

## Response to Reviewers

Thank you for reconsidering this work for publication.

In response to the Editors comment,

Please include the surfactants discussion from Anonymous Referee #3 in the main text, and then the manuscript is ready to be published

We have added the following text to Section 2.1

It should be noted that the PSL solution from Lab 261® contains Tween 20 surfactant; the surfactant is added to prevent coagulation. The atomized surfactant particles are much smaller than the PSL particles and form aerosol less than 100 nm. Thus the majority of surfactant particles are excluded from the size-selected CCN measurement of the large PSL particles. The raw CCN data (Fig. S1) shows only one sigmoid curve, indicating a uniform composition at the selected particle size. Moreover, the apparent hygroscopicity of surfactant particles, typically a hydrophilic polymer, is much larger than an insoluble polymer like PSL. The measured TK hygroscopicity of Tween 20 is  $\sim 0.28 \pm 0.05$ , while the measured TK hygroscopicity of the PSL particles varies from 0.002~0.02. (see Fig. 2.) and thus the influence of the surfactant on the size-selected PSL aerosol is assumed negligible.