

Supplementary Material

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

Nobuyuki Ishikawa ^a and Kazuhiko Sekiguchi ^{b,*}

a Tobacco Science Research Center, Japan Tobacco Inc., Kanagawa 227-8512, Japan

b Graduate School of Science and Engineering, Saitama University, Sakura, Saitama 338-8570,

Japan

*Corresponding author. Phone: +81-48-858-9192, Fax: +81-48-858-9192, E-mail: kseki@mail.saitama-u.ac.jp

Supplementary Material

Measurements of the 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

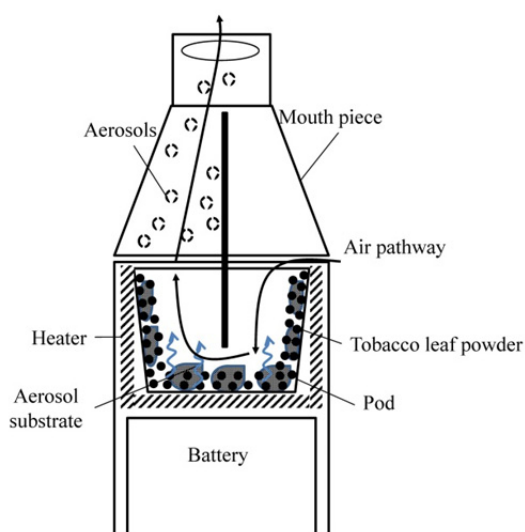


Fig. S1. Schematic diagram of HTP used in this study.

Experimental Line for the Measurement of Particles

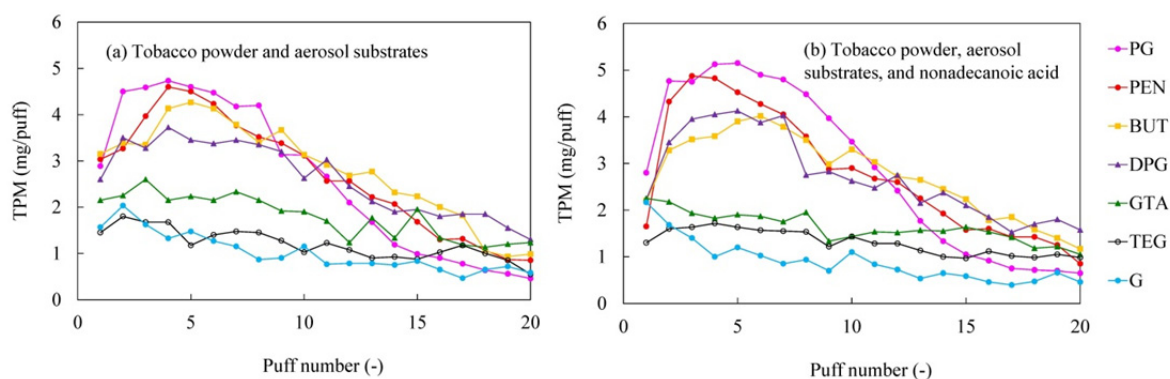


Fig. S2. Results of puff-by-puff measurements for TPM generated from HTP with various aerosol substrates (a) without the fixation agent (b) with the fixation agent.

Results and discussion

Selection of the Most Effective Fixation Agent from the Solubility and AMS Measurements

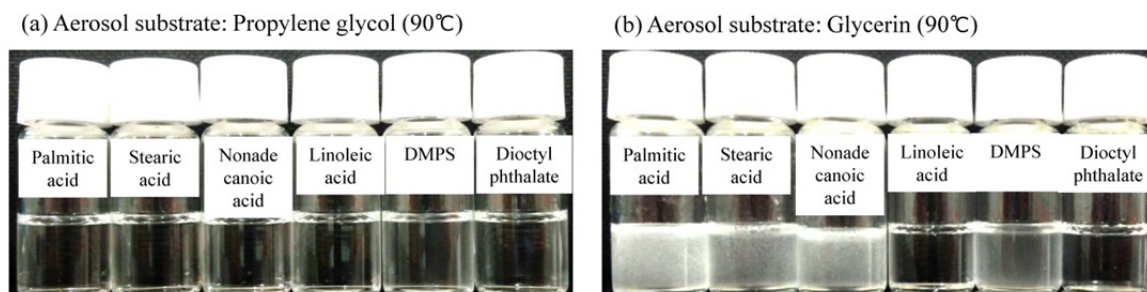


Fig. S3. Results of the solubility check (a) between propylene glycol and fixation agents at 90°C and (b) between glycerin and fixation agents at 90°C.

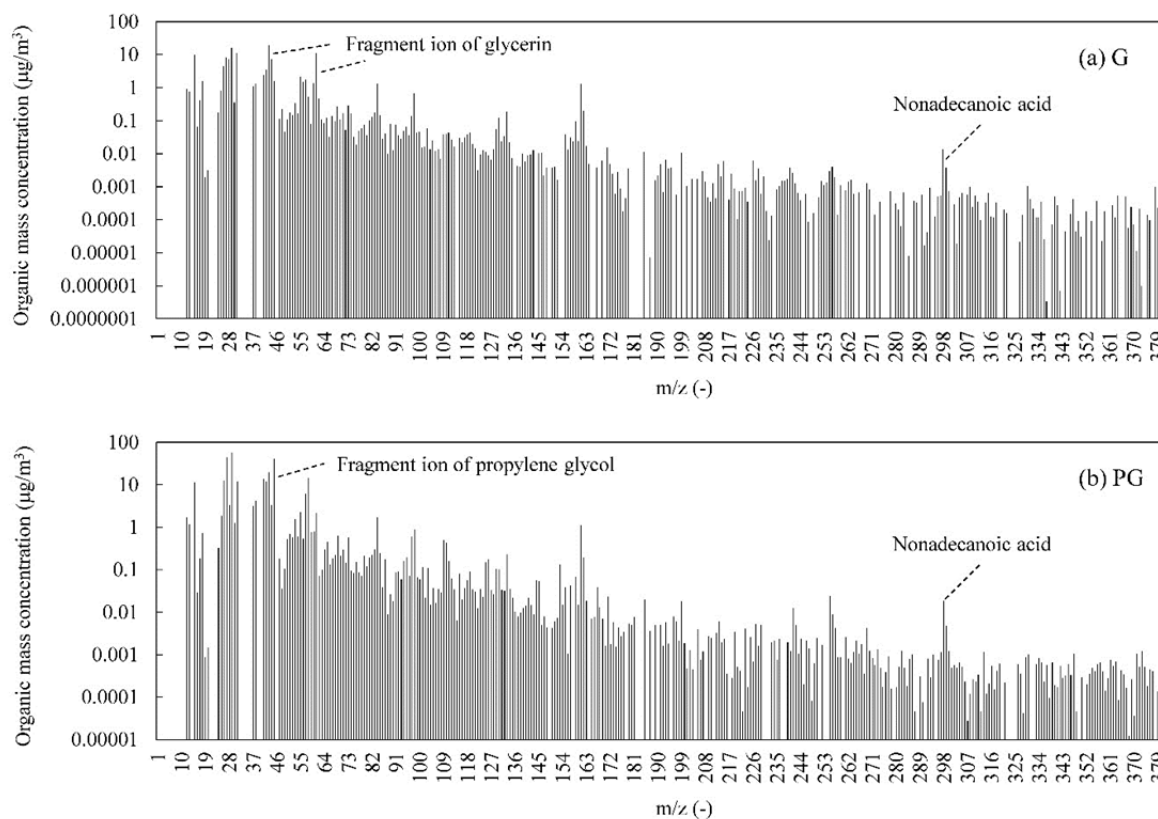


Fig. S4. AMS mass spectrum of the tobacco smoke generated from HTP with (a) the tobacco powders, glycerin, and nonadecanoic acid (b) the tobacco powders, propylene glycol, and nonadecanoic acid in the particle range of 1000-1100 nm.

The Applicability of Nonadecanoic Acid to Other Aerosol Substrates

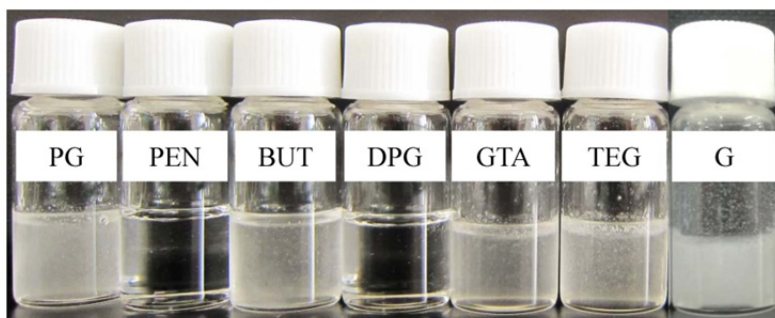


Fig. S5. Results of the solubility check between the fixation agent (nonadecanoic acid) and aerosol substrates.

Confirmation of Aerosol Fixation by TOF-SIMS

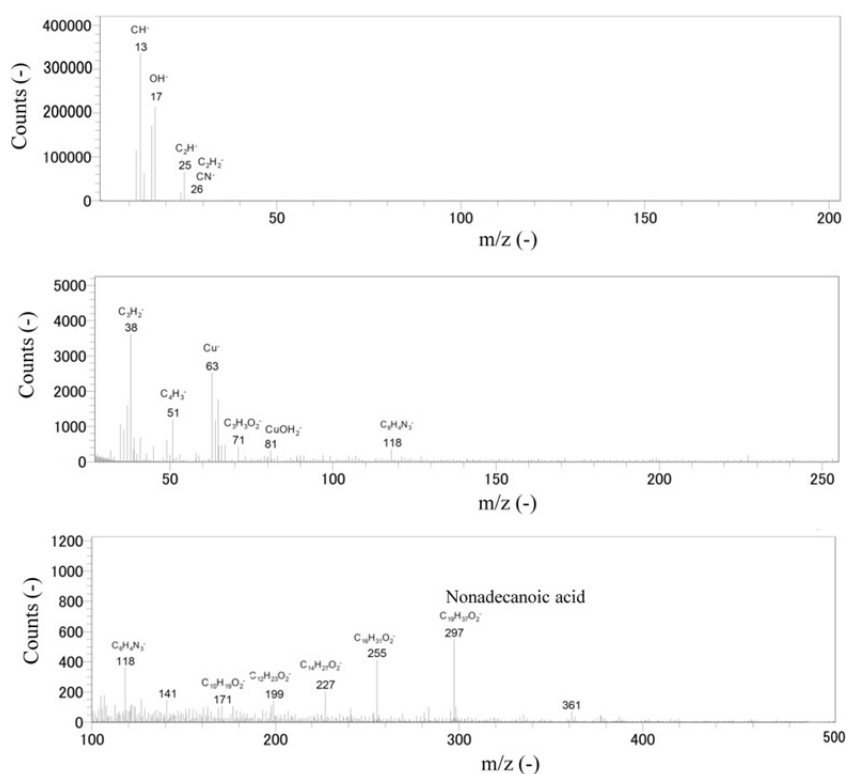


Fig. S6. TOF-SIMS mass spectrum of the tobacco smoke generated from HTP (the tobacco powders and nonadecanoic acid).

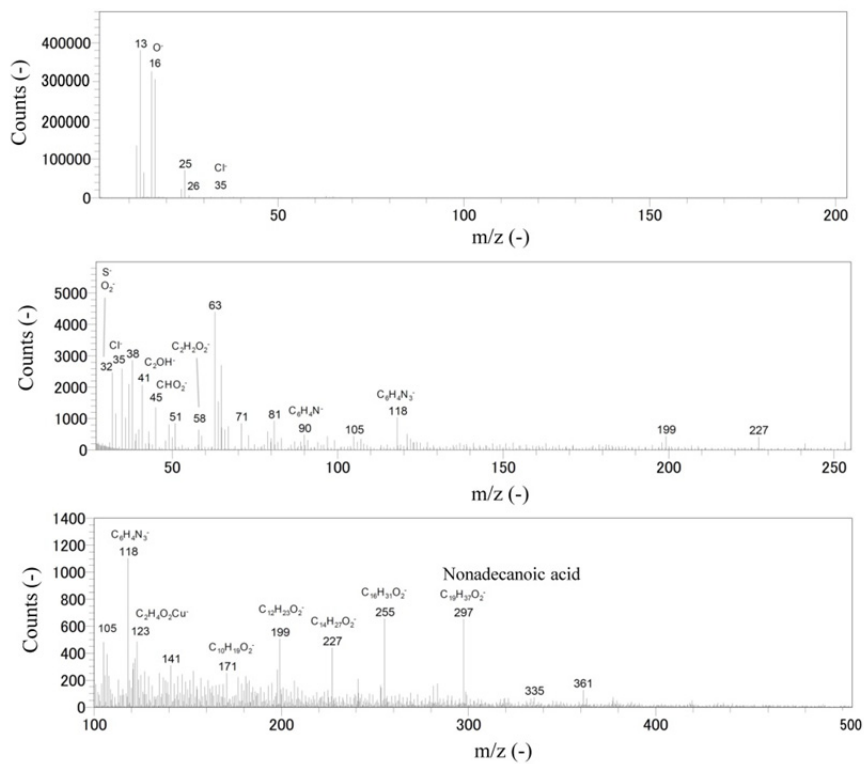


Fig. S7. TOF-SIMS mass spectrum of the tobacco smoke generated from HTP (the tobacco powders, glycerin, and nonadecanoic acid).