

## Guideline Information for Common Components in Drinking Water

Component	Level of concern		Comments
E. coli	Maximum Allowable Value Health significance	<1cfu per 100mL	<ul style="list-style-type: none"> <li>• Presence indicates faecal contamination.</li> <li>• Solid waste material that comes from the bowels of humans and other animals.</li> </ul>
pH	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>• The pH of a water is a measure of its acidity or basicity. pH is present in all waters at some level. It is measured on a scale of 0-14 with 7 being neutral.</li> <li>• A pH value below 7.0 can cause corrosion of metals in distribution systems e.g. rain water, drawn from the roof may have low pH.</li> <li>• A pH value above 8.5 can promote calcium carbonate precipitation and scale formation in pipes and hot water cylinders. It reduces the effectiveness of chlorine disinfection.</li> </ul>
	Guideline Value Aesthetic significance	7.0-8.5	
Free Carbon Dioxide	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>• Carbon dioxide causes acidity in water and can be associated with corrosion of metal fittings in supply systems, especially copper.</li> </ul>
	Guideline Value Aesthetic significance	No Std.	
Acidity	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>• Refer to Free carbon dioxide.</li> </ul>
	Guideline Value Aesthetic significance	No Std.	
Alkalinity	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>• It is a waters' natural buffering capacity to help buffer against corrosive properties.</li> </ul>
	Guideline Value Aesthetic significance	No Std.	
Conductivity	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>• Measures dissolved ions which are mostly attributed to chloride, sodium, calcium and magnesium concentrations.</li> </ul>
	Guideline Value Aesthetic significance	No Std.	
Turbidity	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>• Turbidity, due to suspended material in water, causes cloudiness. Much of the suspended material cannot be seen with the naked eye, but as it reflects light, it is seen as cloudiness.</li> <li>• Excessive levels can protect micro-organisms from disinfection with chlorine. Can also be a source of nutrients for further growth.</li> </ul>
	Guideline Value Aesthetic significance	2.5 NTU	
Nitrate-N	Maximum Allowable Value Health Significance	11.2 g/m <sup>3</sup> as NO-N	<ul style="list-style-type: none"> <li>• Elevated levels can indicate contamination by fertilisers or nearby septic tank effluent pond.</li> <li>• Can cause a health disorder in babies called Blue Baby (metahaemoglobinemia) in infants under six months.</li> </ul>
	Guideline Value Aesthetic significance	No Std.	

Component	Level of Concern		Comments
Chloride	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>Affects taste.</li> <li>Above 250 g/m<sup>3</sup> chloride makes water corrosive.</li> <li>It is a major component of seawater.</li> </ul>
	Guideline Value Aesthetic significance	250 g/m <sup>3</sup>	
Calcium	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>Calcium is a component of hardness.</li> </ul>
	Guideline Value Aesthetic significance	No Std.	
Magnesium	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>Magnesium is a component of hardness.</li> </ul>
	Guideline Value Aesthetic significance	No Std.	
Hardness	Maximum Allowable Value Health Significance	No Std.	<ul style="list-style-type: none"> <li>Total hardness represents the calcium and magnesium content.</li> <li>Excessive hardness &gt;180 g/m<sup>3</sup>, can cause scale formation in piping, heating elements, and cause washing problems.</li> <li>Very low hardness levels &lt;61 g/m<sup>3</sup> can make water corrosive. Below this level the water is termed to be "Soft".</li> </ul>
	Guideline Value Aesthetic significance	200 g/m <sup>3</sup>	
Copper	Maximum Allowable Value Health Significance	2 g/m <sup>3</sup>	<ul style="list-style-type: none"> <li>Copper in water rarely occurs naturally.</li> <li>Above 5 g/m<sup>3</sup> water will appear blue and has a bitter taste.</li> <li>Blue staining of fixtures is an indication of copper presence.</li> </ul>
	Guideline Value Aesthetic significance	1 g/m <sup>3</sup>	
Iron	Maximum Allowable Value Health Significance	No Std	<ul style="list-style-type: none"> <li>Common in bore waters.</li> <li>Reddish-brown iron sediments cause discolouration of laundry and basins. This occurs when the level is above 0.2 g/m<sup>3</sup>.</li> <li>Above 0.2 g/m<sup>3</sup> levels can affect taste and alter the colour of prepared drinks and food.</li> </ul>
	Guideline Value Aesthetic significance	0.2 g/m <sup>3</sup>	
Manganese	Maximum Allowable Value Health Significance	0.5 g/m <sup>3</sup>	<ul style="list-style-type: none"> <li>Gives similar problems to iron, but deposits are black or dark brown.</li> </ul>
	Guideline Value Aesthetic significance	0.05 g/m <sup>3</sup>	

**Maximum Allowable Value for Health significance** as stated in the Drinking Water Standards for NZ 2000

**Aesthetic:** Water constituents which affect the water's appearance, taste but are not directly a health concern.

**Corrosive or soft water:** Will slowly dissolve metal pipes and cylinders causing taste and staining problems. Most natural waters, particularly bore and rain water are corrosive to some extent.

**Explanation of units used**

**g/m<sup>3</sup>:** Grams per Cubic Meter. Same as mg/L (milligrams per litre) or ppm (parts per million).

**TCU:** True Colour Units

**NTU:** Nephelometric Turbidity Units

**Cfu:** Colony Forming Units

**No Standard:** No guideline values are available for this component

**If your drinking water** exceeds any of the above limits please consult your local health authority.

If you require further explanation of your results please phone Cawthron Laboratory Services on 03 548 2839