



## Correction: Reactive polycyclic aromatic hydrocarbon dimerization drives soot nucleation

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Cite this: *Phys. Chem. Chem. Phys.*, 2018, 20, 28941

Correction for 'Reactive polycyclic aromatic hydrocarbon dimerization drives soot nucleation' by M. R. Kholghy *et al.*, *Phys. Chem. Chem. Phys.*, 2018, 20, 10926–10938.

DOI: 10.1039/c8cp91898h

rsc.li/pccp

The authors would like to make the following corrections to the published article.

(1) In the Nomenclature, the following should be added:

$A_v$	Avogadro number [mole <sup>-1</sup> ]
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(2) On page 10928, eqn (1) and (2) should be changed as follows. In the correct format, the changes are shown in bold.

Wrong format

$$k_f = 2.2P10^6 d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}} T^{0.5}$$

$$k_r = 2.2P10^{6-b} d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}} T^{0.5} e^{(-ae \ln b / R_u T)}$$

Correct format

$$k_f = 2.2PA_v 10^6 d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}} T^{0.5}$$

$$k_r = 2.2PA_v 10^{6-b} d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}} T^{0.5} e^{(-ae \ln 10 / R_u T)}$$

This change will affect some formulas listed in Table 1 of page 10928. The changes are shown in bold.

**Table 1** Rate coefficients in Arrhenius form:  $k = AT^n \exp(-E/RT)$ . Units are cm<sup>3</sup>, K, mol, s, and kcal

Type	#	Reaction	A	n	E	Ref.	
Reversible dimerization	1	$PAH_i + PAH_j \rightleftharpoons \text{Dimer}_{ij}^*$	<i>f</i>	$2.2PA_v 10^6 d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}}$	0.5	0.0	This work
			<i>r</i>	$2.2PA_v 10^{6-b} d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}}$	0.5	$ae \ln 10$	This work
	2	$PAH_i + PAH_{j-1} \rightleftharpoons \text{Dimer}_{ij-1}^*$	<i>f</i>	$2.2PA_v 10^6 d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}}$	0.5	0.0	This work
			<i>r</i>	$2.2PA_v 10^{6-b} d_{ij}^2 \sqrt{8\pi k_B / \mu_{ij}}$	0.5	$ae \ln 10$	This work
Dehydrogenation	3	$\text{Dimer}_{ij}^* + H \rightleftharpoons \text{Dimer}_{ij-1}^* + H_2$	<i>f</i>	$10^8$	1.8	16.35	52, 53
			<i>r</i>	$8.68 \times 10^4$	2.36	6.09	53
	4	$\text{Dimer}_{ij}^* + OH \rightleftharpoons \text{Dimer}_{ij-1}^* + H_2O$	<i>f</i>	$6.72 \times 10^1$	3.33	1.46	53
			<i>r</i>	$6.44 \times 10^{-1}$	3.79	6.68	53
	5	$\text{Dimer}_{ij}^* \rightleftharpoons \text{Dimer}_{ij-1}^* + H$	<i>f</i>	$1.13 \times 10^{16}$	-0.06	113.8	53
			<i>r</i>	$4.17 \times 10^{13}$	0.15	0.0	53
Dimer bond formation	6	$PAH_{i-1} + PAH_{j-1} \Rightarrow \text{Dimer}_{ij}$	<i>f</i>	$10^9$	0.0	11.5	54
	7	$\text{Dimer}_{ij-1}^* \Rightarrow \text{Dimer}_{ij} + H$	<i>f</i>	$10^{11}$	0.0	21.9	53, 54
	8	$\text{Dimer}_{ij}^* \Rightarrow \text{Dimer}_{ij} + H_2$	<i>f</i>	$10^8$	0.0	36.5	54

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(3) On page 10928, right column after eqn (3):

Wrong value of  $a$

Correct value of  $a$

where  $a = 0.38$  and  $b = 1.8$

where  $a = \mathbf{0.115}$  and  $b = 1.8$

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

