

Water Quality Standards

Updated April 2009

Microbiological Parameters (Mandatory) Schedule 1			Chemical Parameters (Mandatory) Schedule 1		
Part I: Directive Requirements			Part I: Directive Requirements <i>continued</i>		
standard for	what it means	PCV	standard for	what it means	PCV
Escherichia coli (E.Coli) Enterococci	These bacteria are specific inhabitants of animal or human gut and are indicators of possible contamination with harmful bacteria. Because they occur in large numbers and survive longer than many harmful bacteria, they are good indicators of water quality. Any detection is investigated as a matter of urgency.	0 per 100ml At Customers' Taps	1,2-dichloroethane Tetrachloroethane & Trichloroethene	These substances arise from industrial processes and can be removed from the water by treatment. They are commonly known as chlorinated or industrial solvents.	3 µg/l 10 µg/l as a sum of both parameters
Part II: National Requirements			Epichlorohydrin	Rarely found in water, but arising from the manufacture of epoxy resins and industrial usage.	0.1 µg/l
Total Coliform bacteria	These are bacteria which provide a general and very sensitive measure of microbiological quality. They are widely distributed in nature occurring in soil, vegetation and waste matter. All detections are responded to urgently, but because they are not normally of direct health significance, a very small number of exceedances can be acceptable provided appropriate checks have been taken.	0 per 100ml At Water Treatment Works 0 per 100ml At Service Reservoirs In 95% of samples	Fluoride	Fluoride occurs naturally in water at varying levels. It is also added to the public supply in some areas at the request of the Strategic Health Authority to help protect teeth from decay.	1.5 mg/l
Chemical Parameters (Mandatory) Schedule 1			Lead	High lead levels can be a health risk particularly to young children. Water supplied from our treatment works is virtually lead free. Lead in drinking water arises from the presence of lead service pipes (typically in older properties) and the use of lead in internal plumbing. Soft water can dissolve lead pipes and therefore we treat water with phosphate which coats the pipes and reduces the tendency for lead to dissolve.	25 µg/l (In 2013 this reduces to 10 µg/l)
Part I: Directive Requirements (applies at customers' taps unless otherwise stated)			Acrylamide	Acrylamide does not occur naturally in water but can be detected if it is used in the water treatment process.	0.1 µg/l
Antimony	These substances are rarely found in drinking water. On the very rare occasions that they do occur, they are normally derived from industrial processes or from the underlying geology through which the water has passed. Antimony can also be leached from non-lead solder in domestic plumbing. The standards provide wide safety margins on known levels of human toxicity.	5 µg/l	Nitrate	The presence of nitrate and nitrite in water is primarily associated with intensive farming and the use of fertilisers and organic manure. Nitrates can percolate through the ground and enter groundwater aquifers or run off into rivers. Nitrite occurs at much lower levels in the environment than nitrate but conversion from one form to another occurs readily. The Regulations also require that the nitrate:nitrite ratio: [nitrate]/50+[nitrite]/3 is ≤1	50 mg/l
Arsenic		10 µg/l	Nitrite		0.5 mg/l
Boron		1 µg/l	At Customers' Taps		
Cadmium		5 µg/l	0.1 mg/l		At Water Treatment Works
Chromium		50 µg/l			
Cyanide		50 µg/l			
Mercury		1 µg/l			
Nickel		20 µg/l			
Selenium	10 µg/l				
Benzene	Rarely found in water and derived from petroleum products or other industrial uses.	1.0 µg/l	Pesticides (Individual)	Pesticides comprise a wide variety of different chemicals including insecticides, herbicides, fungicides and algicides. They are widely used in agriculture and by local authorities and gardeners. Levels detected in raw waters are far below those which would impact human health, however to ensure traces are removed, treatment processes such as Granular Activated Carbon filtration are used.	0.1 µg/l 0.03 µg/l for: Aldrin, Dieldrin, Heptachlor and Heptachlor Epoxide
Benzo(a)pyrene	Polycyclic aromatic hydrocarbons (PAHs) are rarely found in water. Where they do occur, the cause is usually the historic use of coal tar pitch to line iron mains.	0.01 µg/l	Pesticides totals	0.5 µg/l	
Polycyclic aromatic hydrocarbons - sum of: • Benzo(b)fluoranthene • Benzo(k)fluoranthene • Benzo(ghi)perylene • Indeno(1,2,3-cd)pyrene		0.1 µg/l			
Bromate	Bromate is not usually present in water, but can arise as a by-product of the disinfection process.	10 µg/l	Trihalomethanes - sum of: • chloroform • bromoform • dibromochloromethane • bromodichloromethane	Trihalomethanes are formed as a by-product of disinfection when chlorine comes into contact with natural organic matter within the water.	100 µg/l
Copper	Traces of copper are occasionally found in water and are typically related to the condition of the internal plumbing at customers' properties.	2 mg/l	Vinyl Chloride	Not naturally found in water. Arises from industrial usage.	0.5 µg/l

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Chemical Parameters (Mandatory) Schedule 1			Indicator Parameters Schedule 2		
Part II: National Requirements (applies at customers' taps unless otherwise stated)					
standard for	what it means	PCV	standard for	what it means	PCV
Aluminium	Aluminium occurs naturally in water and can also be used during the treatment process to remove impurities. Nearly all aluminium is removed from the water at the treatment stage before it enters supply.	200 µg/l	Ammonium	Ammonia occurs naturally in some water sources. It does not pose any health concerns however it can be removed through treatment. Ammonia is sometimes added in a controlled way during water treatment as part of the final disinfection stage (Chloramination).	0.5 mg/l At Customers' Taps
Colour	Upland waters passing through peaty soils can have a natural yellowish tinge. The colour is not harmful and is removed through treatment.	20 mg/l Pt/Co	Chloride	Chloride in drinking water is derived from the underlying geology of the source water. It is not harmful to health.	250 mg/l At Supply Point*
Iron	Iron occurs naturally in water and can also be used during the treatment process to remove impurities. Iron may also be present in drinking water as a result of corrosion of cast iron mains. Iron at levels found in drinking water does not cause health concerns but it can sometimes give water a reddish or yellowish tint if not removed.	200 µg/l	Clostridium Perfringens (including spores)	Clostridia have a widespread environmental distribution. The spores are resistant to chlorine and can persist in the environment for many years. Clostridia can be used as a good indicator of the efficiency of water treatment.	0 per 100 ml At Supply Point*
Manganese	Manganese occurs naturally in water and can cause water to stain surfaces such as the inside of kettles. Like iron, manganese is not harmful to health at levels typically found in drinking water.	50 µg/l	pH (hydrogen ion concentration)	pH is a measure of the acidity or alkalinity of the water. A pH of 7.0 is neutral.	6.5 min and 9.5 max At Customers' Taps
Taste & Odour	Used to check whether the water has any unusual taste or smell.	Acceptable to customers and no abnormal change	Total Coliform Bacteria	These are bacteria which provide a general and very sensitive measure of microbiological quality. They are widely distributed in nature occurring in soil, vegetation and waste matter.	0 per 100 ml At Customers' Taps
Sodium	Sodium is a naturally occurring mineral which is not typically found in large quantities in drinking water. Some types of domestic water softeners can increase sodium content to unhealthily high levels.	200 mg/l	Colony Count at 37°C	Small amounts of harmless bacteria may be present in treated water. Monitoring of these bacteria can be used to monitor trends in water quality and to detect any sudden deterioration.	No abnormal change At Customers' Taps Service Reservoirs and Water Treatment Works
Tetrachloromethane	Commonly known as a chlorinated solvent, tetrachloromethane is derived from industrial processes and can be removed through treatment.	3 µg/l	Colony Count at 22°C		
Turbidity	Turbidity is a measure of particulate matter suspended in the water.	4 NTU	Conductivity	Conductivity is a measure of the natural mineral salts contained in water.	2500 µS/cm at 20°C At Supply Point*
			Sulphate	Sulphate occurs naturally in water and is usually derived from mineral deposits. High concentrations may affect the taste of the water supply.	250 mg/l At Supply Point*
			Total Indicative Dose (for radioactivity)	Total Indicative Dose (TID) is a measure of the total intake of radiation per annum excluding tritium, potassium-40, radon and radon decay products. Radiation is produced naturally from underlying geology.	0.1mSv/year At Supply Point*
			Tritium (radioactivity)	Tritium occurs in water at very low levels and is derived from industrial processes.	100 Bq/l At Supply Point*
			Total Organic Carbon (TOC)	Naturally occurring TOC is monitored to ensure that water treatment processes are working as effectively as possible.	No abnormal change At Supply Point*
			Turbidity	Turbidity is a measure of particulate matter suspended in the water.	1 NTU At Water Treatment Works

* may be monitored from samples of water leaving treatment works or other supply point, as no significant change during distribution.