

Atmos. Chem. Phys. Discuss., referee comment RC3
<https://doi.org/10.5194/acp-2020-1268-RC3>, 2021
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Comment on acp-2020-1268

Anonymous Referee #3

Referee comment on "A mass-balance-based emission inventory of non-methane volatile organic compounds (NMVOCs) for solvent use in China" by Ziwei Mo et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-1268-RC3>, 2021

This study is very interesting because it uses a unique approach to estimate NMVOC emissions in China. In particular, the approach of estimating VOC emissions from adhesives is excellent in terms of the points of view.

It would be good to work on deriving the VOC composition from the literature values, as shown carefully in Figures S3 -12.

It is still necessary to examine the details in order to use these results as input data for an atmospheric model, like CMAQ, but I think it will be useful enough for discussions on understanding the NMVOC emissions of solvents from China.

However, with regard to IVOC, it is a pity that only parameters related to IVOC are listed in Table S6.

In addition, authors mentioned VOC source categories that are not included in this study (L359-360). Do the authors not include them in the total amount as reference or reference data? I think that is one of the reasons of the differences between the VOC emissions from the solvent of REAS v3.1 and this study.

There are some other things that I noticed:

"3.1 Control of NMVOCs emissions" :

Please indicate which of the six categories you are considering applying industrial solvent emission control to. Also, please indicate whether the values are uniform or individually set for all applied categories. For coating, what do the authors think of architectural coating for emission control?

L53: Please write the full terms of OFP and SOAP in the abstract.

L122-125: I think it is better to write somewhere that "Level 1" refers to the six categories (coatings, inks, adhesives, pesticides, cleaners and personal care).

L125-128: I think it is better to explain the subcategories in the order they appear in L122-123.

L161-164: I think the Wvoc listed in Table S6 was calculated by the authors based on Table S1-S5, but they need to mention that clearly.

Only insecticide is shown for pesticides in Table S4. Table S6 lists Insecticide, Herbicide, Bactericide and Other. How did the authors set the VOC ratio for pesticide components other than insecticide?

L163: It would be nice to note that GB18582-2008 and GB24408-2009 are the national standards (GB) for volatile organic compound (VOC) emission restrictions in China.

L170: Eqation => Equation

L193-194: The authors applied foreign profiles to the products lacking domestic source profiles, but are the source of the foreign profiles "Li et al., 2014".? Do the authors see "Lie et al., 2014" as a methodology reference? Please write the reference of the foreign profiles.

L305: Please write the full terms of OVOC.

L323: SOA => SOAP

L340: The reference for REAS v3.1 is incorrect. This reference is REASv2.

Figure 6: This REAS v3.1 NMVOC is the sum of PAINT and SLV, but the decrease from 2014 to 2015 does not seem to be so large. Since the numerical value of REAS v3.2 has been released, I think it is good to replace it. URL: <https://www.nies.go.jp/REAS/>

Figure 5: How did the authors decide on the SOAP for unspecified VOCs?