



Chemical Quality: Potassium (K)

What is Potassium?

- 💧 Potassium is an essential substance of the human diet.
- 💧 It is an important cation in all-living tissue.
- 💧 Potassium is an alkali metal.

Potassium in water

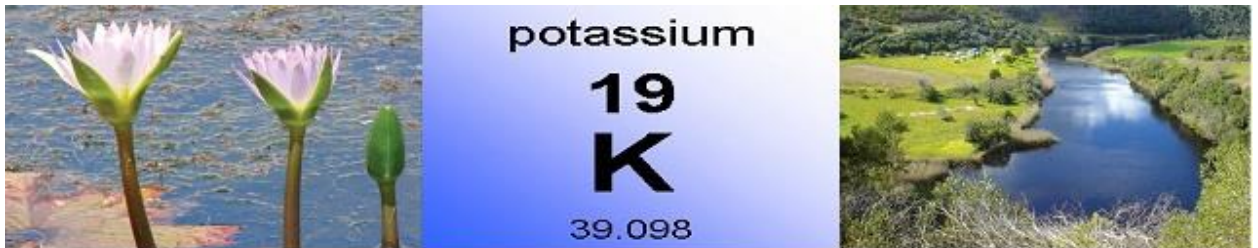
- 💧 Normal levels of potassium in unpolluted, fresh water are between 2 and 5 mg/l.
- 💧 Higher levels are indicative of pollution possibly from runoff from agricultural irrigation, fertiliser-producing industries and even from domestic wastes.

What problems can Potassium cause?

- 💧 Acute exposure to high concentrations of potassium, can cause:
 - Interference with heart muscle function.
 - Interference with normal muscle function.
 - Irritation of mucous membranes.
 - Nausea and vomiting.
- 💧 Children under the age of 2 years and kidney patients are at risk to be affected by higher than normal potassium levels.
- 💧 High concentrations of potassium can impart a bitter taste to waste.
- 💧 Potassium is colourless and odourless and therefore has no adverse effect on the appearance and smell of water.

How can Potassium in water be treated?

- 💧 Processes used for the removal of potassium from water, are desalination processes, such as:
 - Reverse osmosis
 - Ion-exchange demineralisation, using mixed bed resin
 - Distillation
- 💧 All removal processes are difficult and require highly skilled operation and maintenance.
- 💧 All processes produce a waste stream, which are difficult to dispose of.
- 💧 Home treatment kits, using ion-exchange processes are expensive and treat only small volumes of water.



Reference: DWAF (1998). Quality of domestic water supplies. Vol. 1: Assessment Guide. WRC No. TT 101/98, pp. 21.