

Treatment and recycling operations on site

1. Describe the treatment and recycling operations you intend to carry out on each category and chemistry of waste batteries at each of your specified sites.

All waste battery products will be accepted at Ecobat Solutions UK Ltd in accordance with our standard operating procedures and Environmental permit conditions. Upon receipt and acceptance, the material will be moved to a dedicated storage area within our licensed area, this can be inside the warehouse unit or stored in suitable containers within the yard.

There are 5 main areas for the treatment of batteries within Ecobat Solutions UK Ltd, these are Units 2, Unit 3, Unit 4, Unit 5, designated high risk material area, and within the licensed yard area.

All inputs and outputs within Unit 2 are recorded; please see Appendix 12 Batch Production Example.

Unit 3 houses a 6T per hour shredding plant for lithium batteries that shreds and separates the fractions into black mass, ferrous and non-ferrous material.

Unit 4 has a smaller 2T per day shredding plant for lithium batteries that is used for R&D purposes, for shredding please refer to Appendix 26.

Unit 5 treat electric vehicle batteries by disassembling to module level and discharged. On current permit application approval, a lithium shredding machine will be commissioned where lithium cells from EV's will be shredded (in unit 3) to produce black mass, ferrous and non-ferrous fractions. These will be sent for onward processing at approved recyclers. Appendix 21 explains this process.

Within the designated high-risk material area, we treat all Lithium batteries; this includes any lithium that has been sorted in unit 2. All lithium batteries are consolidated in the sacrificial building. They are then transferred to the designated high-risk material area to be manually sorted into individual type/chemistry, and then packed in accordance to packing group II regulations and stored ready for export. During the treatment of Lithium batteries, trained operatives remove any contamination.

Within our licensed yard area, we treat Industrial and Automotive batteries. For the Industrial Wet Nickel Cadmium batteries, we manually repack into approved and suitable packaging/containers. Whilst repacking, the trained operatives remove any contamination if any is found.

Industrial lead acid loads are viewed and categorised into discreet and mixed. The mixed loads are then manually sorted by trained operatives, contamination is removed, and the battery categories found are recorded. The batteries are then repacked into bins according to their battery type before being sent for recycling. For the Automotive batteries, the trained operatives inspect all containers to ensure no contamination. All Automotive batteries are stored in bins until they are sent off site to our sister company Ecobat Resources UK Ltd.

All battery contamination found in all processes are sent to the correct area for processing.

Ecobat Solutions UK Ltd confirms the weights we use for reporting and raising evidence excludes non-battery contamination, container/packaging weight and the vehicle weight. All loads which leave our site are weighed on our onsite weighbridge, where the Gross, Tare and Net weight is recorded and printed on a weighbridge ticket. The weighbridge ticket will be detailed to include any battery boxes/pallet weights.

INFORMATION

This will include details of removal of fluids and acids (if applicable) and if treatment / storage is on impermeable surfaces / under weatherproof covering / in suitable containers.

Further treatment / recycling off site

2. Describe the treatment and recycling operations that take place once the waste batteries/components have been transferred on to other sites.

Please refer to uploaded documentation on NPWD. Ecobat Solutions UK Ltd have uploaded all potential recyclers information on their processes and recycling efficiencies.

Ecobat Solutions UK Ltd receive proof of recovery of batteries sent off site by receiving the completed TFS/Annex VII documentation. For TFS documentation Box 18 must be completed within 3 days to confirm receipt of the material, Box 19 then has to be completed within 12months (hazardous material) to confirm recycling.

For Annex VII documentation box 14 must be completed on receipt of the material. We then receive an invoice within 12months (non-hazardous material) to confirm recycling. This is recorded by our Commercial Department.

Please see Appendix 25 Recycling Certificate Example (TFS) & Appendix 24 Annex VII Example.

Further downstream processing of the recycling residues of batteries received overseas, are recorded within the battery recycling efficiency documents. We confirm with all recyclers that when they send confirmation the material has been recovered; this does include any material they send downstream.

For material sent in the UK for recycling at our partner company Ecobat Resources UK Ltd, we receive Notification of Destruction, please see Appendix 22.

INFORMATION

For each downstream site - this will include the treatment and recycling operations of each category and chemistry of waste batteries, and each component or specific waste stream (e.g. plastics, metals), as well as information about the end products.

There must be a satisfactory audit trail to confirm the batteries have been treated and recycled.

Treatment requirements

- 3. You must ensure that the treatment and recycling complies with;**
- Best available techniques
 - EC legislation.
- Please tell us how you meet this requirement.**

All processes of treatment on our site are reviewed regularly. We have a number of visits / audits regularly on-site including visits from the Environment Agency and the Health and Safety Executive, if there are any recommendations put forward, we review our processes to ensure we are treating the batteries to the best available technique.

We follow many regulations and ensure we comply with all relevant legislation, including ADR, IMDG, Carriage of Dangerous Goods and HSE.

Battery recyclers are only approved if their recycling efficiencies and processes are sufficient to meet the requirements of best available techniques, legislation, relevant guidance and then approved via application and permitting to the competent authorities. Ecobat Solutions UK Ltd are therefore confident that approved recyclers are meeting recycling efficiencies in line with commission regulation 493/2012 and operating in a compliant manner.

INFORMATION

Includes health and safety and waste management legislation.

Recycling requirements

4. If you recycle batteries, how do you ensure that the recycling meets the appropriate recycling efficiencies?

First stage recycling (shredding) will be completed on site when approval granted. Recycling efficiencies have been evaluated for the onsite processing, and onward destinations. All onward destination for further recycling treatment will complete a duty of care audit prior to work commencing where the recycling efficiencies will be audited and confirm if above the minimum standards.

Projected recycling efficiency has been completed for Darlaston that is based around Ecobat Solutions Germany process & samples taken on lithium batteries. Appendix 27.

INFORMATION

You must ensure that when you treat or send the batteries downstream for treatment, that the recovery meets the minimum standards.

Lead Acid = 65%

Ni-Cd = 75%

Other = 50%

You will need to obtain details of the quantities of materials recycled to confirm that the recycling efficiencies will be met.