

## Chemical

For each of these characteristics, values should be below or equal to the corresponding *Australian Drinking Water Guideline* value.

### Fluoride 1.5 mg/L

Fluoride is important for preventing dental decay, but can also be harmful at high concentrations. It is found naturally in rocks and waters, and is sometimes present in industrial air pollution.

### Lead 0.01 mg/L

Lead is a toxic heavy metal. It may enter a water supply from natural sources or from lead plumbing, solder, or roof flashings.

### Nickel 0.02 mg/L

Long term exposure to nickel can cause kidney problems. Nickel may enter water supplies from coal-fired power stations or in small concentrations from nickel-plated tap and plumbing fittings.

### Nitrate 50 mg/L & Nitrite 3 mg/L

Excessive nitrate or nitrite in water can lead to occurrences of 'blue baby syndrome' in infants fed with formula made up using the water. The decomposition of organic wastes such as manure can introduce nitrate to water supplies. Nitrite is only likely to be present in water that has not been aerated.

### Manganese 0.1 mg/L

Although harmful at higher concentrations, the guideline value for manganese is set to avoid an undesirable taste and staining of laundry and plumbing fittings. Manganese is likely to enter water supplies from natural sources or from contaminated sites.

### Sulfate 250 mg/L

Although harmful at higher concentrations, the guideline value for sulfate ions is set to avoid an undesirable taste in water. Under some conditions it can also contribute to corrosion of plumbing fittings. Sulfate at levels greater than 500 mg/L can have purgative effects. Sulfate ions are likely to enter water supplies from natural sources. The highest concentrations are likely to be seen in groundwater.

## Physical

For each of these characteristics, values should be below or equal to the corresponding Australian Drinking Water Guideline value (or for pH, between 6.5 and 8.5):

### pH 6.5-8.5

A pH of 7 is neutral, greater than 7 is alkaline, and less than 7 is acidic. Drinking water with increased acidity (pH less than 6.5) can corrode plumbing fittings and pipes. Apart from the damage caused, this can release harmful metals such as lead or copper. Drinking water with increased alkalinity (pH greater than 8.5) can lead to encrustation of plumbing fittings and pipes. A pH greater than 11 may cause corrosion. A pH greater than 8.0 can decrease the efficiency of chlorine disinfection.

### Total dissolved solids (TDS) 500 mg/L

Dissolved material, usually salts, in the water supply can affect the water's taste. It can also develop scale on the inside of plumbing fittings and pipes, or lead to excessive corrosion.

### Total hardness 200 mg/L

Hard water can contribute to the formation of scale in hot water pipes and fittings, and makes lathering of soap difficult. Hardness is the measure of calcium and magnesium in the water and comes from the dissolving of these materials from soil and rocks.

**Turbidity 5 NTU (less than 1 NTU desirable)**

Turbidity is the measure of dirtiness or cloudiness of water. It indicates the amount of suspended solids present in the water. This can affect the taste of the water and can make the water look 'dirty'. It can also reduce the efficiency of chemical and UV disinfection. Unusual increases in turbidity can indicate a disturbance in the water supply system.

**Reference:**

NSW DEPARTMENT OF HEALTH

This document may be reproduced in whole or part for study or training purposes subject to the inclusion of an acknowledgement of the source and no commercial usage or sale.

SHPN: EH 080176

Private Water Supply

Guidelines

ISBN: 978-1-74187-327-6