

Product:	Batteries		
Scope:	Batteries	Protocol No.	TYCP-PS002 (NA)
		Version	0.2
		Issue Date	15 Jan 2013
		Prepared by	Intertek C&E GZ
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NB: Where there is no applicable US or CN standard, Intertek has chosen the most relevant International standards to assess the product safety and performance. For undated references, the latest edition of the referenced document (including any amendments) applies.

Attribute	Citation	Requirement / Limit
Supplemental Protocols		
*Battery Operated Product	TYCP-PS001	Must all also test to the Battery Operated Product protocol if applicable.
*†CA Prop 65 (mandatory in state California)	Intertek Protocol	Consent Judgment of related court case based on California Proposition 65.
Note: Additional cost, sample size & TAT may be required if testing to 1 or more supplemental protocol is necessary. Please refer to the above referenced supplemental protocol(s) for additional information		
Chemical Analysis		
1. *Lead Content in Paint and Similar Surface Coating	16 CFR 1303 (Scope Widened)	Shall not exceed 90ppm (0.009% by weight) total lead.
2. *Mercury-Containing and Rechargeable Battery Management Act	U.S. Pub. L. 104-142. 13 May 1996. Stat. 110.1333. Mercury Analysis (EPA Guidance, Best Practice) Title II.	Batteries larger than button cell shall contain no intentionally added Mercury. No intentionally added Hg is demonstrated in this protocol if testing shows less than 1 ppm (best practice). Batteries of button cell size are allowed small amounts of added mercury, but shall test to less than 25 mg Hg /cell. Testing is required on all included alkaline-manganese batteries, zinc-carbon (Heavy Duty) batteries, and silver-oxide and zinc-air button cells.
Document Check		
3. Battery Product Packaging	Visual Check	Shall mark with type / designation and number of batteries required; batteries included or not. Shall be visible at purchase.
4. UPC code	Actual Use	Using a commercial available bar code reader to read the UPC code printed on the package/artwork. The code readout shall match with the number underneath. Record the reading displayed on the reader.
5. Parts Inventory	Visual Check	Shall meet label claims.
6. Use Labelling	Visual Check	Use/care instructions that are clear and understandable shall be provided in language appropriate to destination countries.
7. Verify Label Claims (if any)	Visual Check	Must comply with all claims.
For US Only		
8. †One Time Use Products Fair Packaging and Labeling Act OR All Other Products Uniform Packaging and Labeling Regulations	F.P. & L. Act (16 CFR 500) OR NIST Uniform Laws and Regulations Handbook 130	Manufacturer, packer, or distributor's name & address (city, state & zip)
		Product Identification
		Net quantity of contents shall be expressed in terms of weight or mass, measure, numerical count, or combination so as to give accurate information to facilitate consumer comparison (U.S. and metric units).
9. †Country of Origin Marking	19 CFR 134.11	Shall indicate country of origin legibly, permanently, and in comparable size and close proximity to any mention of country other than country in which the article was manufactured or produced. Must be visible at point of purchase.

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10. †*Toxics in Packaging	Toxics in Packaging Act	Intentional introduction of any amount of lead, mercury, cadmium or hexavalent chromium in any packaging is prohibited. Incidental presence of these metals is limited to 100 ppm total concentration of lead, mercury, cadmium and hexavalent chromium in any packaging. In lieu of testing, supplier may submit a Certificate of Compliance.
11. †Plastic Bag Warning Statement (if applicable)	Based on Various State Laws: New York, Chicago, Massachusetts, and Rhode Island State and City Laws modified	Plastic bags with a thickness less than one mil (1/1000 inch) having an opening size of five inches in diameter or more must have the following warning or an equivalent warning visible from each side of the bag. If the total length and width is more than 40 inches, this warning or an equivalent warning must repeat at 20 inch intervals and be visible on each side of the bag: Warning: To avoid danger of suffocation, keep this plastic bag away from babies and children. Do not use this bag in cribs, beds, carriages or playpens. This bag is not a toy. Massachusetts, New York, and Rhode Island provide minimum type size for the warning. The following table sets forth type sizes that will satisfy all four state requirements. Total Length and Width of Bag Size of Print 60 inches or more at least 24 point 40 to 59 inches at least 18 point 25 to 39 inches at least 14 point Less than 25 inches at least 10 point *Virginia's law is intended for dry cleaning bags only and requires at least 36 point type.
12. Mercury-Containing and Rechargeable Battery Management Act Pub. L. 104-142. 13 May 1996. Stat. 110.1333.	Title I, Rechargeable Battery Recycling Act, Visual (if applicable)	Cadmium and Lead containing batteries shall bear 3 chasing arrows or comparable recycling symbol and Ni-Cd or nickel-cadmium and "BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY" Pb or "LEAD", "RETURN" and "RECYCLE" and "BATTERY MUST BE RECYCLED" if sealed.
13. Rechargeable Battery Outside Jacket Marking	ANSI C18.2M, PART 1-2007, Section 1.4.8.1	Shall be marked on the battery or package: <ul style="list-style-type: none"> • Designation • Polarity of terminal • Name or trade mark of the manufacturer or supplier • Battery electrochemical system • Nominal voltage • Rated Capacity in mAh • Year, month, week or day of manufacture which may be coded or the expiration date • Warnings or cautionary notes where applicable • Caution for ingestion • Recycle mark • Country of origin

For Canada Only

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14. †Pre-packaged Product	Consumer Packaging and Labelling Act, R.S. 1985, c. C-38 and Regulations, C.R.C., c. 417	<p>The net quantity declaration shall present on Principal Display Panel (PDP) in English and French, metric units.</p> <p>The numerical quantity shall be bold type with letter height based on the size of Principle Display Surface (X):</p> <table border="1"> <thead> <tr> <th><u>Size of Principle Display Surface</u></th> <th><u>Minimum letter height</u></th> </tr> </thead> <tbody> <tr> <td>$X \leq 32 \text{ cm}^2 (5 \text{ in}^2)$</td> <td>1.6 mm (1/16 in)</td> </tr> <tr> <td>$32 \text{ cm}^2 < X \leq 258 \text{ cm}^2 (40 \text{ in}^2)$</td> <td>3.2 mm (1/8 in)</td> </tr> <tr> <td>$258 \text{ cm}^2 < X \leq 645 \text{ cm}^2 (100 \text{ in}^2)$</td> <td>6.4 mm (1/4 in)</td> </tr> <tr> <td>$645 \text{ cm}^2 < X \leq 25.8 \text{ dm}^2 (400 \text{ in}^2)$</td> <td>9.5 mm (3/8 in)</td> </tr> <tr> <td>$25.8 \text{ dm}^2 (400 \text{ in}^2) < X$</td> <td>12.7 mm (1/2 in)</td> </tr> </tbody> </table> <p>All other information in the net quantity declaration (i.e. units of measurement statements, abbreviations, symbols, etc.) shall be shown in minimum 1.6 mm letter height.</p> <p>Product identification shall be shown on Principal Display Panel (PDP) in English and French, minimum 1.6 mm letter height.</p> <p>Dealer's name and principal place of business (address) shall be shown on any part of label except bottom, English or French, minimum 1.6 mm letter height.</p> <p>For imported goods, the name and address of the dealer outside Canada or the name and address of Canadian dealers shall be preceded by "imported by" ("<i>importé par</i>") or "imported for" ("<i>importé pour</i>"), unless a statement of geographic origin is located immediately adjacent to the name and address of a Canadian dealer, and shown with letter height at least as large as those used in the declaration of the Canadian dealer's principal place of business.</p>	<u>Size of Principle Display Surface</u>	<u>Minimum letter height</u>	$X \leq 32 \text{ cm}^2 (5 \text{ in}^2)$	1.6 mm (1/16 in)	$32 \text{ cm}^2 < X \leq 258 \text{ cm}^2 (40 \text{ in}^2)$	3.2 mm (1/8 in)	$258 \text{ cm}^2 < X \leq 645 \text{ cm}^2 (100 \text{ in}^2)$	6.4 mm (1/4 in)	$645 \text{ cm}^2 < X \leq 25.8 \text{ dm}^2 (400 \text{ in}^2)$	9.5 mm (3/8 in)	$25.8 \text{ dm}^2 (400 \text{ in}^2) < X$	12.7 mm (1/2 in)
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15. The Language of Inscription (mandatory in Quebec)	The Charter of French Language, Title I, Chapter VII, Clause 51 & Regulations adopted under the Charter of French Language	<p>Every inscription on the following shall be drafted in French,</p> <ul style="list-style-type: none"> - product - product container or wrapping - document or object supplied with it (e.g. directions for use, warranty certificates) <p>No inscription in another language may be given greater prominence than that in French.</p> <p>For exceptions, check the following webpage:– http://www.olf.gouv.qc.ca/english/regulations/reg_business.html#div1</p>												

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16. †Country of Origin	Canada Customs Tariff, Marking of Imported Goods Regulations, SOR-94-10 / Marking of Imported Goods Memorandum D11-3-1	<p>A) Imported goods shall indicate country of origin.</p> <p>B) Must be legible and sufficiently permanent to remain on the goods until it reaches the purchaser.</p> <p>C) For goods from NAFTA countries, the language may be English, French or Spanish.</p> <p>D) For goods from non-NAFTA countries, language may be English or French and marking should appear on individual articles.</p> <p>E) If the packaging conceals the Country of Origin mark, then the packaging must also be marked.</p> <p>F) There is a provision to mark only the container if the goods are imported from NAFTA countries, providing that certain conditions are met, such that the ultimate purchaser will see the marked container.</p>
Electrical Safety		
17. Packing	Visual Check	No hazard when removing the packing
18. Workmanship	Visual Check	<p>Shall have no sharp points/edges, other than those required for function.</p> <p>Shall have no components missing, malformed, and/or fractured.</p>
19. Mechanical Assembly	Visual Check	All mechanical parts shall be securely fixed and prevented from turning.
20. Reverse Polarity of Battery	In-house Method	Insert battery but with reverse polarity and stabilize for 1 hour. Explosion or chemical leakage shall not occur.
21. Overcharge Test	In-house Method	Fully charge the product according to user instruction. Additional charge for 7 hours. No overheating, melting of parts and chemical leakage shall occur.
22. Short-circuit Test (For both US and Canada)	ANSI C18.1M Part 2 Cls. 7.4.2 (Mod: sample size = 1; temp. tested = 20+/-5degC)	<p>For non-rechargeable batteries, the undischarged battery sample shall be short-circuited and remain on test for 24 hours or until the case temperature declines by 20% of the temperature rise.</p> <p>No explosion and no fire occur.</p>
	ANSI C18.2M Part 2 Cls. 7.2.2 (Mod: sample size = 1; temp. tested = 20+/-5degC)	<p>For rechargeable batteries, fully charged sample shall be short-circuited and remain on test for 24 hours or until the case temperature declines by 20% of the temperature rise.</p> <p>No explosion and no fire occur.</p>
Performance Test		
23. Open Circuit Voltage	Std. measure	Shall meet label claims.
24. *Rated capacity measurement for rechargeable battery(on request only) (For both US and Canada)	ANSI C18.2M Part 1 Cls. 1.4.6.1 (Mod: sample size = 1)	The delivered capacity shall be greater than or equal to the rated capacity declared by the battery manufacturer. If the resultant capacity delivered is lower than the rated capacity, then the charge and discharge may be repeated until the resultant capacity is greater or equal to the rated capacity. A total of five cycles is permitted to demonstrate compliance.

Remark: Additional tests may be incurred subject to the final samples reviewed by Intertek.

Key: *: Additional charge items †: Mandatory Requirement

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Testing Charge & Sample Size & Turnaround Time

Packaging Charge	USD 200 (Net)
Sample size	2 pieces
Turnaround time	7 working days
Additional Charge (Net)	
Additional sample size	
a. Lead content test	USD 31 per coating
b. Toxics in packaging	USD 54 per material
c. Mercury Content	Quote
d. Battery Capacity	USD 170
Remark: Price information is for reference only and based on our GZ laboratory pricing. Please check with local laboratories to confirm exact pricing for your region.	

Revision History

Issue No.	Revision date	Changes	Prepared by	Approved by
0.1	Sep 12, 2011	Draft	Tiger Yang	
0.2	Aug 23, 2012	Added Canada requirements	Dino Du	Taylor (Emily) on 08 Jan 2013