

**Supporting information:**

**Development of a Novel Simulation Reactor for Chronic Exposure to Atmospheric Particulate Matter**

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## Retention Indices of N-SOA Components

The retention index of a chemical compound is defined by normalizing its retention time to the retention times of co-eluting n-alkanes in the same gas chromatogram<sup>1</sup>. In temperature-programmed chromatography, the retention index of a certain compound *i* can be calculated as:

$$I_i = \frac{t_i - t_n}{t_N - t_n} \times 100 + 100 \times n$$

where  $I_i$  is the retention index of compound *i*;  $t_i$ ,  $t_n$ ,  $t_N$  are the retention time of compound *i*, smaller n-alkane and larger n-alkane, respectively; *n* is number of carbons in smaller n-alkane compound.

The references for the retention indices listed in Table 1 are shown as follows:

Compounds	Reference
Benzoic acid	Ref. 2
1,3-Indandione	Ref. 3
Naphthaquinone	Ref. 4
1-naphthalenol and 2-naphthalenol	Ref. 5

## References

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