

ANNEX 4

Chemical summary tables

Table A4.1 Chemicals excluded from guideline value derivation

Chemical	Reason for exclusion
Amitraz	Degrades rapidly in the environment and is not expected to occur at measurable concentrations in drinking-water supplies
Beryllium	Unlikely to occur in drinking-water
Chlorobenzilate	Unlikely to occur in drinking-water
Chlorothalonil	Unlikely to occur in drinking-water
Cypermethrin	Unlikely to occur in drinking-water
Deltamethrin	Unlikely to occur in drinking-water
Diazinon	Unlikely to occur in drinking-water
Dinoseb	Unlikely to occur in drinking-water
Ethylene thiourea	Unlikely to occur in drinking-water
Fenamiphos	Unlikely to occur in drinking-water
Formothion	Unlikely to occur in drinking-water
Hexachlorocyclohexanes (mixed isomers)	Unlikely to occur in drinking-water
MCPB	Unlikely to occur in drinking-water
Methamidophos	Unlikely to occur in drinking-water
Methomyl	Unlikely to occur in drinking-water
Mirex	Unlikely to occur in drinking-water
Monocrotophos	Has been withdrawn from use in many countries and is unlikely to occur in drinking-water
Oxamyl	Unlikely to occur in drinking-water
Phorate	Unlikely to occur in drinking-water
Propoxur	Unlikely to occur in drinking-water
Pyridate	Not persistent and only rarely found in drinking-water
Quintozene	Unlikely to occur in drinking-water
Toxaphene	Unlikely to occur in drinking-water
Triazophos	Unlikely to occur in drinking-water
Tributyltin oxide	Unlikely to occur in drinking-water
Trichlorfon	Unlikely to occur in drinking-water

Table A4.2 Chemicals for which guideline values have not been established

Chemical	Reason for not establishing a guideline value
Aluminium	Owing to limitations in the animal data as a model for humans and the uncertainty surrounding the human data, a health-based guideline value cannot be derived; however, practicable levels based on optimization of the coagulation process in drinking-water plants using aluminium-based coagulants are derived: 0.1 mg/litre or less in large water treatment facilities, and 0.2 mg/litre or less in small facilities
Ammonia	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Asbestos	No consistent evidence that ingested asbestos is hazardous to health
Bentazone	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Bromochloroacetate	Available data inadequate to permit derivation of health-based guideline value
Bromochloroacetonitrile	Available data inadequate to permit derivation of health-based guideline value
Carbaryl	Generally occurs in drinking-water at concentrations well below those at which toxic effects may occur
Chloral hydrate (trichloroacetaldehyde) Chloride	Occurs in drinking-water at concentrations well below those at which toxic effects may occur Not of health concern at levels found in drinking-water ^a
Chlorine dioxide	Guideline value not established because of the rapid breakdown of chlorine dioxide and because the chlorite provisional guideline value is adequately protective for potential toxicity from chlorine dioxide
Chloroacetones	Available data inadequate to permit derivation of health-based guideline values for any of the chloroacetones
Chlorophenol, 2-	Available data inadequate to permit derivation of health-based guideline value
Chloropicrin	Available data inadequate to permit derivation of health-based guideline value
Dialkyltins	Available data inadequate to permit derivation of health-based guideline values for any of the dialkyltins
Dibromoacetate	Available data inadequate to permit derivation of health-based guideline value
Dichloramine	Available data inadequate to permit derivation of health-based guideline value
Dichlorobenzene, 1,3-	Toxicological data are insufficient to permit derivation of health-based guideline value
Dichloroethane, 1,1-	Very limited database on toxicity and carcinogenicity
Dichloroethene, 1,1-	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Dichlorophenol, 2,4-	Available data inadequate to permit derivation of health-based guideline value
Dichloropropane, 1,3-	Data insufficient to permit derivation of health-based guideline value
Di(2-ethylhexyl)adipate	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Diffenbuzuron	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Diquat	Rarely found in drinking-water, but may be used as an aquatic herbicide for the control of free-floating and submerged aquatic weeds in ponds, lakes and irrigation ditches
Endosulfan	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Fenitrothion	Occurs in drinking-water at concentrations well below those at which toxic effects may occur

ANNEX 4. CHEMICAL SUMMARY TABLES

Fluoranthene	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Formaldehyde	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Glyphosate and AMPA	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Hardness	Not of health concern at levels found in drinking-water ^a
Heptachlor and heptachlor epoxide	Occurs in drinking-water at concentrations well below those at which toxic effects may occur

continued

Table A4.2 Continued

Chemical	Reason for not establishing a guideline value
Hexachlorobenzene	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Hydrogen sulfide	Not of health concern at levels found in drinking-water ^a
Inorganic tin	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Iodine	Available data inadequate to permit derivation of health-based guideline value, and lifetime exposure to iodine through water disinfection is unlikely
Iron	Not of health concern at concentrations normally observed in drinking-water, and taste and appearance of water are affected below the health-based value
Malathion	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Methoprene	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Methyl parathion	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Methyl <i>tertiary</i> -butyl ether (MTBE)	Any guideline that would be derived would be significantly higher than concentrations at which MTBE would be detected by odour
Monobromoacetate	Available data inadequate to permit derivation of health-based guideline value
Monochlorobenzene	Occurs in drinking-water at concentrations well below those at which toxic effects may occur, and health-based value would far exceed lowest reported taste and odour threshold
MX	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Novaluron	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Parathion	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Permethrin	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Petroleum products	Taste and odour will in most cases be detectable at concentrations below those concentrations of concern for health, particularly with short-term exposure
pH	Not of health concern at levels found in drinking-water ^b
Phenylphenol, 2- and its sodium salt	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Pirimiphos-methyl	Not recommended for direct application to drinking-water unless no other effective and safe treatments are available
Propanil	Readily transformed into metabolites that are more toxic; a guideline value for the parent compound is considered inappropriate, and there are inadequate data to enable the derivation of guideline values for the metabolites
Pyriproxyfen	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water ^c
Silver	Available data inadequate to permit derivation of health-based guideline value
Sodium Sulfate	Not of health concern at levels found in drinking-water ^a
Total dissolved solids (TDS)	Not of health concern at levels found in drinking-water ^a
Trichloramine	Available data inadequate to permit derivation of health-based guideline value

GUIDELINES FOR DRINKING-WATER QUALITY

Trichloroacetonitrile	Available data inadequate to permit derivation of health-based guideline value
Trichlorobenzenes (total)	Occurs in drinking-water at concentrations well below those at which toxic effects may occur, and health-based value would exceed lowest reported odour threshold
Trichloroethane, 1,1,1-	Occurs in drinking-water at concentrations well below those at which toxic effects may occur
Zinc	Not of health concern at concentrations normally observed in drinking-water ^a

^a May affect acceptability of drinking-water (see chapter 10).

^b An important operational water quality parameter.

^c A guideline value for pyriproxyfen used for agricultural purposes is given in Table A4.3.

ANNEX 4. CHEMICAL SUMMARY TABLES

Table A4.3 Guideline values for chemicals that are of health significance in drinking-water

Chemical	Guideline value ^a (mg/litre)	Remarks
Acrylamide	0.0005 ^b	
Alachlor	0.02 ^b	
Aldicarb	0.01	Applies to aldicarb sulfoxide and aldicarb sulfone
Aldrin and dieldrin	0.00003	For combined aldrin plus dieldrin
Antimony	0.02	
Arsenic	0.01 (P)	
Atrazine	0.002	
Barium	0.7	
Benzene	0.01 ^b	
Benzo[<i>a</i>]pyrene	0.0007 ^b	
Boron	0.5 (T)	
Bromate	0.01 ^b (A, T)	
Bromodichloromethane	0.06 ^b	
Bromoform	0.1	
Cadmium	0.003	
Carbofuran	0.007	
Carbon tetrachloride	0.004	
Chlorate	0.7 (D)	
Chlordane	0.0002	
Chlorine	5 (C)	For effective disinfection, there should be a residual concentration of free chlorine of ≥ 0.5 mg/litre after at least 30 min contact time at pH <8.0
Chlorite	0.7 (D)	
Chloroform	0.3	
Chlorotoluron	0.03	
Chlorpyrifos	0.03	
Chromium	0.05 (P)	For total chromium
Copper	2	Staining of laundry and sanitary ware may occur below guideline value
Cyanazine	0.0006	
Cyanide	0.07	
Cyanogen chloride	0.07	For cyanide as total cyanogenic compounds
2,4-D (2,4-dichlorophenoxyacetic acid)	0.03	Applies to free acid
2,4-DB	0.09	
DDT and metabolites	0.001	
Di(2-ethylhexyl)phthalate	0.008	
Dibromoacetonitrile	0.07	
Dibromochloromethane	0.1	
1,2-Dibromo-3-chloropropane	0.001 ^b	
1,2-Dibromoethane	0.0004 ^b (P)	
Dichloroacetate	0.05 ^b (T, D)	
Dichloroacetonitrile	0.02 (P)	
Dichlorobenzene, 1,2-	1 (C)	

continued

Table A4.3 *Continued*

Chemical	Guideline value (mg/litre)	Remarks
Dichlorobenzene, 1,4-	0.3 (C)	
Dichloroethane, 1,2-	0.03 ^b	
Dichloroethene, 1,2-	0.05	
Dichloromethane	0.02	
1,2-Dichloropropane (1,2-DCP)	0.04 (P)	
1,3-Dichloropropene	0.02 ^b	
Dichlorprop	0.1	
Dimethoate	0.006	
Dioxane, 1,4-	0.05 ^b	
Edetic acid (EDTA)	0.6	Applies to the free acid
Endrin	0.0006	
Epichlorohydrin	0.0004 (P)	
Ethylbenzene	0.3 (C)	
Fenoprop	0.009	
Fluoride	1.5	Volume of water consumed and intake from other sources should be considered when setting national standards
Hexachlorobutadiene	0.0006	
Isoproturon	0.009	
Lead	0.01	
Lindane	0.002	
Manganese	0.4 (C)	
MCPA	0.002	
Mecoprop	0.01	
Mercury	0.006	For inorganic mercury
Methoxychlor	0.02	
Metolachlor	0.01	
Microcystin-LR	0.001 (P)	For total microcystin-LR (free plus cell-bound)
Molinate	0.006	
Molybdenum	0.07	
Monochloramine	3	
Monochloroacetate	0.02	
Nickel	0.07	
Nitrate (as NO ₃ ⁻)	50	Short-term exposure
Nitritotriacetic acid (NTA)	0.2	
Nitrite (as NO ₂ ⁻)	3	Short-term exposure
	0.2 (P)	Long-term exposure
N-Nitrosodimethylamine (NDMA)	0.1	
Pendimethalin	0.02	
Pentachlorophenol	0.009 ^b (P)	
Permethrin	0.3	Only when used as a larvicide for public health purposes
Pyriproxyfen	0.3	
Pyriproxyfen	0.3	This is not to be used as a guideline value where pyriproxyfen is added to water for public health purposes.
Selenium	0.01	
Simazine	0.002	
Sodium dichloroisocyanurate	50	As sodium dichloroisocyanurate
	40	As cyanuric acid

GUIDELINES FOR DRINKING-WATER QUALITY

Styrene	0.02 (C)
2,4,5-T	0.009
Terbutylazine	0.007
Tetrachloroethene	0.04
Toluene	0.7 (C)

ANNEX 4. CHEMICAL SUMMARY TABLES

Table A4.3 *Continued*

Chemical	Guideline value (mg/litre)	Remarks
Trichloroacetate	0.2	
Trichloroethene	0.02 (P)	
Trichlorophenol, 2,4,6-	0.2 ^b (C)	
Trifluralin	0.02	
Trihalomethanes		The sum of the ratio of the concentration of each to its respective guideline value should not exceed 1
Uranium	0.015 (P,T)	Only chemical aspects of uranium addressed
Vinyl chloride	0.0003 ^b	
Xylenes	0.5 (C)	

^a P = provisional guideline value, as there is evidence of a hazard, but the available information on health effects is limited; T = provisional guideline value because calculated guideline value is below the level that can be achieved through practical treatment methods, source protection, etc.; A = provisional guideline value because calculated guideline value is below the achievable quantification level; D = provisional guideline value because disinfection is likely to result in the guideline value being exceeded; C = concentrations of the substance at or below the health-based guideline value may affect the appearance, taste or odour of the water, leading to consumer complaints.

^b For substances that are considered to be carcinogenic, the guideline value is the concentration in drinking-water associated with an upper-bound excess lifetime cancer risk of 10^{-5} (one additional cancer per 100 000 of the population ingesting drinking-water containing the substance at the guideline value for 70 years). Concentrations associated with upper-bound estimated excess lifetime cancer risks of 10^{-4} and 10^{-6} can be calculated by multiplying and dividing, respectively, the guideline value by 10.