

# Abstract

Tributyltin (TBT) has been measured in water in 12 of 15 harbors studied during US Navy baseline surveys. The highest concentrations of TBT (some exceeding laboratory toxicity limits) have been found in yacht harbors and near vessel repair facilities. Many sites (75%) in harbors and estuaries had no detectable ( $<5 \text{ ng dm}^{-3}$ ) TBT. TBT monitoring studies with increased detection limits ( $<1 \text{ ng dm}^{-3}$ ) have documented a high degree of TBT variability associated with tide, season and intermittent point source discharges. Although yacht harbors were shown to be the principal TBT source in most regions, dry-docks can be significant sources. Tributyltin degradation studies were conducted using unfiltered seawater from four geographic regions and incubated under natural conditions. Degradation half-lives were always in the range of 4–19 days, providing evidence that TBT is not highly persistent in the water column at environmental concentrations. Preliminary degradation experiments suggest that TBT has a longer residence time in sediment with a half-life of several months. Tributyltin is primarily in the dissolved form in unfiltered seawater, although the association with particulate fractions may increase in samples collected near yacht repair facilities. Partition coefficients for particulate TBT versus bulk water are frequently near 3000 and vary with the particulate concentration, salinity and presence of natural organics.