

***Interactive comment on* “Effect of organic compounds on nanoparticle formation in diluted diesel exhaust” by U. Mathis et al.**

Anonymous Referee #2

Received and published: 9 February 2004

The authors have clarified most of the open points, or at least have given an explanation why they do not provide further information. However, one point is more unclear than before: which corresponding temperature is used for relative humidity and saturation ratio calculation?

The response on Comment 3: "The relative sample humidity was calculated at ambient temperature because of fast cooling of the diluted exhaust was achieved." is in contradiction to the experimental section of the manuscript that states: "Taking all contributions into account, the relative sample humidity after the first dilution unit was calculated to range from 30% to 99% at the measured sample temperature.". Furthermore figure 4 shows one data point at $RH < 10\%$ which would only be possible if one considers that 45°C is the corresponding temperature. The water contribution from exhaust alone is about 6 Vol-% (equal to CO_2), which would result in $RH = 8\%$ at $t = 45^\circ\text{C}$

or $RH=23\%$ at $t=25^{\circ}\text{C}$ after dilution by a factor of 8.4 . Therefore using a temperature of 25°C would lead to a RH of at least 23%, which is larger than the given data point.

The authors need to clarify this contradiction. Additionally it needs to be explicitly stated at which corresponding temperature the relative humidity was calculated, the phrase ambient is not precise enough. Of course the calculation of saturation ratios for the organic substances need also a precise statement on corresponding temperature.

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 227, 2004.

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