

***** Technical Fact Sheet *****
ORGANOTINS

Tributyltin (TBT) is commonly used in marine paints as an anti-foulant. It is an organic metal complex that is highly toxic to many types of marine life at extremely low concentration levels. Tributyltin degrades to the di-butyltin and mono-butyltin forms in seawater. Tributyltin can accumulate in sediment near and around marinas, boatyards, ports and docks. Dredging activities can also release tributyltin from contaminated sediment layers that have accumulated due to tidal flows in and around ports and harbors. Environmental toxicity studies prior to and during dredging activities often require the monitoring of tributyltin.

EnviroMatrix Analytical, Inc. (EMA) has designed a highly effective method for the determination of organotins; including the di-butyltin and mono-butyltin degradation compounds of tributyltin as well as tetrabutyltin. This method consists of extracting the contaminants from the sample into chemical solvents, concentrating the extracts and reacting with a modified Grignard reagent to form chemical derivatives. These derivatives are easily isolated and detected using gas chromatography with a flame photometric detector. Confirmation of positive hits are done by GCMS-SIM (selective ion monitoring) analysis. EMA has been performing and perfecting this method since 1989 on marine sediments, seawaters, and tissues.

EMA reports detection limits for Tributyltin at 5 parts per trillion (ppt) for water samples and at 1 part per billion (ppb) for sediment and tissue samples.

EMA's laboratory is equipped with state-of-the-art analytical instrumentation to facilitate cost effective analyses of metals, organics, and inorganics. EMA has extensive experience in the analysis of potentially hazardous substances in water, wastewater, soil, sludge, solids, waste oil, sediment, and tissues. As a result, our clients rely on us to solve complex environmentally sensitive problems that require both routine test procedures and project-specific methods.

EMA maintains a current Foreign Soils permit (#P330-07-00008) authorizing the importation of soils throughout the world. EMA can assist you in shipping samples internationally; call us at (858) 560-7717.

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EnviroMatrix Analytical, Inc.
4340 Viewridge Avenue, Suite
San Diego, California 92123
Phone: (858) 560-7717
Fax: (858) 560-7763