

Interactive comment on “Measurements of Delays of Gas-Phase Compounds in a Wide Variety of Tubing Materials due to Gas-Wall Interactions” by Benjamin Deming et al.

Anonymous Referee #2

Received and published: 25 March 2019

General comments:

In analytical chemistry of gases and particles interactions with wall material of tubing, adsorbents, and/or material of other devices are often crucial. This paper investigates the impact of various tubing materials on the recovery of 4 ketones (C6-C13) and one C12-hydrocarbon in different humidity regimes. The authors present the results clearly and well structured.

Specific comments:

The gas/particle phase analytical community certainly appreciates such an investigation assisting in choosing an appropriate tuning material in the applications. The tub-

ing material selected in the experiments is well tuned far from being comprehensive. It may be worthwhile to discuss more deeply effects of humidity and aging of tubing material on adsorption/desorption processes and thus related recovery of the target compounds. The paper is recommended for publication with minor revisions considering the technical comments.

Technical comments:

The author team should thoroughly check the comma settings throughout the text. This would lead to better structured text improving text understanding.

Page 2 line 47: ... demonstrated that partitioning is depended ...

Page 4/5 line 86/87: per definition ppb is not a concentration. It is a mixing ratio. It is not clear whether weight or volume of the compound of interest is used. It is recommended to use amount fraction or mol fraction throughout the text.

Page 5 line 101: please explain how the flow of 300 ml/min was adjusted. A possible artefact formation through the flow regulating device should be discussed.

Figure 1 legend: the dashed line represents not the chamber concentration. Please describe the correct meaning of the dashed line in the legend below the figure and remove dashed line and label from the legend box in Figure 1a.

Page 12 line 249: "... we hope will help inform decisions in designing ...": The meaning is not clear. Please rephrase.

Page 12 line 253 to line 256: "The longest measured delay times were for aluminium tubing and aluminium tubing treated with hexavalent chromate conversion coating. This treatment is intended to prevent corrosion and is used in the Potential Aerosol Mass flow reactor (Kang et al. 2007), and it does not appear to significantly affect the measurement delays." Please check for consistency: "longest measured delay times" versus "does not appear to significantly affect the measurement delays". Correct "aluminium".

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Figure 2, legend x-axis: what is the meaning of the “**” in SIMPOL C? Please explain or delete.

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Page 14 line 283: Please start new sentence after “(Fig S3)”. ... (Fig S3). The measurements may be

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Interactive
comment