Supplementary material

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For the calculation of the normal volume V_b at the normal boiling point, used in the Wilke-Chang correlation (eq. 41 in the manuscript), the Schroeder method is used https://doi.org/10.1002/cjce.5450740122. The Schroeder method (eq. 1)is an additive method, where the normal boiling point is calculated by adding the contribution of each of the atoms or structural elements that make the molecule.

$$V_b = \sum \Delta V_b \tag{1}$$

With V_b the normal boiling point (cm^3/mol) and ΔV_b the incremental contribution of each part of the molecule (cm^3/mol).
In Table 1 the value of each component's contribution is presented.

Table 1: Values of components contributions to the normal volume V_b

Component	ΔV_b (cm^3/mol)
C	7
H	7
O in OH group	5
O in COOH group	9
O	8
Double bond	7

Here we calculate the V_b for glycerol ($C_3H_8O_5$), succinic acid ($C_4H_6O_4$), formic acid (C_3COOH) and acetic acid (CH_2O_2). In glycerol, all oxygens are part of the OH and all the bonds are single, succinic acid has 2 double bonds and 2 of the O are part OH group. Formic acid has 1 double and the 2 O are part of the COOH group. Finally, acetic acid has one double bond and the O are not part of any group.
Taking all this into account and using eq. (1) and the data in Table 1, the normal volume for each one of the molecules is calculated and presented in Table 2

Table 2: Normal volume V_b values for glycerol, succinic, acetic and formic acid

Molecule	V_b (cm^3/mol)
Glycerol	92
Succinic acid	110
Acetic acid	53
Formic acid	37