



ORGANIC ANALYSIS : SOLUBLE & TOTAL ORGANOTIN COMPOUNDS

Tributyl tin (TBT)

compounds are powerful biocides.

In the aquatic environment they are extensively used as anti-fouling agents applied in paints to ship hulls.

There are two main types of anti-fouling paints:

Traditional free association paints : Relatively high concentrations of TBT are mixed with paints. The TBT diffuses through microchannels in the paint. If a sparingly soluble paint is used periodic sloughing of the TBT depleted layer prolongs the life of the anti-fouling paint to approximately 2 years.

Modern co-polymerised paints : Gradual alkaline hydrolytic erosion of the paint releases TBT at a constant rate. These paints contain lower concentrations of TBT than the traditional paints and have a lifetime of approximately 5 years.

A number of studies have shown that TBT compounds in the aquatic environment are readily adsorbed onto particulate matter. Laboratory experiments have shown that 72 - 100% of TBT in a sample may be adsorbed onto particulate matter in the sample. This, combined with a significant presence of TBT paint flakes from the stripping and reapplication process suggests that TBT may be present in a water sample as both **soluble TBT** and **fixed to any particulate matter** in the sample. As the TBT remains bioactive after adsorption its presence in this state is of concern when evaluating environmental impact.

ALS ORGANOTIN ANALYSES

ALS routinely performs the TBT analyses outlined below to allow determination of the concentration of TBT that has been released into the water and TBT that is associated with the particulate matter in the sample.

Soluble Organotin : The water sample is filtered, the filtered water is extracted, concentrated and the Soluble Organotin concentration is determined and reported.

(ALS method code EP090A)

Total Organotin : The water sample is filtered, the water and the particulate matter are extracted separately, the resulting extracts are combined, concentrated and the Total Organotin concentration is determined and reported.

(ALS method code EP090B)

Soluble and Total Organotin : The water sample is filtered, the water and the particulate matter are extracted, concentrated and the concentration of each extract determined separately. Results for both the Soluble and Total Organotin are reported.

(ALS method code EP090C)

Prices are dependent upon method selection.