

# Supplementary Material

## Measurements for Size and Composition of Volatile Particles Generated from a Heated Tobacco Product Using Aerosol Fixation Agents

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## Supplementary Material

### Measurements for Size and Composition of Volatile Particles Generated from a Heated Tobacco Product Using Aerosol Fixation Agents

#### Experimental

#### *A heated tobacco product, aerosol substrates, and aerosol fixation agents*

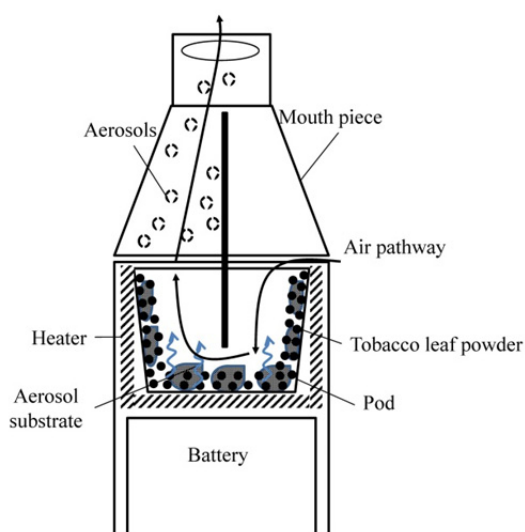


Fig. S1. Schematic diagram of HTP used in this study.

#### *Experimental line for the measurement of particles*

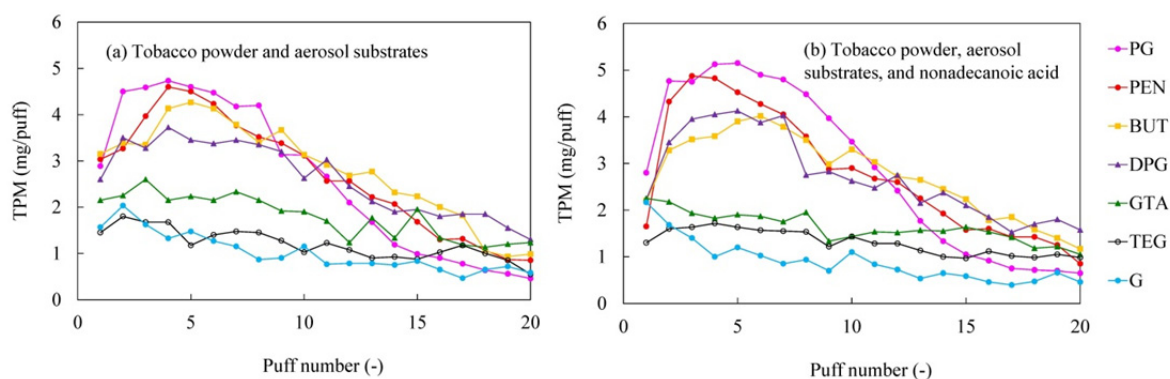


Fig. S2. Results of puff-by-puff measurements for TPM generated from HTP with various aerosol substrates (a) without the fixation agent (b) with the fixation agent.

## Results and discussion

### *Selection of the most effective fixation agent from the solubility and AMS measurements*

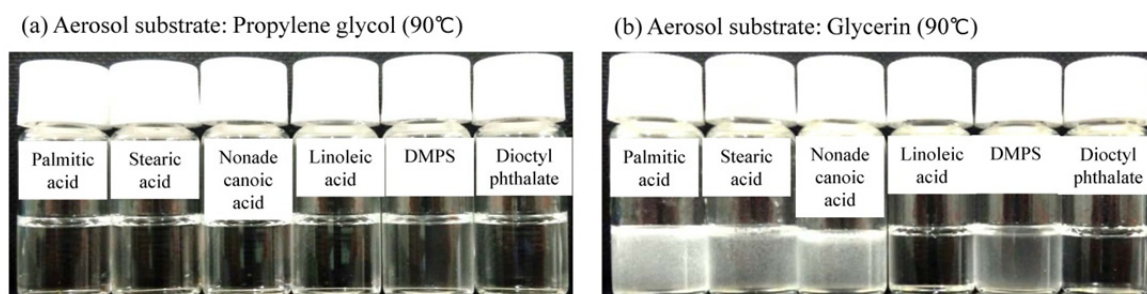


Fig. S3. Results of the solubility check (a) between propylene glycol and fixation agents at 90°C and (b) between glycerin and fixation agents at 90°C.

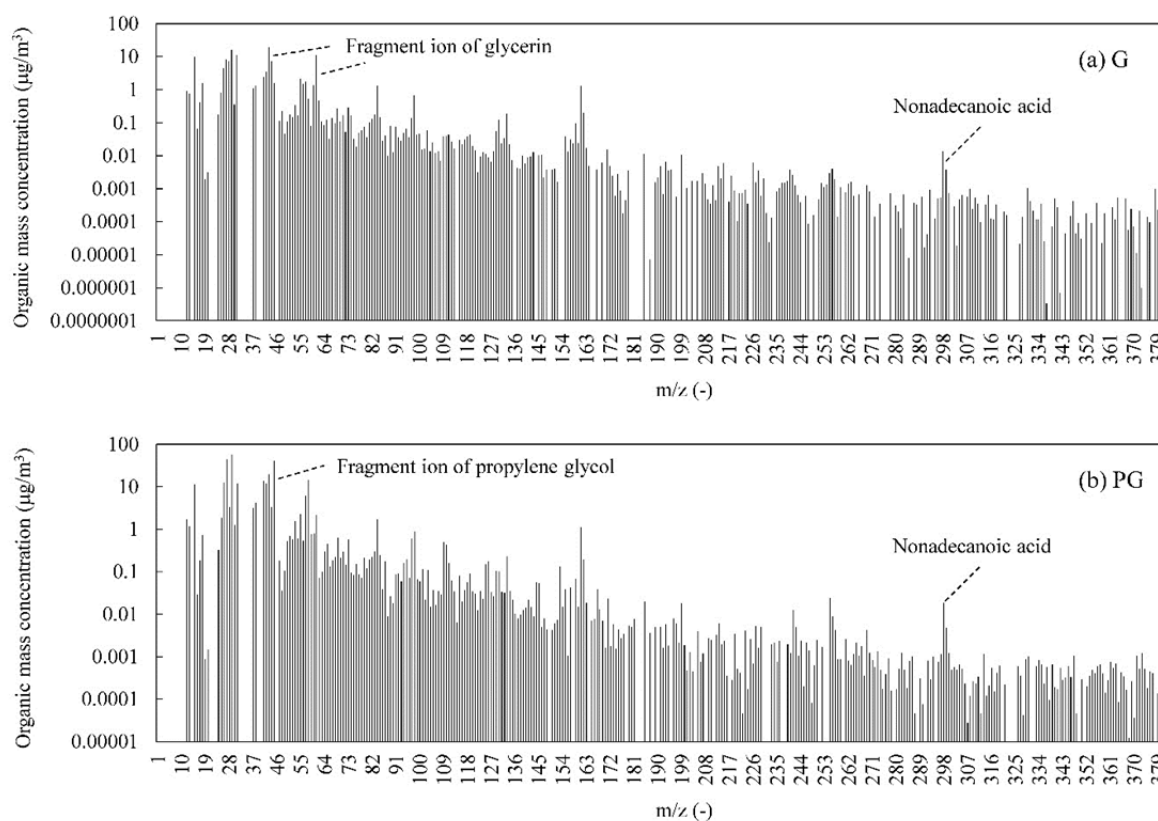


Fig. S4. AMS mass spectrum of the tobacco smoke generated from HTP with (a) the tobacco powders, glycerin, and nonadecanoic acid (b) the tobacco powders, propylene glycol, and nonadecanoic acid in the particle range of 1000-1100 nm.

*The applicability of nonadecanoic acid to other aerosol substrates*

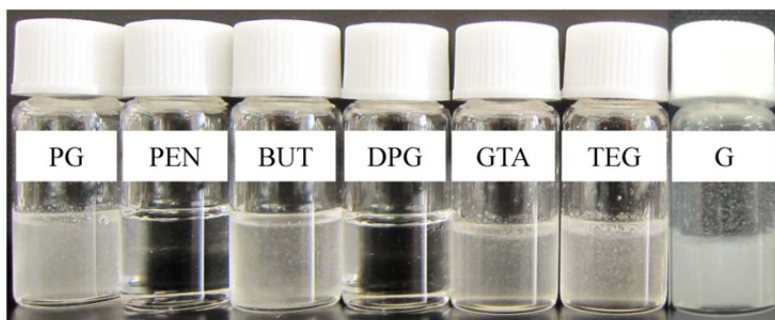


Fig. S5. Results of the solubility check between the fixation agent (nonadecanoic acid) and aerosol substrates.

*Confirmation of aerosol fixation by TOF-SIMS*

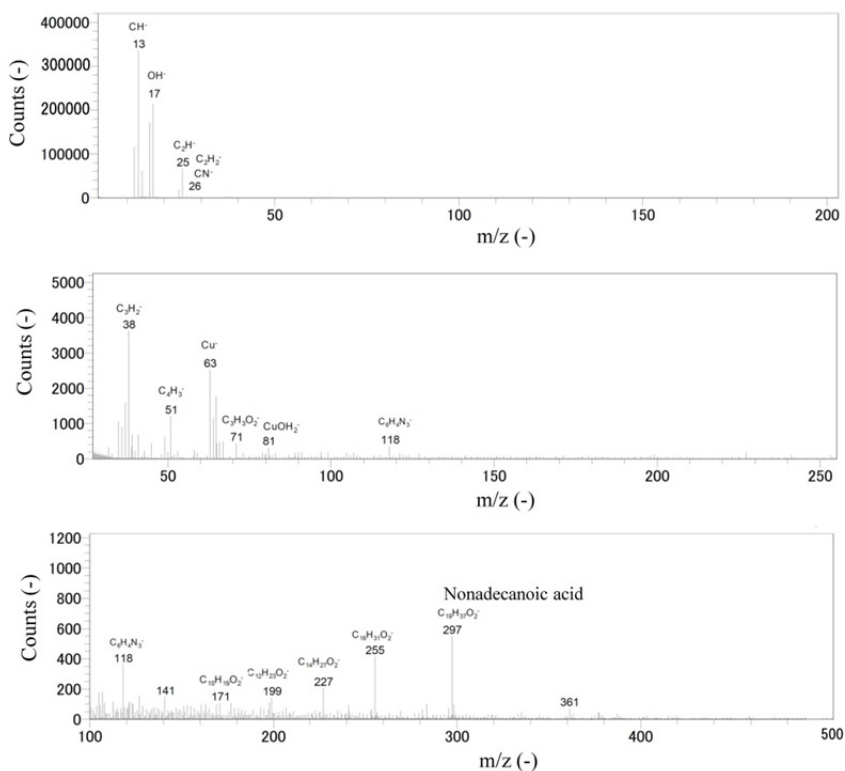


Fig. S6. TOF-SIMS mass spectrum of the tobacco smoke generated from HTP (the tobacco powders and nonadecanoic acid).

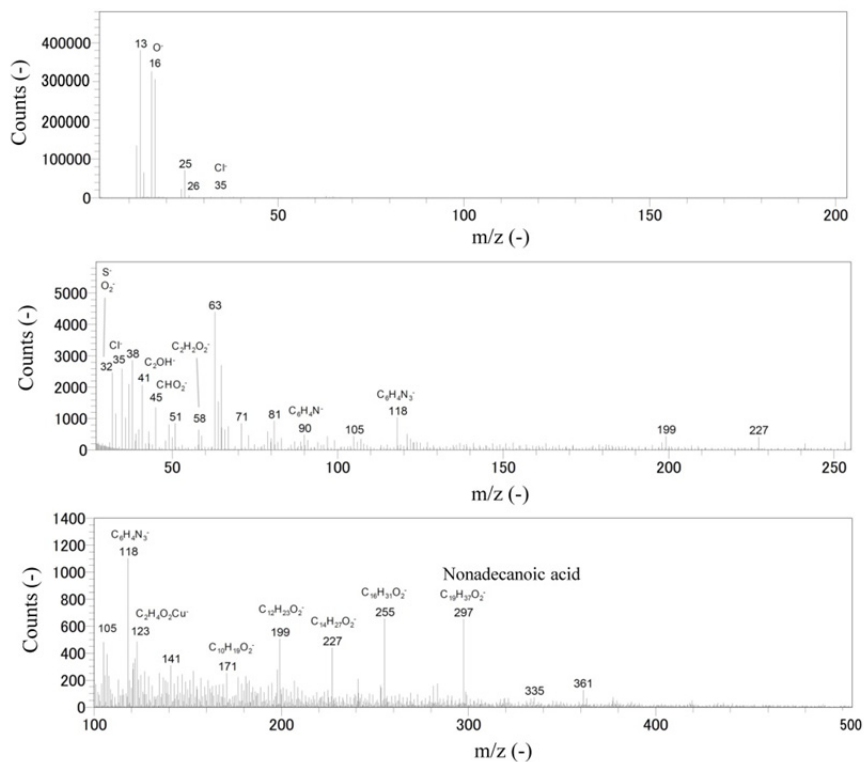


Fig. S7. TOF-SIMS mass spectrum of the tobacco smoke generated from HTP (the tobacco powders, glycerin, and nonadecanoic acid).