



A great many substances can be found in water. However, only a few of these commonly occur in concentrations high enough to be of concern to domestic water users. The most important substances to measure are those that often occur in concentrations high enough to cause health, aesthetic or other problems.

The following substances may occur commonly and be present at concentrations of aesthetic or economic concern in domestic water sources.

### Manganese (Mn)

This is common reason for brown or black discolouration of fixtures and for stains in laundry. It can be common in bottom waters of dams, or in mining areas.

### Zinc (Zn)

This affects the taste of water. Usual cause is acidic water dissolving zinc from galvanised pipes or from appliances.

### Iron (Fe)

This affects the taste of the water and may also cause a reddish brown discolouration. It can be common in bottom waters of dams, or in mining areas. It can cause growth of slimes of iron reducing bacteria that ultimately appear as black flecks in the water.

### Potassium (K)

This affects the taste of the water and it is bitter at elevated concentrations.

### Sodium (Na)

This affects the taste of the water. It is often elevated in hot, arid areas and on the western and southern Cape coasts, particularly in groundwater or in mining areas.

### Calcium (Ca)

This can cause scaling and can reduce the lathering of soap.

### Magnesium (Mg)

This affects the taste of the water. It is bitter at high concentrations. Common in some areas it adds to the effect of calcium.

### Total hardness (Ca and Mg)

This is a combination of calcium and magnesium. It is associated with scaling and inhibition of soap lathering.

The presence of these substances should be determined at least when assessing the water for the first time. Thereafter they can be included when there is reason to believe that their concentrations may have changed.

#### References:

DWAF (1998). Quality of domestic water supplies. Vol. 1: Treatment Guide. WRC No. TT 101/98.

30	25	26	12	20	11	19
<b>Zn</b>	<b>Mn</b>	<b>Fe</b>	<b>Mg</b>	<b>Ca</b>	<b>Na</b>	<b>K</b>
65.38	54.938	55.845	24.305	40.078	22.989	39.098