

Strengthening of the collaboration between the University of South Bohemia in České Budějovice and COWI AS in Water Monitoring, project n. 1404572019

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A document specifying a list of emergent micropollutants of interest, free accessible on FFWP website

In the field of water environment monitoring, the Laboratory of environmental chemistry and biochemistry (LECHB) cooperates with Norwegian partners and a whole range of other entities that also participated in the meeting. During years of cooperation, a list of relevant substances for monitoring the environment was gradually created and discussed during the workshop. The following table shows compounds that are repeatedly positively found in both the Czech and European aquatic environments. At the same time, these substances are suitable for analysis due to the LECHB equipment. Compounds are sorted according to the source by which they enter the environment. Shortcuts for the category are PA – psychoactive compound, ATB – antibiotic, PH – pharmaceutical, PEST – pesticide, PFAC – perfluoroalkyl compound, BP – bisphenol, FR – flame retardant, UV – UV filter, S – surfactant, CI – corrosion inhibitor, and M – metabolite or degradation product. This list of substances can inspire other entities or authorities active in environmental monitoring.

Compound	CAS	Category	Source
Alprazolam	28981-97-7	PA	municipal wastewater
Amitriptyline	50-48-6	PA	municipal wastewater
Atenolol	29122-68-7	PH	municipal wastewater
Atorvastatin	110862-48-1	PH	municipal wastewater
Azithromycin	83905-01-5	ATB	municipal wastewater
Bezafibrate	41859-67-0	PH	municipal wastewater
Biperiden	514-65-8	PH	municipal wastewater
Bisoprolol	66722-44-9	PH	municipal wastewater
Caffeine	58-08-2	PH	municipal wastewater
Carbamazepine	298-46-4	PA	municipal wastewater
Cetirizine	83881-51-0	PH	municipal wastewater
Cilazapril	92077-78-6	PH	municipal wastewater
Citalopram	59729-33-8	PA	municipal wastewater
Clarithromycin	81103-11-9	ATB	municipal wastewater
Clindamycin	18323-44-9	ATB	municipal wastewater
Clindamycin sulfoxide	22431-46-5	M	municipal wastewater

Clomipramine	303-49-1	PA	municipal wastewater
Clonazepam	1622-61-3	PA	municipal wastewater
Codeine	76-57-3	PA	municipal wastewater
Diclofenac	15307-86-5	PH	municipal wastewater
Diltiazem	42399-41-7	PH	municipal wastewater
Diphenhydramine	58-73-1	PH	municipal wastewater
Donepezil	120014-06-4	PA	municipal wastewater
Erythromycin	114-07-8	ATB	municipal wastewater
Fenofibrate	49562-28-9	PH	municipal wastewater
Fexofenadine	83799-24-0	PH	municipal wastewater
Gabapentin	60142-96-3	PA	municipal wastewater
Glibenclamide	10238-21-8	PH	municipal wastewater
Glimepiride	93479-97-1	PH	municipal wastewater
Irbesartan	138402-11-6	PH	municipal wastewater
Lamotrigine	84057-84-1	PA	municipal wastewater
Loperamide	53179-11-6	PH	municipal wastewater
Maprotiline	10262-69-8	PA	municipal wastewater
Meclozine	569-65-3	PH	municipal wastewater
Memantine	19982-08-2	PH	municipal wastewater
Methamphetamine	537-46-2	PA	municipal wastewater
Metoprolol	51384-51-1	PH	municipal wastewater
Metoprolol acid	56392-14-4	PH	municipal wastewater
Mianserin	24219-97-4	PA	municipal wastewater
Mirtazapine	85650-52-8	PA	municipal wastewater
Orphenadrine	83-98-7	PH	municipal wastewater
Oxazepam	604-75-1	PA	municipal wastewater
Oxcarbazepine	28721-07-5	M	municipal wastewater
Propranolol	525-66-6	PH	municipal wastewater
Rosuvastatin	287714-41-4	PH	municipal wastewater
Roxithromycin	80214-83-1	ATB	municipal wastewater
Sertraline	79617-96-2	PA	municipal wastewater
Sotalol	3930-20-9	PH	municipal wastewater
Sulfadiazine	68-35-9	ATB	municipal wastewater
Sulfamethazine	57-68-1	ATB	municipal wastewater
Sulfamethizole	144-82-1	ATB	municipal wastewater
Sulfamethoxazole	723-46-6	ATB	municipal wastewater
Sulfapyridine	144-83-2	ATB	municipal wastewater
Tamoxifen	10540-29-1	PH	municipal wastewater
Telmisartan	144701-48-4	PH	municipal wastewater
Terbinafine	91161-71-6	PH	municipal wastewater
Terbutryn	886-50-0	PH	municipal wastewater
Tramadol	27203-92-5	PA	municipal wastewater
Trazodone	19794-93-5	PA	municipal wastewater
Trimethoprim	738-70-5	ATB	municipal wastewater
Valsartan	137862-53-4	PH	municipal wastewater

Venlafaxine	93413-69-5	PA	municipal wastewater
Verapamil	52-53-9	PH	municipal wastewater
Warfarin	81-81-2	PH	municipal wastewater
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	PEST	agriculture
2,4-Dichlorophenoxypropionic acid (2,4-DP)	120-36-5	PEST	agriculture
2-Hydroxyatrazine	2163-68-0	PEST	agriculture
4-Isopropylaniline	99-88-7	PEST	agriculture
Acetochlor	34256-82-1	PEST	agriculture
Acetochlor_ESA	187022-11-3	M	agriculture
Acetochlor_OA	194992-44-4	M	agriculture
Alachlor	15972-60-8	PEST	agriculture
Alachlor_ESA	142363-53-9	M	agriculture
Alachlor_OA	171262-17-2	M	agriculture
Ametryn	834-12-8	PEST	agriculture
N-Isopropylanthranilamide	30391-89-0	PEST	agriculture
Atrazine	1912-24-9	PEST	agriculture
Atrazine-desethyl-2-hydroxy	19988-24-0	M	agriculture
Atrazine-desethyl	6190-65-4	M	agriculture
Atrazine-desisopropyl	1007-28-9	M	agriculture
Atrazine-hydroxy	2163-68-0	M	agriculture
Azoxystrobin	131860-33-8	PEST	agriculture
Bensulfuron-methyl	83055-99-6	PEST	agriculture
Bentazone	25057-89-0	PEST	agriculture
Carbendiazim	10605-21-7	PEST	agriculture
Carbofuran-3-hydroxy	16655-82-6	PEST	agriculture
Chlorantraniliprole	500008-45-7	PEST	agriculture
Chloridazon	1698-60-8	PEST	agriculture
Chloridazon-methyl-desphenyl	17254-80-7	M	agriculture
Chloridazon-desphenyl	6339-19-1	M	agriculture
Chlortoluron	15545-48-9	PEST	agriculture
Chlorotoluron-desmethyl	22175-22-0	M	agriculture
Clomazone	81777-89-1	PEST	agriculture
Cyanazine	21725-46-2	PEST	agriculture
Cyproconazole	94361-06-5	PEST	agriculture
DEET	134-62-3	PEST	agriculture
Diazinon	333-41-5	PEST	agriculture
Dimethachlor	50563-36-5	PEST	agriculture
Dimethachlor_ESA	CASID30748	M	agriculture
Dimethachlor_OA	1086384-49-7	M	agriculture
Dimethenamid_ESA	205939-58-8	M	agriculture
Dimethenamid_OA	380412-59-9	M	agriculture
Dimethomorph	110488-70-5	PEST	agriculture
Diuron	330-54-1	PEST	agriculture
Diurondesmethyl	3567-62-2	PEST	agriculture

Epoxiconazole	133855-98-8	PEST	agriculture
Fenuron	101-42-8	PEST	agriculture
Florasulam	145701-23-1	PEST	agriculture
Fluazifop-p	83066-88-0	PEST	agriculture
Flusilazole	85509-19-9	PEST	agriculture
Foramsulfuron	173159-57-4	PEST	agriculture
Hexazinone	51235-04-2	PEST	agriculture
Imazamox	114311-32-9	PEST	agriculture
Imidacloprid	138261-41-3	PEST	agriculture
Isoproturon	34123-59-6	PEST	agriculture
Lenacil	2164-08-1	PEST	agriculture
Linuron	330-55-2	PEST	agriculture
MCPA	94-74-6	PEST	agriculture
MCPP	7085-19-0	PEST	agriculture
Metalaxyl	57837-19-1	PEST	agriculture
Metazachlor	67129-08-2	PEST	agriculture
Metazachlor_ESA	172960-62-2	M	agriculture
Metazachlor_OA	1231244-60-2	M	agriculture
Metconazole	125116-23-6	PEST	agriculture
Methabenzthiazuron	18691-97-9	PEST	agriculture
Methoxyfenozide	161050-58-4	PEST	agriculture
Metobromuron	3060-89-7	PEST	agriculture
Metolachlor	51218-45-2	PEST	agriculture
Metolachlor_ESA	171118-09-5	PEST	agriculture
Metolachlor_OA	152019-73-3	PEST	agriculture
Metribuzin	21087-64-9	PEST	agriculture
Metribuzin_desamino	35045-02-4	M	agriculture
Metsulfuron-methyl	74223-64-6	PEST	agriculture
Monolinuron	1746-81-2	PEST	agriculture
N-chloroacetyl-2.6-diethylaniline	1131-01-7	PEST	agriculture
Picloram	1918-02-1	PEST	agriculture
Pirimicarb	23103-98-2	PEST	agriculture
Pirimiphos-methyl	29232-93-7	PEST	agriculture
Prometryn	7287-19-6	PEST	agriculture
Propachlor	1918-16-7	PEST	agriculture
Propazine	139-40-2	PEST	agriculture
Propazine-2-hydroxy	7374-53-0	M	agriculture
Propiconazole	60207-90-1	PEST	agriculture
Pyrimethanil	53112-28-0	PEST	agriculture
Sebuthylazine	7286-69-3	PEST	agriculture
Simazine	122-34-9	PEST	agriculture
Simazine 2-hydroxy	2599-11-3	M	agriculture
Tebuconazole	107534-96-3	PEST	agriculture
Terbuthylazine	5915-41-3	M	agriculture
Terbuthylazine-desethyl	30125-63-4	M	agriculture

Terbutylazinedesethyl-2-hydroxy	66753-06-8	M	agriculture
Terbutylazine-hydroxy	66753-07-9	M	agriculture
Terbutryn	886-50-0	PEST	agriculture
Thiamethoxam	153719-23-4	PEST	agriculture
Triadimenol	55219-65-3	PEST	agriculture
Triallat	2303-17-5	PEST	agriculture
Triticonazole	131983-72-7	PEST	agriculture
Perfluorobutanoic acid	375-22-4	PFAC	industrial wastewater
Perfluoropentanoic acid	2706-90-3	PFAC	industrial wastewater
Perfluorooctanoic acid	335-67-1	PFAC	industrial wastewater
Perfluorononanoic acid	375-95-1	PFAC	industrial wastewater
Perfluorodecanoic acid	335-76-2	PFAC	industrial wastewater
Perfluoroundecanoic acid	2058-94-8	PFAC	industrial wastewater
Perfluorododecanoic acid	307-55-1	PFAC	industrial wastewater
Perfluorotridecanoic acid	72629-94-8	PFAC	industrial wastewater
Perfluorotetradecanoic acid	376-06-7	PFAC	industrial wastewater
N-methylperfluorooctane sulfonamidoacetic acid	2355-31-9	PFAC	industrial wastewater
Perfluorooctanesulphonamide	754-91-6	PFAC	industrial wastewater
N-ethylperfluorooctane sulfonamidoacetic acid	2991-50-6	PFAC	industrial wastewater
Perfluoropentane sulfonic acid	2706-91-4	PFAC	industrial wastewater
Perfluorononanesulfonic acid	68259-12-1	PFAC	industrial wastewater
1H,1H,2H,2H-perfluorohexanesulphonic acid	757124-72-4	PFAC	industrial wastewater
1H,1H,2H,2H-perfluorooctanesulfonic acid	27619-97-2	PFAC	industrial wastewater
1H,1H,2H,2H-perfluorodecanesulfonic acid	39108-34-4	PFAC	industrial wastewater
Perfluorobutanesulfonic acid	375-73-5	PFAC	industrial wastewater
Perfluorodecanesulfonic Acid	335-77-3	PFAC	industrial wastewater
Perfluorooctanesulfonic Acid	1763-23-1	PFAC	industrial wastewater
Perfluoroheptanoic Acid	375-85-9	PFAC	industrial wastewater
Perfluoroheptanesulfonic acid	375-92-8	PFAC	industrial wastewater
Perfluorohexanoic acid	307-24-4	PFAC	industrial wastewater
Perfluorohexanesulfonic acid	355-46-4	PFAC	industrial wastewater
2H,2H,3H,3H-Perfluoroundecanoic acid	34598-33-9	PFAC	industrial wastewater
2H,2H,3H,3H-Perfluorodecanoic acid	812-70-4	PFAC	industrial wastewater
2-Perfluorooctyl ethanoic acid	27854-31-5	PFAC	industrial wastewater
bisphenol A	80-05-7	BP	industrial wastewater
bisphenol AF	1478-61-1	BP	industrial wastewater
bisphenol AP	1571-75-1	BP	industrial wastewater
bisphenol B	77-40-7	BP	industrial wastewater
bisphenol BP	1844-01-5	BP	industrial wastewater
bisphenol E	2081-08-5	BP	industrial wastewater
Bisphenol F - (suma 2,2' a 4,4')	620-92-8	BP	industrial wastewater
bisphenol G	127-54-8	BP	industrial wastewater
bisphenol M	13595-25-0	BP	industrial wastewater

bisphenol P	2167-51-3	BP	industrial wastewater
bisphenol S	80-09-1	BP	industrial wastewater
bisphenol Z	843-55-0	BP	industrial wastewater
2-Ethylhexyl diphenyl phosphate (EHDPP)	1241-94-7	FR	industrial wastewater
TCPP	13674-84-5	FR	industrial wastewater
Tri(2-butoxyethyl) phosphate (TBEP)	78-51-3	FR	industrial wastewater
Tri-(2-chloroisopropyl)phosphate (TDCPP)	13674-87-8	FR	industrial wastewater
Tributyl phosphate	126-73-8	FR	industrial wastewater
Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	FR	industrial wastewater
Tritolyl phosphate (TCP)	1330-78-5	FR	industrial wastewater
Sodium p-n-decylbenzenesulfonate	2627-06-7	S	wastewater
Sodium p-n-dodecylbenzenesulfonate	2211-98-5	S	wastewater
Sodium p-n-undecylbenzenesulfonate	20466-34-6	S	wastewater
Sodium p-n-tridecylbenzenesulfonate	14356-40-2	S	wastewater
BP-3 (Oxybenzone)	131-57-7	UV	wastewater
BP4 (Sulisobenzone)	4065-45-6	UV	wastewater
UV-320	3846-71-7	UV	wastewater
UV-350	115-96-8	UV	wastewater
UV-327	3864-99-1	UV	wastewater
UV-328	25973-55-1	UV	wastewater
Octocrylene	6197-30-4	UV	wastewater
PBSA (Ensulizole)	27503-81-7	UV	wastewater
1H-benzotriazole	95-14-7	CI	wastewater
1-methyl-1H-benzotriazole	13351-73-0	CI	wastewater
4-methyl-1H-benzotriazole	29878-31-7	CI	wastewater
5-methyl-1H-benzotriazole	136-85-6	CI	wastewater