Removal of MTBE by novel *Exiguobacterium* in seawater

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Received 1 February 2009; Accepted 1 July 2010

**ABSTRACT**

For over three decades, methyl-\textit{tert}-butyl ether (MTBE) has been used as an additive to either increase the octane number in high and medium grade gasoline in substitution of tetraethyl lead or to raise its oxygen content. However, the fate of MTBE in the environment is a great concern. In this work, biomass of novel toluene degradator *Exiguobacterium*, isolated from toluene enriched seawater, could utilize MTBE by 72\% and produced CO\textsubscript{2} and formate during degradation. Production of ketone and \textit{tert}-butyl alchol (TBA) has not been seen by gas chromatography (GC). Degradation of MTBE has been seen in aerobic and anaerobic conditions from 4 to 30 °C. It is interesting that the highest degradation occurred during growth in aerobic and cold condition (4 °C). This suggested that in cold areas *Exiguobacterium* is a very good candidate to degrade MTBE. Since this novel isolate could tolerate high salt, it is useful for removal of MTBE from seawater.

*Keywords:* *Exiguobacterium*; MTBE; Pollution; Seawater

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