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SCHEDULE 1

PART 2

Environmental Standards

Environmental Standards for Priority Substances and other Substances

Table 47

Environmental quality standards for priority substances and other substances for which standards have been set at EU-level

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
Number	Name of substance	Chemical Abstracts Service number	Date from which standards apply	All rivers and lakes		All transitional and coastal waters		EQS Biota ⁽¹⁾
				Good		Good		
				AA-EQS (µg/l) ⁽¹⁾ Inland surface waters ⁽²⁾	MAC-EQS (µg/l) ⁽³⁾ Inland surface waters ⁽²⁾	AA-EQS (µg/l) ⁽¹⁾	MAC-EQS (µg/l) ⁽³⁾	
1	Alachlor	15972-60-8		0.3	0.7	0.3	0.7	
2	Anthracene	120-12-7	14/09/15-20/12/15	0.1	0.1	0.1	0.1	
			22/12/15 onwards	0.1	0.1	0.1	0.1	
3	Atrazine	1912-24-9		0.6	2.0	0.6	2.0	
4	Benzene	71-43-2		10	50	8	50	
5	Brominated diphenylethers ⁽⁴⁾	32534-81-9	14/09/15-20/12/15	0.0005	not applicable	0.0002	not applicable	
			22/12/15 onwards	not applicable	0.14	not applicable	0.014	0.0085
6	Cadmium and its compounds (depending on water hardness classes) ⁽⁵⁾	7440-43-9		≤ 0.08 (class 1)	≤ 0.45 (class 1)	0.2	≤ 0.45 (class 1)	
				0.08 (class 2)	0.45 (class 2)		0.45 (class 2)	
				0.09	0.6		0.6	

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				(class 3)	(class 3)		(class 3)	
				0.15 (class 4)	0.9 (class 4)		0.9 (class 4)	
				0.25 (class 5)	1.5 (class 5)		1.5 (class 5)	
6a	Carbon-tetrachloride ⁽⁶⁾	56-23-5		12	not applicable	12	not applicable	
7	C10-13 Chloroalkanes ⁽⁷⁾	85535-84-8		0.4	1.4	0.4	1.4	
8	Chlorfenvinphos ⁽⁸⁾	470-90-6		0.1	0.3	0.1	0.3	
9	Chlorpyrifos (Chlorpyrifos-ethyl)	2921-88-2		0.03	0.1	0.03	0.1	
9a	Cyclodiene pesticides:			Σ=0.01	not applicable	Σ=0.005	not applicable	
	Aldrin ⁽⁶⁾	309-00-2						
	Dieldrin ⁽⁶⁾	60-57-1						
	Endrin ⁽⁶⁾	72-20-8						
	Isodrin ⁽⁶⁾	465-73-6						
9b	DDT total ⁽⁶⁾⁽⁸⁾	not applicable		0.025	not applicable	0.025	not applicable	
	Para-para-DDT ⁽⁶⁾	50-29-3		0.01	not applicable	0.01	not applicable	
10	1,2-Dichloroethane	107-06-2		10	not applicable	10	not applicable	
11	Dichloro-methane	75-09-2		20	not applicable	20	not applicable	

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12	Di(2-ethylhexyl)-phthalate (DEHP)	117-81-7		1.3	not applicable	1.3	not applicable	
13	Diuron	330-54-1		0.2	1.8	0.2	1.8	
14	Endosulfan	115-29-7		0.005	0.01	0.0005	0.004	
15	Fluoranthene	206-44-0	14/09/15-20/12/15	1	0.1	0.1	1	
			22/12/15 onwards	0.0063	0.12	0.0063	0.12	30
16	Hexachlorobenzene	118-74-1			0.05		0.05	10
17	Hexachlorobutadiene	87-68-3			0.6		0.6	55
18	Hexachloro-cyclohexane	608-73-1		0.02	0.04	0.002	0.02	
19	Isoproturon	34123-59-6		0.3	1.0	0.3	1.0	
20	Lead and its compounds	7439-92-1	14/09/15-21/12/15	not applicable	7.2	not applicable		
			22/12/15 onwards	1.2 ⁽¹²⁾	14	1.3	14	
21	Mercury and its compounds	7439-97-6			0.07		0.07	20
22	Naphthalene	91-20-3	14/09/15-21/12/15	not applicable	1.2	not applicable		
			22/12/15 onwards	2	130	2	130	
23	Nickel and its compounds	7440-02-0	14/09/15-21/12/15	not applicable	20	not applicable		
			22/12/15 onwards	4 ⁽¹²⁾	34	8.6	34	
24	Nonylphenol	104-40-5		0.3	2.0	0.3	2.0	

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	(4-Nonylphenol)							
25	Octylphenol ((4-(1,1',3,3'-tetramethylbutyl)-phenol))	140-66-9		0.1	not applicable	0.01	not applicable	
26	Pentachlorobenzene	608-93-5		0.007	not applicable	0.0007	not applicable	
27	Pentachlorophenol	87-86-5		0.4	1	0.4	1	
28	Polyaromatic hydrocarbons (PAH) ⁽¹⁰⁾			not applicable	not applicable	not applicable	not applicable	
	Benzo(a)pyrene	50-32-8	14/09/15-20/12/15	0.1	0.1	0.05	0.1	
			22/12/15 onwards	1.7 x 10 ⁻⁴	0.27	1.7 x 10 ⁻⁴	0.027	5
	Benzo(b)fluoranthene	205-99-2	14/09/15-21/12/15 Σ=0.03	not applicable	not applicable	Σ=0.03	not applicable	
			22/12/15 onwards	see footnote 10	0.017	see footnote 10	0.017	see footnote 10
	Benzo(k)fluoranthene	207-08-9	14/09/15-21/12/15 Σ=0.03	not applicable	not applicable	Σ=0.03	not applicable	
			22/12/15 onwards	see footnote 10	0.017	see footnote 10	0.017	see footnote 10
	Benzo(g,h,i)-perylene	191-24-2	14/09/15-21/12/15 Σ=0.02	not applicable	not applicable	Σ=0.02	not applicable	
			22/12/15 onwards	see footnote 10	8.2 x 10 ⁻³	see footnote 10	8.2 x 10 ⁻⁴	see footnote 10

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	Indeno(1,2,3-cd)-pyrene	193-39-5	14/09/15-21/12/15	Σ=0.02	not applicable	Σ=0.02	not applicable	
			22/12/15 onwards	see footnote 10	not applicable	see footnote 10	not applicable	see footnote 10
29	Simazine	122-34-9		1	4	1	4	
29a	Tetrachloroethylene	127-18-4		10	not applicable	10	not applicable	
29b	Trichloroethylene	79-01-6		10	not applicable	10	not applicable	
30	Tributyltin compounds (Tributhyltin-cation)	36643-28-4		0.0002	0.0015	0.0002	0.0015	
31	Trichlorobenzene	12002-48-1		0.4	not applicable	0.4	not applicable	
32	Trichloromethane	67-66-3		2.5	not applicable	2.5	not applicable	
33	Trifluralin	1582-09-8		0.03	not applicable	0.03	not applicable	
34	Dicofol	115-32-2	22/12/18 onwards	1.3 x 10 ⁻³	not applicable ⁽⁹⁾	3.2 x 10 ⁻⁵	not applicable ⁽⁹⁾	33
35	Perfluorooctane sulfonic acid and its derivatives (PFOS)	1763-23-1	22/12/18 onwards	6.5 x 10 ⁻⁴	36	1.3 x 10 ⁻⁴	7.2	9.1
36	Quinoxifen	124495-18-2	22/12/18 onwards	0.15	2.7	0.015	0.54	
37	Dioxins and dioxin-like compounds	See footnote 9 in Annex X to	22/12/18 onwards		not applicable		not applicable	Sum of PCDD +PCDF +PCB-DL

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		Directive 2000/60/EC						0.0065 µg.kg ⁻¹ TEQ ⁽¹³⁾
38	Aclonifen	74070-46-3	22/12/18 onwards	0.12	0.12	0.012	0.012	
39	Bifenox	42576-02-3	22/12/18 onwards	0.012	0.04	0.0012	0.004	
40	Cybutryne	28159-98-0	22/12/18 onwards	0.0025	0.016	0.0025	0.016	
41	Cypermethrin	52315-07-8	22/12/18 onwards	8 x 10 ⁻⁵	6 x 10 ⁻⁴	8 x 10 ⁻⁶	6 x 10 ⁻⁵	
42	Dichlorvos	62-73-7	22/12/18 onwards	6 x 10 ⁻⁴	7 x 10 ⁻⁴	6 x 10 ⁻⁵	7 x 10 ⁻⁵	
43	Hexabromo-cyclododecane (HBCDD)	See footnote 11 in Annex X to Directive 2000/60/EC	22/12/18 onwards	0.0016	0.5	0.0008	0.05	167
44	Heptachlor and heptachlor epoxide	76-44-8 / 10241-37-8	22/12/18 onwards	2 x 10 ⁻⁷	3 x 10 ⁻⁴	1 x 10 ⁻⁸	3 x 10 ⁻⁵	6.7 x 10 ⁻³
45	Terbutryn	886-50-0	22/12/18 onwards	0.065	0.34	0.0065	0.034	

(1) This parameter is the EQS expressed as an annual average value (AA-EQS). Unless otherwise specified, it applies to the total concentration of all isomers.

(2) Inland surface waters encompass rivers and lakes and related artificial or heavily modified water bodies.

(3) This parameter is the Environmental Quality Standard expressed as a maximum allowable concentration (MAC-EQS). Where the MAC-EQS are marked as “not applicable”, the AA-EQS values are considered protective against short-term pollution peaks in continuous discharges since they are significantly lower than the values derived on the basis of acute toxicity.

(4) For the group of priority substances covered by brominated diphenylethers (No 5), the EQS refers to the sum of the concentrations of congener numbers 28, 47, 99, 100, 153 and 154.

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- (5) For cadmium and its compounds (No 6) the EQS values vary dependent upon the hardness of the water as specified in five class categories (class 1: <40mg CaCO₃/l, class 2: 40 to <50mg CaCO₃/l, class 3: 50 to <100mg CaCO₃/l, class 4: 100 to <200mg CaCO₃/l and class 5: ≥200mg CaCO₃/l).
- (6) This substance is not a priority substance but one of the other pollutants for which the EQS are identical to those laid down in the legislation that applied prior to 13 January 2009.
- (7) No indicative parameter is provided for this group of substances. The indicative parameter(s) must be defined through the analytical method.
- (8) DDT total comprises the sum of the isomers 1,1,1-trichloro-2,2 bis (*p*-chlorophenyl) ethane (CAS number 50-29-3; EU number 200-024-3); 1,1,1-trichloro-2 (*o*-chlorophenyl)-2-(*p*-chlorophenyl) ethane (CAS number 789-02-6; EU number 212-332-5); 1,1-dichloro-2,2 bis (*p*-chlorophenyl) ethylene (CAS number 72-55-9; EU number 200-784-6); and 1,1-dichloro-2,2 bis (*p*-chlorophenyl) ethane (CAS number 72-54-8; EU number 200-783-0).
- (9) There is insufficient information available to set a MAC-EQS for these substances.
- (10) For the group of priority substances of polyaromatic hydrocarbons (PAH) (No 28), the biota EQS and corresponding AA-EQS in water refer to the concentration of benzo(a)pyrene, on the toxicity of which they are based. Benzo(a)pyrene can be considered as a marker for the other PAHs, hence only benzo(a)pyrene needs to be monitored for comparison with the biota EQS or the corresponding AA-EQS in water.
- (11) Unless otherwise indicated, the biota EQS relate to fish. An alternative biota taxon, or another matrix, may be monitored instead, as long as the EQS applied provides an equivalent level of protection. For substances numbered 15 (Fluoranthene) and 28 (PAHs), the biota EQS refers to crustaceans and molluscs. For the purpose of assessing chemical status, monitoring of Fluoranthene and PAHs in fish is not appropriate. For substance number 37 (Dioxins and dioxin-like compounds), the biota EQS relates to fish, crustaceans and molluscs, in line with section 5.3 of the Annex to Commission Regulation (EU) No 1259/2011 of 2 December 2011 amending Regulation (EC) No 1881/2006 as regards maximum levels for dioxins, dioxin-like PCBs and non-dioxin-like PCBs in foodstuffs (OJ L 320, 3.12.2011, P.18).
- (12) These EQS refer to bioavailable concentrations of the substances.
- (13) PCDD: polychlorinated dibenzo-p-dioxins; PCDF: polychlorinated dibenzofurans; PCB-DL: dioxin-like polychlorinated biphenyls; TEQ: toxic equivalents according to the World Health Organisation 2005 Toxic Equivalence Factors.

Application of the standards set out in Table 47

For any given surface water body, applying the AA-EQS means that, for each representative monitoring point within the water body, the arithmetic mean of the concentrations measured at different times during the year does not exceed the standard.

The calculation of the arithmetic mean, the analytical method used and, where there is no appropriate analytical method meeting the minimum performance criteria, the method of applying a standard must be in accordance with implementing acts adopting technical specifications for chemical monitoring and quality of analytical results, in accordance with the Water Framework Directive.

For any given surface water body, applying the MAC-EQS means that the measured concentration at any representative monitoring point within the water body does not exceed the standard.

However, in accordance with section 1.3.4. of Annex V to the Water Framework Directive, the Department may introduce statistical methods, such as a percentile calculation, to ensure an acceptable level of confidence and precision for determining compliance with the MAC-EQS. Where the Department introduces statistical methods, such methods must apply with rules laid down in accordance with the examination procedure referred to in Article 9(2) of Directive [2008/105/EC](#).

With the exception of cadmium, lead, mercury and nickel (hereinafter “metals”) the standards set out in Table 47 are expressed as total concentrations in the whole water sample. In the case of metals the standards refer to the dissolved concentration i.e. the dissolved phase of a water sample obtained by filtration through a 0.45 µm filter or any equivalent pre-treatment, or, where specifically indicated, to the bioavailable concentration.

The Department may, when assessing the monitoring results against the standards, take into account:
natural background concentrations for metals and their compounds, if they prevent compliance with the standard; and
hardness, pH, dissolved organic carbon or other water quality parameters that affect the bioavailability of metals, the bioavailable concentrations being determined using appropriate bioavailability modelling.