WATER TOXICOLOGY

TOXICITY TESTING

- The aim of toxicity testing is to evaluate toxicity using standard methods.
- In toxicity testing, both the test organism and the test water used are normally standardized.
- The ISO is the largest developer of voluntary international standards in the world.

Aquatic Contamination Causatives

- A general understanding that human actions cause deterioration of the aquatic environment at present, such a problem is climate change.
- Cclimate change and aquatic contamination are intimately intertwined.
- About 50% of all photosynthesis, which removes carbon dioxide, is carried out by photosynthetic aquatic organisms.
- Aquatic pollution has decreased the efficiency of photosynthesis, whereby toxicant effects on the aquatic environment facilitate climate change and ocean acidification.

IMPORTANCE OF A COMPOUND AS A POLLUTANT

- 1. The amount of the compound released
- 2. The water solubility of the compound.
- 3. The fugacity of the compound.
- 4. The transformation of the compound. Several organic compounds are biotransformed in organisms by specific pathways.
- 5. Complex formation by the compounds.

- All compounds can become toxic, if an organism gets too much of them.
- This is particularly well demonstrated with metals such as zinc and copper; they are important constituents of enzymes, and must be obtained in small amounts.
- High concentrations are toxic, and aquatic toxicity studies on zinc and copper are very common.

Main Pollutants

Taken from: The Chemistry of Water Pollution https://www.sepa.org.uk/media/120299/chemistry-of-water-pollution.pdf