

Response to Andrew Whitehill

To guide the commenting process we have copied the comments in black text. Our responses are in regular blue font, with alterations to our paper in bold text. All line numbers refer to the originally submitted manuscript.

Overview:

This is an excellent manuscript and a worthwhile contribution to our continued understanding of gas-polymer interactions, especially for the choice of sample tubing for different purposes. I have a few minor comments that I think would improve the paper. I appreciate the excellent work done here and hope to see this contribution published.

Major Comments:

R3.1 Cole-Parmer Part No. EW-01540-18 is advertised as a PTFE-body solenoid valve. The manuscript claims it is PFA. Given the minor differences observed in the behavior of PTFE vs PFA this differentiation could be important.

The authors would like to thank the reviewer for catching this error. The valves are indeed made of PTFE, not PFA.

Lines 125 and 126 have been revised to **“PTFE 3-way solenoid valve”**

R3.2 Please specify the type of stainless steel tubing used. Although specific manufacturers / part numbers are provided for most of the polymer tubing, no specific information is provided about the stainless steel tubing. Different types of stainless steel (e.g. 304 vs 316) and surface finishes would likely make a significant difference on transmission of specific compounds through the tubing.

This is an interesting point. Unfortunately we do not have the surface finish specifications of these tubes to report. Since the steel tubes used in this work (except for the reference tube, made from the same cut of metal) undergo a coating process, we assume that the original surface finish of the steel does not affect the absorptive capacity of the final coated product.

The paper by Deming et. al. has a longer discussion of metal tubing and may be of interest. They showed that gas transmission through steel tubes is highly dependent on the humidity and concentration of gases present, as well as their sampling history, and is subject to such complexity that we do not recommend ever using metal tubing to separate gas mixtures.

R3.3 All the compounds tested are 2-ketones. Although these are interesting and important compounds it is not clear how well these results will extrapolate to other compounds or compound classes. The implications of testing 2-ketones and how the results apply to non 2-ketones should be discussed a bit more if not illustrated with non 2-ketone experiments.

The authors are thankful for this important point. Please see R1.1 for discussion of this point and the text added to the manuscript.