

Atmos. Chem. Phys. Discuss., referee comment RC1
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Comment on acp-2020-1268

Anonymous Referee #1

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-RC1>, 2021

This study concerns on the solvent use emissions that has been one of the most popular topics in the VOCs emission research. In particular, the volatile chemical products (VCPs) are considered as the emerging source of urban NMVOCs. However, understanding of NMVOCs emissions from VCPs are still lacking in China. This work addressed this important problem by establishing a detailed emission NMVOCs inventory of solvent use (including six VCPs, i.e., coatings, adhesives, inks, pesticides, cleaners and personal care products) for China based on the mass balance technique. The authors found that NMVOC emissions from solvent use increased rapidly from 2000 to 2014 but leveled off thereafter due to control measures implemented on the solvent-related factories in China. Personal care products become an increasing important source NMVOCs. Speciated emissions, OFP and SOAP as well as the comparisons with previous studies are also analyzed in detail. Overall, this manuscript is well presented and within the scope of ACP. The methods are solid, and the results are informative. It can be accepted for publication after the following comments are addressed.

- Line 122-123: Why the authors considered the six types of organic solvent products. Are there any other products that could be the sources of NMVOCs?
- Line 139: In equation (1), emissions of S/IVOC are calculated. Are the NMVOCs included S/IVOCs in this study? Please clarify across the entire manuscript.
- Line 146-147: Why only the control of NMVOCs emissions from industrial solvent use are considered? Are there any other control measures implemented for the residential sectors in China?
- Line 367-368: "Ink emissions were much higher in MEIC, while similar results were found for Sun EI and this study (Figure 7b)." What are the reasons for these differences?
- Line 409-412: "Coatings contribute...solvent-based coatings are dominant ...the wide use of water-based solvent..." The solvent-based coatings and water-based adhesives/inks are large. What are their fractions, respectively? Please clarify here.
- Some other minor comments:

Line 372-374: This sentence is too long.

Line 397: The wording "increase less" is confusing.

Figure 4: The size or positions of the left and right panels can be modified.

Line 355: "The reasons for activity data." This sentence is not completed.

Line 357: between-> from.

Line 394-396: "Compared with 2000...industrial process in MEIC in 2017." This sentence is not completed.