Answer on Question #41796, Chemistry, Other

Question

DEAR SIR
I HAVE A QUESTION ABOUT WATER TREATMENT. WHAT IS DIFERENCE BETWEEN SALINITY & TDS(TOTAL DISSOLVE SOILD THAT DISPLAY ON CONDUCOTMETER)?
BEST REGARDS
TONES

Answer

Total dissolved solid (TDS) is a measure of the combined content of all **inorganic** and **organic** substances contained in a liquid in molecular, ionized or micro-granular (colloidal sol) suspended form.
Salinity is the saltiness or dissolved **salt** content of water. So, salinity is part of total dissolved solids
Total dissolved solids are normally discussed only for freshwater systems, as salinity includes some of the ions constituting the definition of TDS.

A quick way of **salinity** measuring is to use a conductivity meter and read off the electrical conductivity. The idea being that a salty solution, because it is full of charged particles will conduct electricity. Most conductivity meters give readings in micro Siemens per cm (μS/cm). Now some salinity meters read off parts per million (ppm). This is an approximation - the problem is that ppm is a measure of dissolved solids and its usually on a weight for volume basis. For example 50 ppm in water means there are 50 milligrams of solids per litre. How does a conductivity meter know how many ppm to show? It just uses its inbuilt conversion factor. This means that you need to choose a meter with either an appropriate factor or get one with an adjustable factor.

TDS is more precisely measured in the laboratory by evapourating a measured sample gently to dryness then calculating how much solids are left. Conductivity is usually given as μS/cm which measures the ability of the sample to conduct an electric current. There is no exact relationship between conductivity as μS/cm and TDS as ppm. But it has been discovered experimentally that for particular types of water there is an **approximate** relationship. In water with a higher proportion of sodium chloride to get to ppm just multiply the μS/cm reading by 0.5. For most other water for example in hydroponics solutions use a factor of 0.67 or 0.7 instead.