

Supporting information

Heterogeneous Reactions of Nitrogen Dioxide and Guaiacol on Indoor Surface Materials: Surface Adsorbed Nitro-phenolic Compound Formation and Gas-Phase HONO Yields

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Mass spectra of guaiacol pre and post extraction process. To ensure that the products observed during the reaction of NO_2 gas with guaiacol-exposed mineral surfaces happened due to their interaction and not from the extraction process, two 1 ppm guaiacol samples were further studied using High-Resolution Mass Spectrometry. The first 1 ppm guaiacol sample did not go through the extraction process discussed in the main text (**Materials and Methods, Product identification via high-resolution mass spectrometry (HRMS)**), while the second 1 ppm guaiacol sample was prepared with the extraction process. The fragmentation and possible products formed from both samples were analyzed with HRMS in negative ESI mode (Figure S1). Negative ESI mode was chosen for this experiment because guaiacol, a phenolic compound, can be easily deprotonated. The orbitrap resolution was 1500 with a scan range of 50-500 m/z. The flow rate was set to 5 $\mu\text{L}/\text{min}$, and the ion spray voltage was 2300 V. Ultimately, the main peaks seen in the spectrum of the 1 ppm pre-extraction guaiacol sample and the 1 ppm post-extraction guaiacol sample are the same. Both samples exhibited peaks 59.01 m/z, 59.99 m/z, 108.02 m/z, and 123.05 m/z. Peak 123.05 m/z is due to a deprotonated guaiacol compound and the parent compound for the fragmentations seen before this peak.

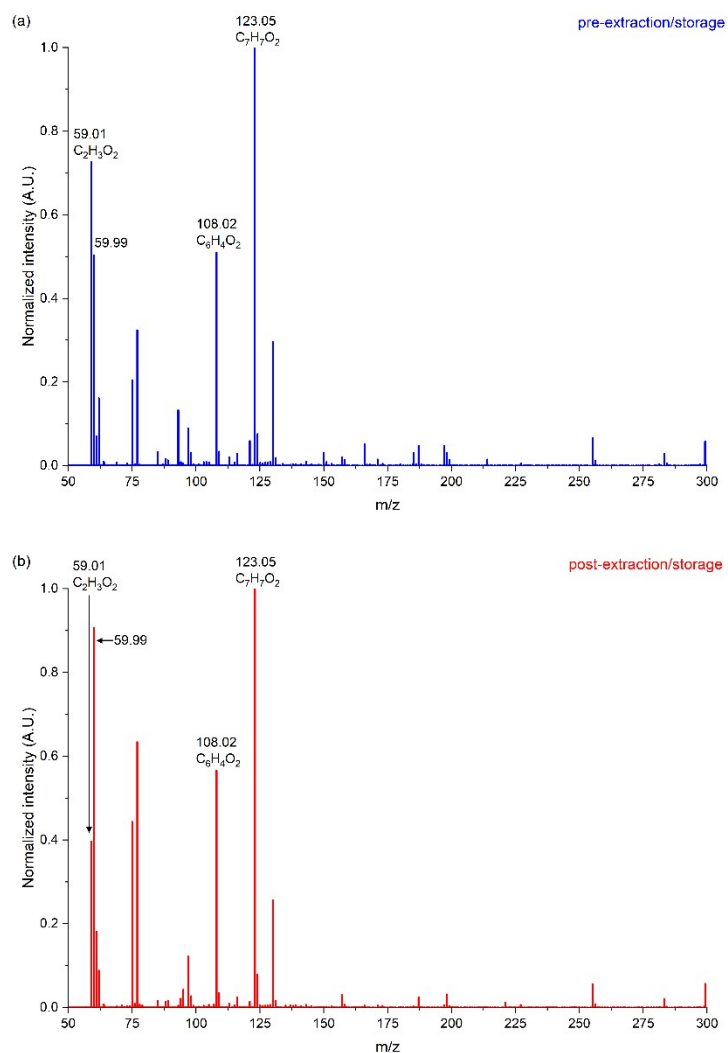


Figure S1. Mass spectra of 1 ppm guaiacol a) pre-extraction and b) post-extraction and storage in negative $[\text{M}-\text{H}]^-$ ESI mode.