

New particle formation from ozonolysis of 2-methyl-2-butene and *trans*-2-butene

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Atmospheric aerosols scatter and absorb incoming solar radiation, which directly impacts the global radiative balance of the atmosphere. If these aerosols are hydrophilic, they can act as cloud condensation nuclei (CCN) and have an indirect effect on the climate by modifying the properties of clouds. New particle formation (NPF) through nucleation is believed to contribute up to half of the global CCN concentrations. The nucleation and growth mechanisms of new particles in the atmosphere have therefore been topics of study in atmospheric research. Recently, we observed NPF during ozonolysis of isoprene (C₅H₈) and ethene (C₂H₄). We proposed that oligomeric hydroperoxides originated from stabilized Criegee intermediates (sCIs) that were generated during the ozonolysis of isoprene and ethene potentially contribute to the NPF. In the present work, we investigated the ozonolysis of 2-methyl-2-butene (C₅H₁₀) and *trans*-2-butene (C₄H₈), in order to investigate the role of C2-sCI ((CH₃)CHOO) on the new particle formation.

Keywords: 2-methyl-2-butene, *trans*-2-butene, ozonolysis, secondary organic aerosol,, Criegee intermediate