

F & R Cawley Limited

Part B4 – Section 1 – Table 1b Types of Waste Accepted

The Environment Agency has been consulted regarding the most appropriate waste codes to accept lithium-ion batteries to the site, together with the waste code required for the onward disposal of black mass (shredded batteries).

Waste Acceptance

The waste codes to accept lithium ion batteries will be as follows:

Waste Code	Description of the Waste
Waste not otherwise specified in the list	
16 06 05	Other batteries and accumulators (industrial / commercial waste stream)
Municipal Wastes including separately collected fractions	
20 01 34	Batteries and accumulators other than those mentioned in 20 01 33 (household waste stream)

These codes already form part of Table S2.1 of the permit.

Waste Recovery

Waste Classification of the black mass has been completed by F&R Cawleys in accordance with the Environment Agency's Technical Guidance WM3¹. Five samples of black mass were assessed to determine the concentration of cobalt, copper, iron, manganese, nickel, lithium and aluminium. It was concluded that the concentrations of cobalt, manganese, nickel and lithium resulted in the black mass being classified as hazardous waste under the following risk phrases: HP3 (flammable), HP4 (irritant), HP5 (harmful), HP8 (corrosive) and HP14 (ecotoxic).

The waste code for the onward transport of the black mass created from the shredding of lithium-ion batteries is as follows:

Waste Code	Description of the Waste
Waste from shredding of metal containing wastes	
19 10 05*	Other fractions containing hazardous substances

¹ Environment Agency (2021) Guidance on the classification and assessment of waste, First Edition version 1.2.



Blackmass WM3 Technical Guidance - Confidential

Lab Reference 08.12.2022

Substance	CAS / EC List No.	Hazard Statement Codes	Threshold	Result	As a %
Co	7440-48-4	H317, H334, H341, H350, H413, H360F	10%, 10%, 1%, 0.1%, 1%, 0.3%	Haz	11%
Cu	918-168-7	H302, H317, H319, H351, H373	25%, 10%, 20%, 1%, 10%	Non Haz	1%
Fe	7439-89-6	Not Classified		Non Haz	1%
Mn	7439-95-4	H250, H260	Non Hazardous, 0.1%	Haz	5%
Ni	7440-02-0	H317, H351, H372	10%, 1%, 1%	Haz	8%
Li	7439-93-2	H260, H314	0.1%, 1%	Haz	3%
Al	91728-14-2	Not Classified		Non Haz	2%

Narrative

The average results over 5 samples show Cobalt, Magnesium, Nickel, and Lithium exceed WM3 Threshold Limits making the waste Hazardous under HP3, HP4, HP5, HP8, HP14 EWC Mirror entry 19 10 05* applies