

Status of butyltins contamination in sediments from Kong Kong Laut, Johor after five years of global banning

ABSTRACT

This study is aimed to determine the concentration of butyltin and the physic-chemical factors in marine sediment after five years of total global banning. Level of butyltins namely tributyltins (TBT), dibutyltin (DBT) monobutyltin (MBT) and the physicochemical parameters of sediments (sediment texture, pH and total organic carbon (TOC)) were measured in sample collected from nine stations at Kong Kong Laut. Concentrations of tributyltin were varied from undetected to 945.7 $\mu\text{g kg}^{-1}$ dry weight, undetected to 188 $\mu\text{g kg}^{-1}$ dry weight for DBT, and undetected to 55.2 $\mu\text{g kg}^{-1}$ dry weights for MBT. The highest levels of TBT and DBT were found at station number 1, which is in the vicinity of dock yard. Level of pH and type of sediment are almost uniform in all nine stations except for TOC. No significant relationships were found between physicochemical parameters and the three butyltins. These findings suggest that TBT in station number 1 was freshly introduced and that the main source was suspected from maintenance work conducted in the dockyard.

Keyword: Antifouling biocide; Organotin; Tributyltin; Dibutyltin; Monobuyltin; Marine pollution; Sediments