



Substances which may be present at concentrations of aesthetic or economic concern

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)

These are common in groundwater (borehole) samples, particularly in areas of intensive agricultural activity, or where pit latrines are used. Severe toxic effects are possible in infants.

Zinc (Zn)

This is often elevated in groundwater in hot, arid areas. They can cause damage to the skeleton and the marking of teeth.

Iron (Fe)

This is particularly common in mining areas. Causes diarrhoea, particularly in users not accustomed to drinking water with high sulphate concentrations.

Potassium (K)

This affects the appearance, and thus the aesthetic acceptability, of the water. Turbidity is commonly high in surface waters.

Sodium (Na)

This may be present in groundwater, particularly in mining areas. It can lead to arsenic poisoning.

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.