

Environmental Choice^M Program

CERTIFICATION CRITERIA DOCUMENT

CCD-133



Product: Batteries: Rechargeable Consumer

Preamble

Pursuant to paragraph 54 (1)(b) of the *Canadian Environmental Protection Act, 1999*, the Minister of the Environment is pleased to publish the following national guideline on **rechargeable consumer batteries** under the auspices of the Environmental Choice^M Program.

The Environmental Choice Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption and by minimizing the impacts of pollution generated by the production, use and disposal of goods and services available to Canadians.

Canadians buy over 150 million consumer batteries each year. Well over 90% of these are single use (primary) batteries. One rechargeable battery can replace many single-use batteries, with associated advantages in terms of resource use and disposal burden. On the other hand, toxic substances -- in particular cadmium -- contained in some rechargeable batteries pose a potential threat to human health and the environment. Therefore, to ensure that rechargeable batteries that are eligible for the EcoLogo^M constitute an environmentally superior alternative, requirements in addition to rechargeability must be met.

Based on a review of currently available life cycle information, the product category requirements will produce an environmental benefit through **resource conservation, reduced solid waste, and reduced potential for human exposure to, and environmental releases of, toxic substances.**

Life cycle review is an ongoing process. As information and technology change, the product category requirements will be reviewed and possibly amended.

Environment Canada anticipates that manufacturers or importers of **rechargeable consumer batteries** which conform to this guideline will apply to the Environmental Choice Program for verification and subsequent authority to label the qualifying products with the Environmental Choice EcoLogo^M.

Note: Environmental Choice guidelines were previously issued for: *Batteries* (ECP-04-89) including speciality batteries, zinc air, and *Batteries: Non-rechargeable* (ECP-27-90) including cylindrical and button or coin alkaline batteries.

Notice

Any reference to a standard means to the latest edition of that standard.

The Environmental Choice Program reserves the right to accept equivalent test data for the test methods specified in this guideline.

Notice of Intent

It is the intent of the Environmental Choice Program at the next revision of this guideline to:

- incorporate a sub-category for single-use batteries and phase out the separate guideline on *Batteries: Non-Rechargeable* (ECP-27-90); and
- evaluate criteria relating to toxicity, bioaccumulation, and persistence of substances instead of an exclusion list for toxic substances.

Interpretation

1. In the following guideline:

"**10 hour discharge rate**" means the current which will drain the rated capacity in 10 hours;

"**A**" means amperes;

"**Ah**" means ampere-hours;

"**acutely lethal**" means that the effluent at 100% concentration kills more than 50 % of the rainbow trout subjected to it when tested in accordance with section 5 or 6 of the *Reference Method for Determining the Acute Lethality of Effluent to Rainbow Trout*, EPS 1/RM/13, July 1990, or when tested in accordance with any test for acute lethality specified in applicable regulations;

"**battery**" means single galvanic cells, and two or more series- or parallel-connected galvanic cells;

"**capacity**" means the output capability or quantity of electricity a battery can deliver, in units of Ah. It is measured under the same conditions as is the rated capacity;

"**cell**" means the unit, composing all or part of a battery, which converts chemical energy directly into electric energy by means of two electrodes of dissimilar material immersed in an electrolyte;

"**consumer**" means a household, commercial establishment or industrial or institutional facility;

"**cutoff voltage**" means the voltage below which the battery is deemed to be discharged. Where cutoff voltage is specified, it refers to cutoff voltage *per cell*;

"**cycle life**" means the total number of charge-discharge cycles provided until the battery can no longer deliver at least 60 % of the minimum rated capacity specified in section 4(a)(i);

"**cycle life capacity**" means the sum of the capacity of each cycle up to the point at which the capacity per cycle declines below 60% of the minimum rated capacity specified in section 4(a)(i). It is measured under the same conditions as is the rated capacity;

"**IEC**" means International Electrotechnical Commission;

"**rated capacity**" means the quantity of electricity a battery can deliver, under specified conditions, to a cutoff voltage of 0.9 V. Rated capacity is measured in Ah, either in the first discharge, or after the battery has been charged, under following conditions:

- at a constant current: the 10 h discharge rate, or
- at a constant resistance, based on model :

for AAA	7.5 ohms
for AA	3.9 ohms
for C	3.9 ohms
for D	2.2 ohms
for N	5.1 ohms
for 9V	180 ohms;

"**rechargeable battery**" means any battery which is specifically designed to be recharged; and

"**rechargeable consumer battery**" means any rechargeable battery which is interchangeable, in terms of dimensions and tolerances, with a non-rechargeable consumer battery. This includes AAA, AA, C, D, N and 9V batteries.

Category Definition

2. This category includes all **rechargeable consumer batteries**. It does not include rechargeable batteries designed specifically for use in original equipment (e.g., camcorders, notebook computers), nor batteries designed for special use conditions (e.g., permanent charge, high temperature), nor speciality batteries.

General Requirements

3. To be authorized to carry the EcoLogo **rechargeable consumer batteries** must:
- (a) meet or exceed all applicable governmental and industrial safety and performance standards; and
 - (b) be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, bylaws and regulations including, for facilities located in Canada, the *Fisheries Act* and the *Canadian Environmental Protection Act (CEPA)*.

Note: Depending on the battery type, performance standards (as required in 3 (a)) may be published by the International Electrotechnical Commission (IEC). For the purposes of this guideline, any battery must comply with the relevant IEC standard(s) to qualify for the EcoLogo.

Product Specific Requirements

4. To be authorized to carry the EcoLogo the **rechargeable consumer batteries** must:
- (a) meet the following performance standards:
 - (i) The rated capacity of the battery, by model, must be equal to or greater than the following minimum value:

for AAA:	300 mAh
for AA:	750 mAh
for C:	1800 mAh
for D:	3000 mAh
for N:	270 mAh
for 9V:	180 mAh;
 - (ii) The cycle life capacity of the battery, by model, must be equal to or greater than the following minimum values:

for AAA:	7 Ah
for AA:	16.5 Ah
for C:	48 Ah
for D:	70 Ah
for N:	5 Ah
for 9V	3 Ah
 - (iii) After storage of the battery on open circuit for 4 weeks, the capacity of the battery must, without recharging, be at least 90% of the minimum rated capacity specified under (i).

- (iv) After storage of the battery on open circuit at a relative humidity of 65% (\pm 20%), for either 52 weeks at 20 °C \pm 5 °C or 4 weeks at 45 °C \pm 2 °C, the battery must, after recharging, meet the rated capacity requirements specified under (i).
 - (v) No electrolyte, sealing compound, or other internal component may appear on any external surfaces of the battery during or following any of the tests specified in (i) to (iv).
- (b) be labelled:
- (i) as required in the IEC Standard applicable to the model, when available; or,
 - (ii) with at least the following information:
 - safety-related prohibitions, as required, in durable marking on the battery itself (e.g., "do not dispose in fire", "do not dismantle")
 - use-related instructions to prevent hazards and promote maximum battery life and utility (e.g., recharging instructions; prohibitions regarding mixing batteries of different ages or types). Use-related instructions may be carried on the battery, on the packaging, or on a shelf label or fact sheet if the battery is sold without packaging.
 - (c) if distributed with a charger, must be distributed only with a charger labelled with information related to proper recharging procedures to prevent hazards and maximize useful battery life;
 - (d) be manufactured in such a manner that none of the effluents or wastes discharged to the environment in the manufacturing process are acutely lethal;
 - (e) not be manufactured or formulated with mercury, cadmium, or their compounds, except where such substances are present as naturally occurring trace contaminant associated with other battery components.
5. All performance testing specified in Sections 4(a) (i) to (iv) must, unless otherwise specified, be carried out under the following conditions:
- (a) at a temperature of 20°C (\pm 5°C);
 - (b) discharging to a cutoff voltage of 0.9 V at either a constant current equivalent to the 10 hour discharge rate of the battery, or at the constant resistance for the model as specified under the definition of "rated capacity";
 - (c) charging according to the manufacturer's normal specifications for the specific battery type; and
 - (d) on a battery that is fully charged at the beginning of the tests.
- 5.1 For the performance tests specified in 4(a)(i) through 4(a)(iv), the procedure to be followed is:
- (a) test nine batteries;
 - (b) calculate the average without excluding any result;
 - (c) if this average is equal to or greater than the specified requirement, and no more than one battery performs at less than 60% of the specified requirement, the batteries are considered to conform to the requirement;
 - (d) if the batteries fail to conform, no further testing is permitted.

Verification

5. To verify a claim that a product meets the criteria listed in the guideline, the Environmental Choice Program will require access, as is its normal practice, to relevant quality control and production records and the right of access to production facilities on an announced basis.
6. Compliance with section 3(b) shall be attested to by a signed statement of the Chief Executive Officer or the equivalent officer of the manufacturer. The Environmental Choice Program shall be advised in writing immediately by the licensee of any noncompliance which may occur during the term of the license. On the occurrence of any noncompliance, the license may be suspended or terminated as stipulated in the license agreement. In the event of a dispute related to the suspension or termination of the license, the license agreement provides for arbitration.

Conditions for EcoLogo Use

7. The EcoLogo may appear on wholesale or retail packaging, or on the product itself, provided that the product meets the requirements in this guideline.
8. It is recommended that a criteria statement appear with the EcoLogo whenever the EcoLogo is used in association with the **rechargeable consumer batteries**. The intent of this statement is to provide clarification as to why the product was certified and to indicate constraints to which the certification is limited. This is to ensure no ambiguity over, or misrepresentation of, the reason(s) for certification.

ECP suggested criteria statement wording for this product type is “*Rechargeable Consumer Battery*”. The licensee may propose other wording for the criteria statement, but any such proposed wording must be approved by the Environmental Choice Program.
9. All licensees and authorized users must comply with the Environmental Choice Program's *Guide to Proper Use of the EcoLogo^M* regarding the format and usage of the EcoLogo.
10. Any accompanying advertising must conform with the relevant requirements stipulated in this guideline, the license agreement and the Environmental Choice Program's *Guide to Proper Use of the EcoLogo^M*.

***For additional copies of this guideline or for more information about the Environmental Choice Program, please contact: TerraChoice Environmental Services Inc.,
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