

Characteristics of Water-soluble Organic carbon species and sources in PM_{2.5} in Gosan supersite, Jeju, Korea

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Water-soluble organic carbon has often been found to be an important component of atmospheric fine particles from secondary organic aerosol (SOA). In order to better understand the transport of airborne particles from distant sources, PM_{2.5} samples were collected periodically at Gosan supersite on Jeju, South Korea from 2009 up to the present time. To determine the properties of water-soluble organic carbon (WSOC), preliminary tests were carried out using Total Suspended Particle filter. Filter samples (quartz fiber, O.D 17 mm × 3) were extracted with 15 mL Milli-Q water under ultrasonication (10 min, three times). WSOC was quantified using a total organic carbon (TOC) analyzer. For speciation analysis of organic compounds, the extracts were concentrated to dryness using a freeze dryer and then derivatized with MSTFA (N-Methyl-N-trimethylsilyltrifluoroacetamide+1% trimethylchlorosilane). Finally organic carbon compounds were analyzed with GC-MS scan mode. We observed several haze and pollution events during the experimental periods in Jeju, and analysis is in progress.

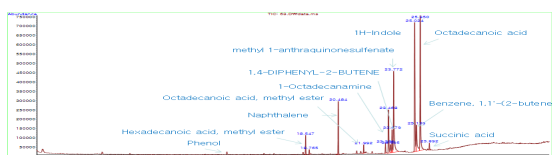


Figure 1. Composition of WSOC analyzed by GC-MS scan mode

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