Methylglyoxal is a known oxidation product of volatile organic compounds (VOCs) in Earth’s atmosphere. While the gas phase chemistry of methylglyoxal is fairly well understood, its modeled concentration and role in the formation of secondary organic aerosol (SOA) continues to be controversial. The gas phase hydration of methylglyoxal to form a gemdiol has been shown to occur in infrared studies but has not been widely considered for water-restricted environments such as the atmosphere. However, this process may have important consequences for the atmospheric processing or VOCs. We have recorded UV spectroscopic measurements following the hydration of methylglyoxal and have compared these measurements to calculated spectra of the electronic transitions of methylglyoxal and methylglyoxal diol. We will report on these measurements and discuss the implications for understanding the atmospheric processing and fate of methylglyoxal and similar molecules.