

# Call for evidence - Identification and analysis of substances of concern and hampering recycling in batteries

Fields marked with \* are mandatory.

## Background information

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This call for evidence relates to the identification and analysis of **substances of concern in batteries including those hampering recycling**

The work aims to identify substances of concern in batteries, including substances that hamper recycling, to further inform the objectives of the Batteries Regulation.

As part of this project, **we are seeking additional information on specific areas of battery chemistries, uses, and recycling**. This is an opportunity for you to provide additional information and highlight gaps in knowledge and understanding to allow ECHA and the European Commission to identify the best regulatory approach to control risks from the use of these substances in batteries. The consultation activities undertaken in this project build on the call for evidence launched earlier this year by asking more specific questions to specific stakeholders.

If you have any questions, please contact the project team ([karina.reynolds@wsp.com](mailto:karina.reynolds@wsp.com) and [CC restriction-batteries@echa.europa.eu](mailto:CC restriction-batteries@echa.europa.eu)).

The data obtained will be anonymised and reported in a way that information cannot be traced back to your organisation name.

The sections within this CfE are as follows:

### **Section 1: Additional substances and missing battery technologies.**

- This section presents battery technologies that have been identified through previous work and asks stakeholders to identify if there are missing technologies.

### **Section 2: Substances in batteries**

- This section presents an excel spreadsheet of substances used in batteries identified from previous works. Stakeholders are asked to fill in information to help complete the information needs for these substances.

### **Section 3: Recycling process**

- This section asks stakeholders to provide additional information on the recycling processes that are currently in use for batteries.

### **Section 4: Substances hampering recycling**

- This section focuses on substances that may hamper the recycling process, and the reason why these substances hamper the process.

### **Section 5: Emissions**

- This section asks for information on the use and emissions of different battery technologies and substances used in batteries.

Mandatory questions are marked with an \*

**This survey will be open until 10/12/2025**

**The list of known substances can be found here.**

Please note that this is the excel file that is used throughout the survey, so you only need to download it once to fill out the information. Please only upload one version of the document at the end of the survey.

[SoC in batteries CfE workbook final.xlsx](#)

## About you

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**\* Name:**

Rafael Basciano

**\* Organisation:**

FEAD

**\* Stakeholder type:**

- ☐ Company
- ☒ Industry/trade association
- ☐ National authority/agency
- ☐ European authority/agency
- ☐ Researcher
- ☐ Other

**If you represent a trade association (national or EU-level) please indicate the (percentage) market coverage of your membership (and the specific market this covers, e.g. EU, Member State). Please specify if this based on financial share of the market, tonnage or quantity of batteries etc.**

**\* Please indicate the category (or categories) that best describes your organisation in relation to the batteries value chain**

- ☐ Raw Material Suppliers
- ☐ Material Producers (Active Materials & Components) [production of cathode, anode active materials. Manufacture of electrolytes, separators, and binders]
- ☐ Battery Manufacturers (includes cell manufacturers)
- ☐ End-Product Manufacturers (integrating batteries into final products)
- ☒ Waste management and recycling companies
- ☐ Other

**Geography**

- ☐ Outside EU
- ☒ Austria
- ☒ Belgium
- ☒ Bulgaria
- ☐ Croatia
- ☐ Cyprus
- ☒ Czechia
- ☒ Denmark
- ☒ Estonia
- ☒ Finland
- ☒ France
- ☒ Germany
- ☒ Greece
- ☐ Hungary
- ☒ Ireland
- ☒ Italy
- ☒ Latvia
- ☐ Lithuania

- ☒ Luxembourg
- ☒ Matla
- ☒ Netherlands
- ☒ Poland
- ☒ Portugal
- ☐ Romania
- ☐ Slovakia
- ☐ Slovenia
- ☒ Spain
- ☐ Sweden
- ☐ Other

**\* Do we have your consent to contact you with an invitation to a future stakeholder consultation (e.g. a one-to-one discussion and/or a workshop)? Please bear in mind that this does not guarantee that you will receive an invitation, nor does it oblige you to accept one should you receive it.**

- ☒ Yes
- ☐ No

## Section 1 - Additional substances and missing battery technologies

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**This section is primarily for manufacturers and users of batteries.**

This section is split into 2 main questions. The first question is about 21 newly identified substances that are registered for use in batteries. However, these substances need to be confirmed.

The second set of questions focuses on missing battery technologies. The list of battery technologies can be seen below.

Categories	Sub-categories	Cell type
Lead acid batteries	Lead acid (PbA)	Rechargeable
Nickel batteries	Nickel cadmium (NiCd)	Rechargeable
	Nickel metal hydride (NiMH)	Rechargeable
Lithium-ion batteries	Lithium cobalt oxide (LCO)	Rechargeable
	Lithium nickel manganese cobalt oxide (NMC)	Rechargeable
	Lithium nickel cobalt aluminium oxide (NCA)	Rechargeable
	Lithium iron phosphate (LFP)	Rechargeable
	Lithium manganese iron phosphate (LMFP)	Rechargeable
	Lithium manganese dioxide (LMO)	Rechargeable
	Lithium titanate (LTO)	Rechargeable
	Solid state Li-metal (SSB) <sup>a</sup>	Rechargeable
Non-rechargeable Li-Metal batteries	Lithium-manganese oxide (Li-MnO <sub>2</sub> )	Non-rechargeable
	Lithium carbon fluoride (Li-(CF) <sub>x</sub> )	Non-rechargeable
	Lithium-iodide (Li-I)	Non-rechargeable
	Lithium-thionyl chloride (Li-SOCl <sub>2</sub> )	Non-rechargeable
	Lithium sulfuryl chloride (Li-SO <sub>2</sub> Cl <sub>2</sub> )	Non-rechargeable
	Lithium-sulfur dioxide (Li-SO <sub>2</sub> )	Non-rechargeable
	Lithium-iron disulfide (Li-FeS <sub>2</sub> )	Non-rechargeable
	Lithium-copper(ii) oxide (Li-CuO)	Non-rechargeable
	Sodium-sulfur (Na-S)	Rechargeable
	Sodium-nickel chloride (Na-NiCl <sub>2</sub> )	Rechargeable
Sodium batteries	Na-ion (NIB)	Rechargeable
Metal-air batteries	Zinc-air (ZnO) (ZAB)	Non-rechargeable
	Silicon-air (SAB) <sup>a</sup>	Non-rechargeable
	Magnesium-air (MAB) <sup>a</sup>	Non-rechargeable
	Aluminium-air (AAB) <sup>a</sup>	Non-rechargeable
Zinc metal batteries	Zn-MnO <sub>2</sub> ("alkaline")	Non-rechargeable
	Zinc-chloride (Zn-Cl)	Non-rechargeable
	Zinc-carbon (Zn-C)	Non-rechargeable
	Silver zinc (Zn-AgO)	Non-rechargeable
Other batteries	Solid state Li-metal (rechargeable)	Rechargeable
	Ag-metal (Ag-ZnO)	Rechargeable
	Vanadium redox battery (VRB) flow battery	Rechargeable

**Q1 Please download the attached excel. There is a list of newly identified substances that are registered for use in batteries contained within this excel. For this list, please fill out the Section 1 tab of the excel.**

[SoC in batteries CfE workbook final.xlsx](#)

**Q1.1 Annex 1 includes a glossary of battery types organised by chemistry as identified in previous work by ECHA. Are there any battery types you are aware of that are missing from that list?**

- ☐ Yes
- ☐ No

## Section 2 - Substances in batteries

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**This section is primarily for manufacturers and users of batteries**

The excel spreadsheet (attached) provides a list of substances that were identified in previous work by ECHA but for which information on possible use in batteries is incomplete. Please download the file and check the list provided in it. Please complete the spreadsheet for any substances you have information for, and if you are aware of the use of any other substance (in addition to those indicated in the list) in batteries, please provide the information in the specific fields.

**Q2.1 Please use the Excel spreadsheet (SECTION 2) to check, and include additional information:**

**Q2.2 Please upload any additional information/documents you would like to share.**

## Section 3 - Recycling processes

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**This section is primarily for waste operators (specifically recyclers) of batteries.**

This section focuses on gathering information on processes that are used to recycle batteries. The recycling process involves a number of steps (e.g. collection, discharging, dismantling, electrolyte recovery, shredding crushing (to obtain the black mass) and recovery of metals/plastic/other materials (e.g. graphite)). Some of these activities are common to all (or most) battery types while the last one is more specific. We are interested in information regarding the following:

- Processes/technologies where all/most substances/materials are recovered to be used in different applications;
- Processes/technologies where the recovery process focuses on obtaining substances/materials that can be recycled back in the production of batteries.

The excel table (attached) includes a list of recycling technologies identified in previous work by ECHA to recover metals from waste battery materials (such as the black mass).

**Q 3.1 Please use the excel spreadsheet and include information on the technologies used for recycling of batteries [SECTION 3].**

**Q3.2 If you are a recycler in the EU, where is your operation based? If more than one location, please include all.**

We are looking for specific locations, i.e., addresses if possible.

**Q3.3 Please upload any additional information/documents you would like to share:**

## Section 4 - Substances hampering recycling

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**This section is primarily for waste operators (specifically recyclers) or batteries.**

ECHA is currently seeking information on substances (intended as well defined, multi constituent or UVCB substances, including polymers) present in waste batteries that disrupt the waste recycling process (process-disturbing substances) and/or substances that reduce the quality and performance of recyclate (quality-disturbing substances). Additionally, information on materials that may hamper recycling are relevant to this study.

**Q 4.1 Based on the above explanation, are you aware of any specific substances or materials that hamper the recycling of batteries? If so, please complete Section 4 of the excel spreadsheet.**

**Q4.2 Please upload any additional information/documents you would like to share:**

## Section 5 - Emissions

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**Q5.1 Are you aware of (or do you have) information on releases of substances during battery manufacturing and/or recycling processes (e.g. releases to air, water, soil etc.)?**

- ☐ Yes, for Lead (Pb)
- ☐ Yes, for Cadmium (Cd)
- ☐ Yes, for other substances
- ☐ No

**Q 5.2 Please fill out the excel spreadsheet (SECTION 5)**

[Upload Excel here](#)

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**Please upload the Excel spreadsheet here:**

## Contact

[Contact Form](#)