

Nordic Ecolabelling of  
**Primary Batteries**



Version 4.9 • 22 June 2011 - 31 December 2020



# Content

<b>What is a Nordic Ecolabelled primary battery?</b>	<b>3</b>
<b>Why choose the Nordic Ecolabel?</b>	<b>3</b>
<b>What can carry the Nordic Ecolabel?</b>	<b>3</b>
<b>How to apply</b>	<b>4</b>
<b>What are the requirements for a Nordic Ecolabel to be awarded</b>	<b>5</b>
1 <b>Environmental requirements</b>	<b>5</b>
2 <b>Packaging and information</b>	<b>6</b>
3 <b>Working conditions</b>	<b>8</b>
4 <b>Efficiency/quality</b>	<b>8</b>
5 <b>Quality requirements and the requirements of the authorities</b>	<b>10</b>
<b>Analysis laboratory/test institution</b>	<b>11</b>
<b>Regulations for the Nordic Ecolabelling of products</b>	<b>12</b>
<b>Follow-up inspections</b>	<b>12</b>
<b>History of the criteria</b>	<b>12</b>
<b>New criteria</b>	<b>13</b>

Appendix 1 The marketing of Nordic Ecolabelled primary batteries - removed

Appendix 2 Declaration by the applicant on primary and secondary packaging and transport

Appendix 3 Declaration by the applicant confirming compliance with laws and regulations

Appendix 4 Example of description of the structure and composition of a battery

001 Primary Batteries, version 4.9, 31 March 2020

This document is a translation of an original in Danish. In case of dispute, the original document should be taken as authoritative.

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## Addresses

In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, the Nordic Ecolabel. These organisations/companies operate the Nordic ecolabelling system on behalf of their own country's government. For more information, see the websites:

### Denmark

Ecolabelling Denmark  
Danish Standard Foundation  
Göteborg Plads 1  
DK-2150 Nordhavn  
Tel: +45 72 300 450  
info@ecolabel.dk  
www.ecolabel.dk

### Iceland

Ecolabelling Iceland  
Umhverfisstofnun  
Suðurlandsbraut 24  
IS-108 Reykjavik  
Tel: +354 591 20 00  
ust@ust.is  
www.svanurinn.is

### Finland

Ecolabelling Finland  
Urho Kekkosen katu 4-6 E  
FI-00101 Helsingfors  
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joutsen@ecolabel.fi  
www.ecolabel.fi

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NO-0255 Oslo  
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info@svanemerket.no  
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### Sweden

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Box 38114  
SE-100 64 Stockholm  
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info@svanen.se  
www.svanen.se

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## What is a Nordic Ecolabelled primary battery?

The quality (operating time) of Nordic Ecolabelled primary batteries places them amongst the best on the market, which is essential to the environmental profile of the batteries. The longer the operating time, the fewer batteries will need to be used and, accordingly, produced. Strict requirements apply to the information provided to the consumer. Both of these points are intended to ensure that the battery will need to be replaced less frequently, thereby "sparing" the environment the burden of more batteries. The permitted content of lead, cadmium and mercury is lower than the levels stipulated by the authorities in their requirements. A Nordic Ecolabelled rechargeable battery is produced by manufacturers with codes of conduct.

## Why choose the Nordic Ecolabel?

- The Nordic Ecolabel trademark may be used for marketing of primary products. The Nordic Ecolabel enjoys widespread recognition and credibility in the Nordic countries.
- The Nordic Ecolabel represents a cost-effective and straightforward means of communicating a company's environmental work and commitment to customers and suppliers.
- An environmentally-aware business often has broad scope for reducing its costs, for example by lowering its energy consumption and reducing the amount of packaging and waste generated.
- An environmentally-aware business will prepare the primary battery for future environmental requirements.
- Environmental issues are complex and learning about specific problems can take time. Nordic Ecolabelling can be seen as a guide to this process.
- The Nordic Ecolabel criteria contain more than just environmental and health requirements, they also specify quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Ecolabel licence can also be viewed as a mark of quality.

## What can carry the Nordic Ecolabel?

Nordic Ecolabel licences are available for portable primary batteries in accordance with the definition provided in the European Union's Batteries Directive 2006/66/EC of September 2006.

According to the European Union's Batteries Directive 2006/66/EC of September 2006, a primary battery is: Any source of electrical energy generated by direct conversion of chemical energy and consisting of one or more primary battery cells (non-rechargeable).

Portable batteries are confined to: Any battery or button cell, or any battery pack or accumulator, that is sealed, can be hand-carried and is neither an industrial battery or accumulator nor an automotive battery or accumulator.

The criteria do not encompass batteries that are built into or form a permanent part of electronic products and where replacement of the batteries is not possible.

The criteria do not encompass rechargeable batteries, for which separate criteria exist.

## How to apply

### Application and costs

For information about the application process and fees for this productgroup, please refer to the respective national web site. For addresses see page 2.

### What is required?

The application must consist of an application form/web form and documentation showing that the requirements are fulfilled.

Each requirement is marked with the letter O (obligatory requirement) and a number. All requirements must be fulfilled to be awarded a licence.

The text describes how the applicant shall demonstrate fulfilment of each requirement. There are also icons in the text to make this clearer. These icons are:

☒      Enclose

ℙ      The requirement checked on site

All information submitted to Nordic Ecolabelling is treated confidentially. Suppliers can send documentation directly to Nordic Ecolabelling, and this will also be treated confidentially.

### License validity

The ecolabel licence is valid providing the criteria are fulfilled and until the criteria expire. The validity period of the criteria may be extended or adjusted, in which case the licence is automatically extended and the licensee informed.

Revised criteria shall be published at least one year prior to the expiry of the present criteria. The licensee is then offered the opportunity to renew their licence.

### On-site inspection

In connection with handling of the application, Nordic Ecolabelling normally performs an on-site inspection to ensure adherence to the requirements. For such an inspection, data used for calculations, original copies of submitted certificates, test records, purchase statistics, and similar documents that support the application must be available for examination.

### Queries

Please contact Nordic Ecolabelling if you have any queries or require further information. See page 2 for addresses. Further information and assistance (such as calculation sheets or electronic application help) may be available. Visit the relevant national website for further information.

# What are the requirements for a Nordic Ecolabel to be awarded

In order for a Nordic Ecolabel licence to be awarded, all requirements must be fulfilled.

## 1 Environmental requirements

### 01 Content

The applicant must:

- a) Describe the structure of the battery (see the example of a description of the structure of a battery in Appendix 4).
- b) Describe the materials used in the outer container and the proportion that the weight of the outer container makes up of the total weight of the battery.
- c) Submit a specification detailing all constituent substances present in the battery (metals, other solid substances and liquid chemical substances). The specification must state the chemical name, concentration (as ppm or weight %) and a description of the purpose of the constituent substance (see an example on specification in appendix 4).
- d) Submit product safety datasheets for each raw material present in the battery.

Ingoing substances are defined, if not otherwise mentioned, as all substances in the product – including additives (e.g. preservatives or stabilisers) in the raw materials/ingredients, but not residuals from the production, incl. the production of raw materials.

Residuals from production of raw materials are defined as residuals, pollutants and contaminants derived from the production of the raw materials, which are present in the final product in amounts less than 100 ppm (0.0100 %w/w, 100 mg/kg), but not substances added to the raw materials or product intentionally and with a purpose – regardless of amount. Residuals in the raw materials above 1.0 % are regarded as ingoing substances. Known substances released from ingoing substances are also regarded as ingoing substances.

Declaration is made by the supplier based to the best of his/her knowledge at the given time, also based on information from raw material manufacturers, recipe and available knowledge on the product with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Additional specific requirements are imposed on the metals Hg, Cd and Pb in R2.

☒ The following must be submitted for each type of battery to which the application applies:

1. A description of the structure of the battery
2. A description of the materials used in the outer container and the proportion that the weight of the outer container makes up of the total weight of the battery.

3. A specification of the composition of the battery, detailing all substances contained in the battery in accordance with the specification of the requirements.
4. Product safety datasheets for each raw material present in the battery.

## 02 Metal content of batteries

The metal content of the battery must not exceed the following limits:

Metal	Content
Mercury	≤ 0.1 ppm
Cadmium	≤ 1.0 ppm
Lead	≤ 10.0 ppm

*It should be noted that the EU's Batteries Directive 2006/66/EC permits a maximum cadmium content of 20 ppm and a maximum mercury content of 5 ppm. The test laboratory may need special equipment in order to test batteries for a mercury content of <0.1 ppm.*

At least four samples of each battery type must be analysed and all four must meet the requirement.

The metal content of the batteries must be analysed in accordance with "Battery Industry Standard Analytical Method. For the determination of Mercury, Cadmium and Lead in Alkaline Manganese Cells Using AAS, ICP-AES and "Cold Vapour". European Portable Battery Association (EPBA), Battery Association of Japan (BAJ) National Electrical Manufacturers Association (NEMA; USA). April 1998".

Similar test methods may be approved if assessed and adjudged to be equivalent to the recommended method by an independent third party.

- Report from the analysis body showing the metal content of the batteries.
- Declaration confirming that the institution performing the analysis is impartial and fulfils the general requirement applicable to test laboratories as described in the requirements applicable to the analysis laboratory/test institutions below.

## 2 Packaging and information

### 03 Packing, chlorinated plastics

PVC or other chlorinated plastics must not be used as packaging.

- Description of the types of packaging used, both primary and secondary.  
Declaration that no PVC or other chlorinated plastics are used in the packaging (See Appendix 2).

Primary packaging is the packaging in which one or more individual batteries are presented in the sales outlet. Secondary packaging is the packaging in which the batteries in the primary packaging is transported in, for example out to the retail outlet.

### 04 Primary packaging, recycled portion

The total proportion of post-consumer recycled material in the primary packaging for the batteries must be at least 80 weight %.

*Post-consumer material is defined in accordance with ISO 14021(2001 as): Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes return of material from the distribution chain.*

- ☒ Documentation from packaging suppliers showing the proportion of post-consumer recycled material in their products.
- ☒ Statement showing that the total proportion of post-consumer recycled material in the primary packaging exceeds 80 weight %.

## 05 Waste sorting in the production process

A waste plan for sorting refuse generated in the production process must be submitted. The waste plan must as a minimum contain the following:

- Overview of all waste fractions occurring in production.  
(The waste plan must specify discarded batteries and discarded semi-manufactured batteries.)
- Description of how waste is handled during the production process and after delivery (landfill, incineration, treatment, material recycling ...)
- Name and address of the business(es)/organisation(s)/authority(authorities) that collect/receive the waste.

Discarded batteries and discarded semi-manufactured batteries must be collected and sent for recycling. Documentation must be submitted in the form of a declaration from the collector/recipient confirming that these batteries/semi-manufactured batteries have been sent for material recycling.

- ☒ Waste plan as described in the requirement.
- ☒ Declaration from collector/recipient of discarded batteries and discarded semi-manufactured batteries confirming that they are sent for material recycling.

## 06 Lithium batteries, safety

If the batteries to which the application applies contain lithium, the licence-holder/ producer must submit an account of the safeguards that are in place in the battery to prevent the battery from exploding during use.

- ☒ If the battery does not contain lithium: A declaration that there is no lithium in the battery.
- ☒ If the battery contains lithium: A description/details of the safeguards in place to ensure that the battery will not explode during use.

## 07 Consumer information on the battery

The primary packaging must clearly state the types of energy-intensive appliances for which the battery is recommended in order to secure optimum use from the battery. This information must contain:

1. Information on whether the batteries are suitable for appliances with high, medium or low energy drain.
2. At least two pictograms showing examples of the types of energy-consuming appliances for which the batteries are suitable.  
If the batteries are suitable for all different types of energy-consuming appliances, according to R9 table 1- Household batteries and 2 – Photo batteries, no pictogram showing this is needed. In this case, the end user shall be informed that the batteries are suitable for all appliances, through for example text on the packaging or similar.

*Examples of high drain appliances: Camera flash, video camera, remote-controlled toy.*

*Examples of medium drain appliances: Wireless mouse, portable games console, cordless telephone, satellite navigation device.*

*Examples of low drain appliances: Remote control device, wall clock, smoke alarm.*

*The above examples are suggestions. Other pictograms representing appliances are permitted, subject to submission of an explanation to Nordic Ecolabelling.*

- ☒ Sample of packaging showing compliance with the requirement. If the applicant uses other pictograms than those for the appliances specified in the examples, an explanation must be provided of the choice of pictograms used for the individual energy drain levels.

## 3 Working conditions

### 08 Working conditions

The licence holder must have a code of conduct in place in accordance with the ten principles provided for in the United Nations Global Compact.

The licence holder must ensure that the code of conduct is communicated to all suppliers/subcontractors together with a request that these should also comply with a code of conduct that follows the ten principles provided for in the United Nations Global Compact.

*The principles embodied in the United Nations Global Compact include the following: human rights, employee rights, environmental protection and anti-corruption safeguards. Further information can be found at <http://www.unglobalcompact.org>*

- ☒ Copy of the licence holder's "Code of Conduct".

Description of the way in which subcontractors and producers are notified of the licence holder's code of conduct and of the licence holder's request that they have a code of conduct in place that follows the ten principles in the United Nations Global Compact.

## 4 Efficiency/quality

### 09 Operating time

This requirement encompasses the testing of the operating time in various applications depending on the type of battery, see Tables 1 and 2. The table uses the designations defined in the International Electrotechnical Commission's standard IEC 60086-2.

The test conditions under which the batteries are tested must be in accordance with the version of the standard IEC 60086-1 current at the time of application.

Each test includes at least nine batteries per size and brand model, and all nine must meet the requirements.

The batteries must meet the minimum permitted operating time specified in Table 1. In the case of LR6 and LR03, the batteries must meet the test requirements of both of the tests specified in Table 1 in order to be approved.

In order to be approved, LR6/ZR6/FR6/LR03 batteries marketed specifically for photographic use must pass the tests specified in Table 2. If these battery sizes are marketed both for photographic use and for use in other applications, the requirements applicable to the sizes in question in both Tables 1 and 2 must be fulfilled.

Button cells and all other types of batteries with dimensions that do not match those specified in Table 1 and 2, including specially designed batteries, are subject to the following requirements: If the type of battery in question is found in standard IEC 60086-2, the battery must be tested in accordance with the version of IEC 60086-2 current at the time of application, and the test results must show that the battery is 60% better than the time specified in the standard (MAD).

In the case of batteries of types or sizes not found in IEC 60086-02:

In the case of Nordic Ecolabel application for batteries of this type the producer is requested to contact Nordic Ecolabelling. Nordic Ecolabelling will conduct an internal assessment of the operating time requirements that should be applicable with respect to such a battery.

In the case of batteries with a different chemical composition than alkaline but of the same size as the batteries specified in Table 1 and/or 2, the requirements in Table 1 and/or 2 applicable to the relevant size must be met.

**Table 1 Household batteries**

Battery dimensions	Application	Charge	Period (hours/day=h(day))	Cut-off voltage (V)	Minimum permitted operating time
LR20	Portable stereo	600 mA	2 h/day	0.9	17.5
LR14	Portable stereo	400 mA	2 h/day	0.9	13 h
LR6	Radio	43 ohm	4 h/day	0.9	95 h
LR6	Toy with motor	3.9 ohm	1 h/day	0.8	7.5 h
LR03	Portable lighting	5.1 ohm	4 m/h, 8 h/day	0.9	4 h
LR03	Radio	75 ohm	4 h	0.9	70 h
6LR61/LF22	Toy	270 ohm	1 h/day	5.4	21.0 h

**Table 2 Photo batteries**

Battery dimensions	Application	Charge	Period (hours/day=h(day))	Cut-off voltage (V)	Minimum permitted operating time
LR6/ZR6/FR6	Photo flash	1000 mA	10 sec/min, 1 h/day	0.9	500 pulses
LR6/ZR6/FR6	Digital camera	1.5/0.65 W	2 sec/28 sec, 5 min/h, 24 h/day	1.05	100 pulses
LR03	Photo flash	600 mA	10 s/min, 1 h/day	0.9	400 pulses

- The result of discharge testing conducted by an impartial test institution.
- In the case of batteries with different dimensions than those found in Table 1 and 2, the impartial test institution conducting the testing must provide a declaration that the result is at least 60% better than the requirement in the IEC 60086-2 standard current at the time of application.
- Declaration from the test institution showing that the batteries were tested in accordance with the version of IEC 60086-1 concerning test conditions current at the time of application and the version of IEC 60086-2 current at the time of application in accordance with Table 1 or 2 above.
- Declaration confirming that the test institution is impartial and fulfils the general requirements applicable to the test institutions provided for in the chapter "Analysis laboratory/test institution" below.

## 5 Quality requirements and the requirements of the authorities

The following procedures must be in place in order to ensure that the Nordic Ecolabel requirements are fulfilled.

If the primary battery manufacturer has an environmental management system certified in accordance with ISO 14 001 or EMAS incorporating the following procedures, it will be sufficient for the accredited auditor to confirm that the requirements have been implemented.

### 010 Responsibility for the Nordic Ecolabel

One person at the licence holder must be allocated responsibility for fulfilment of the Nordic Ecolabel requirements and one person must be allocated responsibility for contact with Nordic Ecolabelling.

- ☒ Organogram showing the persons responsible for the above duties.

### 011 Documentation

The licence holder must be able to present a copy of the application and the basis for calculations and data (including test reports, documents from subcontractors and the like) underlying the documentation submitted in connection with the application.

- 🔍 On-site inspection.

### 012 The quality of the primary batteries

The licence holder must guarantee that the quality of the Nordic Ecolabelled primary batteries will not decline while the licence remains in force.

- ☒ Procedures for registering and where necessary handling complaints concerning the quality of the Nordic Ecolabelled primary batteries.
- ☒ Procedures to ensure that the composition and quality of the batteries at all times remain in compliance with the Nordic Ecolabel requirements.

### 013 Planned changes

Planned changes which impact on the Nordic Ecolabel requirements must be reported in writing to Nordic Ecolabelling.

- ☒ Procedures showing how planned changes are handled.

### 014 Unforeseen deviations

Unforeseen deviations which impact on the Nordic Ecolabel requirements must be reported in writing to Nordic Ecolabelling and logged in a journal.

- ☒ Procedures showing how unforeseen deviations are handled.

### 015 Traceability

The licence holder must be able to trace the Nordic Ecolabelled primary battery in the production process.

- ☒ Description/procedures for how this requirement is fulfilled.

## 016 Recycling system for packaging

The relevant national regulations, laws and/or industry-wide agreements concerning recycling systems for packaging must be fulfilled in the Nordic countries in which the ecolabelled products go on sale. The following systems apply as at 2010:

Norway: [www.grontpunkt.no](http://www.grontpunkt.no)

Sweden: [www.repa.se](http://www.repa.se)

Finland: [www.pyr.fi](http://www.pyr.fi)

Denmark: None

Iceland: None

- Documentation by the applicant of membership of an existing agreement on recycling/processing.

## 017 Laws and Regulations

The licence holder must ensure that the applicable regulations governing safety, working environment, environmental legislation and plant-specific terms/permits are followed at all production sites at which the Nordic Ecolabelled products are produced.

Nordic Ecolabelling may revoke the licence if the requirement is not fulfilled.

- Appendix 3 must be completed and submitted to Nordic Ecolabelling.

## Analysis laboratory/test institution

The analysis laboratory/test institution must be impartial and competent. The analysis laboratory/test institution must fulfil the general requirements provided for in the EN 45001/DS//EN/ISO/IEC 17025 standard or be an official GLP-approved analysis laboratory.

## Regulations for the Nordic Ecolabelling of products

When the Nordic Swan Ecolabel is used on products the licence number shall be included.

More information on graphical guidelines, regulations and fees can be found at [www.svanen.se/regulations/](http://www.svanen.se/regulations/) or at [www.nordic-ecolabel.org/regulations/](http://www.nordic-ecolabel.org/regulations/)

## Follow-up inspections

Nordic Ecolabelling may decide to check whether primary batteries fulfil Nordic Ecolabel requirements during the licence period. This may involve a site visit, random sampling or similar test.

The licence may be revoked if it is evident that primary batteries do not meet the requirements.

Random samples may also be taken in-store and analysed by an independent laboratory. If the requirements are not met, Nordic Ecolabelling may charge the analysis costs to the licensee.

## History of the criteria

Nordic Ecolabelling adopted the criteria for the Nordic Ecolabelling of primary batteries on 22 June 2011 and they will remain in force until 30 June 2014.

On 15 May 2013 the secretariat managers meeting decided to prolong the criteria until 31 March 2015. The new version is called 4.1.

On 19 March 2014 the Nordic Ecolabelling Board decided to prolong the criteria until 30 June 2016. The new version is called 4.2.

The Nordic Ecolabelling's Criteria Group decided on 6 May 2015 to adjust the requirement R7, consumer information on the battery, regarding the usage of pictograms on the packaging. On 17 November 2014 the Board of Directors decided to remove requirement O18 Marketing. The new version is called 4.3.

The Nordic Ecolabelling's Criteria Group decided on 16 June 2015 to prolong the criteria until 31 December 2016. The new version is called 4.4.

The Nordic Ecolabelling's Criteria Group decided on 5 November 2015 to prolong the criteria until 30 June 2018. The new version is called 4.5.

The Nordic Ecolabelling Board decided on 9 March 2016 to prolong the criteria until 31 March 2019. The new version is called 4.6.

The Nordic Ecolabelling's Criteria Group decided on 15 March 2017 to prolong the criteria until 31 October 2019. The new version is called 4.7.

The Nordic Ecolabelling's Criteria Group decided on 10 October 2018 to prolong the criteria until 30 June 2020. The new version is called 4.8.

Nordic Ecolabelling decided on 31 March 2020 to prolong the criteria until 31 December 2020. The new version is called 4.9.

## **New criteria**

In future revisions Nordic Ecolabelling will consider the following points:

- The possibility of tightening up the requirements applicable to the constituent substances in the batteries
- The possibility of imposing requirements on the energy consumed in the production of batteries

## **Appendix 1    The marketing of Nordic Ecolabelled primary batteries**

The appendix is removed as decided by the Board of Directors 17 November 2014.

## **Appendix 2      Declaration by the applicant on primary and secondary packaging and transport**

The undersigned hereby confirms that primary and secondary packaging does not contain PVC or other chlorinated plastic products.

Date	Name of business (licence applicant)
Person responsible for packaging	Telephone/e-mail

## Appendix 3 Declaration by the applicant confirming compliance with laws and regulations

I hereby declare that the applicable provisions governing safety, working environment, environmental legislation and plant-specific conditions/permits are followed at the production site for the Nordic Ecolabelled primary battery.

The following authorities are responsible for supervising the production site.

The working environment (name, address, telephone number):

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Environmental legislation (name, address, telephone number)

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Plant-specific conditions/permits (name, address, telephone number):

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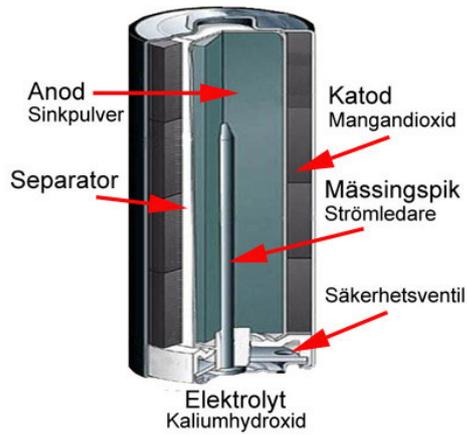
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Date	Name of business (licence applicant)
Person responsible	Telephone/e-mail

## Appendix 4 Example of description of the structure and composition of a battery

Example of a description of the structure of a battery



Example of overview of structure of battery:

Substance and Cas No.	Supplier	Concentration	Function
Zinc (Cas No. 7440-66-6)	"Name of business Ltd"	25 (weight) %	Anode xxxx
Sodium hydroxide (Cas No. 1310-58-3)	"Name of business Ltd"	5 (weight) %	XXX
Copper (Cas No. 7744-50-8)	"Name of business Ltd"	0.05 (weight) %	Xxxx
Arsenic (Cas No. 7440-38-2)	"Name of business Ltd"	0.02 (weight) %	Pollutant in zinc