

Supplementary Information

Table S1 – Results obtained from leachate preparation, regarding particle size as well as pH and EC of the leachates.

Parameter	A1	A2	A3	A4	A5	A6
Percentage of the sample with particle size > 4 mm (%)	40	50	50	25	15	31
Percentage of non-crushable material in the sample (%)	0	0	0	0	0	0
Leachate pH	9	9.5	9.1	8.1	9.5	7.7
Leachate EC ^a (µS / cm)	328	497	325	1.95	1.37	314

^aEC – Electrical conductivity

Table S2 – Grading of skin reactions (erythema and eschar formation, and oedema formation) according to OECD guideline 404.

Erythema and Eschar Formation	Score	Oedema Formation	Score
No erythema	0	No oedema	0
Very slight erythema (barely perceptible)	1	Very slight oedema (barely perceptible)	1
Well defined erythema	2	Slight oedema (edges of the area well defined by definite raising)	2
Moderate to severe erythema	3	Moderate oedema (raised approx. 1 mm)	3
Severe erythema (beef redness) to eschar formation preventing grading of erythema	4	Severe oedema (raised more than 1 mm and extending beyond the area of exposure)	4

Table S3 - Results of the physical and chemical parameters analyzed for IBA samples (A1 to A6). Concentration of chemical elements expressed in mg/kg.

Parameters	Uncertainty	A1 ^a	A2 ^b	A3 ^c	A5 ^d	A4 ^e	A6 ^f	Literature ^g
pH	±0.2	9.7	9.2	9.0	9.8	11.6	10.4	Fresh: 10-13 ^h ; Weathered: 8-10 ⁱ
Moisture (%)	±10	14.2	16.5	15.8	24.4	27.4	14.0	7% - 30% ^j
As (mg/kg)	±37	<10	<10	<10	<10	<10	<10	0.12 - 190
Be (mg/kg)	±14	<4	<4	<4	<4	<4	<4	0.8 - 6
Cd (mg/kg)	±13	<2.0	3.0	3.6	4.2	115	3.0	0.3 - 146
Co (mg/kg)	±19	<4	17	8	13	20	8	6 - 350
Cr (mg/kg)	± 13	47	49	40	29	27	21	20 - 3,400
Cu (mg/kg)	±12	2151	3267	525	1289	688	19	190 – 25,000
Hg (mg/kg)	±20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.02 - 7.75
Mo (mg/kg)	±28	<4	<4	<4	2	<1	<1	2.5 - 280
Ni (mg/kg)	±13	34	23	28	19	18	40	7 - 4300
Pb (mg/kg)	±12	894	433	313	334	590	3569	75 - 14,000
Sb (mg/kg)	±18	<10	<10	<10	<10	<10	38	7.6 - 432
Se (mg/kg)	±18	<10	<10	<10	<10	<10	<10	0.05-10.0
Sn (mg/kg)	±16	<4	<4	<4	54	39	<4	2 - 960
Te (mg/kg)	±15	<4	<4	<4	<4	<4	<4	0.208
Tl (mg/kg)	±12	<4	<4	<4	<4	<4	<4	0.0077-0.23
Zn (mg/kg)	±13	2454	2501	2213	2279	2932	1410	10-20,000
PAH (µm/kg)	±39	<160	<160	<160	426	237	<160	13 - 2,190
Total Organic Carbon (%)	±14	-	-	-	2.40	0.22	0.26	<1-4

^a less than 3-month weathering (<20 mm); ^b 3-month weathered (<20 mm); ^c more than 3-month weathering; ^d more than 3-month weathering; ^e fresh IBA (1 day); ^f more than 3-month weathering (<20 mm); ^g [33,35–48]; ^h [16,49]; ⁱ [14,15]; ^j [20,21,50,51]

Table S4 - Immobilisation of *Daphnia magna* (mean ± standard deviation) after 48h exposure to different concentrations of IBA leachates.

Concentration	Immobilisation (%)					
	A1	A2	A3	A4	A5	A6
Control	0 ± 0	0 ± 0	0 ± 0	0 ± 0	0 ± 0	0 ± 0
1%	0 ± 0	0 ± 0	5 ± 10	0 ± 0	0 ± 0	0 ± 0
2%	0 ± 0	0 ± 0	40 ± 0	0 ± 0	0 ± 0	0 ± 0
4%	0 ± 0	0 ± 0	40 ± 0	20 ± 16	0 ± 0	0 ± 0
8%	5 ± 10	0 ± 0	45 ± 10	45 ± 10	5 ± 10	0 ± 0
16%	15 ± 10	5 ± 10	45 ± 10	45 ± 10	20 ± 0	5 ± 10