



Gas phase glyoxal and methylglyoxal yields from the oxidation of isoprene and first generation products

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α -dicarbonyls such as glyoxal and methylglyoxal are of increasing interest due to their importance in atmospheric processes and their ability to partition from the gas to aerosol phase. Isoprene oxidation is a major source of glyoxal and methylglyoxal in the atmosphere. However, the reaction pathways for these compounds are not well known, nor are the yields. Incorporation of the formation rates and yields of these compounds determined from our studies will allow us to improve chemical models that include isoprene oxidation. To achieve this, we performed experiments at the Caltech environmental chambers to determine the gas phase yields of glyoxal, methylglyoxal, and formaldehyde from isoprene and its primary reaction products, methyl vinyl ketone and methacrolein, under varied oxidation conditions. Gas phase glyoxal, methylglyoxal, and formaldehyde yields from the oxidation of these precursors will be presented as well as analysis of first generation glyoxal formation from isoprene oxidation.