

Correction

Correction: Bandarra et al. A Study on the Classification of a Mirror Entry in the European List of Waste: Incineration Bottom Ash from Municipal Solid Waste. *Sustainability* 2022, 14, 10352

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The authors would like to make the following corrections to the published paper [1]. The changes are as follows:

- (1) Author replacements: the authors would like to make changes to the cut-off limit for the hazard statement code H410 in the Table 6, so we need to replace the original Table 6.

Table 6. Compounds that could be found in the samples considering “worst-case scenario”, their concentrations, the hazard class/category code(s) and hazard statement code(s) according to the list of harmonized classification and labeling of hazardous substances (Annex VI of CLP) as well as the cut-off limits established in Regulation (EU) No 1357/2014.

Chemicals	A1 (%)	A2 (%)	A3 (%)	A4 (%)	A5 (%)	A6 (%)	HP	Hazard Class and Category Code(s)	Hazard Statement Code(s)	Cut-Off Limits
Zn (dust)	0.25	0.25	0.22	0.23	0.29	0.14	HP 3 HP 3 HP 14 HP 14 HP 14 HP 14	Water-react. 1 Pyr. Sol. 1 Aquatic Acute 1 Aquatic Chronic 1 Aquatic Acute 1 Aquatic Chronic 1	H260 H250 H400 H410 H400 H410	- - 0.1% 1% 0.1% 1%
Zinc oxide (ZnO)	0.31	0.31	0.28	0.28	0.37	0.18	HP 14 HP 14 HP 14	Aquatic Acute 1 Aquatic Chronic 1 Aquatic Acute 1	H400 H410 H400	1% 1% 0.1%
Zinc sulfate (ZnSO ₄)	0.61	0.62	0.55	0.56	0.72	0.35	HP 6 HP 4 HP 14 HP 14 HP 14	Acute Tox. 4 Eye Dam. 1 Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 1	H302 H318 H400 H410 H410	1% 1% 0.1% 1% 1%
Zinc chloride (ZnCl ₂)	0.51	0.52	0.46	0.48	0.61	0.29	HP 6 HP 8 HP 14 HP 14	Acute Tox. 4 Skin Corr. 1B Aquatic Acute 1 Aquatic Chronic 1	H302 H314 H400 H410	1% 1% 0.1% 1%
Cu	0.22	0.33	0.05	0.13	0.07	0.002	-	-	-	-
Copper(II) oxide (CuO)	0.27	0.41	0.07	0.16	0.09	0.002	HP 14 HP 14 HP 6	Aquatic Acute 1 Aquatic Chronic 1 Acute Tox. 4	H400 H410 H332	0.1% 1% 1%
Copper(I) oxide (Cu ₂ O)	0.48	0.74	0.12	0.29	0.16	0.004	HP 6 HP 6 HP 4 HP 14 HP 14	Acute Tox. 4 Eye Dam. 1 Aquatic Acute 1 Aquatic Chronic 1	H302 H318 H400 H410	1% 1% 0.1% 1%
Pb	0.09	0.04	0.03	0.03	0.06	0.36	-	-	-	-
Lead compounds with the exception of those specified elsewhere in Annex IV of CLP	>0.09	>0.04	>0.03	>0.03	>0.06	>0.36	HP 10 HP 6 HP 6 HP 5 HP 14 HP 14	Repr. 1A Acute Tox. 4 Acute Tox. 4 STOT RE 2 Aquatic Acute 1 Aquatic Chronic 1	H360 H332 H302 H373 H400 H410	- 1% 1% - 0.1% 1%

With:



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Table 6. Compounds that could be found in the samples in a “worst-case scenario”, their concentrations, the hazard class/category code(s) and the hazard statement code(s), according to the list of harmonized classification and the labeling of hazardous substances (Annex VI of CLP), as well as the cut-off limits established in Regulation (EU) No 1357/2014.

Chemicals	A1 (%)	A2 (%)	A3 (%)	A4 (%)	A5 (%)	A6 (%)	HP	Hazard Class and Category Code(s)	Hazard Statement Code(s)	Cut-Off Limits
Zn (dust)	0.25	0.25	0.22	0.23	0.29	0.14	HP 3	Water-react. 1	H260	-
							HP 3	Pyr. Sol. 1	H250	-
							HP 14	Aquatic Acute 1	H400	0.1%
							HP 14	Aquatic Chronic 1	H410	0.1%
Zinc oxide (ZnO)	0.31	0.31	0.28	0.28	0.37	0.18	HP 14	Aquatic Acute 1	H400	0.1%
							HP 14	Aquatic Chronic 1	H410	0.1%
Zinc sulfate (ZnSO ₄)	0.61	0.62	0.55	0.56	0.72	0.35	HP 6	Acute Tox. 4	H302	1%
							HP 4	Eye Dam. 1	H318	1%
							HP 14	Aquatic Acute 1	H400	0.1%
							HP 14	Aquatic Chronic 1	H410	0.1%
Zinc chloride (ZnCl ₂)	0.51	0.52	0.46	0.48	0.61	0.29	HP 6	Acute Tox. 4	H302	1%
							HP 8	Skin Corr. 1B	H314	1%
							HP 14	Aquatic Acute 1	H400	0.1%
							HP 14	Aquatic Chronic 1	H410	0.1%
Cu	0.22	0.33	0.05	0.13	0.07	0.002	-	-	-	-
Copper(II) oxide (CuO)	0.27	0.41	0.07	0.16	0.09	0.002	HP 14	Aquatic Acute 1	H400	0.1%
							HP 14	Aquatic Chronic 1	H410	0.1%
Copper(I) oxide (Cu ₂ O)	0.48	0.74	0.12	0.29	0.16	0.004	HP 6	Acute Tox. 4	H332	1%
							HP 6	Acute Tox. 4	H302	1%
							HP 4	Eye Dam. 1	H318	1%
							HP 14	Aquatic Acute 1	H400	0.1%
							HP 14	Aquatic Chronic 1	H410	0.1%
Pb	0.09	0.04	0.03	0.03	0.06	0.36	-	-	-	-
Lead compounds with the exception of those specified elsewhere in Annex VI of CLP	>0.09	>0.04	>0.03	>0.03	>0.06	>0.36	HP 10	Repr. 1A	H360	-
							HP 6	Acute Tox. 4	H332	1%
							HP 6	Acute Tox. 4	H302	1%
							HP 5	STOT RE 2	H373	-
							HP 14	Aquatic Acute 1	H400	0.1%
							HP 14	Aquatic Chronic 1	H410	0.1%

- (2) We will also add one sentence into the Section 3.2.11. The replacement will appear as follows:

3.2.11. HP 14 “Ecotoxic”

Council Regulation (EU) 2017/997 was followed when evaluating the ecotoxicity of IBA (samples A4–A6) from a chemical point of view. According to Annex VI of CLP, Zn dust is classified into *Aquatic Acute Toxicity Category 1* and *Aquatic Chronic Toxicity Category 1*. Considering the “worst-case scenario”, some of the compounds that could be found are ZnO, ZnSO₄ or zinc chloride, which are all classified as *Aquatic Acute Toxicity 1* and *Aquatic Chronic Toxicity 1*. For copper, one could find CuO and copper (I) oxide, both also classified with *Aquatic Acute Toxicity 1* and *Aquatic Chronic Toxicity 1*. Lead compounds not specified elsewhere in Annex VI of CLP are also classified as *Aquatic Acute Toxicity Category 1* and *Aquatic Chronic Toxicity Category 1*. The limit value of 25% for the sum of all the substances present in IBA classified as toxic to the aquatic environment was exceeded, according to the calculation formulas from Council Regulation (EU) 2017/997. Nevertheless, Commission Decision 2014/955/UE indicates that when a hazardous property has been assessed via a test and using the concentrations of hazardous substances, the results of the test shall prevail. The possible combined effect of the substances was verified through an ecotoxicity test with *Daphnia magna*. An EC₅₀ value > 160,000 mg/L was obtained via the

test. Regulation (EC) 1272/2008 establishes that $EC_{50} < 100$ mg/L demonstrates ecotoxicity. Thus, the results of the test indicate low acute toxicity for the environment, and the waste was not classified with HP 14 for any of the samples.

Reference

1. Bandarra, B.S.; Silva, S.; Pereira, J.L.; Martins, R.C.; Quina, M.J. A Study on the Classification of a Mirror Entry in the European List of Waste: Incineration Bottom Ash from Municipal Solid Waste. *Sustainability* **2022**, *14*, 10352. [[CrossRef](#)]

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