

## Atmospheric Oxidation of Two Isoprene By-Products, Hydroxyacetone and Glycolaldehyde

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Hydroxyacetone [ $\text{CH}_3\text{C}(=\text{O})\text{CH}_2\text{OH}$ , HYAC] and glycolaldehyde [GLYALD,  $\text{HOCH}_2\text{CH}=\text{O}$ ] are common multi-functional oxygenated VOC compounds, formed as first- and second-generation products of isoprene oxidation. Reaction with OH is expected to be the major gas-phase loss for both species, leading to a lifetime of about one (three) day(s) for GLYALD (HYAC). Recent studies by Butkovskaya et al. (1,2) indicate that oxidation of these species by OH might lead to significant yields of formic and acetic acids, particularly at reduced temperature. To confirm these data, we have conducted a study of HYAC and GLYALD oxidation, using traditional environmental chamber / FTIR techniques. Experiments show that organic acid production from HYAC is minimal over a range of temperatures (248-298 K) under the conditions of our experiments. Product yield data for both species over a range of temperatures and conditions, and mechanistic interpretation of the data will be presented.

### References

- (1) Butkovskaya, N., N. Pouvesle, A. Kukui, Y. J. Mu, and G. Le Bras, *J. Phys. Chem. A* **2006**, 110, 6833-6843.
- (2) Butkovskaya, N., N. Pouvesle, A. Kukui, and G. Le Bras, *J. Phys. Chem. A* **2006**, 110, 13492-13499.