What is Arsenic?

- Arsenic is semi-metal poison, which is used in rat poison.
- Humans require extremely small amounts of Arsenic, which plays an important role in the integrity of the immune system, skin and hair.

Arsenic in water

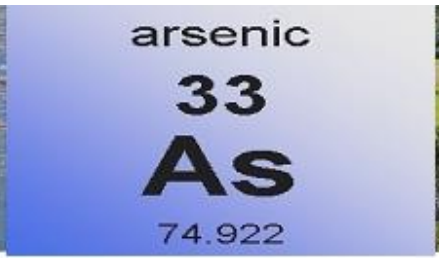
- Arsenic occurs naturally in unpolluted water in concentrations as low as 0,010 mg/l.
- Unpolluted groundwater from areas with naturally high Arsenic minerals can have Arsenic concentrations of as high as 0.500 mg/l.
- Any higher concentration in any water source can be Arsenic pollution, which typically results from mining activities or pesticides in e.g. cattle dips.

What problems can Arsenic cause?

- Arsenic poisoning is a chronic problem and the symptoms are skin lesions.
- The symptoms of acute arsenic poisoning can cause loss of sensitivity in the peripheral nerves as well as gastrointestinal symptoms.
- Bathing in arsenic polluted water can cause health effects, since arsenic can be absorbed through the skin.
- Children under the age of 2, people suffering from kidney diseases and people who consume large amounts of water, e.g. those living in hot conditions, are most sensitive to arsenic pollution.
- Aesthetically arsenic in water cannot be detected by colour, taste and odour.

How can Arsenic in water be treated?

- Arsenic in a pentavalent form (with a five-fold electronic charge) can be removed from water by flocculation, using ferric salts.
- Arsenic in a trivalent form (with a three-fold electronic charge) needs to be oxidised before it can be treated with the flocculation method.
- Any arsenic removal process requires skilled monitoring and analysis.
- 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.