

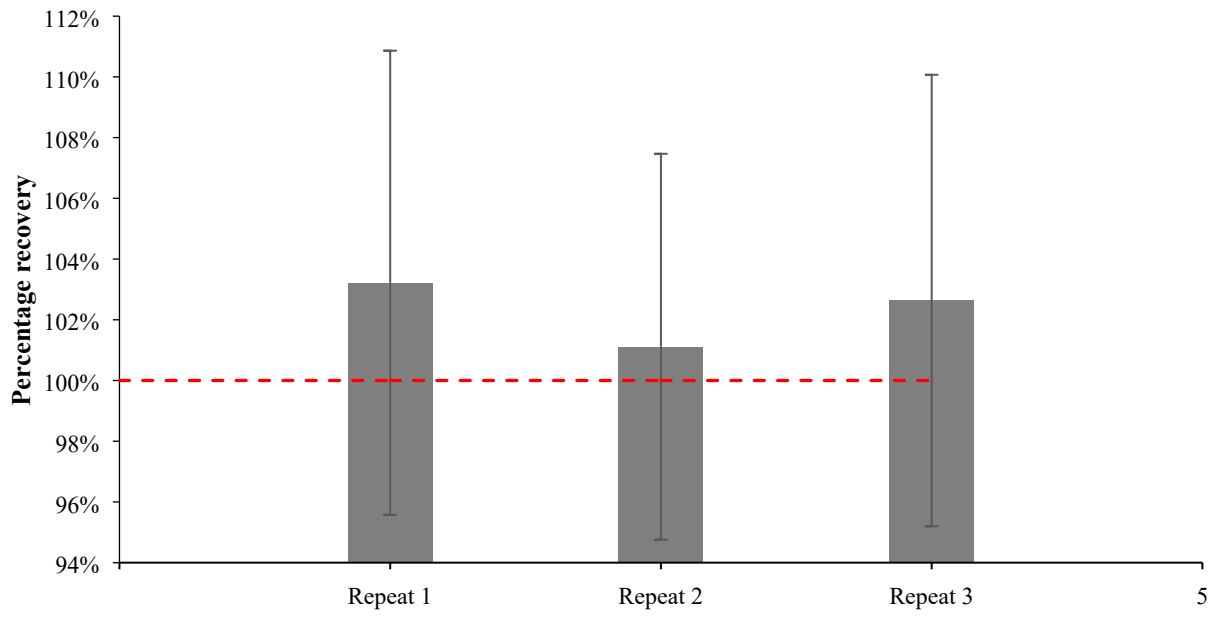
1 Supplementary information

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3 **Supplementary Table 1** Mass fraction and uncertainty ($k = 2$) of analyte in tyre samples of different brands and
4 models ($\mu\text{g g}^{-1}$). Results are an average of 5 replicates and are not presented if <LoD.

Sample		Mg	Al	Ti	Fe	Ni	Cu	Zn	Ba	Pb
UKT242	Mass fraction	43.7	638	71.4	117	3.88	2.93	8150	2.39	29.2
	Uncertainty	6.0	56	4.1	11	0.62	0.16	421	0.17	3.0
UKT244	Mass fraction	40.2	554	64.2	117	2.95	2.25	6851	1.68	25.4
	Uncertainty	5.4	39	5.1	10	0.48	0.26	354	0.20	2.7
UKT245	Mass fraction	51.7	643	25.9	67.6	1.80	2.17	8146	-	28.6
	Uncertainty	6.9	63	4.6	6.9	0.30	0.15	406	-	2.9
UKT246	Mass fraction	63.6	936	55.6	155	2.98	4.28	8844	8.29	8.80
	Uncertainty	6.5	94	8.3	13	0.49	0.27	435	0.52	0.99
UKT247	Mass fraction	73.3	707	18.4	54.3	1.32	2.54	13150	-	14.1
	Uncertainty	13.8	69	1.7	7.3	0.28	0.20	570	-	1.7
Mean	Mass fraction	54.5	695	47.1	102	2.6	2.8	9028	2.72	21.2
	Uncertainty	18.1	162	13.7	25.9	1.0	0.6	1421	2.2	5.7

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8 **Supplementary Figure 1** Percentage recovery of Y spiked onto tyre sample over 3 repeat measurements.

9 **Supplementary Table 2** Details of calculations used to estimate emission rates.

	Mg	Al	Ti	Fe	Ni	Cu	Zn	Ba	Pb
Average mass fraction in tyre ($\mu\text{g g}^{-1}$) - A	55	695	47	102	3	3	9028	3	21
PM10 tyre wear emission rate (passenger cars) (mg km^{-1}) [USEPA MOVES tool] - B					5				
Metals in PM10 tyre wear emission rate (passenger cars) (ng km^{-1}) - C	273	3477	236	511	13	14	45141	14	106
Distance driven by cars & taxis in Great Britain in 2020 (km) - D					3.18E+11				
Metals in PM10 tyre wear emissions from cars and taxis in Great Britain in 2020 - E	87	1104	75	162	4	4	14337	4	34
PM10 emitted from tyre wear (passenger cars) in 2020 (kt) [UKNAEI] - F					2.718				
Metals in PM10 in 2020 (kg) - G	148	1890	128	278	7	8	24540	7	58

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11 $A \times B = c$

12 $C \times (D \times 10^{-12}) = E$

13 $A \times F = G$

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