

# **Characteristic of organic precursors and their relationship with disinfection by-products**

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摘要.

## **Abstract**

The molecular weight distribution and chemical composition of precursors and their relationship with disinfection by-products (DBPs) were investigated. Most of the organic matter responsible for the major DBP precursors in the Pan-Hsin water are small compounds with a molecular weight less than 1 kDa. The hydrophobic acids display the greatest ability to produce DBP. Therefore, effective removal of small molecules or hydrophobic acidic organics prior to disinfection process will significantly reduce the DBP concentration in the finished water. Although the coagulation process is effective in removing large organic precursors and the removal efficiencies of  $\text{CHCl}_3$  formation potential and organic carbon increase proportionally to the molecular weight of the precursors, the conventional treatment methods have limited efficiency in eliminating small precursors, which have high DBP formation potential.