

Atmospheric sources and sinks of acetonitrile: considerations of its budget and use as a tracer for biomass burning plumes

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Acetonitrile is a long-lived (~ 6 months) organic trace gas that in recent years has been used as a tracer for biomass burning plumes. However, its atmospheric budget is not well-known. It has been accepted in the recent literature that the primary source for acetonitrile is from biomass burning, but a recent study points to an oceanic source. Loss is believed to be by reaction with OH and oceanic uptake. Earlier studies indicated that acetonitrile may be produced in emissions from automobile exhaust but a study done in the late 90's appeared to discredit this. We use measurements from the Trace Organic Gas Analyzer (TOGA) to investigate the sources and sinks of acetonitrile, investigate its utility as a tracer of emissions, and present data on emissions characterization based on measurements of acetonitrile and other VOCs.