 250 | 260 | 300 | 2100 | 2300 | 2700 |
| 74 | PFOA | 335-67-1 | µg/kg DW | < 1.5 | < 1.4 | < 1.6 | < 2.2 | < 2.3 | < 1.9 | < 2.7 |
| 75 | PFNA | 375-95-1 | µg/kg DW | < 0.43 | < 0.39 | < 0.45 | < 0.62 | < 0.65 | < 0.53 | < 0.77 |
| 76 | PFOS | 1763-23-1 | µg/kg DW | 6.5 | 5.7 | 5.4 | 3.6 | 11 | 5.7 | 2.9 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 77 | 6.2 monoPAP | | µg/kg DW | < 6 | < 5.9 | | < 8 | < 9.4 | < 9.1 | < 11 |
| 78 | 8:2 monoPAP | | µg/kg DW | < 0.97 | < 0.94 | | < 1.3 | < 1.5 | < 1.5 | < 1.7 |
| 79 | 6:2 diPAP | | µg/kg DW | 1.6 | 1.55 | | 1.9 | 6.2 | 4.7 | 5.6 |
| 80 | 8:2 diPAP | | µg/kg DW | < 0.73 | 1 | | 1 | 1.6 | < 0.88 | 2.1 |
| | | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | µg/kg DW | < 6.6 | < 7.2 | < 7.8 | < 8 | < 15 | < 16 | < 16 |
| | Amitryptyline | 50-48-6 | µg/kg DW | 100 | 120 | 96 | 88 | 410 | 360 | 330 |
| | Atorvastatin | 134523-00-5 | µg/kg DW | 100 | 130 | 110 | 110 | 170 | 160 | 160 |
| | Azithromycin | 83905-01-5 | µg/kg DW | 190 | 260 | 290 | 290 | < 29 | < 33 | < 31 |
| | Bezafibrate | 41859-67-0 | µg/kg DW | < 3.9 | < 4.5 | < 4.1 | < 4.2 | < 4.5 | < 5.2 | < 5.4 |
| | Bisoprolol | 66722-44-9 | µg/kg DW | < 3.1 | < 3.5 | < 3.9 | < 3.5 | < 7.8 | < 6.8 | < 6.7 |
| | Caffeine | 58-08-2 | µg/kg DW | 35 | 32 | 30 | 38 | 39 | 25 | 16 |
| | Carbamazepine | 298-46-4 | µg/kg DW | 66 | 90 | 82 | 76 | 99 | 99 | 90 |
| | Citalopram | 59729-33-8 | µg/kg DW | 98 | 130 | 120 | 110 | 270 | 290 | 260 |
| | Clarithromycin | 81103-11-9 | µg/kg DW | 17 | 30 | 29 | 26 | < 13 | < 14 | < 13 |
| | Clemastine | 15686-51-8 | µg/kg DW | < 10 | < 12 | < 11 | < 11 | < 12 | < 14 | < 14 |
| | Clindamycin_sulfoxide | 22431-46-5 | µg/kg DW | < 2.7 | < 2.8 | < 3 | < 3.2 | < 5.3 | < 5.9 | < 5.6 |
| | Clindamycine | 18323-44-9 | µg/kg DW | 24 | 32 | 33 | 30 | < 5.3 | < 5.9 | < 5.7 |
| | Clomipramine | 303-49-1 | µg/kg DW | < 7.1 | < 8.1 | < 7.4 | < 7.7 | 13 | 13 | 11 |
| | Clonazepam | 1622-61-3 | µg/kg DW | < 3.8 | < 4.3 | < 3.9 | < 4.1 | < 4.3 | < 5 | < 5.1 |
| | Diclofenac | 15307-86-5 | µg/kg DW | 54 | 81 | 70 | 68 | 69 | 61 | 69 |
| | Diltiazem | 42399-41-7 | µg/kg DW | < 7.7 | < 8.8 | < 8.1 | < 8.4 | < 8.9 | < 10 | < 11 |
| | Diphenhydramine | 58-73-1 | µg/kg DW | 32 | 46 | 41 | 35 | 16 | < 15 | < 16 |
| | Disopyramide | 3737-09-05 | µg/kg DW | < 5 | < 5.4 | < 5.8 | < 6 | < 11 | < 12 | < 12 |
| | Erythromycin | 114-07-8 | µg/kg DW | < 9.6 | < 10 | < 11 | < 11 | < 19 | < 21 | < 20 |
| | Fenofibrate | 49562-28-9 | µg/kg DW | < 4.1 | < 4.7 | < 4.3 | < 4.4 | < 4.7 | < 5.5 | < 5.6 |
| | Fexofenadine | 83799-24-0 | µg/kg DW | 1400 | 1500 | 1200 | 1000 | 960 | 830 | 780 |
| | Glibenclamide | 10238-21-8 | µg/kg DW | 4.6 | < 3.8 | < 3.4 | < 3.6 | < 3.8 | < 4.4 | < 4.5 |
| | Glimepiride | 93479-97-1 | µg/kg DW | < 4.1 | < 4.7 | < 4.3 | < 4.5 | < 4.8 | < 5.5 | < 5.7 |
| | Haloperidol | 52-86-8 | µg/kg DW | < 10 | < 12 | < 11 | < 11 | < 12 | < 14 | < 14 |
| | Irbesartan | 138402-11-6 | µg/kg DW | 25 | 37 | 32 | 26 | 30 | 28 | 34 |
| | Loperamide | 53179-11-6 | µg/kg DW | 19 | 22 | 19 | 17 | 39 | 38 | 33 |
| | Memantine | 19982-08-2 | µg/kg DW | < 4.2 | < 4.6 | < 5 | < 5.1 | 13 | 10 | 13 |
| | Metoprolol | 51384-51-1 | µg/kg DW | 61 | 72 | 81 | 68 | 310 | 300 | 280 |
| | Metoprolol acid | 56392-14-4 | µg/kg DW | 3.7 | 5.6 | 5.6 | 7.8 | 17 | 12 | 7 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mirtazapine | 61337-67-5 | µg/kg DW | 22 | 31 | 34 | 39 | 220 | 240 | 240 |
| | N-Desmethylcitalopram | 144025-14-9 | µg/kg DW | 80 | 140 | 120 | 120 | 530 | 530 | 490 |
| | Norsertraline | 87857-41-8 | µg/kg DW | 110 | 140 | 140 | 130 | 210 | 160 | 110 |
| | O-Desmethylvenlafaxine | 93413-62-8 | µg/kg DW | < 12 | 15 | 15 | 14 | 39 | 46 | 47 |
| | Orphenadrine | 83-98-7 | µg/kg DW | < 8.6 | < 9.8 | < 9 | < 9.3 | < 9.9 | < 11 | < 12 |
| | Oxazepam | 604-75-1 | µg/kg DW | 16 | 22 | 20 | 18 | < 4.4 | < 5.1 | < 5.2 |
| | Propranolol | 287714-41-4 | µg/kg DW | 15 | 21 | 21 | 18 | 110 | 78 | 64 |
| | Rosuvastatin | 80214-83-1 | µg/kg DW | < 3.8 | < 4.3 | < 3.9 | < 4.1 | 4.6 | 5.2 | 5.5 |
| | Roxithromycin | 79617-96-2 | µg/kg DW | < 4.5 | < 4.7 | < 5.1 | < 5.4 | < 8.9 | < 9.8 | < 9.4 |
| | Sertraline | 57-68-1 | µg/kg DW | 140 | 180 | 160 | 130 | 210 | 200 | 150 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | µg/kg DW | < 1.6 | < 1.5 | < 1.6 | < 2.1 | < 2.1 | < 2.1 | < 2.4 |
| | Sotalol | 959-24-0 | µg/kg DW | < 35 | < 39 | < 42 | < 43 | < 78 | < 84 | < 83 |
| | Sulfamethazine | 723-46-6 | µg/kg DW | < 6.6 | < 7.2 | < 7.8 | < 7.9 | < 15 | < 16 | < 15 |
| | Sulfamethoxazole | 144-83-2 | µg/kg DW | < 5.2 | < 5.9 | < 6.6 | < 6.2 | 27 | < 6.2 | < 6.9 |
| | Sulfapyridine | 91161-71-6 | µg/kg DW | 14 | 24 | 15 | 14 | 47 | 27 | 19 |
| | Tramadol | 27203-92-5 | µg/kg DW | 6.3 | 6.7 | 6.7 | 7.4 | 18 | 25 | 26 |
| | Trimethoprim | 738-70-5 | µg/kg DW | < 3.9 | < 4.2 | < 4.6 | < 4.7 | < 8.6 | < 9.2 | < 9.1 |
| | Valsartan | 137862-53-4 | µg/kg DW | 220 | 260 | 250 | 250 | 260 | 260 | 230 |
| | Venlafaxine | 93413-69-5 | µg/kg DW | 740 | 920 | 810 | 780 | 840 | 820 | 790 |
| | Verapamil | 52-53-9 | µg/kg DW | 26 | 29 | 22 | 21 | < 8.2 | < 9.6 | < 9.8 |
| | | | | | | | | | | |
| | PFBA | - | µg/kg DW | < 1.4 | < 1.5 | < 1.7 | < 1.9 | < 1.6 | < 1.7 | < 2.1 |
| | PFBS | - | µg/kg DW | < 11 | < 13 | < 14 | < 16 | < 13 | < 14 | < 17 |
| | PFDA | - | µg/kg DW | < 14 | < 13 | < 15 | < 20 | < 21 | < 17 | < 25 |
| | PFDoA | - | µg/kg DW | < 50 | < 45 | < 52 | < 73 | < 76 | < 62 | < 90 |
| | PFDS | - | µg/kg DW | < 15 | < 14 | < 15 | < 19 | < 20 | < 20 | < 23 |
| | PFHpS | - | µg/kg DW | < 14 | < 14 | < 14 | < 18 | < 19 | < 18 | < 22 |
| | PFTeDA | - | µg/kg DW | < 0.39 | < 0.35 | < 0.41 | < 0.57 | < 0.59 | < 0.48 | < 0.7 |
| | PFTrDA | - | µg/kg DW | < 0.34 | < 0.3 | < 0.35 | < 0.48 | < 0.5 | < 0.41 | < 0.6 |
| | PFUdA | - | µg/kg DW | < 15 | < 14 | < 16 | < 22 | < 23 | < 19 | < 27 |
| | | | | | | | | | | |
| | 1,2-xylen | - | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | 1,4-xylen | - | µg/kg DW | <20 | <20 | - | <20 | 37 | 26 | <20 |
| | 2,2',3,4,4',5',6-heptabromdifenylether | - | µg/kg DW | <2.0 | <2.0 | - | <2.0 | <2.0 | <2.0 | <2.0 |
| | 2,2',4,4'- tetrabromdifenylether | - | µg/kg DW | 3.2 | 4.1 | - | 3.8 | 6.9 | 6.8 | 5.8 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2,2',4,4',5,5'-hexabromdifenylether | - | µg/kg DW | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,2',4,4',5,6'-hexabromdifenylether | - | µg/kg DW | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,2',4,4',5-pentabromdifenylether | - | µg/kg DW | 3.0 | 4.3 | - | 3.6 | 7.5 | 8.1 | 6.1 |
| | 2,2',4,4',6-pentabromdifenylether | - | µg/kg DW | <1.0 | <1.0 | - | <1.0 | 1.5 | 1.6 | 1.4 |
| | 2,4,4'-tribromdifenylether | - | µg/kg DW | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | Aldrin | - | µg/kg DW | <5 | <5 | - | <5 | <5 | <5 | <5 |
| | Alfa-hexachlorcyklohexan | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Benzen | - | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Beta-hexachlorcyklohexan | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Delta-hexachlorcyklohexan | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Dieldrin | - | µg/kg DW | <10 | <10 | - | <10 | <10 | <10 | <10 |
| | Endrin | - | µg/kg DW | <10 | <10 | - | <10 | <10 | <10 | <10 |
| | Ethylbenzen | - | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Galaxolide - HHCB | - | µg/kg DW | 8000 | 11000 | - | 11000 | 20000 | 21000 | 19000 |
| | Gama-hexachlorcyklohexan (Lindan) | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Hexabromcyklododecane | - | µg/kg DW | <30 | <30 | - | <30 | 66 | 69 | <30 |
| | Hexachlorbenzen | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Isodrin | - | µg/kg DW | <5 | <5 | - | <5 | <5 | <5 | <5 |
| | Methoxychlor | - | µg/kg DW | <10 | <10 | - | <10 | <10 | <10 | <10 |
| | Musk keton | - | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Musk xylen | - | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | o,p - DDD | - | µg/kg DW | <3.0 | 5.1 | - | 6.6 | <3.0 | <3.0 | <3.0 |
| | o,p - DDT | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | o,p-DDE | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | p,p-DDD | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | p,p-DDE | - | µg/kg DW | <3.0 | 3.5 | - | 3.5 | <3.0 | 3.1 | <3.0 |
| | p,p-DDT | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | PBDE 209 | - | µg/kg DW | 230 | 290 | - | 250 | 720 | 1100 | 180 |
| | PCB 194 | - | µg/kg DW | <1 | <1 | - | <1 | <1 | <1 | <1 |
| | PCB kongener 101 | - | µg/kg DW | 2.1 | 2.4 | - | 1.8 | 2.5 | 3.0 | 2.7 |
| | PCB kongener 118 | - | µg/kg DW | <1.0 | 1.1 | - | <1.0 | 1.6 | 1.6 | 1.5 |
| | PCB kongener 138 | - | µg/kg DW | 3.1 | 2.4 | - | 1.9 | 2.4 | 2.9 | 2.6 |
| | PCB kongener 153 | - | µg/kg DW | 4.3 | 3.7 | - | 2.7 | 3.5 | 4.1 | 3.3 |
| | PCB kongener 180 | - | µg/kg DW | 2.1 | 1.3 | - | <1.0 | 1.5 | 1.6 | 1.0 |
| | PCB kongener 28 | - | µg/kg DW | 1.0 | 1.4 | - | 1.2 | 2.6 | 2.6 | 1.8 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PCB kongener 52 | - | µg/kg DW | 1.2 | 1.6 | - | 1.5 | 2.0 | 2.0 | 1.8 |
| | Pentachlorbenzen | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Tetrachlorethylen | - | µg/kg DW | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Thiofosfat | - | µg/kg DW | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Toluen | - | µg/kg DW | <20 | <20 | - | <20 | 22 | <20 | <20 |
| | Tonalide | - | µg/kg DW | 8300 | 12000 | - | 12000 | 17000 | 22000 | 17000 |
| | Xylene | - | µg/kg DW | <20 | <20 | - | <20 | 37 | 26 | <20 |

## Matrix: sediment

| No. | Parameter | CAS-number | Unit of measure | Site: Indre Oslofjorden | | | | | | | Site: Lake Mjøsa | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | | | | | | | Sample date | | | | | |
| | | | | 25.08.16 | | | | | | | 12.09.16 | | | | | |
| | | | | Sample 1A | Sample 1B | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 | Sample 1A | Sample 1B | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
| | | | | *Parallel analyses* | | | | | | | *Parallel analyses* | | | | | |
| | | | | | | | | | | | | | | | | |
| 1 | Perfluorotripropylamin | 338-83-0 | µg/kg DW | | | | | | | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | µg/kg DW | | | | | | | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | µg/kg DW | | | | | | | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | µg/kg DW | | | | | | | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | µg/kg DW | | | | | | | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | µg/kg DW | | | | | | | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | µg/kg DW | | | | | | | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | µg/kg DW | | | | | | | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | µg/kg DW | | | | | | | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | µg/kg DW | | | | | | | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | µg/kg DW | < 0.54 | < 0.61 | < 0.61 | < 0.52 | < 0.66 | < 0.52 | < 0.63 | < 0.61 | < 0.71 | < 0.65 | < 0.71 | < 0.6 | < 0.49 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | µg/kg DW | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluorodihydrogenfosfat (9Cl) | 94200-54-1 | µg/kg DW | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9Cl) | 57678-05-4 | µg/kg DW | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9Cl) | 57678-07-6 | µg/kg DW | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | µg/kg DW | | | | | | | | | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10,11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9Cl) | 101896-22-4 | µg/kg DW | | | | | | | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | µg/kg DW | <50 | - | <50 | <50 | <50 | <50 | <50 | <50 | - | <50 | <50 | <50 | <50 |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | µg/kg DW | | | | | | | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-triacontafluorotetradecan | 307-62-0 | µg/kg DW | | | | | | | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | µg/kg DW | <50 | - | <50 | <50 | <50 | <50 | <50 | <50 | - | <50 | <50 | <50 | <50 |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | µg/kg DW | | | | | | | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | µg/kg DW | < 1.1 | < 1.3 | < 1.2 | < 1.2 | < 1.3 | < 1.1 | < 1.4 | < 2.2 | < 2.4 | < 2.3 | < 2.9 | < 2.6 | < 1.8 |
| 28 | 1H-Benzotriazole | 94-14-7 | µg/kg DW | < 8.8 | < 9.4 | < 9.6 | < 8.6 | < 11 | < 11 | < 12 | < 12 | < 12 | < 12 | < 12 | < 8.8 | < 9.7 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | µg/kg DW | < 7 | < 8 | < 7.8 | < 9.3 | < 9.6 | < 10 | < 8.6 | < 11 | < 11 | < 10 | < 9.9 | < 8.2 | < 7 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | µg/kg DW | < 7 | < 8.1 | < 7.8 | < 9.4 | < 9.7 | < 10 | < 8.7 | < 11 | < 11 | < 10 | < 10 | < 8.3 | < 7.1 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | µg/kg DW | < 1.1 | < 1.1 | < 1.2 | < 1 | < 1.3 | < 1.3 | < 1.4 | < 1.5 | < 1.5 | < 1.4 | < 1.4 | < 1.1 | < 1.2 |
| 32 | Benzothiazole | 95-16-9 | µg/kg DW | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 | < 28 |
| 33 | 2-Benzothiazolamine | 136-95-8 | µg/kg DW | < 11 | < 11 | < 12 | < 10 | < 13 | < 13 | < 14 | < 15 | < 15 | < 14 | < 14 | < 11 | < 12 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | µg/kg DW | < 8.2 | < 8.8 | < 8.9 | < 8 | < 10 | < 10 | < 11 | 12 | < 11 | < 11 | < 11 | < 8.2 | < 9.1 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | µg/kg DW | < 1.2 | < 1.5 | < 1.4 | < 1.1 | < 1.5 | < 1.4 | < 1.4 | < 1.3 | < 1.4 | < 1.4 | < 1.4 | < 1.3 | < 1.4 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | µg/kg DW | < 7.2 | < 8.6 | < 8 | < 6.7 | < 8.6 | < 8.1 | < 8.3 | < 7.6 | < 7.8 | < 8.3 | < 8.2 | < 7.3 | < 7.9 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | µg/kg DW | < 28 | < 30 | < 31 | < 28 | < 36 | < 35 | < 37 | < 20 | < 20 | < 19 | < 19 | < 14 | < 16 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | µg/kg DW | < 28 | < 30 | < 31 | < 28 | < 36 | < 35 | < 37 | < 20 | < 20 | < 19 | < 19 | < 14 | < 16 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | µg/kg DW | <30 | - | <30 | <30 | <30 | <30 | <30 | <30 | - | <30 | <30 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | µg/kg DW | | | | | | | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | µg/kg DW | < 54 | < 59 | < 48 | < 53 | < 59 | < 50 | < 58 | < 50 | < 65 | < 100 | < 100 | < 76 | < 58 |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | µg/kg DW | < 6.2 | < 7.3 | < 6.8 | < 5.7 | < 7.4 | < 6.9 | < 7.1 | < 6.6 | < 6.8 | < 7.2 | < 7.1 | < 6.3 | < 6.8 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | µg/kg DW | | | | | | | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | µg/kg DW | < 8.3 | < 8.9 | < 9.1 | < 8.1 | < 11 | < 10 | < 11 | < 12 | < 12 | < 11 | < 11 | < 8.3 | < 9.2 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | µg/kg DW | 2.1 | 1 | < 0.8 | < 0.9 | < 1 | 1.2 | < 1 | 1.3 | < 1.1 | < 1.7 | < 1.8 | < 1.3 | < 1 |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | µg/kg DW | < 1 | < 1.2 | < 1 | < 1.1 | < 1.2 | < 1 | < 1.2 | < 1 | < 1.3 | < 2 | < 2 | < 1.5 | < 1.2 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | µg/kg DW | < 1.3 | < 1.5 | < 1.2 | < 1.3 | < 1.5 | < 1.3 | < 1.4 | < 1.3 | < 1.6 | < 2.5 | < 2.6 | < 1.9 | < 1.4 |
| 49 | Octabromobisphenol-S | 42757-55-1 | µg/kg DW | | | | | | | | | | | | | |
| 50 | BHA | 732-26-3 | µg/kg DW | < 1 | < 1.1 | < 0.9 | < 1 | < 1.1 | < 0.9 | < 1.1 | < 0.9 | < 1.2 | < 1.9 | < 1.9 | < 1.4 | < 1.1 |
| 51 | AO 246 | 119-47-1 | µg/kg DW | 6 | < 1.2 | < 1.0 | < 1.1 | < 1.2 | < 1 | < 1.2 | < 1 | < 1.3 | < 2.1 | < 2.1 | < 1.6 | < 1.2 |
| 52 | DTBSBP | 1709-70-2 | µg/kg DW | | | | | | | | | | | | | |
| 53 | AO 2246 | 118-82-1 | µg/kg DW | < 0.9 | < 1 | < 0.8 | < 0.9 | < 1 | < 0.8 | < 1 | < 0.8 | < 1.1 | < 1.7 | < 1.7 | < 1.3 | < 1 |
| 54 | AO 22E46 | 85-60-9 | µg/kg DW | < 0.4 | < 0.5 | < 0.4 | < 0.4 | < 0.5 | < 0.4 | < 0.5 | < 0.4 | < 0.5 | < 0.8 | < 0.9 | < 0.6 | < 0.5 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55 | BHT-guinol | 121-00-6 | µg/kg DW | | | | | | | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | µg/kg DW | | | | | | | | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | µg/kg DW | | | | | | | | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | µg/kg DW | <2.0 | - | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | - | <2.0 | <2.0 | <2.0 | <2.0 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | µg/kg DW | < 0.69 | < 0.78 | < 0.77 | < 0.66 | < 0.83 | < 0.66 | < 0.8 | < 0.79 | < 0.92 | < 0.85 | < 0.92 | < 0.78 | < 0.64 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | µg/kg DW | | | | | | | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | µg/kg DW | < 5.9 | < 6.7 | < 5.5 | < 6.1 | < 6.7 | < 5.7 | < 6.6 | < 5.7 | < 7.4 | < 11 | < 12 | < 8.7 | < 6.6 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | µg/kg DW | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | µg/kg DW | | | | | | | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | µg/kg DW | 33 | 20 | 15 | 17 | 13 | 14 | < 13 | < 12 | < 12 | 14 | < 13 | < 11 | < 12 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | µg/kg DW | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | µg/kg DW | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | µg/kg DW | | | | | | | | | | | | | |
| 68 | 1,3-Propandiamin N,N"-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | µg/kg DW | | | | | | | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | µg/kg DW | < 10 | < 12 | < 11 | < 9.3 | < 12 | < 11 | < 12 | < 11 | < 11 | < 12 | < 12 | < 10 | < 11 |
| 70 | PFPeA | 2706-90-3 | µg/kg DW | < 5.2 | < 6.8 | < 6.3 | < 5.3 | < 6.8 | < 5.6 | < 6.3 | < 6.5 | < 7.1 | < 20 | < 8.6 | < 7.6 | < 14 |
| 71 | PFHxA | 307-24-4 | µg/kg DW | < 0.5 | < 0.6 | < 0.57 | < 0.5 | < 0.6 | < 0.49 | < 0.62 | < 0.58 | < 0.66 | < 0.74 | < 0.86 | < 0.71 | < 0.53 |
| 72 | PFHpA | 375-85-9 | µg/kg DW | < 0.31 | < 0.37 | < 0.36 | < 0.31 | < 0.38 | < 0.31 | < 0.39 | < 0.37 | < 0.42 | < 0.47 | < 0.54 | < 0.45 | < 0.34 |
| 73 | PFHxS | 355-46-4 | µg/kg DW | < 0.54 | < 0.61 | < 0.61 | < 0.52 | < 0.66 | < 0.52 | < 0.63 | < 0.61 | < 0.71 | < 0.65 | < 0.71 | < 0.6 | < 0.49 |
| 74 | PFOA | 335-67-1 | µg/kg DW | < 0.43 | < 0.5 | < 0.46 | < 0.44 | 0.51 | < 0.42 | 0.96 | < 0.51 | < 0.55 | < 0.52 | < 0.65 | < 0.59 | 0.51 |
| 75 | PFNA | 375-95-1 | µg/kg DW | < 0.16 | < 0.19 | < 0.17 | < 0.17 | < 0.19 | < 0.16 | < 0.2 | < 0.059 | < 0.064 | < 0.061 | < 0.076 | < 0.069 | < 0.047 |
| 76 | PFOS | 1763-23-1 | µg/kg DW | 0.9 | 0.72 | 1.8 | 1.2 | 1.4 | 0.68 | 3.2 | 0.64 | < 0.63 | < 0.58 | < 0.63 | < 0.53 | 1.2 |
| 77 | 6.2 monoPAP | | µg/kg DW | < 0.3 | | < 0.25 | < 0.26 | < 0.33 | < 0.25 | < 0.26 | < 0.28 | | < 0.24 | < 0.32 | < 0.25 | < 0.26 |
| 78 | 8:2 monoPAP | | µg/kg DW | < 2.1 | | < 1 | < 0.97 | < 0.5 | < 0.45 | < 0.5 | < 0.39 | | < 0.35 | < 0.46 | < 0.35 | < 0.37 |
| 79 | 6:2 diPAP | | µg/kg DW | < 0.14 | | < 0.10 | < 0.12 | < 0.15 | < 0.11 | < 0.12 | < 0.12 | | < 0.11 | < 0.14 | < 0.11 | < 0.12 |
| 80 | 8:2 diPAP | | µg/kg DW | < 0.84 | | < 0.52 | < 0.39 | < 0.51 | < 0.26 | < 0.4 | < 0.17 | | < 0.22 | < 0.26 | < 0.17 | < 0.16 |
| | | | | | | | | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | µg/kg DW | < 1.2 | < 1.3 | < 1.4 | < 1.2 | < 1.6 | < 1.5 | < 1.6 | < 1.7 | < 1.7 | < 1.6 | < 1.7 | < 1.2 | < 1.4 |
| | Amitryptyline | 50-48-6 | µg/kg DW | < 1.1 | < 1.3 | < 1.2 | < 1 | < 1.3 | < 1.2 | < 1.3 | < 1.2 | < 1.2 | < 1.3 | < 1.3 | < 1.1 | < 1.2 |
| | Atorvastatin | 134523-00-5 | µg/kg DW | < 1.1 | < 1.3 | < 1.2 | < 1 | < 1.3 | < 1.2 | < 1.3 | < 1.2 | < 1.2 | < 1.3 | < 1.3 | < 1.1 | < 1.2 |
| | Azithromycin | 83905-01-5 | µg/kg DW | 2.0 | 1.7 | 2.8 | 1.5 | 4.2 | 1.2 | 5.7 | < 0.87 | < 1.1 | < 1.2 | < 1.1 | < 0.86 | < 0.8 |
| | Bezafibrate | 41859-67-0 | µg/kg DW | < 1.1 | < 1.3 | < 1.2 | < 1 | < 1.3 | < 1.2 | < 1.2 | < 0.92 | < 0.94 | < 1 | < 0.99 | < 0.88 | < 0.95 |
| | Bisoprolol | 66722-44-9 | µg/kg DW | < 0.82 | < 0.95 | < 0.91 | < 1.1 | < 1.1 | < 1.2 | < 1 | < 1.2 | < 1.3 | < 1.2 | < 1.2 | < 0.97 | < 0.83 |
| | Caffeine | 58-08-2 | µg/kg DW | 12 | 10 | 12 | 6.0 | 5.6 | 3.8 | 6.4 | 3.6 | 2.7 | < 1.2 | < 1.2 | < 1.1 | 2.0 |
| | Carbamazepine | 298-46-4 | µg/kg DW | < 1.8 | < 2.1 | < 2 | < 1.7 | < 2.1 | < 2 | < 2.1 | < 2 | < 2.1 | < 2.2 | < 2.2 | < 2 | < 2.1 |
| | Citalopram | 59729-33-8 | µg/kg DW | < 1.6 | < 1.9 | < 1.8 | < 1.5 | < 1.9 | < 1.8 | < 1.8 | < 1.3 | < 1.3 | < 1.4 | < 1.3 | < 1.2 | < 1.3 |
| | Clarithromycin | 81103-11-9 | µg/kg DW | < 1.8 | < 2.3 | < 2 | < 1.9 | < 2.6 | < 2.5 | < 2.2 | < 1.7 | < 2.1 | < 2.3 | < 2.1 | < 1.7 | < 1.5 |

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| | Clemastine | 15686-51-8 | µg/kg DW | < 1.2 | < 1.4 | < 1.3 | < 1.1 | < 1.4 | < 1.3 | < 1.4 | < 1.3 | < 1.3 | < 1.4 | < 1.4 | < 1.2 | < 1.3 |
| | Clindamycin_sulfoxide | 22431-46-5 | µg/kg DW | < 1.2 | < 1.5 | < 1.3 | < 1.2 | < 1.6 | < 1.6 | < 1.4 | < 1.1 | < 1.3 | < 1.4 | < 1.3 | < 1 | < 0.97 |
| | Clindamycine | 18323-44-9 | µg/kg DW | < 1.2 | < 1.5 | < 1.3 | < 1.2 | < 1.7 | < 1.6 | < 1.4 | < 1.2 | < 1.5 | < 1.7 | < 1.6 | < 1.2 | < 1.1 |
| | Clomipramine | 303-49-1 | µg/kg DW | < 1.1 | < 1.3 | < 1.3 | < 1 | < 1.3 | < 1.3 | < 1.3 | < 1.2 | < 1.2 | < 1.3 | < 1.3 | < 1.2 | < 1.3 |
| | Clonazepam | 1622-61-3 | µg/kg DW | < 1 | < 1.2 | < 1.1 | < 0.95 | < 1.2 | < 1.2 | < 1.2 | < 0.88 | < 0.91 | < 0.96 | < 0.95 | < 0.85 | < 0.92 |
| | Diclofenac | 15307-86-5 | µg/kg DW | < 0.9 | < 1.1 | < 1 | < 0.83 | < 1.1 | < 1 | < 1 | < 0.94 | < 0.96 | < 1 | < 1 | < 0.9 | < 0.97 |
| | Diltiazem | 42399-41-7 | µg/kg DW | < 1.1 | < 1.3 | < 1.2 | < 1 | < 1.3 | < 1.3 | < 1.3 | < 1.2 | < 1.2 | < 1.3 | < 1.3 | < 1.2 | < 1.3 |
| | Diphenhydramine | 58-73-1 | µg/kg DW | < 1.2 | < 1.4 | < 1.3 | < 1.1 | < 1.4 | < 1.4 | < 1.4 | < 1.3 | < 1.3 | < 1.4 | < 1.4 | < 1.2 | < 1.3 |
| | Disopyramide | 3737-09-05 | µg/kg DW | < 1.2 | < 1.3 | < 1.3 | < 1.2 | < 1.5 | < 1.5 | < 1.6 | < 1.7 | < 1.7 | < 1.6 | < 1.6 | < 1.2 | < 1.3 |
| | Erythromycin | 114-07-8 | µg/kg DW | < 1.5 | < 1.9 | < 1.7 | < 1.6 | < 2.1 | < 2.1 | < 1.8 | < 2.1 | < 2.6 | < 2.8 | < 2.6 | < 2.1 | < 1.9 |
| | Fenofibrate | 49562-28-9 | µg/kg DW | < 0.9 | < 1.1 | < 1 | < 0.83 | < 1.1 | < 1 | < 1 | < 0.91 | < 0.94 | < 0.99 | < 0.98 | < 0.87 | < 0.95 |
| | Fexofenadine | 83799-24-0 | µg/kg DW | < 1.5 | < 1.8 | < 1.7 | < 1.4 | < 1.8 | < 1.7 | < 1.8 | < 1.7 | < 1.7 | < 1.8 | < 1.8 | < 1.6 | < 1.7 |
| | Glibenclamide | 10238-21-8 | µg/kg DW | < 0.85 | < 1 | < 0.94 | < 0.79 | < 1 | < 0.95 | < 0.98 | < 0.92 | < 0.94 | < 1 | < 0.99 | < 0.88 | < 0.95 |
| | Glimepiride | 93479-97-1 | µg/kg DW | < 1.1 | < 1.3 | < 1.3 | < 1 | < 1.3 | < 1.3 | < 1.3 | < 1.2 | < 1.2 | < 1.3 | < 1.3 | < 1.2 | < 1.3 |
| | Haloperidol | 52-86-8 | µg/kg DW | < 2.1 | < 2.5 | < 2.3 | < 1.9 | < 2.5 | < 2.4 | < 2.4 | < 1.9 | < 1.9 | < 2 | < 2 | < 1.8 | < 1.9 |
| | Irbesartan | 138402-11-6 | µg/kg DW | < 1.1 | < 1.3 | < 1.2 | < 1 | < 1.3 | < 1.2 | < 1.3 | < 1.2 | < 1.2 | < 1.3 | < 1.3 | < 1.1 | < 1.2 |
| | Loperamide | 53179-11-6 | µg/kg DW | < 1.2 | < 1.4 | < 1.3 | < 1.1 | < 1.4 | < 1.3 | < 1.4 | < 1.3 | < 1.3 | < 1.4 | < 1.4 | < 1.2 | < 1.3 |
| | Memantine | 19982-08-2 | µg/kg DW | < 1.3 | < 1.4 | < 1.4 | < 1.3 | < 1.7 | < 1.6 | < 1.7 | < 1.8 | < 1.8 | < 1.7 | < 1.8 | < 1.3 | < 1.5 |
| | Metoprolol | 51384-51-1 | µg/kg DW | < 0.88 | < 1 | < 0.99 | < 1.2 | < 1.2 | < 1.3 | < 1.1 | < 1.3 | < 1.4 | < 1.3 | < 1.3 | < 1 | < 0.89 |
| | Metoprolol acid | 56392-14-4 | µg/kg DW | < 0.15 | < 0.17 | < 0.17 | < 0.2 | < 0.21 | < 0.23 | < 0.19 | < 0.32 | < 0.33 | < 0.31 | < 0.3 | < 0.25 | < 0.21 |
| | Mirtazapine | 61337-67-5 | µg/kg DW | < 1.3 | < 1.4 | < 1.4 | < 1.3 | < 1.7 | < 1.6 | < 1.7 | < 1.8 | < 1.8 | < 1.7 | < 1.8 | < 1.3 | < 1.5 |
| | N-Desmethylcitalopram | 144025-14-9 | µg/kg DW | < 1.2 | < 1.5 | < 1.4 | < 1.2 | < 1.5 | < 1.4 | < 1.4 | < 1.3 | < 1.4 | < 1.5 | < 1.4 | < 1.3 | < 1.4 |
| | Norsertraline | 87857-41-8 | µg/kg DW | < 0.7 | < 0.83 | < 0.78 | < 0.65 | < 0.83 | < 0.79 | < 0.81 | < 0.76 | < 0.78 | < 0.83 | < 0.82 | < 0.73 | < 0.79 |
| | O-Desmethylvenlafaxine | 93413-62-8 | µg/kg DW | < 1.3 | < 1.6 | < 1.5 | < 1.2 | < 1.6 | < 1.5 | < 1.5 | < 1.4 | < 1.4 | < 1.5 | < 1.5 | < 1.3 | < 1.5 |
| | Orphenadrine | 83-98-7 | µg/kg DW | < 1.2 | < 1.4 | < 1.3 | < 1.1 | < 1.4 | < 1.3 | < 1.4 | < 1.3 | < 1.3 | < 1.4 | < 1.4 | < 1.2 | < 1.3 |
| | Oxazepam | 604-75-1 | µg/kg DW | < 0.85 | < 1 | < 0.94 | < 0.79 | < 1 | < 0.95 | < 0.98 | < 1.1 | < 1.1 | < 1.2 | < 1.2 | < 1.1 | < 1.2 |
| | Propranolol | 287714-41-4 | µg/kg DW | < 0.83 | < 0.96 | < 0.92 | < 1.1 | < 1.1 | < 1.2 | < 1 | < 1.3 | < 1.3 | < 1.2 | < 1.2 | < 0.98 | < 0.84 |
| | Rosuvastatin | 80214-83-1 | µg/kg DW | < 0.82 | < 0.97 | < 0.91 | < 0.76 | < 0.98 | < 0.92 | < 0.94 | < 0.83 | < 0.85 | < 0.91 | < 0.9 | < 0.8 | < 0.86 |
| | Roxithromycin | 79617-96-2 | µg/kg DW | < 1.5 | < 1.8 | < 1.6 | < 1.6 | < 2.1 | < 2 | < 1.8 | < 1.5 | < 1.8 | < 2 | < 1.9 | < 1.5 | < 1.4 |
| | Sertraline | 57-68-1 | µg/kg DW | < 1.3 | < 1.6 | < 1.5 | < 1.2 | < 1.6 | < 1.5 | < 1.5 | < 1.4 | < 1.4 | < 1.5 | < 1.5 | < 1.3 | < 1.5 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | µg/kg DW | < 0.54 | < 0.61 | < 0.61 | < 0.52 | < 0.66 | < 0.52 | < 0.63 | < 0.61 | < 0.71 | < 0.65 | < 0.71 | < 0.6 | < 0.49 |
| | Sotalol | 959-24-0 | µg/kg DW | < 28 | < 30 | < 31 | < 28 | < 36 | < 35 | < 37 | < 20 | < 20 | < 19 | < 19 | < 14 | < 16 |
| | Sulfamethazine | 723-46-6 | µg/kg DW | < 1.2 | < 1.3 | < 1.3 | < 1.2 | < 1.6 | < 1.5 | < 1.6 | < 1.7 | < 1.7 | < 1.6 | < 1.6 | < 1.2 | < 1.4 |
| | Sulfamethoxazole | 144-83-2 | µg/kg DW | < 1.6 | < 1.9 | < 1.5 | < 1.5 | < 1.8 | < 1.9 | < 1.5 | < 1.5 | < 1.9 | < 1.5 | < 1.5 | < 1.6 | < 1.2 |
| | Sulfapyridine | 91161-71-6 | µg/kg DW | < 1.3 | < 1.4 | < 1.4 | < 1.2 | < 1.6 | < 1.6 | < 1.7 | < 1.8 | < 1.8 | < 1.7 | < 1.7 | < 1.3 | < 1.4 |
| | Tramadol | 27203-92-5 | µg/kg DW | < 1.3 | < 1.4 | < 1.4 | < 1.3 | < 1.7 | < 1.6 | < 1.7 | < 1.8 | < 1.8 | < 1.7 | < 1.8 | < 1.3 | < 1.5 |
| | Trimethoprim | 738-70-5 | µg/kg DW | < 1.2 | < 1.3 | < 1.3 | < 1.2 | < 1.5 | < 1.5 | < 1.6 | < 1.7 | < 1.7 | < 1.6 | < 1.6 | < 1.2 | < 1.3 |
| | Valsartan | 137862-53-4 | µg/kg DW | < 0.26 | < 0.31 | < 0.29 | 0.5 | < 0.31 | < 0.3 | < 0.3 | < 0.27 | < 0.28 | < 0.3 | < 0.29 | < 0.26 | < 0.28 |
| | Venlafaxine | 93413-69-5 | µg/kg DW | < 1.2 | < 1.5 | < 1.4 | < 1.1 | < 1.5 | < 1.4 | < 1.4 | < 1.3 | < 1.4 | < 1.4 | < 1.4 | < 1.3 | < 1.4 |
| | Verapamil | 52-53-9 | µg/kg DW | < 1.2 | < 1.4 | < 1.3 | < 1.1 | < 1.4 | < 1.4 | < 1.4 | < 1.3 | < 1.3 | < 1.4 | < 1.4 | < 1.2 | < 1.3 |
| | | | | | | | | | | | | | | | | |

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| | PFBA | - | µg/kg DW | < 0.22 | < 0.28 | < 0.26 | < 0.22 | < 0.28 | < 0.24 | < 0.27 | < 0.3 | < 0.32 | < 0.92 | < 0.39 | < 0.35 | < 0.64 |
| | PFBS | - | µg/kg DW | < 5.2 | < 6.8 | < 6.3 | < 5.3 | < 6.8 | < 5.7 | < 6.4 | < 6.6 | < 7.2 | < 20 | < 8.7 | < 7.7 | < 14 |
| | PFDA | - | µg/kg DW | < 4 | < 4.6 | < 4.3 | < 4.1 | < 4.7 | < 4 | < 5 | < 4.7 | < 5.1 | < 4.9 | < 6.1 | < 5.5 | < 3.8 |
| | PFDoA | - | µg/kg DW | < 3.6 | < 4.2 | < 3.9 | < 3.7 | < 4.3 | < 3.6 | < 4.5 | < 7.2 | < 7.9 | < 7.5 | < 9.3 | < 8.5 | < 5.8 |
| | PFDS | - | µg/kg DW | < 5 | < 5.7 | < 5.7 | < 4.9 | < 6.1 | < 4.9 | < 5.9 | < 5.7 | < 6.6 | < 6.1 | < 6.6 | < 5.6 | < 4.6 |
| | PFHpS | - | µg/kg DW | < 4.8 | < 5.4 | < 5.4 | < 4.6 | < 5.8 | < 4.6 | < 5.6 | < 5.4 | < 6.2 | < 5.7 | < 6.3 | < 5.3 | < 4.4 |
| | PFTeDA | - | µg/kg DW | < 0.26 | < 0.3 | < 0.28 | < 0.26 | < 0.3 | < 0.25 | < 0.32 | < 0.3 | < 0.33 | < 0.31 | < 0.39 | < 0.35 | < 0.24 |
| | PFTrDA | - | µg/kg DW | < 0.2 | < 0.23 | < 0.22 | < 0.21 | < 0.24 | < 0.2 | < 0.25 | < 0.24 | < 0.26 | < 0.24 | < 0.3 | < 0.28 | < 0.19 |
| | PFUdA | - | µg/kg DW | < 4.3 | < 5 | < 4.7 | < 4.4 | < 5.1 | < 4.3 | < 5.4 | < 6.1 | < 7.3 | < 4.3 | < 5.7 | < 4.4 | < 4.6 |
| | | | | | | | | | | | | | | | | |
| | 1,2-xylen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | 1,4-xylen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | 2,2',3,4,4',5',6-heptabromdifenylether | - | µg/kg DW | <2.0 | - | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | - | <2.0 | <2.0 | <2.0 | <2.0 |
| | 2,2',4,4'- tetrabromdifenylether | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,2',4,4',5,5'-hexabromdifenylether | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,2',4,4',5,6'-hexabromdifenylether | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,2',4,4',5-pentabromdifenylether | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,2',4,4',6-pentabromdifenylether | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,4,4'-tribromdifenylether | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | Aldrin | - | µg/kg DW | <5 | - | <5 | <5 | <5 | <5 | <5 | <5 | - | <5 | <5 | <5 | <5 |
| | Alfa-hexachlorcyklohexan | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Benzen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Beta-hexachlorcyklohexan | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Delta-hexachlorcyklohexan | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Dieldrin | - | µg/kg DW | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | - | <10 | <10 | <10 | <10 |
| | Endrin | - | µg/kg DW | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | - | <10 | <10 | <10 | <10 |
| | Ethylbenzen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Galaxolide - HHCB | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | 240 | - | <20 | <20 | <20 | <20 |
| | Gama-hexachlorcyklohexan (Lindan) | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Hexabromcyklododecane | - | µg/kg DW | <30 | - | <30 | <30 | <30 | <30 | <30 | <30 | - | <30 | <30 | <30 | <30 |
| | Hexachlorbenzen | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | 4.3 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Isodrin | - | µg/kg DW | <5 | - | <5 | <5 | <5 | <5 | <5 | <5 | - | <5 | <5 | <5 | <5 |
| | Methoxychlor | - | µg/kg DW | <10 | - | <10 | <10 | <10 | <10 | <10 | <10 | - | <10 | <10 | <10 | <10 |
| | Musk keton | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Musk xylen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | o,p - DDD | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | 5.5 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | o,p - DDT | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | o,p-DDE | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | p,p-DDD | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | 19.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | p,p-DDE | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | 12.0 | - | <3.0 | <3.0 | 3.7 | <3.0 |
| | p,p-DDT | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | 3.8 | - | <3.0 | <3.0 | 31.0 | <3.0 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PBDE 209 | - | µg/kg DW | <20 | - | <20 | <20 | 170 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | PCB 194 | - | µg/kg DW | <1 | - | <1 | <1 | <1 | <1 | 6 | <1 | - | <1 | <1 | <1 | <1 |
| | PCB kongener 101 | - | µg/kg DW | 1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | 5.9 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 118 | - | µg/kg DW | 1.3 | - | 1.4 | <1.0 | 1.6 | 1.1 | 6.5 | 1.1 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 138 | - | µg/kg DW | 1.5 | - | 1.5 | 1.0 | 2.1 | 1.8 | 11.0 | 1.8 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 153 | - | µg/kg DW | 1.8 | - | 2.0 | 1.1 | 2.2 | 2.3 | 9.6 | 2.2 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 180 | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | 1.0 | 8.6 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 28 | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | PCB kongener 52 | - | µg/kg DW | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 | 1.9 | <1.0 | - | <1.0 | <1.0 | <1.0 | <1.0 |
| | Pentachlorbenzen | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Tetrachlorethylen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Thiofosfát | - | µg/kg DW | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | - | <3.0 | <3.0 | <3.0 | <3.0 |
| | Toluen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |
| | Tonalide | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | 240 | - | <20 | <20 | <20 | <20 |
| | Xylen | - | µg/kg DW | <20 | - | <20 | <20 | <20 | <20 | <20 | <20 | - | <20 | <20 | <20 | <20 |

## Matrix: biota liver rat

| No. | Parameter | CAS-number | Unit of measure | Liver from rats from Oslo, sewage system and city | | | | | | | | Liver from rats from ROAF landfill | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | | | | | | | | Sample date | | |
| | | | | 08.09.16 | 14.09.16 | 16.11.16 | 22.11.16 | 22.11.16 | 16.11.16 | 16.11.16 | 18.11.17 | 07.11.16 | 07.11.16 | 26.09.16 |
| | | | | Sample 1 | Sample 2 | Sample 3 | Sample 7 | Sample 8 | Sample 9 | Sample 10 | Sample 12 | Sample 4 | Sample 5 | Sample 6 |
| 1 | Perfluorotripropylamin | 338-83-0 | µg/kg DW | | | | | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | µg/kg DW | | | | | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | µg/kg DW | | | | | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | µg/kg DW | | | | | | | | | | | |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | µg/kg DW | | | | | | | | | | | |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | µg/kg DW | | | | | | | | | | | |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | µg/kg DW | | | | | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | µg/kg DW | | | | | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | µg/kg DW | | | | | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | µg/kg DW | | | | | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | µg/kg DW | | | | | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | µg/kg DW | | | | | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | µg/kg DW | | | | | | | | | | | |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | µg/kg DW | | | | | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | µg/kg DW | < 0.53 | < 0.53 | < 0.6 | < 0.41 | < 0.4 | < 0.68 | < 0.62 | < 0.38 | < 1.1 | < 0.57 | < 0.61 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | µg/kg DW | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluorodihydrogenfosfat (9Cl) | 94200-54-1 | µg/kg DW | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9Cl) | 57678-05-4 | µg/kg DW | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9Cl) | 57678-07-6 | µg/kg DW | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | µg/kg DW | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10, 11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9CI) | 101896-22-4 | µg/kg DW | | | | | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | µg/kg DW | | | | | | | | | | | |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | µg/kg DW | | | | | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-triacontafluorotetradecan | 307-62-0 | µg/kg DW | | | | | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | µg/kg DW | | | | | | | | | | | |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | µg/kg DW | | | | | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | µg/kg DW | < 0.25 | < 0.25 | < 0.28 | < 0.19 | < 0.19 | < 0.32 | < 0.29 | < 0.18 | < 0.5 | < 0.27 | < 0.29 |
| 28 | 1H-Benzotriazole | 95-14-7 | µg/kg DW | 510 | 380 | 1800 | 4800 | 9900 | 190 | 530 | 460 | 1300 | 380 | 500 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | µg/kg DW | < 0.74 | < 0.74 | < 0.74 | < 0.74 | 1.1 | < 0.94 | < 0.93 | < 0.66 | < 2.1 | < 0.8 | < 1.1 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | µg/kg DW | < 0.74 | < 0.74 | < 0.74 | < 0.74 | 1.1 | < 0.94 | < 0.93 | < 0.66 | < 2.1 | < 0.8 | < 1.1 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | µg/kg DW | < 0.46 | < 0.41 | < 0.5 | 0.33 | 0.68 | 0.75 | < 0.49 | 0.3 | 4.7 | < 0.39 | 2.1 |
| 32 | Benzothiazole | 95-16-9 | µg/kg DW | 240 | 280 | 260 | 160 | 150 | 280 | 240 | 130 | 630 | 210 | 320 |
| 33 | 2-Benzothiazolamine | 136-95-8 | µg/kg DW | < 0.99 | < 1.1 | < 1.3 | < 0.89 | < 1.2 | < 1.5 | < 1.4 | < 0.82 | < 3 | < 1.2 | < 1.6 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | µg/kg DW | < 36 | < 35 | < 37 | < 36 | < 40 | < 45 | < 41 | < 33 | < 95 | < 37 | < 45 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | µg/kg DW | < 0.096 | < 0.09 | < 0.084 | < 0.082 | < 0.065 | < 0.1 | < 0.11 | < 0.065 | < 0.19 | < 0.077 | < 0.092 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | µg/kg DW | < 0.5 | 1.8 | 1.9 | 4.1 | 19 | < 0.52 | < 0.56 | < 0.34 | 3.6 | 1.4 | 1.6 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | µg/kg DW | < 22 | < 24 | < 29 | < 20 | < 28 | < 34 | < 31 | < 18 | < 67 | < 28 | < 36 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | µg/kg DW | < 22 | < 24 | < 29 | < 20 | < 28 | < 34 | < 31 | < 18 | < 67 | < 28 | < 36 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | µg/kg DW | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | µg/kg DW | | | | | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | µg/kg DW | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | µg/kg DW | < 4.3 | < 4 | < 3.8 | < 3.7 | < 2.9 | < 4.5 | < 4.8 | < 2.9 | < 8.7 | < 3.4 | < 4.1 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | µg/kg DW | | | | | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | µg/kg DW | < 54 | < 51 | < 53 | < 43 | < 45 | < 56 | < 62 | < 43 | < 120 | < 54 | < 53 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | µg/kg DW | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | µg/kg DW | < 8.9 | < 9.5 | < 8.8 | < 7.9 | < 9 | < 10 | < 8.6 | < 6.9 | < 17 | < 8.9 | < 9.1 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | µg/kg DW | < 1.3 | < 1.4 | < 1.3 | < 1.2 | < 1.3 | < 1.5 | < 1.3 | < 1 | < 2.5 | < 1.3 | < 1.3 |
| 49 | Octabromobisphenol-S | 42757-55-1 | µg/kg DW | | | | | | | | | | | |
| 50 | BHA | 732-26-3 | µg/kg DW | < 13 | < 14 | 40 | < 12 | < 13 | 28 | < 13 | < 10 | < 26 | < 13 | < 14 |
| 51 | AO 246 | 119-47-1 | µg/kg DW | 69 | < 72 | < 66 | < 60 | < 68 | 170 | < 65 | < 52 | < 130 | < 67 | < 69 |
| 52 | DTBSBP | 1709-70-2 | µg/kg DW | | | | | | | | | | | |
| 53 | AO 2246 | 118-82-1 | µg/kg DW | < 230 | < 240 | < 230 | < 200 | < 230 | < 270 | < 220 | < 180 | 1600 | < 230 | < 230 |
| 54 | AO 22E46 | 85-60-9 | µg/kg DW | < 5.7 | < 6 | < 5.6 | < 5 | < 5.7 | < 6.6 | < 5.5 | < 4.4 | < 11 | < 5.6 | 86 |
| 55 | BHT-guinol | 121-00-6 | µg/kg DW | | | | | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | µg/kg DW | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57 | Behentrimonium methosulfate | 81646-13-1 | µg/kg DW | | | | | | | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | µg/kg DW | < 0.49 | < 0.49 | < 0.56 | < 0.37 | < 0.37 | < 0.63 | < 0.57 | < 0.35 | < 1 | < 0.53 | < 0.56 | |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | µg/kg DW | | | | | | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | µg/kg DW | < 29 | < 31 | < 29 | < 26 | < 29 | < 34 | < 28 | < 23 | < 56 | < 29 | < 30 | |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | µg/kg DW | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | µg/kg DW | | | | | | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | µg/kg DW | 16 | 7.7 | 14 | 5.3 | 2.4 | 8.6 | 13 | 4.2 | 23 | 5.6 | 12 | |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | µg/kg DW | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | µg/kg DW | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | µg/kg DW | | | | | | | | | | | | |
| 68 | 1,3-Propandiamin N,N"-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | µg/kg DW | | | | | | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | µg/kg DW | < 100 | < 95 | < 89 | < 87 | < 68 | < 110 | < 110 | < 68 | < 200 | < 81 | < 97 | |
| 70 | PFPeA | 2706-90-3 | µg/kg DW | < 1.7 | < 1.6 | < 1.6 | < 1.3 | < 1.4 | < 1.7 | < 1.9 | < 1.3 | < 3.6 | < 1.7 | < 1.6 | |
| 71 | PFHxA | 307-24-4 | µg/kg DW | < 0.14 | < 0.13 | < 0.14 | < 0.1 | < 0.11 | < 0.16 | < 0.16 | < 0.1 | < 0.31 | < 0.13 | < 0.15 | |
| 72 | PFHpA | 375-85-9 | µg/kg DW | < 2 | < 1.9 | < 2.1 | < 1.5 | < 1.6 | < 2.3 | < 2.3 | < 1.5 | < 4.4 | < 1.9 | < 2.2 | |
| 73 | PFHxS | 355-46-4 | µg/kg DW | 1.3 | 22 | 0.68 | 400 | 58 | 20 | 0.35 | 0.98 | < 0.36 | < 0.15 | < 0.16 | |
| 74 | PFOA | 335-67-1 | µg/kg DW | < 4.2 | < 3.9 | 6.59425355 | < 3.5 | < 3.4 | < 4.9 | 15.4052879 | 9.21229195 | < 10 | < 4.4 | < 4.8 | |
| 75 | PFNA | 375-95-1 | µg/kg DW | 17 | 24 | 24 | 1.7 | 5.1 | < 1.7 | 2.7 | 3.5 | < 3.5 | < 1.7 | 1.8 | |
| 76 | PFOS | 1763-23-1 | µg/kg DW | 480 | 440 | 530 | 380 | 170 | 320 | 190 | 220 | 38 | 170 | 70 | |
| 77 | 6.2 monoPAP | | µg/kg DW | < 0.07 | < 0.07 | < 0.10 | < 0.09 | < 0.1 | < 0.11 | < 0.11 | < 0.07 | < 0.24 | < 0.08 | < 0.09 | |
| 78 | 8:2 monoPAP | | µg/kg DW | 64 | 320 | 435 | 2700 | 6.4 | < 0.08 | < 0.08 | < 0.05 | 44 | 6.4 | < 0.07 | |
| 79 | 6:2 diPAP | | µg/kg DW | 3.7 | 1.6 | 1.3 | < 0.39 | 2 | < 0.33 | 1.9 | 2.5 | 1.9 | 53 | 6.8 | |
| 80 | 8:2 diPAP | | µg/kg DW | 2.4 | 1.3 | 1.8 | < 0.27 | 2.7 | < 0.35 | < 0.32 | < 0.21 | 6.1 | < 0.24 | < 0.28 | |
| | | | | | | | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | µg/kg DW | < 0.46 | < 0.47 | < 0.47 | < 0.46 | < 0.48 | < 0.59 | < 0.59 | < 0.41 | < 1.3 | < 0.5 | < 0.66 | |
| | Amitryptyline | 50-48-6 | µg/kg DW | < 0.53 | < 0.51 | < 0.54 | < 0.51 | < 0.51 | < 0.63 | < 0.68 | < 0.43 | < 1.3 | < 0.51 | < 0.68 | |
| | Atorvastatin | 134523-00-5 | µg/kg DW | 1.9 | 2.8 | 8.6 | < 0.19 | < 0.17 | < 0.32 | < 0.29 | < 0.15 | < 0.7 | < 0.23 | < 0.36 | |
| | Azithromycin | 83905-01-5 | µg/kg DW | < 9.4 | < 9.9 | < 9.1 | < 8.2 | < 8.5 | < 11 | 16 | < 7.2 | < 22 | < 9.3 | < 11 | |
| | Bezafibrate | 41859-67-0 | µg/kg DW | < 0.13 | < 0.11 | < 0.14 | < 0.091 | < 0.082 | < 0.15 | < 0.14 | < 0.071 | < 0.33 | < 0.11 | < 0.17 | |
| | Bisoprolol | 66722-44-9 | µg/kg DW | < 0.41 | < 0.38 | < 0.38 | < 0.36 | < 0.39 | < 0.47 | < 0.44 | < 0.32 | < 1 | < 0.4 | < 0.5 | |
| | Caffeine | 58-08-2 | µg/kg DW | < 59 | < 59 | 110 | < 51 | < 53 | 2600 | < 68 | 130 | < 170 | 1800 | 1800 | |
| | Carbamazepine | 298-46-4 | µg/kg DW | 6.5 | 26 | < 0.94 | < 0.62 | < 0.56 | < 1 | < 0.93 | < 0.49 | < 2.3 | < 0.75 | < 1.2 | |
| | Citalopram | 59729-33-8 | µg/kg DW | < 0.94 | < 0.84 | < 1 | < 0.67 | < 0.61 | < 1.1 | < 1 | < 0.53 | < 2.5 | 9.5 | < 1.3 | |
| | Clarithromycin | 81103-11-9 | µg/kg DW | < 0.53 | < 0.59 | < 0.53 | < 0.5 | < 0.49 | < 0.54 | < 0.57 | < 0.41 | < 1.5 | < 0.48 | < 0.57 | |
| | Clemastine | 15686-51-8 | µg/kg DW | < 0.54 | < 0.48 | < 0.59 | < 0.39 | < 0.35 | < 0.65 | < 0.57 | < 0.3 | < 1.4 | < 0.46 | < 0.73 | |
| | Clindamycin_sulfoxide | 22431-46-5 | µg/kg DW | < 0.19 | < 0.2 | 0.29 | < 0.16 | < 0.17 | < 0.21 | < 0.2 | 0.28 | < 0.44 | 0.48 | 0.33 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Clindamycine | 18323-44-9 | µg/kg DW | < 0.87 | < 0.92 | < 0.85 | < 0.76 | < 0.8 | < 0.99 | < 0.93 | < 0.67 | < 2.1 | < 0.87 | < 1 |
| | Clomipramine | 303-49-1 | µg/kg DW | < 0.86 | < 0.77 | < 0.93 | < 0.62 | < 0.56 | < 1 | < 0.92 | < 0.48 | < 2.2 | < 0.74 | < 1.2 |
| | Clonazepam | 1622-61-3 | µg/kg DW | < 0.18 | < 0.18 | < 0.17 | < 0.15 | < 0.15 | < 0.22 | < 0.19 | < 0.12 | < 0.43 | < 0.16 | < 0.21 |
| | Diclofenac | 15307-86-5 | µg/kg DW | < 6 | < 5.4 | < 6.5 | < 4.3 | < 3.9 | < 7.2 | < 6.4 | < 3.4 | < 16 | < 5.2 | 58 |
| | Diltiazem | 42399-41-7 | µg/kg DW | < 0.46 | < 0.4 | < 0.49 | < 0.32 | < 0.29 | < 0.54 | < 0.48 | < 0.25 | < 1.2 | < 0.39 | < 0.61 |
| | Diphenhydramine | 58-73-1 | µg/kg DW | < 0.66 | < 0.58 | < 0.71 | < 0.47 | < 0.42 | < 0.78 | < 0.7 | < 0.37 | < 1.7 | < 0.56 | < 0.88 |
| | Disopyramide | 3737-09-05 | µg/kg DW | < 0.46 | < 0.46 | < 0.46 | < 0.46 | < 0.48 | < 0.59 | < 0.58 | < 0.41 | < 1.3 | < 0.5 | < 0.66 |
| | Erythromycin | 114-07-8 | µg/kg DW | < 1.9 | < 2.1 | < 1.9 | < 1.7 | < 1.8 | < 2.2 | < 2.1 | < 1.5 | < 4.6 | < 1.9 | < 2.3 |
| | Fenofibrate | 49562-28-9 | µg/kg DW | < 5.2 | < 4.6 | < 5.7 | < 3.7 | < 3.4 | < 6.3 | < 5.6 | < 2.9 | < 14 | < 4.5 | < 7.1 |
| | Fexofenadine | 83799-24-0 | µg/kg DW | < 2.5 | < 2.2 | 120 | < 1.8 | < 1.6 | 8.3 | < 2.7 | < 1.4 | < 6.5 | < 2.1 | < 3.4 |
| | Glibenclamide | 10238-21-8 | µg/kg DW | < 0.15 | < 0.13 | < 0.16 | < 0.1 | < 0.093 | < 0.17 | < 0.15 | < 0.081 | < 0.38 | < 0.12 | 0.26 |
| | Glimepiride | 93479-97-1 | µg/kg DW | < 1.8 | < 1.6 | < 2 | < 1.3 | < 1.2 | < 2.2 | < 1.9 | < 1 | < 4.7 | < 1.5 | < 2.4 |
| | Haloperidol | 52-86-8 | µg/kg DW | < 0.64 | < 0.57 | < 0.7 | < 0.46 | < 0.41 | < 0.77 | < 0.68 | < 0.36 | < 1.7 | < 0.55 | < 0.87 |
| | Irbesartan | 138402-11-6 | µg/kg DW | 350 | 600 | 1.1 | 660 | 1.6 | 7.8 | 46 | 11 | < 1.2 | 3.7 | 2.9 |
| | Loperamide | 53179-11-6 | µg/kg DW | < 0.39 | < 0.35 | < 0.43 | < 0.28 | < 0.25 | < 0.47 | < 0.42 | < 0.22 | < 1 | < 0.34 | < 0.53 |
| | Memantine | 19982-08-2 | µg/kg DW | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.52 | < 0.64 | < 0.63 | < 0.44 | < 1.5 | < 0.54 | < 0.71 |
| | Metoprolol | 51384-51-1 | µg/kg DW | 7.6 | 26 | 1.7 | < 0.26 | < 0.28 | < 0.34 | < 0.32 | < 0.23 | < 0.72 | 1.9 | < 0.37 |
| | Metoprolol acid | 56392-14-4 | µg/kg DW | 19 | 22 | 6.2 | < 0.2 | < 0.28 | 17 | 3.2 | 1.2 | 2.4 | 6.2 | 3.2 |
| | Mirtazapine | 61337-67-5 | µg/kg DW | < 0.42 | < 0.42 | < 0.42 | < 0.42 | < 0.44 | < 0.53 | < 0.53 | < 0.37 | 1.4 | < 0.45 | < 0.6 |
| | N-Desmethylcitalopram | 144025-14-9 | µg/kg DW | < 0.79 | < 0.7 | < 0.85 | < 0.56 | < 0.51 | < 0.94 | < 0.84 | < 0.44 | < 2.1 | < 0.67 | < 1.1 |
| | Norsertraline | 87857-41-8 | µg/kg DW | < 56 | < 50 | < 61 | < 40 | < 36 | < 67 | < 60 | < 31 | < 150 | < 48 | < 76 |
| | O-Desmethylvenlafaxine | 93413-62-8 | µg/kg DW | 9.3 | 0.74 | < 0.41 | < 0.4 | < 0.45 | < 0.5 | < 0.45 | < 0.36 | < 1.1 | < 0.42 | < 0.5 |
| | Orphenadrine | 83-98-7 | µg/kg DW | < 0.61 | < 0.54 | < 0.66 | < 0.43 | < 0.39 | < 0.72 | < 0.64 | < 0.34 | < 1.6 | < 0.52 | < 0.82 |
| | Oxazepam | 604-75-1 | µg/kg DW | < 1.8 | < 1.8 | < 1.7 | < 1.5 | < 1.4 | < 2.2 | < 1.9 | < 1.2 | < 4.3 | < 1.6 | < 2.1 |
| | Potasium9-chlorohexadeca-fluoro-3-oxanonane-1-sulfonate | 73606-19-6 | µg/kg DW | < 0.53 | < 0.53 | < 0.6 | < 0.41 | < 0.4 | < 0.68 | < 0.62 | < 0.38 | < 1.1 | < 0.57 | < 0.61 |
| | Propranolol | 287714-41-4 | µg/kg DW | < 0.6 | < 0.56 | < 0.56 | < 0.54 | < 0.57 | < 0.7 | < 0.64 | < 0.47 | < 1.5 | < 0.59 | < 0.74 |
| | Rosuvastatin | 80214-83-1 | µg/kg DW | < 3.3 | < 3 | < 3.6 | < 2.4 | < 2.2 | < 4 | < 3.6 | < 1.9 | < 8.7 | < 2.9 | < 4.5 |
| | Roxithromycin | 79617-96-2 | µg/kg DW | < 1.7 | < 2 | < 1.8 | < 1.7 | < 1.6 | < 1.8 | < 1.9 | < 1.4 | < 4.9 | < 1.6 | < 1.9 |
| | Sertraline | 57-68-1 | µg/kg DW | < 0.57 | 1.000 | < 0.62 | < 0.41 | < 0.37 | < 0.69 | < 0.61 | < 0.32 | < 1.5 | < 0.49 | < 0.77 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | µg/kg DW | < 0.48 | < 0.48 | < 0.54 | < 0.37 | < 0.36 | < 0.62 | < 0.56 | < 0.34 | < 0.97 | < 0.52 | < 0.55 |
| | Sotalol | 959-24-0 | µg/kg DW | < 8.9 | < 9.7 | < 12 | < 8 | < 11 | < 14 | < 12 | < 7.4 | < 27 | < 11 | < 14 |
| | Sulfamethazine | 723-46-6 | µg/kg DW | < 4.6 | < 4.5 | < 5.2 | < 4.2 | < 4.4 | < 5.8 | < 5.1 | < 2.8 | < 12 | < 4.2 | < 6.4 |
| | Sulfamethoxazole | 144-83-2 | µg/kg DW | < 9.6 | 10 | < 11 | < 8.7 | < 9.1 | < 12 | < 11 | 6.3 | < 25 | < 8.8 | < 13 |
| | Sulfapyridine | 91161-71-6 | µg/kg DW | < 0.46 | < 0.45 | < 0.52 | < 0.42 | < 0.44 | < 0.58 | < 0.51 | < 0.28 | < 1.2 | < 0.42 | < 0.64 |
| | Tramadol | 27203-92-5 | µg/kg DW | 260 | < 3.5 | < 3.5 | < 3.5 | < 3.6 | < 4.5 | < 4.4 | < 3.1 | < 10 | < 3.8 | < 5 |
| | Trimethoprim | 738-70-5 | µg/kg DW | < 0.4 | < 0.4 | < 0.42 | < 0.35 | < 0.37 | < 0.55 | < 0.47 | < 0.29 | < 1.1 | < 0.39 | < 0.53 |
| | Valsartan | 137862-53-4 | µg/kg DW | 48 | 110 | 3.9 | < 0.18 | 17 | < 0.29 | < 0.26 | 33 | < 0.64 | < 0.21 | 2.8 |
| | Venlafaxine | 93413-69-5 | µg/kg DW | < 0.43 | < 0.41 | < 0.44 | < 0.43 | < 0.47 | < 0.53 | < 0.48 | < 0.38 | < 1.1 | < 0.44 | < 0.53 |
| | Verapamil | 52-53-9 | µg/kg DW | < 0.38 | < 0.37 | < 0.39 | < 0.36 | < 0.37 | < 0.45 | < 0.49 | < 0.31 | < 0.94 | < 0.37 | < 0.49 |
| | | | µg/kg DW | | | | | | | | | | | |
| | PFBA | - | µg/kg DW | < 1.1 | < 1 | < 1.1 | < 0.86 | < 0.91 | < 1.1 | < 1.2 | < 0.86 | < 2.3 | < 1.1 | < 1.1 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PFBS | - | µg/kg DW | < 1.8 | < 1.8 | < 1.8 | < 1.5 | < 1.6 | < 1.9 | < 2.1 | < 1.5 | < 4 | < 1.9 | < 1.8 |
| | PFDA | - | µg/kg DW | < 45 | < 36 | < 42 | < 39 | < 31 | < 51 | < 68 | < 30 | < 100 | < 51 | < 43 |
| | PFDoA | - | µg/kg DW | < 25 | < 29 | < 33 | < 23 | < 24 | < 33 | < 41 | < 22 | < 67 | < 29 | < 29 |
| | PFDS | - | µg/kg DW | 170 | 28 | 12 | 4.0 | < 2.1 | 4.4 | 33 | 2.5 | < 5.8 | < 2.5 | < 2.5 |
| | PFHpS | - | µg/kg DW | < 3 | < 2.9 | < 2.9 | < 2.5 | < 2.6 | < 3.5 | < 3.7 | < 2.5 | < 7.3 | < 3 | < 3.2 |
| | PFTeDA | - | µg/kg DW | < 23 | < 26 | < 29 | < 20 | < 21 | < 29 | < 36 | < 19 | < 60 | < 26 | < 26 |
| | PFTrDA | - | µg/kg DW | < 18 | < 20 | < 23 | < 16 | < 17 | < 23 | < 28 | < 15 | < 47 | < 20 | < 20 |
| | PFUdA | - | µg/kg DW | < 2 | 2.6 | 9.5 | 7.2 | 4.9 | 6.7 | < 3.2 | < 1.7 | < 5.2 | < 2.2 | < 2.3 |
| | | | | | | | | | | | | | | |
| | Aldrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | Alfa-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Beta-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.6 | <0.5 | 1.3 |
| | Chlorpyrifos | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 2.4 | <0.5 | 0.5 |
| | Delta-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Dieldrin | - | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Endrin | - | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Galaxolide | - | µg/kg DW | 44 | 34 | 41 | 37 | 41 | 31 | 26 | 25 | 210 | 27 | 38 |
| | Gama-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 |
| | HCB | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | 1.4 | <0.5 | 2.1 | <0.5 | 0.8 | <0.5 | 0.6 |
| | Isodrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | MethoxyCl | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Musk keton | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | Musk xylen | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | o,p-DDD | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDE | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDT | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.9 | <0.5 | <0.5 |
| | p,p-DDD | - | µg/kg DW | 0.7 | 0.6 | 20.0 | 29.0 | 14.0 | 2.0 | 4.6 | 3.8 | 1.0 | 1.6 | 4.3 |
| | p,p-DDE | - | µg/kg DW | 0.9 | 0.7 | 5.5 | 3.8 | 9.7 | 1.2 | 4.4 | 6.2 | 1.7 | 0.6 | 1.8 |
| | p,p-DDT | - | µg/kg DW | 0.6 | <0.5 | 1.5 | 8.6 | 4.5 | <0.5 | 3.5 | 3.2 | 1.3 | 1.1 | 0.8 |
| | PBDE 100 | - | µg/kg DW | 0.5 | 0.6 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PBDE 99 | - | µg/kg DW | 1.4 | 1.4 | 0.4 | <0.2 | 1.1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.7 |
| | PBDE153 | - | µg/kg DW | 2.0 | 2.1 | <0.5 | <0.5 | 2.6 | <0.5 | <0.5 | 0.9 | <0.5 | <0.5 | 0.9 |
| | PBDE154 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE183 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE28 | - | µg/kg DW | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PBDE47 | - | µg/kg DW | 2.3 | 4.1 | 0.5 | 0.7 | 2.1 | <0.2 | <0.2 | 0.5 | <0.2 | 0.5 | 1.4 |
| | PCB 101 | - | µg/kg DW | <0.5 | <0.5 | 0.5 | <0.5 | <0.5 | 0.6 | <0.5 | <0.5 | 1.3 | <0.5 | <0.5 |
| | PCB 118 | - | µg/kg DW | <0.5 | <0.5 | 1.9 | 0.7 | 1.1 | 0.9 | <0.5 | 0.8 | 1.0 | <0.5 | 0.7 |
| | PCB 138 | - | µg/kg DW | 1.5 | 1.2 | 7.2 | 4.0 | 11.0 | 8.1 | 2.5 | 28.0 | 3.5 | 1.8 | 3.5 |
| | PCB 153 | - | µg/kg DW | 2.4 | 1.7 | 11.0 | 5.3 | 15.0 | 7.2 | 3.5 | 25.0 | 4.7 | 2.1 | 4.2 |
| | PCB 180 | - | µg/kg DW | 1.2 | 0.9 | 15.0 | 3.7 | 12.0 | 5.2 | 2.2 | 29.0 | 2.0 | 1.4 | 2.2 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PCB 194 | - | µg/kg DW | <0.5 | <0.5 | 6.8 | 0.6 | 1.5 | <0.5 | <0.5 | 5.0 | 0.6 | <0.5 | <0.5 |
| | PCB 28 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 |
| | PCB 52 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PentaCB | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Tonalide - AHTN | - | µg/kg DW | 41 | 34 | 36 | 32 | 37 | 31 | 30 | 27 | 190 | 28 | 33 |

## Matrix: biota fish liver

| No. | Parameter | CAS-number | Unit of measure | Liver of cod, Indre Oslofjorden | | | | | | | | | | | | | | | Liver of large perch, Lake Mjøsa | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | | | | | | | | | | | | | | | Sample date | | | | |
| | | | | 24.08.16 | | | | | | | | | | | | | | | 30.08.16 | | | | |
| | | | | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 | Sample 7 | Sample 8 | Sample 9 | Sample 10 | Sample 11 | Sample 12 | Sample 13 | Sample 14 | Sample 15 | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
| 1 | Perfluorotripropylamin | 338-83-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | µg/kg DW | < 0.23 | < 0.18 | < 0.18 | < 0.18 | < 0.17 | < 0.22 | < 0.22 | < 0.2 | < 0.16 | < 0.15 | < 0.18 | < 0.19 | < 0.19 | < 0.21 | < 0.18 | < 46 | < 58 | < 42 | < 33 | < 64 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15 ,15,16,16,16-nona-cosafluorodihydrogenfosfat (9Cl) | 94200-54-1 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-henicosafluorodihydrogenfosfat (9Cl) | 57678-05-4 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9Cl) | 57678-07-6 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15 ,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10, 11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9Cl) | 101896-22-4 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-triacontafluorotetradecan | 307-62-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | µg/kg DW | < 0.46 | < 0.36 | < 0.35 | < 0.36 | < 0.34 | < 0.44 | < 0.44 | < 0.4 | < 0.32 | < 0.31 | < 0.37 | < 0.39 | < 0.38 | < 0.41 | < 0.35 | < 5.6 | < 7.1 | < 5.1 | < 4.1 | < 7.7 |
| 28 | 1H-Benzotriazole | 95-14-7 | µg/kg DW | < 6 | < 2.4 | < 2.9 | < 2 | < 3.1 | < 4.9 | < 4.6 | < 4.8 | < 6.3 | < 5.6 | < 6.8 | < 6.5 | < 6.5 | < 7.5 | < 7 | 210 | 260 | 170 | 210 | 450 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | µg/kg DW | < 1.2 | < 0.86 | < 0.78 | < 0.78 | < 0.83 | < 1.1 | < 1 | < 1.1 | < 1.1 | < 1.1 | < 1.4 | < 1.4 | < 1.3 | < 1.5 | < 1.3 | < 1.9 | 2.2 | < 1.9 | < 1.7 | < 1.4 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 4- and 5-methyltriazole | 136-85-6 | µg/kg DW | < 1.2 | < 0.86 | < 0.78 | < 0.78 | < 0.83 | < 1.1 | < 1 | < 1.1 | < 1.1 | < 1.1 | < 1.4 | < 1.4 | < 1.3 | < 1.5 | < 1.3 | < 1.9 | 2.2 | < 1.9 | < 1.7 | < 1.4 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | µg/kg DW | < 0.72 | < 0.23 | < 0.31 | < 0.2 | < 0.38 | < 0.65 | < 0.54 | < 0.57 | < 0.73 | < 0.7 | < 0.8 | < 0.78 | < 0.83 | < 0.91 | < 0.75 | < 3.2 | < 2.5 | < 4 | < 2.2 | < 2.4 |
| 32 | Benzothiazole | 95-16-9 | µg/kg DW | 260 | 110 | 120 | 86 | 110 | 200 | 170 | 190 | 220 | 170 | 330 | 260 | 250 | 280 | 280 | 300 | 210 | 340 | < 170 | 320 |
| 33 | 2-Benzothiazolamine | 136-95-8 | µg/kg DW | < 1.2 | < 0.97 | < 1.3 | < 0.89 | < 1.1 | < 1.3 | < 1.5 | < 1.7 | < 1.9 | < 2.2 | < 2.1 | < 2.1 | < 2 | < 2.6 | < 2.2 | < 20 | < 11 | < 18 | < 15 | < 11 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | µg/kg DW | < 54 | < 36 | < 36 | < 33 | < 36 | 62 | < 46 | 47 | < 48 | 50 | < 57 | < 57 | < 58 | < 69 | < 58 | 53 | 50 | 47 | 34 | 63 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | µg/kg DW | < 2.7 | < 2.8 | < 1.7 | < 1.5 | < 2 | < 2.1 | < 1.9 | < 2.4 | < 2.7 | < 2.7 | < 4.1 | < 3.4 | < 4.2 | < 4.1 | < 2.9 | < 17 | < 18 | < 23 | < 14 | < 15 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | µg/kg DW | < 0.43 | < 0.45 | 0.88 | < 0.24 | 1.2 | 0.91 | 1.1 | 1.6 | < 0.45 | < 0.43 | < 0.66 | < 0.55 | < 0.68 | 1.9 | 1.5 | < 270 | < 280 | < 370 | < 230 | < 240 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | µg/kg DW | < 8.5 | < 7.1 | < 9.3 | < 6.5 | < 8 | < 9.2 | < 11 | < 13 | < 14 | < 16 | < 15 | < 16 | < 15 | < 19 | < 16 | < 860 | < 480 | < 780 | < 640 | < 470 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | µg/kg DW | < 8.5 | < 7.1 | < 9.3 | < 6.5 | < 8 | < 9.2 | < 11 | < 13 | < 14 | < 16 | < 15 | < 16 | < 15 | < 19 | < 16 | < 860 | < 480 | < 780 | < 640 | < 470 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | µg/kg DW | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | 150 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | 90 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | µg/kg DW | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2700 | 5800 | 800 | 620 | < 1000 |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | µg/kg DW | < 3.4 | < 3.5 | < 2.1 | < 1.9 | < 2.5 | < 2.6 | < 2.4 | < 3.1 | < 3.5 | < 3.4 | < 5.2 | < 4.3 | < 5.3 | < 5.2 | < 3.7 | < 200 | < 210 | < 270 | < 170 | < 180 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | µg/kg DW | < 96 | < 58 | < 120 | < 59 | < 62 | < 91 | < 86 | < 78 | < 80 | < 70 | < 76 | < 83 | < 80 | < 77 | < 65 | < 6.9 | < 6.3 | < 7.3 | < 5.5 | < 5.1 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | µg/kg DW | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | µg/kg DW | < 9.2 | < 8.1 | < 6.2 | < 6.7 | < 6.1 | < 7.5 | < 6.3 | < 6.9 | < 7.7 | < 5.2 | < 6.5 | < 7.7 | < 7.1 | < 7.5 | < 5.8 | < 6.9 | < 5.7 | < 6.2 | < 3.6 | < 15 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | µg/kg DW | < 1.4 | < 1.2 | < 0.92 | < 0.99 | < 0.9 | < 1.1 | < 0.94 | < 1 | < 1.1 | < 0.76 | < 0.96 | < 1.1 | < 1 | < 1.1 | < 0.86 | < 0.19 | < 0.15 | < 0.17 | < 0.099 | < 0.4 |
| 49 | Octabromobisphenol-S | 42757-55-1 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 50 | BHA | 732-26-3 | µg/kg DW | 36 | < 12 | < 9.4 | < 10 | < 9.2 | 16 | 35 | < 10 | 24 | 17 | 34 | 19 | 40 | 50 | 21 | < 1.2 | < 0.97 | < 1.1 | < 0.62 | < 2.5 |
| 51 | AO 246 | 119-47-1 | µg/kg DW | < 69 | 1200 | 940 | 780 | 1400 | 120 | < 48 | 680 | < 58 | < 39 | < 49 | 490 | 67 | 140 | 110 | 18 | 2.5 | 75 | 0.87 | < 3.1 |
| 52 | DTBSBP | 1709-70-2 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 53 | AO 2246 | 118-82-1 | µg/kg DW | < 240 | < 210 | < 160 | < 170 | < 160 | < 190 | < 160 | < 180 | < 200 | < 130 | < 170 | < 200 | < 180 | < 190 | < 150 | < 22 | < 18 | < 20 | < 12 | < 46 |
| 54 | AO 22E46 | 85-60-9 | µg/kg DW | 86 | < 5.2 | < 3.9 | < 4.2 | 27 | 110 | 71 | 23 | < 4.9 | 8.2 | 79 | < 4.9 | < 4.5 | 76 | 64 | < 64 | < 52 | < 57 | < 34 | < 130 |
| 55 | BHT-guinol | 121-00-6 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | µg/kg DW | < 0.56 | < 0.44 | < 0.43 | < 0.44 | < 0.42 | < 0.54 | < 0.54 | < 0.49 | < 0.39 | < 0.38 | < 0.45 | < 0.47 | < 0.47 | < 0.5 | < 0.43 | < 4.5 | < 5.7 | < 4.1 | < 3.3 | < 6.2 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | µg/kg DW | < 30 | < 27 | < 20 | < 22 | < 20 | < 25 | < 21 | < 23 | < 25 | < 17 | < 21 | < 25 | < 23 | < 25 | < 19 | < 86 | < 70 | < 77 | < 45 | < 180 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | µg/kg DW | 9.8 | 5.4 | 4.7 | 2.7 | 9.9 | 18 | 6.8 | 9.8 | 10 | 13 | 14 | 7.1 | 9.8 | 10 | 9.7 | 71 | < 49 | < 78 | < 44 | < 47 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 68 | 1,3-Propandiamin N,N''-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | µg/kg DW | | | | | | | | | | | | | | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | µg/kg DW | < 84 | < 87 | < 52 | < 47 | < 62 | < 65 | < 60 | < 76 | < 86 | < 84 | < 130 | < 110 | < 130 | < 130 | < 91 | < 1300 | < 1400 | < 1800 | < 1100 | < 1200 |
| 70 | PFPeA | 2706-90-3 | µg/kg DW | < 2.1 | < 1.2 | < 2.5 | < 1.3 | < 1.3 | < 1.9 | < 1.8 | < 1.7 | < 1.7 | < 1.5 | < 1.6 | < 1.8 | < 1.7 | < 1.7 | < 1.4 | < 1.5 | < 1.4 | < 1.6 | < 1.2 | < 1.1 |
| 71 | PFHxA | 307-24-4 | µg/kg DW | < 0.16 | < 0.094 | < 0.1 | < 0.095 | < 0.1 | < 0.13 | < 0.13 | < 0.13 | < 0.12 | < 0.11 | < 0.12 | < 0.13 | < 0.12 | < 0.13 | < 0.1 | < 0.85 | < 0.78 | < 0.82 | < 0.6 | < 0.65 |
| 72 | PFHpA | 375-85-9 | µg/kg DW | < 2.4 | < 1.4 | < 1.5 | < 1.4 | < 1.4 | < 2 | < 1.9 | < 1.9 | < 1.7 | < 1.5 | < 1.8 | < 1.8 | < 1.7 | < 1.9 | < 1.5 | < 7 | < 6.4 | < 6.7 | < 4.9 | < 5.4 |
| 73 | PFHxS | 355-46-4 | µg/kg DW | 16 | 9.1 | 1.7 | 1.4 | 5.1 | 9.7 | 1 | 0.72 | 3.6 | 3.8 | 0.66 | 1.1 | 1.8 | 1.9 | 1.1 | < 0.39 | < 0.4 | < 0.38 | < 0.31 | < 0.35 |
| 74 | PFOA | 335-67-1 | µg/kg DW | < 5.9 | < 3.7 | < 4.2 | < 3.5 | < 4.7 | < 5.2 | < 4.9 | < 4.2 | < 4.5 | < 4.2 | < 4.6 | < 4.8 | < 5 | < 5.1 | < 4.2 | < 1.4 | < 1.2 | < 1.4 | < 0.91 | < 0.97 |
| 75 | PFNA | 375-95-1 | µg/kg DW | < 2.9 | < 0.99 | < 1 | < 0.92 | < 1.1 | < 2 | < 1.9 | < 1.5 | < 2 | < 1.6 | < 1.5 | < 1.7 | < 1.8 | < 1.8 | < 1.5 | < 51 | < 39 | < 44 | < 26 | < 34 |
| 76 | PFOS | 1763-23-1 | µg/kg DW | 33 | 5.3 | 4.4 | 2.5 | 20 | 15 | 16 | 12 | 16 | 55 | 45 | 23 | 44 | 43 | 25 | 30 | 29 | 80 | 29 | 72 |
| 77 | 6.2 monoPAP | | µg/kg DW | < 0.1 | < 0.05 | < 0.06 | < 0.08 | < 0.07 | < 0.10 | < 0.09 | < 0.08 | < 0.05 | < 0.05 | < 0.07 | < 0.11 | < 0.06 | < 0.12 | < 0.12 | < 0.59 | < 0.35 | < 0.48 | < 0.37 | < 0.37 |
| 78 | 8:2 monoPAP | | µg/kg DW | < 0.04 | < 0.02 | < 0.03 | < 0.03 | < 0.03 | < 0.04 | < 0.04 | < 0.03 | < 0.02 | < 0.02 | < 0.03 | < 0.05 | < 0.02 | < 0.05 | < 0.05 | < 0.16 | < 0.09 | < 0.13 | < 0.1 | < 0.1 |
| 79 | 6:2 diPAP | | µg/kg DW | < 0.39 | < 0.5 | < 0.24 | < 0.30 | < 0.26 | < 0.36 | < 0.36 | < 0.3 | < 0.19 | < 0.19 | < 0.24 | < 0.42 | < 0.22 | < 0.45 | < 0.45 | < 0.66 | < 0.40 | < 0.54 | < 0.42 | < 0.42 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 8:2 diPAP | | µg/kg DW | < 0.32 | < 0.14 | < 0.2 | < 0.25 | < 0.22 | < 0.29 | < 0.29 | < 0.24 | < 0.16 | < 0.16 | < 0.2 | < 0.35 | < 0.18 | < 0.37 | < 0.37 | < 0.55 | < 0.32 | < 0.45 | < 0.34 | < 0.34 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | µg/kg DW | < 0.37 | < 0.28 | < 0.25 | < 0.25 | < 0.26 | < 0.34 | < 0.32 | < 0.34 | < 0.34 | < 0.36 | < 0.43 | < 0.43 | < 0.43 | < 0.49 | < 0.4 | < 0.42 | < 0.39 | < 0.43 | 1.4 | < 0.33 |
| | Amitryptyline | 50-48-6 | µg/kg DW | < 0.64 | < 0.42 | < 0.45 | < 0.36 | < 0.45 | < 0.62 | < 0.55 | < 0.55 | < 0.62 | < 0.61 | < 0.7 | < 0.66 | < 0.76 | < 0.87 | < 0.72 | < 0.51 | < 0.45 | < 0.59 | < 0.41 | < 0.46 |
| | Atorvastatin | 134523-00-5 | µg/kg DW | < 0.36 | < 0.12 | < 0.15 | < 0.098 | < 0.19 | < 0.32 | < 0.27 | < 0.29 | < 0.36 | < 0.35 | < 0.4 | < 0.39 | < 0.42 | < 0.45 | < 0.37 | < 10 | < 8.1 | < 13 | < 7.3 | < 7.8 |
| | Azithromycin | 83905-01-5 | µg/kg DW | < 8.8 | < 6.4 | < 5.6 | < 6.7 | < 5.5 | < 7 | < 6.8 | < 6.7 | < 8.7 | < 8.4 | < 10 | < 9.7 | < 9.7 | < 11 | < 10 | < 1800 | < 1600 | < 1900 | < 1400 | < 1500 |
| | Bezafibrate | 41859-67-0 | µg/kg DW | < 0.19 | < 0.06 | < 0.08 | < 0.051 | < 0.099 | < 0.17 | < 0.14 | < 0.15 | < 0.19 | < 0.18 | < 0.21 | < 0.2 | < 0.22 | < 0.24 | < 0.19 | < 1.1 | < 0.82 | < 1.3 | < 0.74 | < 0.79 |
| | Bisoprolol | 66722-44-9 | µg/kg DW | < 0.46 | < 0.24 | < 0.27 | < 0.22 | < 0.29 | < 0.4 | < 0.39 | < 0.38 | < 0.46 | < 0.44 | < 0.49 | < 0.53 | < 0.55 | < 0.62 | < 0.51 | < 1.1 | < 1 | < 1.1 | < 0.92 | < 0.9 |
| | Caffeine | 58-08-2 | µg/kg DW | < 59 | < 38 | < 40 | < 35 | < 42 | < 52 | < 52 | < 54 | < 48 | < 54 | < 59 | < 61 | < 59 | < 73 | < 62 | < 160 | < 130 | < 160 | < 140 | < 89 |
| | Carbamazepine | 298-46-4 | µg/kg DW | < 1.5 | < 0.48 | < 0.63 | < 0.4 | < 0.78 | < 1.3 | < 1.1 | < 1.2 | < 1.5 | < 1.4 | < 1.7 | < 1.6 | < 1.7 | < 1.9 | < 1.5 | < 4.2 | < 3.3 | < 5.3 | < 3 | < 3.2 |
| | Citalopram | 59729-33-8 | µg/kg DW | < 1.3 | < 0.41 | < 0.55 | < 0.35 | < 0.68 | < 1.2 | < 0.96 | < 1 | < 1.3 | < 1.3 | < 1.4 | < 1.4 | < 1.5 | < 1.6 | < 1.3 | < 2.4 | < 1.8 | < 3 | < 1.7 | < 1.8 |
| | Clarithromycin | 81103-11-9 | µg/kg DW | < 0.61 | < 0.42 | < 0.42 | < 0.37 | < 0.4 | < 0.52 | < 0.46 | < 0.48 | < 0.43 | < 0.46 | < 0.55 | < 0.56 | < 0.58 | < 0.68 | < 0.56 | 1.1 | < 0.96 | < 0.99 | < 0.67 | < 0.79 |
| | Clemastine | 15686-51-8 | µg/kg DW | < 0.62 | < 0.2 | < 0.26 | < 0.17 | < 0.33 | < 0.56 | < 0.46 | < 0.49 | < 0.63 | < 0.61 | < 0.69 | < 0.67 | < 0.72 | < 0.78 | < 0.64 | < 0.83 | < 0.65 | < 1 | < 0.58 | < 0.63 |
| | Clindamycin_sulfoxide | 22431-46-5 | µg/kg DW | < 0.24 | < 0.17 | < 0.15 | < 0.18 | < 0.15 | < 0.19 | < 0.19 | < 0.18 | < 0.24 | < 0.23 | < 0.28 | < 0.26 | < 0.26 | < 0.31 | < 0.27 | < 0.46 | < 0.42 | < 0.48 | < 0.35 | < 0.39 |
| | Clindamycine | 18323-44-9 | µg/kg DW | < 1.1 | < 0.81 | < 0.71 | < 0.85 | < 0.69 | < 0.9 | < 0.87 | < 0.86 | < 1.1 | < 1.1 | < 1.3 | < 1.2 | < 1.2 | < 1.4 | < 1.3 | < 2 | < 1.8 | < 2 | < 1.5 | < 1.7 |
| | Clomipramine | 303-49-1 | µg/kg DW | < 0.87 | < 0.28 | < 0.37 | < 0.24 | < 0.46 | < 0.78 | < 0.65 | < 0.69 | < 0.88 | < 0.85 | < 0.97 | < 0.94 | < 1 | < 1.1 | < 0.9 | < 1.3 | < 1 | < 1.7 | < 0.94 | < 1 |
| | Clonazepam | 1622-61-3 | µg/kg DW | < 0.18 | < 0.13 | < 0.13 | < 0.12 | < 0.14 | < 0.16 | < 0.15 | < 0.15 | < 0.17 | < 0.19 | < 0.21 | < 0.21 | < 0.19 | < 0.24 | < 0.2 | < 5.8 | < 5.5 | < 5.9 | < 4.6 | < 4.7 |
| | Diclofenac | 15307-86-5 | µg/kg DW | < 8.8 | < 2.8 | < 3.8 | < 2.4 | < 4.6 | < 7.9 | < 6.6 | < 7 | < 8.9 | < 8.6 | < 9.8 | < 9.6 | < 10 | < 11 | < 9.1 | < 14 | < 11 | < 18 | < 10 | < 11 |
| | Diltiazem | 42399-41-7 | µg/kg DW | < 0.54 | < 0.17 | < 0.23 | < 0.15 | < 0.29 | < 0.49 | < 0.41 | < 0.43 | < 0.55 | < 0.53 | < 0.61 | < 0.59 | < 0.63 | < 0.68 | < 0.56 | 1.8 | < 0.87 | < 1.4 | < 0.78 | < 0.84 |
| | Diphenhydramine | 58-73-1 | µg/kg DW | 1.2 | 0.47 | 1.1 | < 0.22 | 0.58 | < 0.72 | 0.74 | 0.66 | < 0.82 | < 0.79 | 1.5 | < 0.87 | 1 | < 1 | < 0.83 | < 1.4 | < 1.1 | < 1.8 | < 1 | < 1.1 |
| | Disopyramide | 3737-09-05 | µg/kg DW | < 0.34 | < 0.25 | < 0.23 | < 0.23 | < 0.24 | < 0.31 | < 0.3 | < 0.31 | < 0.32 | < 0.33 | < 0.4 | < 0.4 | < 0.39 | < 0.45 | < 0.37 | < 0.65 | < 0.61 | < 0.66 | < 0.6 | < 0.5 |
| | Erythromycin | 114-07-8 | µg/kg DW | < 2.6 | < 1.9 | < 1.7 | < 2 | < 1.6 | < 2.1 | < 2 | < 2 | < 2.6 | < 2.5 | < 3 | < 2.9 | < 2.9 | < 3.4 | < 3 | < 5.8 | < 5.2 | < 6 | < 4.4 | < 5 |
| | Fenofibrate | 49562-28-9 | µg/kg DW | < 5.1 | < 1.7 | < 2.2 | < 1.4 | < 2.7 | < 4.6 | < 3.8 | < 4.1 | < 5.2 | < 5 | < 5.7 | < 5.6 | < 6 | < 6.5 | < 5.3 | < 20 | < 16 | < 26 | < 14 | < 15 |
| | Fexofenadine | 83799-24-0 | µg/kg DW | < 3.4 | < 1.1 | < 1.5 | < 0.93 | < 1.8 | < 3.1 | < 2.5 | < 2.7 | < 3.4 | < 3.3 | < 3.8 | < 3.7 | < 3.9 | < 4.3 | < 3.5 | < 0.45 | < 0.35 | < 0.56 | 2.2 | < 0.34 |
| | Glibenclamide | 10238-21-8 | µg/kg DW | < 0.25 | < 0.081 | < 0.11 | < 0.069 | < 0.13 | < 0.23 | < 0.19 | < 0.2 | < 0.25 | < 0.25 | < 0.28 | < 0.27 | < 0.29 | < 0.32 | < 0.26 | < 8.5 | < 6.6 | < 11 | < 5.9 | < 6.4 |
| | Glimepiride | 93479-97-1 | µg/kg DW | < 3.1 | < 1 | < 1.3 | < 0.86 | < 1.7 | < 2.8 | < 2.4 | < 2.5 | < 3.2 | < 3.1 | < 3.5 | < 3.4 | < 3.7 | < 4 | < 3.3 | < 19 | < 15 | < 24 | < 13 | < 14 |
| | Haloperidol | 52-86-8 | µg/kg DW | < 0.83 | < 0.27 | < 0.35 | < 0.23 | < 0.44 | < 0.75 | < 0.62 | < 0.66 | < 0.84 | < 0.81 | < 0.92 | < 0.9 | < 0.96 | < 1 | < 0.86 | < 1.7 | < 1.3 | < 2.1 | < 1.2 | < 1.3 |
| | Irbesartan | 138402-11-6 | µg/kg DW | < 0.95 | < 0.31 | < 0.41 | < 0.26 | < 0.5 | < 0.86 | 1.5 | < 0.76 | < 0.97 | < 0.93 | < 1.1 | < 1 | < 1.1 | < 1.2 | < 0.99 | < 2.5 | < 1.9 | < 3.1 | < 1.7 | < 1.9 |
| | Loperamide | 53179-11-6 | µg/kg DW | < 0.43 | < 0.14 | < 0.18 | < 0.12 | < 0.23 | < 0.39 | < 0.32 | < 0.34 | < 0.44 | < 0.42 | < 0.48 | < 0.47 | < 0.5 | < 0.54 | < 0.45 | < 0.79 | < 0.61 | < 0.98 | < 0.55 | < 0.59 |
| | Memantine | 19982-08-2 | µg/kg DW | < 0.52 | < 0.38 | < 0.34 | < 0.35 | < 0.37 | < 0.47 | < 0.45 | < 0.47 | < 0.48 | < 0.5 | < 0.6 | < 0.6 | < 0.59 | < 0.67 | < 0.56 | < 1.2 | < 1.2 | < 1.3 | < 1.1 | < 0.96 |
| | Metoprolol | 51384-51-1 | µg/kg DW | < 0.4 | < 0.21 | < 0.24 | < 0.19 | < 0.26 | < 0.35 | < 0.34 | < 0.34 | < 0.4 | < 0.38 | < 0.43 | < 0.46 | < 0.48 | < 0.54 | < 0.45 | < 4.8 | < 4.6 | < 5 | < 4.1 | < 4 |
| | Metoprolol acid | 56392-14-4 | µg/kg DW | 11 | 0.28 | < 0.28 | < 0.2 | 0.28 | 4.2 | 2.8 | 2.3 | 32 | 29 | 6.4 | 24 | 30 | 15 | 18 | < 5.3 | < 2.9 | < 4.8 | < 3.9 | < 2.9 |
| | Mirtazapine | 61337-67-5 | µg/kg DW | < 0.57 | < 0.42 | < 0.38 | < 0.38 | < 0.4 | < 0.52 | < 0.5 | < 0.51 | < 0.52 | < 0.55 | < 0.66 | < 0.66 | < 0.65 | < 0.74 | < 0.62 | < 1.3 | < 1.2 | < 1.3 | < 1.2 | < 0.96 |
| | N-Desmethylcitalopram | 144025-14-9 | µg/kg DW | < 1.1 | < 0.35 | < 0.46 | < 0.29 | < 0.57 | < 0.97 | < 0.8 | < 0.86 | < 1.1 | < 1.1 | < 1.2 | < 1.2 | < 1.2 | < 1.4 | < 1.1 | < 1.8 | < 1.4 | < 2.2 | < 1.2 | < 1.3 |
| | Norsertraline | 87857-41-8 | µg/kg DW | < 95 | < 31 | < 41 | < 26 | < 50 | < 86 | < 71 | < 76 | < 97 | < 93 | < 110 | < 100 | < 110 | < 120 | < 99 | < 150 | < 110 | < 180 | < 100 | < 110 |
| | O-Desmethylvenlafaxine | 93413-62-8 | µg/kg DW | < 0.49 | < 0.33 | < 0.33 | < 0.3 | < 0.33 | < 0.43 | < 0.41 | < 0.41 | < 0.43 | < 0.44 | < 0.52 | < 0.51 | < 0.53 | < 0.63 | < 0.53 | < 0.85 | < 0.78 | < 0.89 | 3.1 | < 0.66 |
| | Orphenadrine | 83-98-7 | µg/kg DW | < 0.75 | < 0.24 | < 0.32 | < 0.2 | < 0.39 | < 0.67 | < 0.56 | < 0.6 | < 0.76 | < 0.73 | < 0.84 | < 0.81 | < 0.87 | < 0.94 | < 0.78 | < 1.5 | < 1.2 | < 1.9 | < 1.1 | < 1.1 |
| | Oxazepam | 604-75-1 | µg/kg DW | < 1.8 | < 1.3 | < 1.3 | < 1.2 | < 1.4 | < 1.6 | < 1.5 | < 1.5 | < 1.7 | < 1.9 | < 2.1 | < 2.1 | < 1.9 | < 2.4 | < 2 | < 4.8 | < 4.6 | < 4.9 | < 3.8 | < 3.9 |
| | Propranolol | 287714-41-4 | µg/kg DW | < 0.82 | 0.59 | < 0.48 | < 0.38 | < 0.52 | < 0.72 | < 0.7 | < 0.68 | < 0.81 | < 0.78 | < 0.87 | < 0.94 | < 0.97 | < 1.1 | < 0.9 | < 0.74 | < 0.7 | < 0.76 | < 0.62 | < 0.61 |
| | Rosuvastatin | 80214-83-1 | µg/kg DW | < 4.1 | < 1.3 | < 1.8 | < 1.1 | < 2.2 | < 3.7 | < 3.1 | < 3.3 | < 4.2 | < 4.1 | < 4.6 | < 4.5 | < 4.8 | < 5.2 | < 4.3 | < 10 | < 7.8 | < 12 | < 7 | < 7.5 |
| | Roxithromycin | 79617-96-2 | µg/kg DW | < 2 | < 1.4 | < 1.4 | < 1.2 | < 1.3 | < 1.7 | < 1.5 | < 1.6 | < 1.4 | < 1.5 | < 1.8 | < 1.9 | < 1.9 | < 2.3 | < 1.9 | < 75 | < 75 | < 78 | < 53 | < 62 |
| | Sertraline | 57-68-1 | µg/kg DW | < 0.87 | < 0.28 | < 0.37 | < 0.24 | < 0.46 | < 0.79 | < 0.65 | < 0.7 | < 0.88 | < 0.85 | < 0.98 | < 0.95 | < 1 | < 1.1 | < 0.91 | < 1.3 | < 1 | < 1.6 | < 0.92 | < 0.99 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | µg/kg DW | < 0.41 | < 0.32 | < 0.32 | < 0.32 | < 0.31 | < 0.4 | < 0.4 | < 0.36 | < 0.29 | < 0.28 | < 0.33 | < 0.35 | < 0.34 | < 0.37 | < 0.32 | < 0.35 | < 0.44 | < 0.31 | < 0.25 | < 0.47 |
| | Sotalol | 959-24-0 | µg/kg DW | < 22 | < 19 | < 24 | < 17 | < 21 | < 24 | < 28 | < 33 | < 37 | < 42 | < 40 | < 41 | < 39 | < 51 | < 42 | < 300 | < 170 | < 280 | < 230 | < 170 |
| | Sulfamethazine | 723-46-6 | µg/kg DW | < 11 | < 3.4 | < 4.2 | < 2.7 | < 6.2 | < 12 | < 10 | < 9.9 | < 16 | < 13 | < 14 | < 13 | < 15 | < 15 | < 12 | < 5.4 | < 4.8 | < 8.3 | < 4 | < 4.4 |
| | Sulfamethoxazole | 144-83-2 | µg/kg DW | < 23 | < 7 | < 8.8 | < 5.5 | < 13 | < 25 | < 21 | < 21 | < 33 | < 27 | < 30 | < 26 | < 30 | < 32 | < 25 | 420 | < 17 | < 29 | < 14 | < 15 |
| | Sulfapyridine | 91161-71-6 | µg/kg DW | < 28 | < 8.6 | < 11 | < 6.7 | < 16 | < 30 | < 26 | < 25 | < 40 | < 33 | < 37 | < 32 | < 37 | < 39 | < 30 | < 25 | < 22 | < 38 | < 19 | < 20 |
| | Tramadol | 27203-92-5 | µg/kg DW | < 3.6 | 3.2 | < 2.4 | < 2.4 | 3.7 | < 3.3 | 5.1 | < 3.3 | < 3.3 | < 3.5 | < 4.2 | < 4.2 | < 4.2 | < 4.7 | 9.4 | < 12 | 4900 | 21 | 120 | < 9.1 |
| | Trimethoprim | 738-70-5 | µg/kg DW | < 0.58 | < 0.23 | < 0.28 | < 0.19 | < 0.3 | < 0.48 | < 0.45 | < 0.47 | < 0.62 | < 0.55 | < 0.66 | < 0.63 | < 0.64 | < 0.74 | < 0.68 | < 6.1 | < 4.7 | < 6.3 | < 5.2 | < 4.8 |
| | Valsartan | 137862-53-4 | µg/kg DW | < 0.54 | < 0.18 | < 0.23 | < 0.15 | < 0.29 | < 0.49 | < 0.41 | < 0.43 | < 0.55 | < 0.53 | < 0.61 | < 0.59 | < 0.63 | < 0.69 | < 0.57 | < 1.3 | < 0.99 | < 1.6 | < 0.89 | < 0.95 |
| | Venlafaxine | 93413-69-5 | µg/kg DW | 0.56 | < 0.34 | < 0.35 | < 0.32 | < 0.35 | < 0.46 | < 0.44 | < 0.43 | < 0.46 | < 0.47 | < 0.55 | < 0.54 | < 0.56 | < 0.66 | < 0.56 | 2 | < 1.4 | < 1.6 | < 1.3 | < 1.2 |
| | Verapamil | 52-53-9 | µg/kg DW | < 0.43 | < 0.28 | < 0.3 | < 0.24 | < 0.3 | < 0.41 | < 0.37 | < 0.37 | < 0.41 | < 0.41 | < 0.47 | < 0.44 | < 0.51 | < 0.58 | < 0.48 | < 0.85 | < 0.75 | < 0.99 | < 0.68 | < 0.76 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | PFBA | - | µg/kg DW | < 1.3 | < 0.8 | < 1.6 | < 0.82 | < 0.86 | < 1.3 | < 1.2 | < 1.1 | < 1.1 | < 0.97 | < 1 | < 1.1 | < 1.1 | < 1.1 | < 0.91 | < 0.86 | < 0.79 | < 0.92 | < 0.69 | < 0.64 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PFBS | - | µg/kg DW | < 2.3 | < 1.4 | < 2.8 | < 1.4 | < 1.5 | < 2.1 | < 2 | < 1.9 | < 1.9 | < 1.7 | < 1.8 | < 2 | < 1.9 | < 1.8 | < 1.5 | < 1.4 | < 1.3 | < 1.5 | < 1.2 | < 1.1 |
| | PFDA | - | µg/kg DW | < 86 | < 29 | < 30 | < 27 | < 34 | < 58 | < 55 | < 44 | < 60 | < 46 | < 43 | < 51 | < 54 | < 54 | < 43 | < 26 | < 19 | < 60 | < 18 | < 32 |
| | PFDoA | - | µg/kg DW | < 40 | < 23 | < 27 | < 22 | < 28 | < 44 | < 39 | < 29 | < 28 | < 25 | < 24 | < 29 | < 27 | < 30 | < 27 | < 13 | < 9.9 | < 14 | < 8.2 | < 32 |
| | PFDS | - | µg/kg DW | < 3.4 | < 2 | < 2.3 | < 1.9 | < 2.4 | < 3.8 | < 3.4 | < 2.5 | < 2.4 | 8 | 7.8 | < 2.5 | 8.6 | 4.9 | < 2.4 | < 3.8 | < 2.9 | < 4 | < 2.4 | < 9.5 |
| | PFHpS | - | µg/kg DW | < 3.2 | < 2.4 | < 2.5 | < 2.4 | < 2.3 | < 2.8 | < 3 | < 2.8 | < 2.3 | < 2.1 | < 2.3 | < 2.7 | < 2.5 | < 2.7 | < 2.3 | < 1.5 | < 1.5 | < 1.5 | < 1.2 | < 1.3 |
| | PFTeDA | - | µg/kg DW | < 35 | < 21 | < 24 | < 19 | < 25 | < 39 | < 35 | < 26 | < 24 | < 22 | < 22 | < 26 | < 24 | < 27 | < 24 | < 28 | < 22 | < 30 | < 18 | < 70 |
| | PFTrDA | - | µg/kg DW | < 28 | < 16 | < 19 | < 15 | < 19 | < 31 | < 27 | < 20 | < 19 | < 18 | < 17 | < 20 | < 19 | < 21 | < 19 | < 23 | < 18 | < 25 | < 15 | < 58 |
| | PFUdA | - | µg/kg DW | < 3.1 | < 1.8 | < 2.1 | < 1.7 | < 2.2 | < 3.4 | < 3 | < 2.3 | < 2.1 | 5.8 | 7.8 | 2.7 | 13 | < 2.3 | 2.5 | < 43 | < 33 | < 46 | < 28 | < 110 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | Aldrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 13 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | Alfa-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Beta-HCH | - | µg/kg DW | 0.5 | 0.9 | 0.8 | 0.7 | 0.9 | 0.6 | 0.5 | <0.5 | <0.5 | 0.5 | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 | 0.9 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Chlorpyrifos | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.1 | <0.5 | 1 | 2.3 | 1.7 |
| | Delta-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.8 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Dieldrin | - | µg/kg DW | 27 | 44 | 47 | 55 | 48 | 24 | 20 | 36 | 28 | 17 | 15 | 20 | 3.1 | 7.5 | 14 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Endrin | - | µg/kg DW | <2.0 | 3.8 | 4 | 5.5 | 3.4 | 3 | 2.2 | 2.7 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Galaxolide | - | µg/kg DW | 170 | 320 | 420 | 1300 | 130 | 120 | 66 | 280 | 57 | 150 | 75 | 90 | 110 | 77 | 99 | 94 | 63 | 110 | 100 | 100 |
| | Gama-HCH | - | µg/kg DW | 0.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.6 | 0.8 | 0.6 | 0.8 | <0.5 | 0.5 | 0.6 | <0.5 | <0.5 | 1.2 | 0.7 | 0.8 | 0.7 | 1 |
| | HCB | - | µg/kg DW | 6.1 | 18 | 16 | 18 | 15 | 6.4 | 6.3 | 11 | 6.7 | 8.1 | 2 | 11 | 7.4 | 3.1 | 6.5 | 2.5 | 1.2 | 1.5 | 1.3 | 1.5 |
| | Isodrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | MethoxyCl | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Musk keton | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | Musk xylen | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | o,p-DDD | - | µg/kg DW | 2.7 | 2.9 | 2 | 4.7 | 3.7 | 5.1 | 4.1 | 7.8 | 3.9 | 5.7 | 2.3 | 4.8 | 2.3 | 1.9 | 3.5 | 1.9 | 1.5 | 1 | 2.4 | 1.4 |
| | o,p-DDE | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDT | - | µg/kg DW | 0.6 | 0.6 | 0.5 | 2 | 0.6 | 2.3 | 2 | 0.9 | 0.9 | 1.9 | <0.5 | 0.7 | 0.7 | <0.5 | 1.2 | 1 | 0.7 | 0.7 | 1.1 | 1.2 |
| | p,p-DDD | - | µg/kg DW | 2.6 | 67 | 55 | 98 | 76 | 75 | 24 | 200 | 97 | 46 | 67 | 80 | 15 | 19 | 26 | 6.2 | 7.7 | 4.9 | 12 | 6.4 |
| | p,p-DDE | - | µg/kg DW | 420 | 320 | 220 | 390 | 325 | 240 | 190 | 350 | 470 | 350 | 350 | 440 | 160 | 170 | 370 | 25 | 33 | 26 | 48 | 32 |
| | p,p-DDT | - | µg/kg DW | 18 | 24 | 17 | 33 | 33 | 26 | 19 | 41 | 49 | 24 | 6.5 | 23 | 9.1 | 2.5 | 29 | 1.5 | 1.4 | 1.2 | 5 | 3.9 |
| | PBDE 100 | - | µg/kg DW | 8 | 13 | 7.6 | 13 | 9.3 | 70 | 12 | 7.1 | 5.5 | 26 | 14 | 6.9 | 21 | 11 | 28 | <0.2 | 3.4 | 1.2 | 2.9 | 2.7 |
| | PBDE 99 | - | µg/kg DW | 0.2 | 2 | 46 | 2.1 | 1.6 | 290 | 1.9 | 0.9 | 0.6 | 13 | 0.7 | 1.4 | 0.5 | 0.7 | 2.1 | 1 | 3 | 1.9 | 3.4 | 2.2 |
| | PBDE153 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 45 | <0.5 | <0.5 | <0.5 | 2.3 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.4 | <0.5 | <0.5 | <0.5 |
| | PBDE154 | - | µg/kg DW | 1.4 | 1.4 | 1.3 | 2.3 | 2.5 | 30 | 3.9 | 1 | 2.8 | 6.8 | 4.9 | 1.8 | 5.4 | 3.5 | 5.7 | 1.3 | 2.8 | <0.5 | 1.8 | 0.6 |
| | PBDE183 | - | µg/kg DW | 1.4 | 1.2 | <0.5 | <0.5 | 0.7 | 83 | 2 | <0.5 | <0.5 | 10 | 6.2 | <0.5 | <0.5 | 1.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE28 | - | µg/kg DW | <0.2 | 1.4 | 0.9 | 2.2 | 1.5 | 2.6 | 1.4 | 1 | 0.6 | 1.6 | 0.7 | 0.7 | 0.9 | 0.9 | 1.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PBDE47 | - | µg/kg DW | 6.9 | 61 | 39 | 65 | 52 | 150 | 24 | 40 | 21 | 50 | 33 | 38 | 55 | 38 | 60 | 5.9 | 7.6 | 6.3 | 8.8 | 7.4 |
| | PCB 101 | - | µg/kg DW | 110 | 360 | 220 | 400 | 310 | 310 | 180 | 260 | 4500 | 340 | 250 | 280 | 280 | 140 | 370 | 3.9 | 4.1 | 3.8 | 5.4 | 4.9 |
| | PCB 118 | - | µg/kg DW | 680 | 420 | 240 | 470 | 350 | 200 | 310 | 420 | 4600 | 760 | 650 | 610 | 540 | 360 | 830 | 2.9 | 4.1 | 3.3 | 4.9 | 3.8 |
| | PCB 138 | - | µg/kg DW | 1780 | 810 | 360 | 620 | 440 | 880 | 590 | 870 | 3200 | 1350 | 1470 | 950 | 1200 | 980 | 1800 | 7.2 | 10 | 7.9 | 11 | 8 |
| | PCB 153 | - | µg/kg DW | 3100 | 1260 | 610 | 1000 | 550 | 1470 | 1100 | 1500 | 4400 | 2600 | 2700 | 1300 | 2200 | 1400 | 2700 | 13 | 15 | 13 | 22 | 15 |
| | PCB 180 | - | µg/kg DW | 640 | 270 | 115 | 190 | 120 | 190 | 220 | 340 | 910 | 510 | 560 | 300 | 410 | 350 | 670 | 4.8 | 7.1 | 4.6 | 8.4 | 5.8 |
| | PCB 194 | - | µg/kg DW | 210 | 35 | 13 | 24 | 13 | 41 | 45 | 91 | 140 | 120 | 140 | 40 | 55 | 72 | 110 | 1.4 | 1.2 | 0.8 | 1.5 | 1.2 |
| | PCB 28 | - | µg/kg DW | 9 | 27 | 22 | 34 | 23 | 11 | 8 | 15 | 260 | 12 | 8 | 32 | 13 | 5.8 | 11 | 1.5 | 1.1 | 1 | 1.1 | 1.3 |
| | PCB 52 | - | µg/kg DW | 21 | 140 | 99 | 180 | 140 | 87 | 40 | 87 | 3100 | 62 | 40 | 115 | 45 | 21 | 58 | 1.9 | 2.1 | 2.1 | 2.3 | 3.2 |
| | PentaCB | - | µg/kg DW | <0.5 | 1.4 | 1.2 | 1.3 | 1.1 | 0.6 | 0.6 | 1 | <0.5 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.1 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Tonalide - AHTN | - | µg/kg DW | 160 | 395 | 540 | 1300 | 87 | 100 | 66 | 340 | 80 | 130 | 65 | 110 | 130 | 82 | 110 | 90 | 50 | 87 | 90 | 88 |

## Matrix: biota fish fillet and small fish

| No. | Parameter | CAS-number | Unit of measure | Fillet of small perch, Lake Mjøsa | | | | | Fillet of roach, Lake Mjøsa | | | | | Fillet of bream, Lake Mjøsa | Fillet of grayling, Lake Mjøsa | Fillet of whitefish, Lake Mjøsa | | Small fish, 5-10 g, whole, Lake Mjøsa | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | | | | | Sample date | | | | | Sample date | Sample date | Sample date | | Sample date | |
| | | | | 30.08.16 | | | | | 30.08.16 | | | | | 30.08.16 | 30.08.16 | 30.08.16 | | 05.10.16 | |
| | | | | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 1 | Sample 1 | Sample 1 | Sample 2 | Sample 1 | Sample 2 |
| 1 | Perfluorotripropylamin | 338-83-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | µg/kg DW | | | | | | | | | | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | µg/kg DW | | | | | | | | | | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | µg/kg DW | | | | | | | | | | | | | | | | |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | µg/kg DW | | | | | | | | | | | | | | | | |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | µg/kg DW | | | | | | | | | | | | | | | | |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | µg/kg DW | | | | | | | | | | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | µg/kg DW | | | | | | | | | | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | µg/kg DW | | | | | | | | | | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | µg/kg DW | | | | | | | | | | | | | | | | |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | µg/kg DW | | | | | | | | | | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | µg/kg DW | < 0.35 | < 0.33 | < 0.41 | < 0.35 | < 0.39 | < 1.5 | < 1.5 | < 1.2 | < 1.3 | < 1.2 | < 1.4 | < 1.5 | < 1.2 | < 1.4 | < 1.8 | < 1.5 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | µg/kg DW | | | | | | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15 ,15,16,16,16-nona-cosafluorodihydrogenfosfat (9Cl) | 94200-54-1 | µg/kg DW | | | | | | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9Cl) | 57678-05-4 | µg/kg DW | | | | | | | | | | | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9Cl) | 57678-07-6 | µg/kg DW | | | | | | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15 ,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | µg/kg DW | | | | | | | | | | | | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10, 11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9Cl) | 101896-22-4 | µg/kg DW | | | | | | | | | | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | µg/kg DW | | | | | | | | | | | | | | | | |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | µg/kg DW | | | | | | | | | | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13 ,14,14,14-triacontafluorotetradecan | 307-62-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | µg/kg DW | | | | | | | | | | | | | | | | |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | µg/kg DW | < 0.16 | < 0.16 | < 0.19 | < 0.16 | < 0.18 | < 23 | < 22 | < 17 | < 19 | < 18 | < 21 | < 21 | < 18 | < 20 | < 27 | < 22 |
| 28 | 1H-Benzotriazole | 95-14-7 | µg/kg DW | < 2 | < 1.4 | < 1.6 | < 1.4 | < 1.8 | **12** | **13** | **9.4** | **12** | **14** | **9** | **18** | **4.1** | **5.1** | **53** | **29** |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | µg/kg DW | < 0.73 | < 0.51 | < 0.64 | < 0.51 | < 0.69 | < 0.43 | 1.2 | 0.78 | 0.52 | < 0.48 | **1.8** | **2.2** | **0.88** | **0.89** | **3.6** | < 0.52 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | µg/kg DW | < 0.73 | < 0.51 | < 0.64 | < 0.51 | < 0.69 | < 0.43 | 1.2 | 0.78 | 0.52 | < 0.48 | **1.8** | **2.2** | **0.88** | **0.89** | **3.6** | < 0.52 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | µg/kg DW | < 0.29 | < 0.21 | 0.34 | < 0.23 | < 0.31 | < 0.67 | < 0.71 | < 0.47 | < 0.67 | < 0.58 | < 0.51 | < 1.7 | < 0.95 | < 0.91 | < 1.5 | < 1.3 |
| 32 | Benzothiazole | 95-16-9 | µg/kg DW | 160 | 120 | 150 | 140 | 190 | 62 | 78 | 53 | 82 | 68 | 69 | < 130 | < 74 | < 70 | < 120 | < 100 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 2-Benzothiazolamine | 136-95-8 | µg/kg DW | < 1.4 | < 1.1 | < 0.99 | < 0.94 | < 1.3 | < 3 | < 2.9 | < 2.6 | < 2.4 | < 2.4 | < 2.6 | < 7.3 | < 4.1 | < 4.9 | < 4.6 | < 3.4 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | µg/kg DW | < 39 | < 30 | < 32 | < 30 | 36 | 13 | 14 | < 8.4 | < 7.9 | 15 | 26 | < 34 | < 29 | < 23 | **52** | **32** |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | µg/kg DW | < 0.065 | < 0.047 | < 0.054 | < 0.047 | < 0.058 | < 6.6 | < 8 | < 4.9 | < 5.5 | < 4.9 | < 5.6 | < 34 | < 22 | < 16 | < 11 | < 9.1 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | µg/kg DW | < 0.34 | < 0.25 | 1.3 | < 0.25 | < 0.3 | < 75 | < 91 | < 55 | < 62 | < 56 | < 64 | < 390 | < 250 | < 190 | < 130 | < 100 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | µg/kg DW | < 33 | < 25 | < 22 | < 21 | < 29 | < 150 | < 140 | < 130 | < 120 | < 120 | < 130 | < 370 | < 200 | < 250 | < 230 | < 170 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | µg/kg DW | < 33 | < 25 | < 22 | < 21 | < 29 | < 150 | < 140 | < 130 | < 120 | < 120 | < 130 | < 370 | < 200 | < 250 | < 230 | < 170 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | µg/kg DW | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | µg/kg DW | | | | | | | | | | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | µg/kg DW | NA | NA | NA | NA | NA | < 82 | < 77 | < 82 | < 100 | < 79 | < 100 | < 140 | < 140 | < 130 | < 110 | < 100 |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | µg/kg DW | < 2.9 | < 2.1 | < 2.4 | < 2.1 | < 2.6 | < 60 | < 72 | < 44 | < 49 | < 45 | < 51 | < 310 | < 200 | < 150 | < 99 | < 82 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | µg/kg DW | < 57 | < 60 | < 60 | < 55 | < 52 | < 1.1 | < 1.1 | < 0.87 | < 0.95 | < 0.95 | < 1.1 | < 1.3 | < 1.1 | < 1.2 | < 1.1 | < 1.1 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | µg/kg DW | NA | NA | NA | NA | NA | < 57 | < 54 | < 57 | < 71 | < 54 | 220 | < 99 | < 98 | < 91 | < 74 | < 70 |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | µg/kg DW | < 10 | < 8.1 | < 8.4 | < 9.7 | < 8.7 | < 1.7 | < 1.6 | < 1.7 | < 2.1 | < 1.7 | < 2.2 | < 3 | < 3 | < 2.8 | < 2.2 | < 2.1 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | µg/kg DW | < 1.5 | < 1.2 | < 1.2 | < 1.4 | < 1.3 | < 0.43 | < 0.41 | < 0.43 | < 0.54 | < 0.41 | < 0.55 | < 0.75 | 1.3 | < 0.69 | < 0.56 | < 0.53 |
| 49 | Octabromobisphenol-S | 42757-55-1 | µg/kg DW | | | | | | | | | | | | | | | | |
| 50 | BHA | 732-26-3 | µg/kg DW | < 15 | < 12 | < 13 | < 15 | < 13 | < 0.89 | < 0.84 | < 0.89 | 1.1 | < 0.86 | < 1.1 | 2.8 | 2.5 | < 1.4 | 6.6 | < 1.1 |
| 51 | AO 246 | 119-47-1 | µg/kg DW | < 77 | < 61 | < 64 | < 73 | < 66 | 4.2 | < 0.35 | < 0.37 | < 0.46 | < 0.35 | 9.9 | < 0.64 | < 0.63 | < 0.59 | 2.6 | 1.4 |
| 52 | DTBSBP | 1709-70-2 | µg/kg DW | | | | | | | | | | | | | | | | |
| 53 | AO 2246 | 118-82-1 | µg/kg DW | < 260 | < 210 | < 220 | < 250 | < 220 | < 4.6 | < 4.3 | < 4.6 | < 5.7 | < 4.4 | < 5.9 | < 8 | < 7.9 | < 7.3 | < 6 | < 5.7 |
| 54 | AO 22E46 | 85-60-9 | µg/kg DW | < 6.5 | < 5.1 | 6 | < 6.1 | < 5.5 | < 43 | < 41 | < 43 | < 54 | < 42 | < 55 | < 76 | < 75 | < 69 | < 56 | < 54 |
| 55 | BHT-guinol | 121-00-6 | µg/kg DW | | | | | | | | | | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | µg/kg DW | | | | | | | | | | | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | µg/kg DW | < 0.32 | < 0.31 | < 0.38 | < 0.32 | < 0.36 | < 0.84 | < 0.81 | < 0.63 | < 0.69 | < 0.67 | < 0.77 | < 0.78 | < 0.65 | < 0.74 | < 0.98 | < 0.81 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | µg/kg DW | | | | | | | | | | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | µg/kg DW | < 46 | < 33 | < 33 | < 39 | < 31 | < 58 | < 55 | < 58 | < 72 | < 56 | < 74 | < 100 | < 100 | < 93 | < 76 | < 72 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | µg/kg DW | | | | | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | µg/kg DW | | | | | | | | | | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | µg/kg DW | 3.9 | 4.9 | 17 | 4.3 | 6.9 | < 17 | < 18 | < 12 | < 17 | < 15 | < 13 | < 42 | < 24 | < 23 | < 38 | < 33 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | µg/kg DW | | | | | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | µg/kg DW | | | | | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | µg/kg DW | | | | | | | | | | | | | | | | |
| 68 | 1,3-Propandiamin N,N"-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | µg/kg DW | | | | | | | | | | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | µg/kg DW | < 68 | < 50 | < 57 | < 50 | < 61 | < 610 | < 730 | < 440 | < 500 | < 450 | < 510 | < 3100 | < 2000 | < 1500 | < 1000 | < 830 |
| 70 | PFPeA | 2706-90-3 | µg/kg DW | < 1.8 | < 1.9 | < 1.9 | < 1.7 | < 1.6 | < 1.2 | < 1.3 | < 1 | < 1.1 | < 1.1 | < 1.2 | < 1.5 | < 1.3 | < 1.4 | < 1.3 | < 1.3 |
| 71 | PFHxA | 307-24-4 | µg/kg DW | < 0.1 | < 0.11 | 0.21 | < 0.11 | < 0.12 | < 0.62 | < 0.72 | < 0.53 | < 0.6 | < 0.55 | < 0.59 | < 0.81 | < 0.67 | < 0.66 | < 0.82 | < 0.77 |
| 72 | PFHpA | 375-85-9 | µg/kg DW | < 1.5 | < 1.6 | < 1.8 | < 1.6 | < 1.7 | < 5.1 | < 5.9 | < 4.4 | < 4.9 | < 4.5 | < 4.8 | < 6.6 | < 5.5 | < 5.4 | < 6.8 | < 6.3 |
| 73 | PFHxS | 355-46-4 | µg/kg DW | < 0.12 | < 0.12 | < 0.15 | < 0.13 | < 0.14 | < 0.34 | < 0.39 | < 0.29 | < 0.32 | < 0.3 | < 0.33 | < 0.36 | < 0.31 | < 0.35 | < 0.39 | < 0.36 |
| 74 | PFOA | 335-67-1 | µg/kg DW | < 3.1 | < 3.2 | < 3.9 | < 3.3 | < 3.3 | < 1.1 | < 1.2 | < 0.98 | < 0.93 | < 0.86 | < 0.95 | < 1.4 | < 0.96 | < 1.1 | < 1.4 | < 1.2 |
| 75 | PFNA | 375-95-1 | µg/kg DW | < 0.84 | < 0.91 | < 1.2 | < 0.95 | < 0.99 | < 27 | < 35 | < 26 | < 33 | < 25 | < 27 | < 35 | < 27 | < 24 | < 50 | < 34 |
| 76 | PFOS | 1763-23-1 | µg/kg DW | 16 | 12 | 25 | 18 | 13 | 4 | 3 | < 1.4 | 29 | < 1.5 | 8.6 | < 1.8 | < 1.5 | < 1.7 | 36 | 33 |
| 77 | 6.2 monoPAP | | µg/kg DW | < 0.07 | < 0.09 | < 0.09 | < 0.07 | < 0.08 | < 0.09 | < 0.09 | < 0.07 | < 0.09 | < 0.07 | < 0.07 | < 0.10 | < 0.10 | < 0.10 | < 0.12 | < 0.09 |
| 78 | 8:2 monoPAP | | µg/kg DW | < 0.05 | < 0.06 | < 0.07 | < 0.05 | < 0.06 | < 0.16 | < 0.16 | < 0.12 | 13 | < 0.12 | < 0.12 | 16 | < 0.17 | < 0.17 | < 0.19 | < 0.16 |
| 79 | 6:2 diPAP | | µg/kg DW | 1.6 | 1.5 | < 0.41 | < 0.74 | < 0.40 | < 0.35 | < 0.35 | < 0.26 | < 0.32 | < 0.26 | < 0.28 | 2.8 | 2.1 | < 0.54 | < 0.42 | < 0.35 |
| 80 | 8:2 diPAP | | µg/kg DW | 26 | 24 | 19 | 13 | 12 | < 0.18 | 0.97 | 0.74 | < 0.16 | < 0.13 | < 0.14 | 3.6 | 3.3 | 1.7 | < 0.22 | < 0.18 |
| | | | µg/kg DW | | | | | | | | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | µg/kg DW | < 0.46 | < 0.32 | < 0.4 | < 0.32 | < 0.43 | < 0.16 | < 0.17 | < 0.12 | < 0.13 | < 0.18 | < 0.13 | < 0.28 | < 0.23 | < 0.23 | < 0.22 | < 0.19 |
| | Amitryptyline | 50-48-6 | µg/kg DW | < 0.49 | < 0.34 | < 0.41 | < 0.35 | < 0.44 | < 0.15 | < 0.16 | < 0.12 | < 0.13 | < 0.13 | < 0.12 | < 0.23 | < 0.17 | < 0.16 | < 0.19 | 0.21 |
| | Atorvastatin | 134523-00-5 | µg/kg DW | < 0.17 | < 0.13 | < 0.16 | < 0.13 | < 0.18 | < 2.9 | < 3.1 | < 2 | < 2.9 | < 2.5 | < 2.2 | < 7.1 | < 4.1 | < 3.9 | < 6.5 | < 5.7 |
| | Azithromycin | 83905-01-5 | µg/kg DW | < 14 | < 10 | < 9 | < 8.8 | < 8.4 | < 16 | < 17 | < 13 | < 13 | < 11 | < 14 | < 25 | < 19 | < 20 | < 18 | < 16 |
| | Bezafibrate | 41859-67-0 | µg/kg DW | < 0.081 | < 0.06 | < 0.076 | < 0.064 | < 0.085 | < 0.25 | < 0.27 | < 0.18 | < 0.25 | < 0.22 | < 0.19 | < 0.63 | < 0.36 | < 0.34 | < 0.58 | < 0.5 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bisoprolol | 66722-44-9 | µg/kg DW | < 0.35 | < 0.27 | < 0.36 | < 0.28 | < 0.36 | < 0.32 | < 0.35 | < 0.25 | < 0.29 | < 0.33 | < 0.28 | < 0.55 | < 0.48 | < 0.43 | < 0.47 | 0.89 |
| | Caffeine | 58-08-2 | µg/kg DW | < 53 | < 39 | < 41 | < 38 | 49 | < 57 | < 56 | 49 | < 45 | < 64 | < 45 | < 130 | < 98 | < 87 | 130 | 97 |
| | Carbamazepine | 298-46-4 | µg/kg DW | < 0.55 | < 0.41 | < 0.52 | < 0.44 | < 0.58 | < 0.93 | < 0.99 | < 0.65 | < 0.93 | < 0.8 | < 0.7 | < 2.3 | < 1.3 | < 1.3 | < 2.1 | < 1.8 |
| | Citalopram | 59729-33-8 | µg/kg DW | < 0.6 | < 0.44 | < 0.56 | < 0.47 | < 0.63 | < 0.55 | < 0.59 | < 0.38 | < 0.55 | < 0.48 | < 0.42 | < 1.4 | < 0.78 | < 0.74 | < 1.3 | 1.2 |
| | Clarithromycin | 81103-11-9 | µg/kg DW | < 0.52 | < 0.36 | 0.64 | < 0.38 | < 0.47 | < 0.4 | < 0.44 | < 0.31 | 0.34 | < 0.29 | < 0.3 | < 0.65 | < 0.55 | < 0.53 | < 0.5 | < 0.4 |
| | Clemastine | 15686-51-8 | µg/kg DW | < 0.34 | < 0.25 | < 0.32 | < 0.27 | < 0.36 | < 0.26 | < 0.27 | < 0.18 | < 0.26 | < 0.22 | < 0.2 | < 0.64 | < 0.37 | < 0.35 | < 0.59 | < 0.51 |
| | Clindamycin_sulfoxide | 22431-46-5 | µg/kg DW | < 0.28 | < 0.21 | < 0.18 | 0.29 | < 0.17 | 0.28 | < 0.23 | < 0.17 | 0.24 | < 0.14 | < 0.18 | < 0.33 | 11 | 0.41 | < 0.24 | < 0.21 |
| | Clindamycine | 18323-44-9 | µg/kg DW | < 1.3 | < 0.97 | < 0.84 | < 0.82 | < 0.78 | < 0.83 | < 0.94 | < 0.7 | < 0.72 | < 0.57 | < 0.74 | < 1.3 | < 1 | < 1.1 | < 0.98 | < 0.84 |
| | Clomipramine | 303-49-1 | µg/kg DW | < 0.55 | < 0.4 | < 0.51 | < 0.43 | < 0.58 | < 0.37 | < 0.39 | < 0.25 | < 0.37 | < 0.32 | < 0.28 | < 0.91 | < 0.52 | < 0.49 | < 0.83 | 1.5 |
| | Clonazepam | 1622-61-3 | µg/kg DW | < 0.2 | < 0.13 | < 0.15 | < 0.13 | < 0.14 | < 2.3 | < 2.5 | < 1.9 | < 1.8 | < 1.8 | < 1.8 | < 5.2 | < 4.8 | < 4.3 | < 3.4 | < 2.8 |
| | Diclofenac | 15307-86-5 | µg/kg DW | < 3.8 | < 2.8 | < 3.6 | < 3 | < 4 | < 2.8 | < 3 | < 2 | < 2.8 | < 2.4 | < 2.1 | < 7 | < 4 | < 3.8 | < 6.4 | < 5.5 |
| | Diltiazem | 42399-41-7 | µg/kg DW | < 0.29 | < 0.21 | < 0.27 | < 0.23 | < 0.3 | < 0.31 | < 0.33 | < 0.22 | < 0.31 | < 0.27 | < 0.24 | < 0.78 | < 0.44 | < 0.42 | < 0.71 | 2 |
| | Diphenhydramine | 58-73-1 | µg/kg DW | < 0.42 | < 0.31 | < 0.39 | < 0.33 | < 0.44 | < 0.41 | < 0.43 | < 0.28 | < 0.41 | 0.4 | 0.54 | 1.1 | < 0.58 | < 0.55 | < 0.92 | < 0.8 |
| | Disopyramide | 3737-09-05 | µg/kg DW | < 0.46 | < 0.32 | < 0.4 | < 0.32 | < 0.43 | < 0.26 | < 0.28 | < 0.2 | < 0.21 | < 0.29 | < 0.21 | < 0.47 | < 0.39 | < 0.38 | < 0.36 | < 0.32 |
| | Erythromycin | 114-07-8 | µg/kg DW | < 2.9 | < 2.1 | < 1.9 | < 1.8 | < 1.7 | < 0.96 | < 1.1 | < 0.81 | < 0.83 | < 0.66 | < 0.85 | < 1.5 | < 1.2 | < 1.2 | < 1.1 | < 0.97 |
| | Fenofibrate | 49562-28-9 | µg/kg DW | < 3.3 | < 2.4 | < 3.1 | < 2.6 | < 3.5 | < 3.7 | < 3.9 | < 2.6 | < 3.7 | < 3.2 | < 2.8 | < 9.2 | < 5.3 | < 5 | < 8.4 | < 7.3 |
| | Fexofenadine | 83799-24-0 | µg/kg DW | < 1.6 | < 1.2 | < 1.5 | < 1.3 | < 1.7 | < 0.11 | < 0.12 | < 0.079 | < 0.11 | < 0.099 | < 0.086 | < 0.28 | < 0.16 | < 0.15 | < 0.26 | < 0.22 |
| | Glibenclamide | 10238-21-8 | µg/kg DW | < 0.092 | < 0.068 | < 0.086 | < 0.073 | < 0.097 | < 1.4 | < 1.4 | < 0.95 | < 1.4 | < 1.2 | < 1 | < 3.4 | < 1.9 | < 1.8 | < 3.1 | < 2.7 |
| | Glimepiride | 93479-97-1 | µg/kg DW | < 1.2 | < 0.84 | < 1.1 | < 0.91 | < 1.2 | < 3.1 | < 3.3 | < 2.1 | < 3.1 | < 2.7 | < 2.3 | < 7.6 | < 4.3 | < 4.1 | < 6.9 | < 6 |
| | Haloperidol | 52-86-8 | µg/kg DW | < 0.41 | < 0.3 | < 0.38 | < 0.32 | < 0.43 | < 0.66 | < 0.7 | < 0.46 | < 0.66 | < 0.57 | < 0.5 | < 1.6 | < 0.93 | < 0.88 | < 1.5 | 3.5 |
| | Irbesartan | 138402-11-6 | µg/kg DW | < 0.3 | < 0.22 | < 0.28 | < 0.24 | < 0.31 | < 0.49 | < 0.52 | < 0.34 | < 0.49 | < 0.43 | < 0.37 | < 1.2 | < 0.7 | < 0.66 | < 1.1 | 0.97 |
| | Loperamide | 53179-11-6 | µg/kg DW | < 0.25 | < 0.18 | < 0.24 | < 0.2 | < 0.26 | < 0.24 | < 0.26 | < 0.17 | < 0.24 | < 0.21 | < 0.18 | < 0.6 | < 0.34 | < 0.33 | < 0.55 | < 0.48 |
| | Memantine | 19982-08-2 | µg/kg DW | < 0.5 | < 0.34 | < 0.44 | < 0.35 | < 0.47 | < 0.35 | < 0.38 | < 0.26 | < 0.29 | < 0.39 | < 0.28 | < 0.63 | < 0.52 | < 0.51 | < 0.49 | < 0.42 |
| | Metoprolol | 51384-51-1 | µg/kg DW | < 0.26 | < 0.2 | < 0.26 | < 0.2 | < 0.26 | < 1.4 | < 1.5 | < 1.1 | < 1.3 | < 1.4 | < 1.2 | < 2.4 | < 2.1 | < 1.9 | < 2.1 | < 2 |
| | Metoprolol acid | 56392-14-4 | µg/kg DW | < 0.33 | < 0.26 | < 0.23 | < 0.21 | < 0.29 | < 0.82 | < 0.78 | < 0.7 | < 0.64 | < 0.66 | < 0.72 | < 2 | < 1.1 | < 1.3 | < 1.2 | < 0.93 |
| | Mirtazapine | 61337-67-5 | µg/kg DW | 0.79 | 0.36 | < 0.37 | < 0.29 | < 0.39 | < 0.43 | < 0.46 | < 0.32 | < 0.35 | < 0.48 | < 0.34 | 1.8 | 1.5 | 1.3 | < 0.59 | 1.7 |
| | N-Desmethylcitalopram | 144025-14-9 | µg/kg DW | < 0.5 | < 0.37 | < 0.47 | < 0.4 | < 0.53 | < 0.42 | < 0.44 | < 0.29 | < 0.42 | < 0.36 | < 0.31 | < 1 | < 0.59 | < 0.56 | < 0.94 | 1.2 |
| | Norsertraline | 87857-41-8 | µg/kg DW | < 36 | < 26 | < 34 | < 28 | < 38 | < 40 | < 42 | < 28 | < 39 | < 34 | < 30 | < 98 | < 56 | < 53 | < 89 | < 78 |
| | O-Desmethylvenlafaxine | 93413-62-8 | µg/kg DW | < 0.44 | < 0.34 | < 0.36 | < 0.34 | < 0.38 | < 0.37 | < 0.43 | < 0.3 | < 0.29 | < 0.37 | < 0.29 | < 1.2 | < 1 | < 0.85 | < 0.75 | 1.7 |
| | Orphenadrine | 83-98-7 | µg/kg DW | < 0.39 | < 0.28 | < 0.36 | < 0.3 | < 0.4 | < 0.44 | < 0.47 | < 0.31 | < 0.44 | < 0.38 | < 0.33 | < 1.1 | < 0.62 | < 0.59 | < 0.99 | < 0.87 |
| | Oxazepam | 604-75-1 | µg/kg DW | < 2 | < 1.3 | < 1.5 | < 1.3 | < 1.4 | < 1.8 | < 2 | < 1.5 | < 1.4 | < 1.5 | < 1.4 | < 4.1 | < 3.9 | < 3.5 | < 2.8 | < 2.2 |
| | Propranolol | 287714-41-4 | µg/kg DW | 1.2 | < 0.4 | < 0.53 | < 0.4 | < 0.52 | < 0.21 | < 0.23 | < 0.17 | < 0.19 | < 0.22 | < 0.19 | < 0.36 | < 0.32 | < 0.29 | < 0.31 | 0.59 |
| | Rosuvastatin | 80214-83-1 | µg/kg DW | < 2.1 | < 1.6 | < 2 | < 1.7 | < 2.2 | < 2 | < 2.2 | < 1.4 | < 2 | < 1.8 | < 1.5 | < 5.1 | < 2.9 | < 2.8 | < 4.6 | < 4 |
| | Roxithromycin | 79617-96-2 | µg/kg DW | < 1.7 | < 1.2 | < 1.4 | < 1.3 | < 1.6 | < 29 | < 32 | < 22 | < 24 | < 21 | < 22 | < 47 | < 40 | < 39 | < 37 | < 29 |
| | Sertraline | 57-68-1 | µg/kg DW | < 0.36 | < 0.27 | < 0.34 | < 0.29 | < 0.38 | < 0.28 | < 0.3 | < 0.19 | < 0.28 | < 0.24 | < 0.21 | < 0.69 | < 0.4 | < 0.38 | < 0.63 | < 0.55 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | µg/kg DW | < 0.31 | < 0.3 | < 0.37 | < 0.31 | < 0.35 | < 0.11 | < 0.11 | < 0.082 | < 0.09 | < 0.087 | < 0.1 | < 0.1 | < 0.084 | < 0.097 | < 0.13 | < 0.11 |
| | Sotalol | 959-24-0 | µg/kg DW | < 13 | < 10 | < 8.9 | < 8.5 | < 12 | < 61 | < 58 | < 51 | < 47 | < 49 | < 53 | < 150 | < 81 | < 99 | < 92 | < 68 |
| | Sulfamethazine | 723-46-6 | µg/kg DW | < 4.8 | < 3 | < 2.8 | < 2.8 | < 3.2 | < 0.91 | < 0.98 | < 0.76 | < 0.92 | < 0.86 | < 0.72 | < 2 | < 1.2 | < 1 | < 2 | < 1.6 |
| | Sulfamethoxazole | 144-83-2 | µg/kg DW | 14 | 7 | 12 | 9 | 11 | < 3.9 | < 4.2 | < 3.2 | < 3.9 | < 3.7 | < 3.1 | < 8.5 | < 5.2 | < 4.5 | < 8.6 | < 7 |
| | Sulfapyridine | 91161-71-6 | µg/kg DW | < 0.48 | < 0.3 | < 0.28 | < 0.28 | < 0.32 | < 4.7 | < 5.1 | < 3.9 | < 4.8 | < 4.5 | < 3.7 | < 10 | < 6.4 | < 5.4 | < 10 | < 8.5 |
| | Tramadol | 27203-92-5 | µg/kg DW | < 3.5 | < 2.4 | < 3 | < 2.4 | < 3.3 | 15 | 4.1 | 3.3 | 8.1 | < 3.6 | 2.9 | < 5.8 | < 4.7 | 7.8 | 10 | 4.6 |
| | Trimethoprim | 738-70-5 | µg/kg DW | < 0.35 | < 0.24 | < 0.27 | < 0.24 | < 0.32 | < 1.8 | < 1.8 | < 1.3 | < 1.5 | < 1.6 | < 1.4 | < 3.2 | < 2.5 | < 2.2 | < 2.7 | < 2.6 |
| | Valsartan | 137862-53-4 | µg/kg DW | < 0.16 | < 0.11 | < 0.15 | < 0.12 | < 0.16 | < 0.2 | < 0.21 | < 0.14 | < 0.19 | < 0.17 | < 0.15 | < 0.48 | < 0.28 | < 0.26 | < 0.44 | < 0.38 |
| | Venlafaxine | 93413-69-5 | µg/kg DW | 6.1 | < 0.36 | < 0.38 | < 0.36 | < 0.4 | < 0.69 | < 0.79 | < 0.56 | < 0.53 | < 0.69 | < 0.53 | < 2.2 | < 1.9 | < 1.6 | < 1.4 | 2.6 |
| | Verapamil | 52-53-9 | µg/kg DW | < 0.35 | < 0.24 | < 0.29 | < 0.25 | < 0.31 | < 0.27 | < 0.3 | < 0.22 | < 0.24 | < 0.23 | < 0.22 | < 0.42 | < 0.31 | < 0.3 | < 0.34 | 1.1 |
| | | | | | | | | | | | | | | | | | | | |
| | PFBA | - | µg/kg DW | < 1.2 | < 1.2 | < 1.2 | < 1.1 | < 1 | < 0.71 | < 0.77 | < 0.59 | < 0.64 | < 0.64 | < 0.71 | < 0.86 | < 0.75 | < 0.83 | < 0.77 | < 0.73 |
| | PFBS | - | µg/kg DW | < 2 | < 2.1 | < 2 | < 1.9 | < 1.8 | < 1.2 | < 1.3 | < 0.98 | < 1.1 | < 1.1 | < 1.2 | < 1.4 | < 1.3 | < 1.4 | < 1.3 | < 1.2 |
| | PFDA | - | µg/kg DW | < 25 | < 27 | < 34 | < 28 | < 29 | < 26 | < 20 | < 21 | < 17 | < 17 | < 18 | < 70 | < 17 | < 21 | < 61 | < 20 |
| | PFDoA | - | µg/kg DW | < 23 | < 25 | < 28 | < 28 | < 30 | < 8.4 | < 9.5 | < 8.1 | < 11 | < 7.6 | < 8.7 | < 14 | < 9.9 | < 8.9 | < 17 | < 11 |
| | PFDS | - | µg/kg DW | < 2 | < 2.2 | < 2.4 | < 2.5 | < 2.6 | < 2.5 | < 2.8 | < 2.4 | < 3.4 | < 2.2 | < 2.6 | < 4.2 | < 2.9 | < 2.6 | < 5 | < 3.1 |
| | PFHpS | - | µg/kg DW | < 2.4 | < 2.4 | < 3 | < 2.6 | < 2.8 | < 1.3 | < 1.5 | < 1.1 | < 1.2 | < 1.1 | < 1.2 | < 1.4 | < 1.2 | < 1.3 | < 1.5 | < 1.4 |
| | PFTeDA | - | µg/kg DW | < 21 | < 22 | < 25 | < 25 | < 27 | < 18 | < 21 | < 18 | < 25 | < 16 | < 19 | < 31 | < 21 | < 19 | < 37 | < 23 |
| | PFTrDA | - | µg/kg DW | < 16 | < 17 | < 20 | < 20 | < 21 | < 15 | < 17 | < 15 | < 21 | < 14 | < 16 | < 26 | < 18 | < 16 | < 31 | < 19 |
| | PFUdA | - | µg/kg DW | < 1.8 | < 1.9 | < 2.2 | < 2.2 | < 2.3 | < 28 | < 32 | < 27 | < 38 | < 25 | < 29 | < 48 | < 33 | < 30 | < 57 | < 35 |
| | | | | | | | | | | | | | | | | | | | |
| | Aldrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | Alfa-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Beta-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Chlorpyrifos | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Delta-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Dieldrin | - | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Endrin | - | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Galaxolide | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | 74 | <20 | <20 | <20 | <20 | <20 | <20 |
| | Gama-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | HCB | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.9 | <0.5 | <0.5 | <0.5 | <0.5 | 0.8 | <0.5 |
| | Isodrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | MethoxyCl | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Musk keton | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | Musk xylen | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | o,p-DDD | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDE | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDT | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | p,p-DDD | - | µg/kg DW | <0.5 | <0.5 | 0.7 | 0.8 | 0.5 | <0.5 | 1.3 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 | 0.6 | 1.5 | 1.2 |
| | p,p-DDE | - | µg/kg DW | 5.8 | 3.6 | 8.4 | 8.3 | 5.6 | 10.0 | 5.8 | 5.0 | 5.0 | 7.1 | 15.0 | 7.5 | 2.7 | 15.0 | 8.5 | 8.3 |
| | p,p-DDT | - | µg/kg DW | 0.9 | 0.7 | 0.9 | 0.8 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 2.1 | 0.8 | 1.9 | 0.6 | 0.5 |
| | PBDE 100 | - | µg/kg DW | <0.2 | <0.2 | 0.8 | 0.5 | 0.6 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.4 | <0.2 | <0.2 | 0.6 | <0.2 | 0.3 |
| | PBDE 99 | - | µg/kg DW | 0.4 | 0.2 | 0.9 | 0.8 | 0.7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.7 | 0.5 | 0.4 |
| | PBDE153 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE154 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.7 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE183 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE28 | - | µg/kg DW | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PBDE47 | - | µg/kg DW | 0.8 | 0.5 | 1.9 | 1.9 | 1.3 | 0.8 | 2.2 | 0.6 | 1.3 | 0.5 | 4.2 | 0.9 | 0.3 | 2.2 | 0.8 | 1.2 |
| | PCB 101 | - | µg/kg DW | 0.7 | 0.5 | 1.1 | 1.4 | 0.8 | 1.0 | 8.3 | 0.5 | 1.6 | 1.0 | 2.1 | 1.7 | <0.5 | 1.1 | 2.0 | 1.3 |
| | PCB 118 | - | µg/kg DW | 0.6 | <0.5 | 0.9 | 1.1 | 0.7 | 0.6 | 9.0 | <0.5 | 0.9 | 0.7 | 2.0 | 1.2 | <0.5 | 1.1 | 0.9 | 0.8 |
| | PCB 138 | - | µg/kg DW | 1.6 | 1.2 | 2.6 | 3.7 | 1.8 | 1.4 | 7.4 | 0.7 | 1.8 | 1.0 | 6.7 | 2.1 | 0.8 | 2.3 | 2.4 | 2.7 |
| | PCB 153 | - | µg/kg DW | 2.8 | 1.9 | 4.5 | 5.9 | 3.0 | 2.7 | 11.0 | 1.5 | 3.1 | 1.8 | 10.0 | 3.8 | 1.1 | 3.2 | 3.6 | 4.0 |
| | PCB 180 | - | µg/kg DW | 1.0 | 0.6 | 1.8 | 2.1 | 1.3 | 0.9 | 4.4 | 0.5 | 1.3 | 0.8 | 4.4 | 1.1 | <0.5 | 1.0 | 1.1 | 1.4 |
| | PCB 194 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 2.2 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 28 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.7 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 | 0.6 | <0.5 |
| | PCB 52 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.9 | 2.4 | <0.5 | 1.3 | 0.6 | 1.8 | 2.0 | <0.5 | <0.5 | 3.0 | <0.5 |
| | PentaCB | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Tonalide - AHTN | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | 62 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |

## Matrix: biota invertebrates

| No. | Parameter | CAS-number | Unit of measure | Common shore crab, Indre Oslofjorden | | | Winkle, Indre Oslofjorden | |
|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | | | Sample date | |
| | | | | 24.08.16 | | | 24.08.16 | |
| | | | | Sample 1 | Sample 2 | Sample 3 | Sample 1 | Sample 2 |
| | | | | | | | | |
| 1 | Perfluorotripropylamin | 338-83-0 | µg/kg DW | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | µg/kg DW | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | µg/kg DW | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | µg/kg DW | | | | | |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | µg/kg DW | | | | | |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | µg/kg DW | | | | | |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | µg/kg DW | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | µg/kg DW | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | µg/kg DW | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | µg/kg DW | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | µg/kg DW | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | µg/kg DW | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | µg/kg DW | | | | | |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | µg/kg DW | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | µg/kg DW | < 0.87 | < 0.73 | < 0.85 | < 0.56 | < 0.67 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | µg/kg DW | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluorodihydrogenfosfat (9Cl) | 94200-54-1 | µg/kg DW | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9CI) | 57678-05-4 | µg/kg DW | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9CI) | 57678-07-6 | µg/kg DW | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | µg/kg DW | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10,11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9CI) | 101896-22-4 | µg/kg DW | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | µg/kg DW | | | | | |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | µg/kg DW | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-triacontafluorotetradecan | 307-62-0 | µg/kg DW | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | µg/kg DW | | | | | |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | µg/kg DW | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | µg/kg DW | < 12 | < 9.8 | < 12 | < 7.6 | < 9 |
| 28 | 1H-Benzotriazole | 95-14-7 | µg/kg DW | 21 | 6.7 | 4.3 | 17 | 850 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | µg/kg DW | 2.7 | 2.2 | 12 | 0.66 | 2.2 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | µg/kg DW | 2.7 | 2.2 | 12 | 0.66 | 2.2 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | µg/kg DW | < 1 | < 1 | < 1.2 | < 0.33 | 420 |
| 32 | Benzothiazole | 95-16-9 | µg/kg DW | 110 | 100 | 110 | 31 | 110 |
| 33 | 2-Benzothiazolamine | 136-95-8 | µg/kg DW | < 2.9 | < 2.4 | < 3 | < 0.91 | < 1.4 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | µg/kg DW | < 19 | < 16 | 30 | 12 | 34 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | µg/kg DW | < 4.9 | < 3.8 | < 5.2 | < 2 | < 2.4 |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | µg/kg DW | < 41 | < 32 | < 44 | < 17 | < 20 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | µg/kg DW | < 120 | < 98 | < 120 | < 37 | < 57 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | µg/kg DW | < 120 | < 98 | < 120 | < 37 | < 57 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | µg/kg DW | <30 | <30 | <30 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | µg/kg DW | <20 | <20 | <20 | <20 | <20 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | µg/kg DW | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | µg/kg DW | < 270 | < 260 | < 280 | < 190 | < 230 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | µg/kg DW | < 32 | < 25 | < 34 | < 13 | < 15 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | µg/kg DW | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | µg/kg DW | < 1.6 | < 1.5 | < 1.8 | < 0.7 | < 0.8 |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | µg/kg DW | NA | NA | NA | NA | NA |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | µg/kg DW | < 0.91 | < 0.88 | < 0.96 | < 0.66 | < 0.78 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | µg/kg DW | < 0.32 | < 0.31 | < 0.34 | < 0.23 | < 0.28 |
| 49 | Octabromobisphenol-S | 42757-55-1 | µg/kg DW | | | | | |
| 50 | BHA | 732-26-3 | µg/kg DW | 2.3 | < 0.65 | < 0.71 | 0.89 | 2 |
| 51 | AO 246 | 119-47-1 | µg/kg DW | 3.5 | 33 | 33 | 0.55 | < 0.24 |
| 52 | DTBSBP | 1709-70-2 | µg/kg DW | | | | | |
| 53 | AO 2246 | 118-82-1 | µg/kg DW | < 3.4 | < 3.3 | < 3.6 | < 2.5 | < 3 |
| 54 | AO 22E46 | 85-60-9 | µg/kg DW | < 33 | < 31 | < 34 | < 24 | < 28 |
| 55 | BHT-guinol | 121-00-6 | µg/kg DW | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | µg/kg DW | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | µg/kg DW | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | µg/kg DW | < 0.56 | < 0.47 | < 0.55 | < 0.36 | < 0.43 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | µg/kg DW | | | | | |
| 61 | Chloroxylenol | 88-04-0 | µg/kg DW | < 44 | < 42 | < 46 | < 32 | < 38 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | µg/kg DW | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | µg/kg DW | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | µg/kg DW | < 110 | < 110 | < 130 | < 36 | 120 |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | µg/kg DW | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | µg/kg DW | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | µg/kg DW | | | | | |
| 68 | 1,3-Propandiamin N,N″-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | µg/kg DW | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | µg/kg DW | < 250 | < 200 | < 270 | < 100 | < 120 |
| 70 | PFPeA | 2706-90-3 | µg/kg DW | < 1.5 | < 1.4 | < 1.6 | < 0.65 | < 0.74 |
| 71 | PFHxA | 307-24-4 | µg/kg DW | < 0.55 | < 0.54 | < 0.52 | < 0.33 | < 0.42 |
| 72 | PFHpA | 375-85-9 | µg/kg DW | < 4.5 | < 4.4 | < 4.3 | < 2.7 | < 3.5 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 73 | PFHxS | 355-46-4 | µg/kg DW | 1.6 | 18 | 1.3 | 0.7 | 9.1 |
| 74 | PFOA | 335-67-1 | µg/kg DW | 10 | < 0.81 | < 0.78 | < 0.49 | < 0.6 |
| 75 | PFNA | 375-95-1 | µg/kg DW | < 22 | < 19 | < 27 | < 13 | < 15 |
| 76 | PFOS | 1763-23-1 | µg/kg DW | 43 | 4.5 | 4.2 | < 0.97 | < 1.2 |
| 77 | 6.2 monoPAP | | µg/kg DW | < 0.13 | < 0.15 | < 0.16 | < 0.05 | < 0.08 |
| 78 | 8:2 monoPAP | | µg/kg DW | < 0.17 | < 0.19 | < 0.21 | < 0.07 | < 0.10 |
| 79 | 6:2 diPAP | | µg/kg DW | < 0.14 | < 0.16 | < 0.18 | < 0.06 | < 0.09 |
| 80 | 8:2 diPAP | | µg/kg DW | < 0.08 | < 0.09 | < 0.1 | < 0.03 | < 0.05 |
| | | | | | | | | |
| | Alfuzosin | 81403-80-7 | µg/kg DW | < 0.59 | < 0.52 | < 0.51 | < 0.13 | < 0.16 |
| | Amitryptyline | 50-48-6 | µg/kg DW | < 0.26 | < 0.26 | < 0.3 | < 0.091 | < 0.13 |
| | Atorvastatin | 134523-00-5 | µg/kg DW | < 3.5 | < 3.4 | < 4.1 | < 1.1 | < 1.4 |
| | Azithromycin | 83905-01-5 | µg/kg DW | < 27 | < 24 | < 27 | < 14 | < 19 |
| | Bezafibrate | 41859-67-0 | µg/kg DW | < 0.49 | < 0.48 | < 0.58 | < 0.16 | < 0.2 |
| | Bisoprolol | 66722-44-9 | µg/kg DW | < 0.76 | < 0.64 | < 0.66 | < 0.22 | < 0.25 |
| | Caffeine | 58-08-2 | µg/kg DW | < 170 | < 140 | < 180 | < 38 | 69 |
| | Carbamazepine | 298-46-4 | µg/kg DW | < 1.8 | < 1.8 | < 2.1 | < 0.57 | < 0.73 |
| | Citalopram | 59729-33-8 | µg/kg DW | < 1.4 | < 1.4 | < 1.7 | < 0.45 | < 0.57 |
| | Clarithromycin | 81103-11-9 | µg/kg DW | < 0.73 | < 0.71 | < 0.74 | < 0.31 | < 0.39 |
| | Clemastine | 15686-51-8 | µg/kg DW | < 0.48 | < 0.48 | < 0.57 | < 0.15 | < 0.2 |
| | Clindamycin_sulfoxide | 22431-46-5 | µg/kg DW | < 0.27 | < 0.24 | < 0.26 | < 0.14 | 4.2 |
| | Clindamycine | 18323-44-9 | µg/kg DW | < 1.2 | < 1.1 | < 1.2 | < 0.64 | < 0.85 |
| | Clomipramine | 303-49-1 | µg/kg DW | < 0.62 | < 0.62 | < 0.74 | < 0.2 | < 0.25 |
| | Clonazepam | 1622-61-3 | µg/kg DW | < 2.4 | < 2.6 | < 3.2 | < 1.8 | < 2.2 |
| | Diclofenac | 15307-86-5 | µg/kg DW | < 6.4 | < 6.3 | < 7.6 | < 2 | < 2.6 |
| | Diltiazem | 42399-41-7 | µg/kg DW | < 0.65 | < 0.64 | < 0.77 | < 0.21 | < 0.26 |
| | Diphenhydramine | 58-73-1 | µg/kg DW | < 1.1 | < 1.1 | < 1.3 | 0.95 | < 0.43 |
| | Disopyramide | 3737-09-05 | µg/kg DW | < 0.92 | < 0.8 | < 0.79 | < 0.2 | < 0.25 |
| | Erythromycin | 114-07-8 | µg/kg DW | < 3.3 | < 2.9 | < 3.3 | < 1.7 | < 2.3 |
| | Fenofibrate | 49562-28-9 | µg/kg DW | < 6 | < 5.9 | < 7.1 | < 1.9 | < 2.4 |
| | Fexofenadine | 83799-24-0 | µg/kg DW | < 0.2 | < 0.2 | < 0.23 | < 0.063 | < 0.081 |
| | Glibenclamide | 10238-21-8 | µg/kg DW | < 3.1 | < 3.1 | < 3.7 | < 1 | < 1.3 |
| | Glimepiride | 93479-97-1 | µg/kg DW | < 9.7 | < 9.6 | < 12 | < 3.1 | < 4 |
| | Haloperidol | 52-86-8 | µg/kg DW | < 1.4 | < 1.4 | < 1.7 | < 0.46 | < 0.59 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Irbesartan | 138402-11-6 | µg/kg DW | < 0.98 | < 0.98 | < 1.2 | < 0.31 | < 0.4 |
| | Loperamide | 53179-11-6 | µg/kg DW | < 0.39 | < 0.39 | < 0.46 | < 0.12 | 0.32 |
| | Memantine | 19982-08-2 | µg/kg DW | < 1.5 | < 1.3 | < 1.3 | < 0.32 | < 0.41 |
| | Metoprolol | 51384-51-1 | µg/kg DW | < 4.3 | < 3.6 | < 3.7 | < 1.3 | < 1.4 |
| | Metoprolol acid | 56392-14-4 | µg/kg DW | < 2 | < 1.6 | < 2 | < 0.61 | < 0.94 |
| | Mirtazapine | 61337-67-5 | µg/kg DW | < 1.6 | < 1.4 | < 1.3 | < 0.33 | < 0.43 |
| | N-Desmethylcitalopram | 144025-14-9 | µg/kg DW | < 1.2 | < 1.2 | < 1.4 | < 0.38 | < 0.48 |
| | Norsertraline | 87857-41-8 | µg/kg DW | < 110 | < 110 | < 130 | < 34 | < 44 |
| | O-Desmethylvenlafaxine | 93413-62-8 | µg/kg DW | < 0.81 | < 0.68 | < 0.79 | < 0.26 | < 0.34 |
| | Orphenadrine | 83-98-7 | µg/kg DW | < 1.3 | < 1.3 | < 1.6 | < 0.42 | < 0.54 |
| | Oxazepam | 604-75-1 | µg/kg DW | < 1.7 | < 1.8 | < 2.2 | < 1.3 | < 1.5 |
| | Propranolol | 287714-41-4 | µg/kg DW | < 0.63 | < 0.53 | < 0.55 | < 0.19 | < 0.21 |
| | Rosuvastatin | 80214-83-1 | µg/kg DW | < 2.8 | < 2.8 | < 3.3 | < 0.89 | < 1.1 |
| | Roxithromycin | 79617-96-2 | µg/kg DW | < 45 | < 44 | < 46 | < 19 | < 24 |
| | Sertraline | 57-68-1 | µg/kg DW | < 0.62 | < 0.62 | < 0.74 | < 0.2 | < 0.25 |
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | µg/kg DW | < 0.15 | < 0.13 | < 0.15 | < 0.097 | < 0.12 |
| | Sotalol | 959-24-0 | µg/kg DW | < 100 | < 84 | < 100 | < 31 | < 49 |
| | Sulfamethazine | 723-46-6 | µg/kg DW | < 2.3 | < 2.1 | < 2.4 | < 0.6 | < 0.9 |
| | Sulfamethoxazole | 144-83-2 | µg/kg DW | < 5.7 | < 5 | < 5.8 | < 1.5 | < 2.2 |
| | Sulfapyridine | 91161-71-6 | µg/kg DW | < 8.2 | < 7.2 | < 8.4 | < 2.1 | < 3.1 |
| | Tramadol | 27203-92-5 | µg/kg DW | 49 | 27 | < 11 | 1000 | 14 |
| | Trimethoprim | 738-70-5 | µg/kg DW | < 4.3 | < 3.6 | < 4.1 | < 1.2 | < 1.6 |
| | Valsartan | 137862-53-4 | µg/kg DW | < 0.37 | < 0.36 | < 0.43 | < 0.12 | < 0.15 |
| | Venlafaxine | 93413-69-5 | µg/kg DW | < 1.4 | < 1.2 | < 1.4 | < 0.46 | < 0.6 |
| | Verapamil | 52-53-9 | µg/kg DW | < 0.43 | < 0.43 | < 0.5 | < 0.15 | < 0.22 |
| | | | | | | | | |
| | PFBA | - | µg/kg DW | < 0.88 | < 0.82 | < 0.96 | < 0.38 | < 0.43 |
| | PFBS | - | µg/kg DW | < 1.5 | < 1.4 | < 1.6 | < 0.63 | < 0.72 |
| | PFDA | - | µg/kg DW | < 24 | < 20 | < 12 | < 9.1 | < 11 |
| | PFDoA | - | µg/kg DW | < 23 | < 22 | < 14 | < 3.4 | < 7.4 |
| | PFDS | - | µg/kg DW | < 2.2 | < 2.2 | < 2.2 | < 1.3 | < 1.7 |
| | PFHpS | - | µg/kg DW | < 1.2 | < 1 | < 1.1 | < 0.7 | < 0.82 |
| | PFTeDA | - | µg/kg DW | < 14 | < 10 | < 10 | < 3.9 | < 8.4 |
| | PFTrDA | - | µg/kg DW | < 12 | < 11 | < 11 | < 3.6 | < 7.8 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PFUdA | - | µg/kg DW | < 25 | < 25 | < 25 | < 15 | < 19 |
| | | | | | | | | |
| | Aldrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | Alfa-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Beta-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Chlorpyrifos | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Delta-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Dieldrin | - | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Endrin | - | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Galaxolide | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 |
| | Gama-HCH | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | HCB | - | µg/kg DW | <0.5 | <0.5 | 0.5 | <0.5 | <0.5 |
| | Isodrin | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | MethoxyCl | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Musk keton | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 |
| | Musk xylen | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 |
| | o,p-DDD | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDE | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDT | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | p,p-DDD | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | p,p-DDE | - | µg/kg DW | 0.7 | 1.1 | 1.1 | <0.5 | <0.5 |
| | p,p-DDT | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE 100 | - | µg/kg DW | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PBDE 99 | - | µg/kg DW | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PBDE153 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE154 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE183 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE28 | - | µg/kg DW | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PBDE47 | - | µg/kg DW | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | PCB 101 | - | µg/kg DW | 1.1 | 2.6 | 1.3 | <0.5 | <0.5 |
| | PCB 118 | - | µg/kg DW | 1.1 | 2.1 | 1.1 | <0.5 | <0.5 |
| | PCB 138 | - | µg/kg DW | 1.2 | 2.5 | 1.3 | <0.5 | <0.5 |
| | PCB 153 | - | µg/kg DW | 2.6 | 5 | 2.8 | <0.5 | <0.5 |
| | PCB 180 | - | µg/kg DW | <0.5 | 0.8 | <0.5 | <0.5 | <0.5 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PCB 194 | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 28 | - | µg/kg DW | <0.5 | 0.6 | 0.6 | <0.5 | <0.5 |
| | PCB 52 | - | µg/kg DW | <0.5 | 1.6 | 1.1 | <0.5 | <0.5 |
| | PentaCB | - | µg/kg DW | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Tonalide - AHTN | - | µg/kg DW | <20 | <20 | <20 | <20 | <20 |

## Matrix: indoor air

| No. | Parameter | CAS-number | Unit of mearure | Furniture centre, Oslo | | | | Hotel, Oslo | | Shopping centre, Oslo | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | | | | Sample date | | | | | |
| | | | | 17.10.16 | | | | 18.10.16 | | 19.10.16 | | | |
| | | | | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 1 | Sample 2 | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
| 1 | Perfluorotripropylamin | 338-83-0 | | | | | | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | | | | | | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | | | | | | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | | | | | | | | | | | |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | | | | | | | | | | | |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | | | | | | | | | | | |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | | | | | | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | | | | | | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | | | | | | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | | | | | | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | | | | | | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | | | | | | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | | | | | | | | | | | |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | | | | | | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | | | | | | | | | | | |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | | | | | | | | | | | |
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluorodihydrogenfosfat (9CI) | 94200-54-1 | | | | | | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9CI) | 57678-05-4 | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9CI) | 57678-07-6 | | | | | | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15, 15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | | | | | | | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10, 11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9CI) | 101896-22-4 | | | | | | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | | | | | | | | | | | |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | | | | | | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13, 14,14,14-triacontafluorotetradecan | 307-62-0 | | | | | | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | | | | | | | | | | | |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | | | | | | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | | | | | | | | | | | |
| 28 | 1H-Benzotriazole | 94-14-7 | | | | | | | | | | | |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | | | | | | | | | | | |
| 30 | 4- and 5-methyltriazole | 136-85-6 | | | | | | | | | | | |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | | | | | | | | | | | |
| 32 | Benzothiazole | 95-16-9 | | | | | | | | | | | |
| 33 | 2-Benzothiazolamine | 136-95-8 | | | | | | | | | | | |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | | | | | | | | | | | |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | | | | | | | | | | | |
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | | | | | | | | | | | |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | | | | | | | | | | | |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | | | | | | | | | | | |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | | | | | | | | | | | |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | | | | | | | | | | | |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | | | | | | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | | | | | | | | | | | |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | | | | | | | | | | | |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | | | | | | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | | | | | | | | | | | | |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | | | | | | | | | | | | |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | | | | | | | | | | | | |
| 49 | Octabromobisphenol-S | 42757-55-1 | | | | | | | | | | | | |
| 50 | BHA | 732-26-3 | | | | | | | | | | | | |
| 51 | AO 246 | 119-47-1 | | | | | | | | | | | | |
| 52 | DTBSBP | 1709-70-2 | | | | | | | | | | | | |
| 53 | AO 2246 | 118-82-1 | | | | | | | | | | | | |
| 54 | AO 22E46 | 85-60-9 | | | | | | | | | | | | |
| 55 | BHT-guinol | 121-00-6 | | | | | | | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | | | | | | | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | | | | | | | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | | | | | | | | | | | | |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | | | | | | | | | | | | |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | | | | | | | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | | | | | | | | | | | | |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | | | | | | | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | | | | | | | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | | | | | | | | | | | | |
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | | | | | | | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | | | | | | | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | | | | | | | | | | | | |
| 68 | 1,3-Propandiamin N,N″-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | | | | | | | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | | | | | | | | | | | | |
| 70 | PFPeA | 2706-90-3 | | | | | | | | | | | | |
| 71 | PFHxA | 307-24-4 | | | | | | | | | | | | |
| 72 | PFHpA | 375-85-9 | | | | | | | | | | | | |
| 73 | PFHxS | 355-46-4 | | | | | | | | | | | | |
| 74 | PFOA | 335-67-1 | | | | | | | | | | | | |
| 75 | PFNA | 375-95-1 | | | | | | | | | | | | |
| 76 | PFOS | 1763-23-1 | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 77 | 6.2 monoPAP | | | | | | | | | | | | |
| 78 | 8:2 monoPAP | | | | | | | | | | | | |
| 79 | 6:2 diPAP | | | | | | | | | | | | |
| 80 | 8:2 diPAP | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 1,2-DCl-octaFhexene | - | ug/sampler | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | 1-Cl-PFhexane | - | ug/sampler | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | 2,2-MeE(6-TB-4-MePh) | - | ng/sampler | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| | 2,4,6-TriTBPhe | - | ng/sampler | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | 3-(4-MeBenzylid)Camp | - | ng/sampler | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | 3-BenzylidCamp | - | ng/sampler | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| | 4,4-ButE(6-TB-m-Cre) | - | ng/sampler | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| | 4,4-MeE(2,6-diTBph) | - | ng/sampler | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| | Aldrin | - | ng/sampler | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| | Alfa-HCH | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Beta-HCH | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Chloroxylenol | - | ng/sampler | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| | Delta-HCH | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Dibromoaldrin | - | ng/sampler | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Dieldrin | - | ng/sampler | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| | Endrin | - | ng/sampler | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | Galaxolide | - | ng/sampler | 44 | 46 | 66 | 59 | 43 | 46 | 120 | 120 | 130 | 130 |
| | Gama-HCH | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | HCB | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Isodrin | - | ng/sampler | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | MethoxyCl | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Musk keton | - | ng/sampler | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | Musk xylen | - | ng/sampler | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | o,p-DDD | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDE | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | o,p-DDT | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | p,p-DDD | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | p,p-DDE | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | p,p-DDT | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PBDE 100 | - | ng/sampler | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PBDE 99 | - | ng/sampler | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| | PBDE153 | - | ng/sampler | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | PBDE154 | - | ng/sampler | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | PBDE183 | - | ng/sampler | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | PBDE28 | - | ng/sampler | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| | PBDE47 | - | ng/sampler | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| | PCB 101 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 118 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 138 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 153 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 180 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 194 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 28 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | PCB 52 | - | ng/sampler | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Perfluoroheptane | - | ug/sampler | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | Perfluorooctane | - | ug/sampler | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 | <20 |
| | PFoctyl methacrylate | - | ug/sampler | <70 | <70 | <70 | <70 | <20 | <20 | <40 | <40 | <40 | <40 |
| | Tonalide - AHTN | - | ng/sampler | 28 | 30 | 40 | 37 | 29 | 31 | 77 | 82 | 82 | 82 |

## Matrix: house dust

| No. | Parameter | CAS-number | Unit of mearure | Furniture centre, Oslo | | | | Hotel, Oslo | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample date | 17.10.16 | | | Sample date | 18.10.16 |
| | | | | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 1 | Sample 2 |
| 1 | Perfluorotripropylamin | 338-83-0 | µg/kg DW | | | | | | |
| 2 | 1-chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadeca-fluorooctane | 307-33-5 | µg/kg DW | | | | | | |
| 3 | Pentadeca-fluoro-octanoyl klorid | 335-64-8 | µg/kg DW | | | | | | |
| 4 | 1,2-Di-chloro-octa-fluoro-cyclohex-1-en | 336-19-6 | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <200 |
| 5 | 1,4-Di-chloro-octa-fluoro-butane | 355-24-8 | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <200 |
| 6 | 1-Chloro-perfluoro-hexane | 355-41-9 | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <200 |
| 7 | Per-fluoro-oxacyclononan | 1978-24-1 | µg/kg DW | | | | | | |
| 8 | 33,33,34,34,35,35,36,36,37,37,38,38,39,39,40,40, 41,42,42,42-icosafluoro-31-hydroxy-41-(tri-fluoro-methyl)dotetracontane-2,5,8,11,14,17,20,23,26,29-decone | 93776-10-4 | µg/kg DW | | | | | | |
| 9 | Ethyl per-fluoro-heptanoate | 41430-70-0 | µg/kg DW | | | | | | |
| 10 | 7-ethenoxy-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoroheptane | 78971-81-0 | µg/kg DW | | | | | | |
| 11 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluoro-9-(vinyloxy)nonane | 71726-31-3 | µg/kg DW | | | | | | |
| 12 | 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-icosafluoro-11-(vinyloxy)undecane | 94231-58-0 | µg/kg DW | | | | | | |
| 13 | 1H,1H-Per-fluorooctyl meta-crylat | 3934-23-4 | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <200 |
| 14 | F-53 Kalium 1,1,2,2-tetrafluoro-2-(per-fluoro-hexyloxy)-etan sulfonat | 754925-54-7 | µg/kg DW | | | | | | |
| 15 | F 53B Kalium 2-(6-chloro-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyloxy)-1,1,2,2-tetrafluoroetan sulfonat | 73606-19-6 | µg/kg DW | < 0.84 | < 0.91 | < 3.1 | < 4.2 | < 0.82 | < 0.34 |
| 16 | Ammonium per-fluoro(2-methyl-3-oxahexanoate) | 62037-80-3 | µg/kg DW | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|
| 17 | 1-Hexadecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,16-nona-cosafluorodihydrogenfosfat (9CI) | 94200-54-1 | µg/kg DW | | | | | | |
| 18 | 1-Dodecanol,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafluorodihydrogenfosfat (9CI) | 57678-05-4 | µg/kg DW | | | | | | |
| 19 | 1-Tetradecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafluoro-dihydrogenfosfat (9CI) | 57678-07-6 | µg/kg DW | | | | | | |
| 20 | 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-tritriacontafluorodihydrogenfosfat | 94200-55-2 | µg/kg DW | | | | | | |
| 21 | 4,6-Dioxa-3-aza-5-phosphaheptadecan-1-ol,9,9,10,10, 11,11,12,12,13,13,14, 14,15,15, 16,16,17,17,17-nonadecafluoro-3-(2-hydroxy-etyl)-5-[(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10, 11,11,11-nona-decafluoroundecyl)oxy]-5-oxide(9CI) | 101896-22-4 | µg/kg DW | | | | | | |
| 22 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-octadecafluorooctan | 307-34-6 | µg/kg DW | <200 | <200 | <400 | <400 | <200 | <200 |
| 23 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-hexacosafluorododecan | 307-59-5 | µg/kg DW | | | | | | |
| 24 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-triacontafluorotetradecan | 307-62-0 | µg/kg DW | | | | | | |
| 25 | 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-hexadecafluoro-heptan | 335-57-9 | µg/kg DW | <200 | <200 | <400 | <400 | <200 | <200 |
| 26 | 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoylfluorid | 335-66-0 | µg/kg DW | | | | | | |
| 27 | 6:2 fluorotelomermercaptoalkylamidosulfonat | - | µg/kg DW | < 0.43 | < 0.46 | < 1.6 | < 2.1 | < 0.42 | < 0.17 |
| 28 | 1H-Benzotriazole | 95-14-7 | µg/kg DW | 800 | 650 | 360 | 340 | 55 | 89 |
| 29 | Methyl-1H-benzotriazole | 29385-43-1 | µg/kg DW | 75 | 58 | 95 | 100 | 22 | 28 |
| 30 | 4- and 5-methyltriazole | 136-85-6 | µg/kg DW | 75 | 58 | 95 | 100 | 22 | 28 |
| 31 | Xylyltriazol (5,6-dimethyl-1H-benzotriazole) | 4184-79-6 | µg/kg DW | < 1.2 | < 1.2 | < 4.5 | < 5 | < 1.1 | < 0.61 |
| 32 | Benzothiazole | 95-16-9 | µg/kg DW | 2220 | 2120 | 1720 | 1720 | 1520 | 1820 |
| 33 | 2-Benzothiazolamine | 136-95-8 | µg/kg DW | 53 | 39 | 18 | 12 | 44 | 44 |
| 34 | 2(3H)-Benzothiazolone | 934-34-9 | µg/kg DW | 1600 | 1800 | 980 | 980 | 1500 | 2200 |
| 35 | 2-(Thiocyanatomethylthio)-benzothiazole | 21564-17-0 | µg/kg DW | 130 | 110 | 12 | < 11 | 130 | 140 |

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|---|---|---|---|---|---|---|---|---|---|
| 36 | 2-(2H-benzotriazol-2-yl)-4-methyl-phenol | 2440-22-4 | µg/kg DW | 3900 | 3900 | 770 | 490 | 9800 | 8600 |
| 37 | Methylisothia zolinone (MI) | 2682-20-4 | µg/kg DW | 1100 | 860 | < 460 | < 450 | < 120 | < 61 |
| 38 | Methylisothia zolinone (CMI/MI) | 55965-84-9 | µg/kg DW | 1100 | 860 | < 460 | < 450 | < 120 | < 61 |
| 39 | 3 Benzylidene camphor (3-BC) | 15087-24-8 | µg/kg DW | <30 | <30 | <30 | <30 | <30 | <30 |
| 40 | 4-MBC 4-Methylbenzylidene camphor | 36861-47-9 | µg/kg DW | <20 | <20 | <20 | <20 | <20 | <20 |
| 41 | BDM Butyl methoxydibenzoylmethane | 70356-09-1 | µg/kg DW | | | | | | |
| 42 | Homosalate (HS) | 118-56-9 | µg/kg DW | 400 | 410 | 590 | 450 | 270 | < 170 |
| 43 | IMC Isoamyl p-methoxycinnamate | 71617-10-2 | µg/kg DW | < 67 | < 76 | < 250 | < 300 | < 72 | < 37 |
| 44 | PBS Phenylbenzimidazole sulphonic acid (1) | 88122-99-0 | µg/kg DW | | | | | | |
| 45 | 2-Phenyl-5-benzimidazolesulfonic Acid | 27503-81-7 | µg/kg DW | | | | | | |
| 46 | Tetrabromobisphenol A bis (dibromopropyl ether) | 21850-44-2 | µg/kg DW | < 39 | < 45 | < 170 | < 100 | < 34 | < 42 |
| 47 | 2,2',6,6'-Tetrabromobisphenol A diallyl ether | 25327-89-3 | µg/kg DW | < 0.23 | < 0.26 | < 0.96 | < 0.6 | < 0.14 | < 0.063 |
| 48 | 4,4'-Sulphonylbis(2,6-dibromophenol) | 39635-79-5 | µg/kg DW | < 0.38 | < 0.43 | < 1.6 | < 0.99 | < 0.23 | < 0.1 |
| 49 | Octabromobisphenol-S | 42757-55-1 | µg/kg DW | | | | | | |
| 50 | BHA | 732-26-3 | µg/kg DW | < 1.8 | 4 | 5.7 | 6.2 | 14 | 9.9 |
| 51 | AO 246 | 119-47-1 | µg/kg DW | 2.7 | 48 | < 7 | 5.1 | 140 | 200 |
| 52 | DTBSBP | 1709-70-2 | µg/kg DW | | | | | | |
| 53 | AO 2246 | 118-82-1 | µg/kg DW | < 2.7 | < 3.1 | < 11 | < 7.2 | < 1.6 | < 0.75 |
| 54 | AO 22E46 | 85-60-9 | µg/kg DW | 190 | 210 | < 120 | < 77 | 290 | 180 |
| 55 | BHT-guinol | 121-00-6 | µg/kg DW | | | | | | |
| 56 | Behentrimonium chloride | 17301-53-0 | µg/kg DW | | | | | | |
| 57 | Behentrimonium methosulfate | 81646-13-1 | µg/kg DW | | | | | | |
| 58 | Dibromoaldrin | Dibromoaldrin | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| 59 | Dichlorophene (Bis(5-chloro-2-hydroxyphenyl)methane) | 97-23-4 | µg/kg DW | 30 | 43 | 17 | 23 | 0.78 | 0.82 |
| 60 | 2,2'-Methylene Bis(5-chlorophenol) | 1215-74-3 | µg/kg DW | | | | | | |
| 61 | Chloroxylenol | 88-04-0 | µg/kg DW | < 40 | < 46 | < 170 | < 110 | < 24 | < 11 |
| 62 | Chlorophene (2-Benzyl-4-chlorophenol) | 120-32-1 | µg/kg DW | | | | | | |
| 63 | Poly(4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol-alt-1,4-butanedioic acid) | 65447-77-0 | µg/kg DW | | | | | | |
| 64 | Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate | 52829-07-9 | µg/kg DW | 55000 | 47000 | 22000 | 20000 | 45000 | 17000 |

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|---|---|---|---|---|---|---|---|---|---|
| 65 | N,N'-1,6-hexanediylbis(N-(2,2,6,6-tetramethyl-piperidin-4-yl)formamide | 124172-53-8 | µg/kg DW | | | | | | |
| 66 | Chimassorb 9441 | 71878-19-8 | µg/kg DW | | | | | | |
| 67 | 1,6-Hexanediamine N,N'-bis(2,2,6,6-tetramethyl-4-piperidinyl)-, polymer med morpholine-2,4,6-trichloro-1,3,5-triazine | 193098-40-7 | µg/kg DW | | | | | | |
| 68 | 1,3-Propandiamin N,N″-1,2-ethandiylbis-, polymer med 2,4,6-trichlor-1,3-5-triazin | 136504-96-6 | µg/kg DW | | | | | | |
| 69 | PBDPP Resorcinol bis(bifenylfosfat) | 57583-54-7 | µg/kg DW | < 90 | < 100 | < 340 | < 410 | < 98 | 130 |
| 70 | PFPeA | 2706-90-3 | µg/kg DW | 7 | < 3.5 | < 12 | < 17 | < 3.7 | < 1.5 |
| 71 | PFHxA | 307-24-4 | µg/kg DW | 4.4 | 4.8 | < 16 | < 22 | 8.4 | 8.9 |
| 72 | PFHpA | 375-85-9 | µg/kg DW | < 0.15 | < 0.16 | < 0.59 | < 0.81 | 1.6 | 1.1 |
| 73 | PFHxS | 355-46-4 | µg/kg DW | 2300 | 2100 | 1600 | 2200 | 2100 | 1600 |
| 74 | PFOA | 335-67-1 | µg/kg DW | < 62 | < 56 | < 230 | < 320 | < 67 | < 31 |
| 75 | PFNA | 375-95-1 | µg/kg DW | < 7.1 | < 6.5 | < 23 | < 32 | < 8.3 | < 4 |
| 76 | PFOS | 1763-23-1 | µg/kg DW | < 5.1 | < 5.5 | < 19 | < 25 | < 4.9 | 5 |
| 77 | 6.2 monoPAP | | µg/kg DW | < 0.71 | < 0.53 | < 2.6 | < 3.4 | 7.4 | < 0.25 |
| 78 | 8:2 monoPAP | | µg/kg DW | < 0.29 | < 0.22 | < 1.1 | < 1.4 | < 0.32 | 5.8 |
| 79 | 6:2 diPAP | | µg/kg DW | 3300 | 2700 | 380 | 330 | 1700 | 980 |
| 80 | 8:2 diPAP | | µg/kg DW | 79 | 68 | < 260 | < 340 | < 78 | 35 |
| | | | | | | | | | |
| | Alfuzosin | 81403-80-7 | µg/kg DW | < 0.89 | < 0.87 | < 3 | < 3.6 | < 0.87 | < 0.5 |
| | Amitryptyline | 50-48-6 | µg/kg DW | < 0.49 | < 0.5 | < 2 | < 2.5 | < 0.46 | < 0.24 |
| | Atorvastatin | 134523-00-5 | µg/kg DW | < 0.58 | < 0.57 | < 2.1 | < 2.3 | < 0.5 | < 0.28 |
| | Azithromycin | 83905-01-5 | µg/kg DW | < 44 | < 43 | < 150 | < 180 | < 39 | < 23 |
| | Bezafibrate | 41859-67-0 | µg/kg DW | < 3.5 | < 3.4 | < 12 | < 14 | < 3 | < 1.7 |
| | Bisoprolol | 66722-44-9 | µg/kg DW | < 0.62 | < 0.62 | < 2.2 | < 2.7 | < 0.62 | < 0.36 |
| | Caffeine | 58-08-2 | µg/kg DW | 4400 | 3400 | 5100 | 6000 | 14000 | 13000 |
| | Carbamazepine | 298-46-4 | µg/kg DW | 5.3 | 4.6 | < 4.8 | < 5.4 | 3.0 | 2.2 |
| | Citalopram | 59729-33-8 | µg/kg DW | 4.7 | 4.1 | < 4.6 | < 5.1 | 3.1 | 2.7 |
| | Clarithromycin | 81103-11-9 | µg/kg DW | < 0.81 | < 0.8 | < 2.8 | 14 | < 0.67 | 0.97 |

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|---|---|---|---|---|---|---|---|---|---|
| | Clemastine | 15686-51-8 | µg/kg DW | < 0.87 | < 0.85 | < 3.1 | < 3.5 | < 0.75 | < 0.43 |
| | Clindamycin_sulfoxide | 22431-46-5 | µg/kg DW | < 0.54 | 1.0 | < 1.8 | < 2.2 | 0.5 | < 0.27 |
| | Clindamycine | 18323-44-9 | µg/kg DW | < 0.34 | < 0.33 | < 1.1 | < 1.4 | < 0.3 | < 0.17 |
| | Clomipramine | 303-49-1 | µg/kg DW | < 1.1 | < 1.1 | < 3.9 | < 4.3 | < 0.94 | < 0.53 |
| | Clonazepam | 1622-61-3 | µg/kg DW | < 3 | < 2.8 | < 12 | < 13 | < 2.6 | < 1.5 |
| | Diclofenac | 15307-86-5 | µg/kg DW | 250 | 240 | 73 | 59 | 260 | 160 |
| | Diltiazem | 42399-41-7 | µg/kg DW | < 1.1 | < 1.1 | < 3.9 | < 4.4 | < 0.94 | < 0.54 |
| | Diphenhydramine | 58-73-1 | µg/kg DW | 1.3 | < 0.93 | < 3.4 | < 3.8 | < 0.83 | 1 |
| | Disopyramide | 3737-09-05 | µg/kg DW | < 0.68 | < 0.67 | < 2.3 | < 2.8 | < 0.67 | < 0.38 |
| | Erythromycin | 114-07-8 | µg/kg DW | < 2 | < 2 | < 6.6 | < 8 | < 1.8 | < 1 |
| | Fenofibrate | 49562-28-9 | µg/kg DW | < 0.69 | < 0.67 | < 2.5 | < 2.7 | < 0.59 | < 0.34 |
| | Fexofenadine | 83799-24-0 | µg/kg DW | < 0.92 | < 0.9 | < 3.3 | < 3.7 | < 0.8 | < 0.45 |
| | Glibenclamide | 10238-21-8 | µg/kg DW | < 0.39 | < 0.38 | < 1.4 | < 1.6 | < 0.34 | < 0.19 |
| | Glimepiride | 93479-97-1 | µg/kg DW | < 0.47 | < 0.46 | < 1.7 | < 1.9 | < 0.41 | < 0.23 |
| | Haloperidol | 52-86-8 | µg/kg DW | < 1 | < 1 | < 3.7 | < 4.2 | < 0.9 | < 0.51 |
| | Irbesartan | 138402-11-6 | µg/kg DW | < 1 | < 0.98 | < 3.6 | < 4 | < 0.87 | < 0.49 |
| | Loperamide | 53179-11-6 | µg/kg DW | < 0.86 | < 0.84 | < 3.1 | < 3.5 | < 0.75 | < 0.42 |
| | Memantine | 19982-08-2 | µg/kg DW | < 0.86 | < 0.84 | < 2.9 | < 3.5 | < 0.84 | < 0.48 |
| | Metoprolol | 51384-51-1 | µg/kg DW | 4.2 | 1.7 | < 1.6 | 5.1 | 10 | 10 |
| | Metoprolol acid | 56392-14-4 | µg/kg DW | 8.2 | 6.8 | < 2.4 | < 2.3 | 17 | 14 |
| | Mirtazapine | 61337-67-5 | µg/kg DW | 79 | 64 | 100 | 120 | 200 | 170 |
| | N-Desmethylcitalopram | 144025-14-9 | µg/kg DW | < 0.98 | < 0.96 | < 3.5 | < 3.9 | < 0.85 | < 0.48 |
| | Norsertraline | 87857-41-8 | µg/kg DW | < 62 | < 60 | < 220 | < 250 | < 54 | < 30 |
| | O-Desmethylvenlafaxine | 93413-62-8 | µg/kg DW | < 0.65 | < 0.66 | < 2.7 | < 3.1 | < 0.62 | < 0.35 |
| | Orphenadrine | 83-98-7 | µg/kg DW | < 0.91 | < 0.89 | < 3.3 | < 3.6 | < 0.79 | < 0.45 |
| | Oxazepam | 604-75-1 | µg/kg DW | 3.8 | 6.1 | < 11 | < 12 | < 2.5 | 6.0 |
| | Propranolol | 287714-41-4 | µg/kg DW | 5.7 | 4.9 | < 2.9 | < 3.5 | < 0.82 | 0.86 |
| | Rosuvastatin | 80214-83-1 | µg/kg DW | < 2 | < 2 | < 7.3 | < 8.1 | < 1.8 | < 1 |
| | Roxithromycin | 79617-96-2 | µg/kg DW | < 2.7 | < 2.6 | < 9.3 | < 12 | < 2.2 | < 1.3 |
| | Sertraline | 57-68-1 | µg/kg DW | < 0.9 | < 0.88 | < 3.2 | < 3.6 | < 0.78 | < 0.44 |

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|---|---|---|---|---|---|---|---|---|---|
| | Sodium dodecafluoro-3H-4,8-dioxanonanoate | 958445-44-8 | µg/kg DW | < 0.73 | < 0.78 | < 2.7 | < 3.6 | < 0.71 | < 0.29 |
| | Sotalol | 959-24-0 | µg/kg DW | < 190 | < 170 | < 510 | < 500 | < 130 | < 68 |
| | Sulfamethazine | 723-46-6 | µg/kg DW | < 1.7 | < 1.6 | < 7.1 | < 8.7 | < 1.4 | < 0.75 |
| | Sulfamethoxazole | 144-83-2 | µg/kg DW | < 16 | < 15 | < 67 | < 83 | < 13 | < 7.1 |
| | Sulfapyridine | 91161-71-6 | µg/kg DW | < 0.57 | < 0.54 | < 2.4 | < 2.9 | < 0.46 | < 0.25 |
| | Tramadol | 27203-92-5 | µg/kg DW | 13 | 12 | 37 | 40 | 210 | 7.5 |
| | Trimethoprim | 738-70-5 | µg/kg DW | 0.61 | 0.54 | < 1.2 | < 1.4 | 1.4 | 2 |
| | Valsartan | 137862-53-4 | µg/kg DW | < 2.7 | < 2.6 | < 9.6 | < 11 | < 2.3 | < 1.3 |
| | Venlafaxine | 93413-69-5 | µg/kg DW | 2.5 | 2.5 | < 3.1 | 3.8 | 1.1 | 1.3 |
| | Verapamil | 52-53-9 | µg/kg DW | < 0.56 | < 0.57 | < 2.3 | < 2.9 | < 0.52 | 0.73 |
| | | | | | | | | | |
| | PFBA | - | µg/kg DW | < 3 | < 3.1 | < 10 | < 15 | < 3.3 | < 1.3 |
| | PFBS | - | µg/kg DW | < 3.5 | < 3.6 | < 12 | < 18 | < 3.8 | < 1.5 |
| | PFDA | - | µg/kg DW | < 77 | < 71 | < 250 | < 350 | < 90 | < 43 |
| | PFDoA | - | µg/kg DW | < 56 | < 42 | < 220 | < 240 | < 45 | < 21 |
| | PFDS | - | µg/kg DW | < 4.5 | < 3.4 | < 18 | < 19 | < 3.7 | < 1.7 |
| | PFHpS | - | µg/kg DW | < 3.3 | < 3.4 | < 13 | < 19 | < 3.4 | < 1.4 |
| | PFTeDA | - | µg/kg DW | < 63 | < 47 | < 250 | < 270 | < 51 | < 24 |
| | PFTrDA | - | µg/kg DW | < 63 | < 47 | < 250 | < 270 | < 51 | < 24 |
| | PFUdA | - | µg/kg DW | < 2.5 | < 1.9 | < 9.7 | < 10 | < 2 | < 0.93 |
| | | | | | | | | | |
| | 1,2-xylen | - | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <100 |
| | 1,4-xylen | - | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <100 |
| | 2,2',3,4,4',5',6-heptabromdifenylether | - | µg/kg DW | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 |
| | 2,2',4,4'- tetrabromdifenylether | - | µg/kg DW | 3.8 | 4.1 | 4.0 | 3.8 | 4.1 | 3.9 |
| | 2,2',4,4',5,5'-hexabromdifenylether | - | µg/kg DW | 1.1 | 1.0 | <1.0 | 1.1 | 1.1 | 1.3 |
| | 2,2',4,4',5,6'-hexabromdifenylether | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 2,2',4,4',5-pentabromdifenylether | - | µg/kg DW | 5.9 | 4.5 | 4.7 | 5.4 | 4.7 | 4.4 |
| | 2,2',4,4',6-pentabromdifenylether | - | µg/kg DW | <1.0 | 1.2 | 1.2 | 1.6 | <1.0 | <1.0 |
| | 2,4,4'-tribromdifenylether | - | µg/kg DW | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

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|---|---|---|---|---|---|---|---|---|---|
| | Aldrin | - | µg/kg DW | <5 | <5 | <5 | <5 | <5 | <5 |
| | Alfa-hexachlorcyklohexan | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Benzen | - | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <100 |
| | Beta-hexachlorcyklohexan | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Delta-hexachlorcyklohexan | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Dieldrin | - | µg/kg DW | <10 | <10 | <10 | <10 | <10 | <10 |
| | Endrin | - | µg/kg DW | <10 | <10 | <10 | <10 | <10 | <10 |
| | Ethylbenzen | - | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <100 |
| | Galaxolide - HHCB | - | µg/kg DW | 970 | 1350 | 650 | 550 | 1100 | 1000 |
| | Gama-hexachlorcyklohexan (Lindan) | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Hexabromcyklododecane | - | µg/kg DW | 1200 | 1500 | 300 | 250 | 1100 | 990 |
| | Hexachlorbenzen | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | Isodrin | - | µg/kg DW | <5 | <5 | <5 | <5 | <5 | <5 |
| | Methoxychlor | - | µg/kg DW | <10 | <10 | <10 | <10 | <10 | <10 |
| | Musk keton | - | µg/kg DW | <20 | <20 | 36 | 27 | 33 | <20 |
| | Musk xylen | - | µg/kg DW | 27 | 24 | <20 | <20 | <20 | <20 |
| | o,p - DDD | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | o,p - DDT | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | o,p-DDE | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | p,p-DDD | - | µg/kg DW | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| | p,p-DDE | - | µg/kg DW | <3.0 | <3.0 | 3.5 | 3.3 | <3.0 | <3.0 |
| | p,p-DDT | - | µg/kg DW | <3.0 | 8.1 | 5.8 | 5.6 | 3.8 | <3.0 |
| | PBDE 209 | - | µg/kg DW | 300 | 1500 | 2000 | 850 | 560 | 310 |
| | PCB 194 | - | µg/kg DW | <1 | 2 | 1 | 1 | <1 | <1 |
| | PCB kongener 101 | - | µg/kg DW | 1.7 | 3.0 | 2.8 | 2.7 | 1.3 | <1.0 |
| | PCB kongener 118 | - | µg/kg DW | <1.0 | 1.7 | 1.7 | 1.6 | <1.0 | <1.0 |
| | PCB kongener 138 | - | µg/kg DW | 2.9 | 5.0 | 3.6 | 3.2 | 1.6 | 1.2 |
| | PCB kongener 153 | - | µg/kg DW | 3.7 | 6.9 | 5.7 | 4.3 | 2.2 | 1.6 |
| | PCB kongener 180 | - | µg/kg DW | 1.6 | 6.2 | 4.5 | 2.4 | 1.6 | <1.0 |
| | PCB kongener 28 | - | µg/kg DW | 1.2 | 1.8 | 1.6 | 1.3 | 1.0 | <1.0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PCB kongener 52 | - | µg/kg DW | <1.0 | 1.6 | 1.6 | 1.5 | 1.0 | <1.0 |
| | Tetrachlorethylen | - | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <100 |
| | Toluen | - | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <100 |
| | Tonalide | - | µg/kg DW | 1100 | 1500 | 730 | 620 | 1300 | 1200 |
| | Xlen | - | µg/kg DW | <100 | <100 | <200 | <200 | <100 | <100 |

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The Norwegian Environment Agency is working for a clean and diverse environment. Our primary tasks are to reduce greenhouse gas emissions, manage Norwegian nature, and prevent pollution.

We are a government agency under the Ministry of Climate and Environment and have 700 employees at our two offices in Trondheim and Oslo and at the Norwegian Nature Inspectorate's more than sixty local offices.

We implement and give advice on the development of climate and environmental policy. We are professionally independent. This means that we act independently in the individual cases that we decide and when we communicate knowledge and information or give advice.

Our principal functions include collating and communicating environmental information, exercising regulatory authority, supervising and guiding regional and local government level, giving professional and technical advice, and participating in international environmental activities.