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Subject: Comments from P. R. China on Notification G/TBT/N/USA/1964/Add.5 Agency Information Collection Activities; Extension of Collection; Comment Request; Safety Standard for Button Cell or Coin Batteries and Consumer Products Containing Such Batteries	

Comments from P. R. China on Notification

G/TBT/N/USA/1964/Add.5

Agency Information Collection Activities; Extension of Collection; Comment Request; Safety Standard for Button Cell or Coin Batteries and Consumer Products Containing Such Batteries

Dear Sir or Madam,

We appreciate the opportunity to submit comments on the notified draft proposed by USA.

Enclosed please find comments in English and Chinese.

Please acknowledge receipt of the comments by e-mail to tbt@customs.gov.cn.

Thank you very much in advance for USA taking into account comments from P.R. China. Your formal reply will be appreciated.

Best regards,

Jiao Yang



Deputy Director General

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Comments from P. R. China on Notification

G/TBT/N/USA/1964/Add.5

Agency Information Collection Activities; Extension of Collection; Comment Request;
Safety Standard for Button Cell or Coin Batteries and Consumer Products Containing
Such Batteries

The People's Republic of China appreciates USA for fulfilling the transparency obligation under WTO, as well as for the opportunities for other WTO Members to make comments on the notification G/TBT/N/USA/1964/Add.5. According to Article 2.9.4 of the WTO/TBT Agreement "without discrimination, allow reasonable time for other Members to make comments in writing, discuss these comments upon request, and take these written comments and the results of these discussions into account", China would like to put forward the following comments on the notified regulations and hope USA take these comments into consideration. The detail comments as follows:

1.Regarding §1263 (Scope, purpose, effective date, and exemption), it is recommended to correct the editorial error. The reasons are as follows:

There is an editorial error in §1263 (Scope, purpose, effective date, and exemption); it is recommended to revise it to §1263.1 (Scope, purpose, effective date, and exemption).

2.Regarding UL 4200A-2023 §1.1, it is recommended to unify core terminology. The reasons are as follows:

It is recommended to revise the term "household type products" in UL 4200A §1.1 to "consumer products." This term is consistent with Reese's Law and the CPSC's jurisdictional scope, ensuring accurate conveyance of the regulatory intent.

3.Regarding §1263.1(a) and UL 4200A-2023 §1.3, it is recommended to clarify the rules for determining dual-market products. The reasons are as follows:

The core definition in §1263.1(a) ("consumer product") emphasizes "product attributes," while UL 4200A-2023 §1.3 emphasizes "use scenarios." This "attributes vs. scenarios" discrepancy may lead to different interpretations of the same product based on sales channels, usage environments, and packaging instructions. It is recommended to clarify the determination principle, making it clear that the regulatory classification of "dual-market products" should be based on product attributes. It is recommended to establish quantitative determination criteria and a verifiable quantitative determination framework, enabling manufacturers to assess the regulatory classification of their products in advance.

4.Regarding §1263.1(c), it is recommended to clarify the boundary for determining "toys" versus "children's products." The reasons are as follows:

§1263.1(c) exempts toys for children under 14 years of age that comply with §1250 (referencing ASTM F963) (Reese's Law Notes to 15 U.S.C. 2056e), which applies the standard §1250 (ASTM F963); "children's products" are consumer products designed or intended primarily for children 12 years of age or younger (15 U.S.C. 2052(a)(2)), subject to §1263 and requiring testing by a CPSC-accepted third-party laboratory. The U.S. defines the upper age limit for "toys" as 14 years, while the upper limit for

"children's products" is 12 years. This inconsistency in age thresholds may create a regulatory gap for children's products in the 12–14 age group. It is recommended to explicitly reference the CPSC Age Determination Guidelines and the Children's Product Interpretive Rules in §1263.1(c) as reference bases for determining boundaries, and to refine the differences between "toys" and "children's products" in terms of definitions, age stratification, and determining factors, in order to eliminate compliance uncertainties arising from standard updates and definitional overlaps.

5.Regarding §1263.1(c) and UL 4200A-2023 §1.2 and §1.3, it is recommended to clarify exemption boundaries, unify safety requirements, and eliminate standard gaps. The reasons are as follows:

The scope of UL 4200A-2023 covers "all consumer products containing button/coin batteries," with the sole exemption being "toys that comply with §1250 (ASTM F963)." This means that non-toy children's products (e.g., light-up children's shoes, children's electronic keyboards (professional entry-level), children's activity trackers, decorative children's jewelry (with lights), early learning devices, baby scales, embroidered LED labels on children's clothing, etc.) must comply with §1263 and do not fall under ASTM F963. The legislative purpose of Reese's Law is to "protect against ingestion risks for children 6 years of age and under," but ASTM F963 already covers battery compartment requirements for "toys accessible to children under 6 years of age." Non-toy children's products and toys are not materially different in terms of "child ingestion scenarios," yet U.S. regulations present an inverted scenario where toy requirements are looser while non-toy children's product requirements are stricter. It is recommended to incorporate non-toy children's products into the ASTM F963 battery compartment exemption scope. If ASTM F963 is insufficient to provide an equivalent level of protection, it is recommended to consider bringing toy products within the scope of §1263 or require ASTM F963 to adopt the relevant test requirements of UL 4200A-2023.

6.Regarding §1263.1(c) and UL 4200A-2023 §1.3, it is recommended to assess the risks of regulatory gaps and overlaps. The reasons are as follows:

Both §1263.1(c) and UL 4200A-2023 §1.3 provide exemptions for "toy products." However, the definitions of "toys" overlap, and the applicable boundaries are ambiguous. Although the exemption in §1263.1(c) is premised on compliance with ASTM F963, for products that technically meet some requirements of ASTM F963 but are not overall recognized as "toys" (e.g., electronic devices with cartoon shapes, electronic components of children's furniture, etc.), there is interpretive space regarding their classification. This ambiguity in the overlap zone may result in either regulatory gaps or regulatory overlaps. It is recommended that for products that are "not toys" and "are for professional/commercial use," the applicable safety standards or regulatory mechanisms be clarified to avoid regulatory gaps; for products that are "toys" and "are not for professional/commercial use," the regulatory standards should be clarified to avoid dual compliance requirements.

7.Regarding the UL 4200A-2023 § 1.3 exclusion clause for "professional use/commercial use," it is recommended to establish a multi-dimensional determination framework and clarify the effect of manufacturer declarations and evidence. The reasons are as follows:

UL 4200A-2023 §1.3 does not provide any specific quantitative criteria for determining that "children are not normally or typically present." IEC 62368-1 uses

"sales channels" as the core criterion for determining professional equipment, whereas the UL standard uses "use and instructions" as the criterion. The former is more objective and verifiable, while the latter relies on subjective judgment and may lead to inconsistent enforcement. It is recommended to establish a multi-dimensional determination framework (e.g., sales channels, usage environments, operational qualifications, packaging, and instructions); clarify the effect of manufacturer declarations and evidence, allowing manufacturers to claim the applicability of the §1.3 exclusion clause as long as they can provide clear objective evidence regarding sales channels, usage environments, operational qualifications, etc., and explicitly declare such in the product instructions. This will help both manufacturers and the CPSC more accurately determine product compliance pathways and reduce the risk of misjudgment.

8.Regarding UL 4200A-2023 §5.5(b), it is recommended to incorporate the official interpretation into the standard text or test operation guidelines. The reasons are as follows:

UL 4200A-2023 §5.5(b) requires that the "two actions" of a dual-action lock must be performed simultaneously and cannot be combined into a single action by a single finger/single finger. To ensure that the requirement of "two independent and simultaneous actions" is unambiguous in implementation, it is recommended to formally incorporate the official interpretation into the standard text or test operation guidelines, with emphasis on clarifying that "the two actions cannot be combined by one finger" and standardizing the interpretation of the criterion that "the actions must be sustained."

9.Regarding UL 4200A-2023 §5.6 Exception No. 2, it is recommended to add an explanation in Exception No. 2 clarifying the physical protection connotation of Exception No. 2. The reasons are as follows:

The fact that a product "is opened by professionals" under §5.6 Exception No. 2 is itself a key physical protection measure. By design and intent, the product is excluded from scenarios typically accessible to consumers (and children). It is recommended to add an explanation in Exception No. 2 clarifying that "opening by professional service center" should be deemed to satisfy the "physical protection" required by this clause, without needing to additionally meet the "not commonly available household tools" requirement proposed in the CPSC's interpretation.

10.Regarding UL 4200A-2023 §5.6 Exception No. 2 and §5.7, it is recommended to clarify the applicable boundaries and priority rules between the two clauses, with priority given to §5.7 for addressing the safety issues of non-replaceable battery products. The reasons are as follows:

The logical relationship between §5.6 Exception No. 2 and §5.7 is ambiguous. §5.6 and its exceptions fall under the framework of requirements for replaceable batteries. However, products that are "opened only by professional service center" should fall under §5.7 from a functional perspective. AWA explicitly stated in its comments submitted to the CPSC: "The text of UL 4200A makes clear that only section 5.7 applies to products with batteries not intended to be replaced by consumers." §5.7 explicitly provides that such products only need to meet its requirements (inaccessible or securely fixed), i.e., no fastening screws are required. Yet §5.6 Exception No. 2, within the framework of §5.6, also provides an exception for such products from the requirement for fastening screws. Two different clauses address the same issue

(exemption from fastening screws) for the same category of products (non-consumer-replaceable batteries), resulting in structural redundancy and applicability uncertainty. The CPSC's response to comments added an extra "common household tools" requirement to the interpretation of §5.6 Exception No. 2, which conflicts with the direct applicability path of §5.7. It is recommended that the standard revert to its text, clarifying that §5.6 Exception No. 2 does not apply to "non-replaceable battery" products, and that such products should be uniformly governed by §5.7.

11.Regarding UL 4200A-2023 §6.2 and §6.3, it is recommended to clarify the timing and method of verification for §5.5(b) and the quantitative verification method for §5.5(b) after abuse testing. The reasons are as follows:

UL 4200A-2023 §6.2 and §6.3 specify the complete sequence of use and abuse tests. However, two points are missing: First, the timing of the initial functional verification of the §5.5(b) mechanism is not explicitly stated, should the effectiveness of the "two actions" be verified before or after preconditioning? Second, there is no quantitative method for functional verification after abuse testing, only "battery inaccessibility" is verified, but whether the "two independent actions" remain effective is not verified. Based on common industry laboratory practices and the existing framework of the standard, it is recommended to clarify the initial verification timing and method for §5.5(b), adding an "initial structural verification" step before §6.2 preconditioning (e.g., before subjecting samples to heat treatment and simulated battery replacement under §6.2, first verify whether the opening mechanism of §5.5(b) meets design requirements); it is recommended to clarify the quantitative determination method for §5.5(b) after abuse testing, supplementing the compliance test in §6.3.5 with a determination requirement for the functionality of the §5.5(b) mechanism (e.g., action sequence verification or opening force value testing after abuse testing).

12.Regarding UL 4200A-2023 §4.3A and §6.3.2, it is recommended to introduce "intended use mode" as a grouping criterion for drop testing in the standard. The reasons are as follows:

The 4.5 kg weight threshold in UL 4200A-2023 §4.3A was originally a general test requirement designed for portable electrical equipment. When directly applied to small household appliances (e.g., kitchen scales, small humidifiers, etc.), there is a serious disconnect between test severity and the actual usage scenarios of these products. The vast majority of small household appliances (e.g., kitchen scales approx. 500 g, electric toothbrushes approx. 100 g, small blenders approx. 1.5 kg) are well below the 4.5 kg upper limit and are designed for "one-handed or two-handed handheld use," yet they are classified as "hand-held devices" and must undergo 10 drop tests. In actual use, such products are mostly "placed for use" and rarely experience frequent accidental drops; the severity of 10 drops far exceeds their real usage scenarios. Moreover, the CPSC acknowledged in the Federal Register that "10 drops are not reasonably necessary for all consumer products" (88 FR 65284). The CPSC also did not provide incident data for small household appliances demonstrating that their drop frequency warrants the 10-drop test requirement. It is recommended to introduce "intended use mode" as a grouping criterion for drop testing in the standard. For products designed for placement use and weighing more than 1 kg, the number of drop tests could be reduced to 3. Before the standard is formally revised, a test guideline for small household appliances containing button batteries could be issued, clarifying the applicability interpretation of drop testing for

stationary-use small household appliances, providing a consistent operational basis for manufacturers and laboratories, and reducing uncertainty and over-interpretation in testing.

13.Regarding UL 4200A-2023 §6.3.4A/B/C, it is recommended to supplement with descriptions of specialized fixtures suitable for soft materials. The reasons are as follows:

§6.3.4A/B/C directly reference ASTM F963 torque (0.5 Nm), tension (72 N), and compression (136 N). ASTM F963 was designed for rigid plastic toys, but the scope of UL 4200A has been extended to non-toy consumer products. For soft-substrate consumer products containing batteries, such as embroidered battery packs on children's clothing, sound modules in greeting cards encapsulated with fabric + hot-melt adhesive, plush electronic pets, etc., the gripping fixtures of ASTM F963 may not effectively clamp or simulate the actual force application methods of children, leading to distorted test results. It is recommended to supplement with specialized fixture descriptions suitable for soft materials for textile/pliable substrate products containing batteries, or to moderately lower the torque/tensile test thresholds (e.g., reduce torque to 0.35 Nm, tension to 50 N) to ensure test repeatability and fairness.

14.Regarding UL 4200A-2023 §6.4, it is recommended to exempt SMD solutions where "the battery is physically blocked by a double layer of PCB + enclosure" from the 20 N hook-pull test. The reasons are as follows:

For CR2016/CR2032 batteries that are SMD-soldered to the PCB and sealed at the bottom with adhesive, since the battery is blocked by the PCB and is in a state where it cannot be pulled outward, the 20 N hook-pull direction cannot be realized in actual drop scenarios. IEC 62368-1 covers this through a comprehensive robustness test. It is recommended to exempt SMD solutions where "the battery is physically blocked by a double layer of PCB + enclosure" from the single-point 20 N hook-pull test of §6.4, and instead deem compliance established by passing §6.3 (drop + compression + probe) tests, thereby aligning with IEC 62368-1.

15.Regarding UL 4200A-2023 §7, it is recommended to harmonize with international standard symbols. The reasons are as follows:

UL 4200A-2023 §7 allows the use of the "Keep Out of Reach" icon or the "Warning: Contains Coin Battery" icon. These symbol combinations are inconsistent with the internationally used ISO 7000 graphical symbols for equipment, IEC 60417 graphical symbols for electrical equipment, and the ISO 3864 safety colors and safety signs standard system. The CPSC, in responding to comments, indicated that symbols from ISO 7000 and IEC 60417 may be used, but the standard text does not explicitly permit this, which may cause uncertainty in implementation. The multi-color requirement in §7 is unreasonable; a large number of CR2032/AG13 battery retail cards in China use 1-2 color flexographic printing, and forcibly switching to 4-color gravure printing would increase unit prices by 15-20%. The minimum font size based on PDP area is unfriendly to small cards. For CR-series battery small blister cards (PDP < 50 in²), warning content crowds out space for UPC codes, brand names, and certification marks. It is recommended that the standard text explicitly accept internationally recognized symbols and color specifications, such as ISO 7000-W0001, IEC 60417-6367, and safety signs complying with ISO 3864 requirements; for battery retail cards with PDP < 100 in², allow black-and-white high contrast ($\geq 70\%$) as a substitute for the "multi-color mandatory" requirement; for small battery blister cards

with $PDP < 50 \text{ in}^2$, allow warnings to be scaled down to the ANSI Z535.4 minimum acceptable font size lower limit, avoiding the need to switch to larger cards.

Comments in Chinese are in below:

中国对 G/TBT/N/USA/1964/Add.5 通报的评议意见

中国赞赏美国履行 WTO 透明度义务，给予其他 WTO 成员评议 G/TBT/N/USA/1964/Add.5 号通报的机会，根据 WTO/TBT 协定 2.9.4 条“无歧视地给予其他成员合理的时间以提出书面意见，并对这些书面意见和讨论的结果予以考虑”的规定，请美国对中方的评议意见予以考虑并作出答复，中方意见及论述如下：

1.针对§1263（Scope, purpose, effective date, and exemption），建议修改编辑性错误。理由如下：

§1263（Scope, purpose, effective date, and exemption）存在编辑性错误，建议修正为§1263.1（Scope, purpose, effective date, and exemption）。

2.针对 UL 4200A-2023§1.1，建议统一核心术语。理由如下：

建议将 UL 4200A§1.1 中的“household type products”修正为“consumer products”。该术语与里斯法案（Reese’s Law）及 CPSC 的管辖范围一致，能确保法规意图的准确传达。

3.针对§1263.1(a)条和 UL 4200A-2023§1.3，建议明确双重市场产品的判定规则。理由如下：

§1263.1(a)核心定义（消费者产品）强调“产品属性”，UL 4200A-2023§1.3 强调“使用场景”。这种“属性 vs 场景”的差异，导致同一款产品可能因销售渠道、使用环境、包装说明的不同而被不同解读。建议明确判定原则，明确“双重市场产品”的监管归属以产品属性为准。建立量化判定标准，建立可验证的量化判定框架，使制造商能够提前评估产品的监管归属。。

4.针对§1263.1(c)条，建议明确“玩具”和“儿童产品”判定边界。理由如下：

§1263.1(c)豁免了符合§1250（引用 ASTM F963）的 14 岁以下儿童玩具（Reese’s Law Notes to 15 U.S.C.2056e），其适用标准为§1250（ASTM F963）；“儿童用品”是一种专为 12 岁及以下儿童设计或适用的消费品（15 U.S.C. 2052(a)(2)），其适用标准为§1263 且须由 CPSC 认可的第三方实验室进行测试。美国将“玩具”定义上限为 14 岁，“儿童产品”定义上限为 12 岁，两者的年龄界限不一致，可能会导致 12-14 岁年龄段儿童产品存在监管空白。建议在§1263.1(c)中明确引用 CPSC《年龄判定指南》和《儿童产品解释性规则》作为判定边界的参考依据，并细化“玩具”与“儿童产品”在定义、年龄分层和判定因素上的差异，以消除因标准更新和定义交叉带来的合规不确定性。

5.针对§1263.1(c)条和 UL 4200A-2023§1.2 及§1.3，建议明确豁免边界，统一安全要求，消除标准落差。理由如下：

UL 4200A-2023 的适用范围为“所有含纽扣/硬币电池的消费品”，唯一豁免是“符合§1250（ASTM F963）的玩具”。这意味着非玩具类儿童产品（如发光童鞋、儿童电子琴（专业入门型）、儿童运动手环、装饰性儿童首饰（带灯）、早教机、婴儿秤、童装刺绣 LED 标等）必须符合§1263，不适用于 ASTM F963。Reese’s Law

立法的目的是“保护6岁及以下儿童摄入风险”，但ASTM F963本身已经覆盖了“6岁以下儿童可接触玩具”的电池仓要求。非玩具类儿童用品与玩具在“儿童摄入场景”上并无本质差异，但美国法规却呈现出玩具要求松，非玩具儿童用品严的倒挂现象。建议将非玩具儿童用品并入ASTM F963电池仓豁免范围。如ASTM F963不足以提供同等保护水平，建议考虑将玩具产品纳入§1263的适用范围或要求ASTM F963采纳UL 4200A-2023的相关测试要求。

6.针对§1263.1(c)条和 UL 4200A-2023§1.3，建议评估监管空白与重叠风险。理由如下：

§1263.1(c)与UL 4200A-2023§1.3两者均规定了针对“玩具产品”的豁免。但对“玩具”的定义存在交叉，适用边界模糊。虽然§1263.1(c)的豁免以符合ASTM F963为前提，但对于那些技术上符合ASTM F963部分要求、但整体不被认定为“玩具”的产品（如带有卡通造型的电子设备、儿童家具的电子部件等），其归属存在解释空间。这种交叉地带的模糊性，可能导致监管空白或监管重叠。建议对于“不属于玩具”且“属于专业/商业用途”的产品，明确其使用的安全标准或监管机制，避免监管空白；对于“属于玩具”且“不属于专业/商业用途”的产品，明确其监管标准，避免双重合规要求。

7.针对 UL 4200A-2023§1.3“专业用途/商业用途”排除条款，建议建立多维度判定框架，明确制造商声明与证据的效力。理由如下：

UL 4200A-2023§1.3并未对“儿童通常或典型不在场”给出任何具体的量化标准。IEC 62368-1以“销售渠道”作为专业设备的核心判定标准，而UL标准以“用途和说明书”为判定标准。前者更具客观性和可验证性，后者依赖主观判断，易导致执法不一致。建议建立多维度判定框架（如销售渠道、使用环境、操作资质、包装和说明书）；明确制造商声明与证据的效力，只要制造商能提供清晰的销售渠道、使用环境、操作资质等客观证据，且在产品说明中明确声明，即可主张§1.3排除条款的适用。这将有助于制造商和CPSC双方更准确地判断产品的合规路径，减少误判风险。

8.针对 UL 4200A-2023§5.5(b)，建议将官方解读纳入标准文本或测试操作指南。理由如下：

UL 4200A-2023§5.5(b)规定双动锁的“两个动作”必须同时进行，且不能通过单指/单指合并为一个动作。为确保“两个独立且同时的动作”这一要求在执行层面无歧义，建议将官方解读正式纳入标准文本或测试操作指南，重点明确“不可用一个手指将两个动作合并完成”，并统一对“动作必须持续保持”这一判定的理解。

9.针对 UL 4200A-2023§5.6 Exception No.2，建议在 Exception No.2 中增加说明，明确 Exception No.2 的物理防护内涵。理由如下：

§5.6 Exception No.2中“由专业人员打开”这一事实本身就是一种关键的物理防护措施。该产品已通过设计和意图，被排除在通常由消费者（及儿童）接触的情境之外。建议在Exception No.2中增加说明，明确“由专业服务中心打开”应被视为满足该条款所要求的“物理防护”，不需要额外满足CPSC在解读中提出的“非家用常用工具”的要求。

10.针对 UL 4200A-2023§5.6 Exception No.2 和§5.7，建议明确两条款的适用边界和优先规则，优先适用§5.7 处理不可更换电池产品的安全问题。理由如下：

§5.6 Exception No. 2 与§5.7 条款之间的逻辑关系存在模糊地带。§5.6 及其例外位于可更换电池的要求框架下。然而，“仅由专业服务中心打开”的产品从实际功能上看应该归入§5.7。AWA 在提交给 CPSC 的意见中明确指出：“The text of UL 4200A makes clear that only section 5.7 applies to products with batteries not intended to be replaced by consumers.”§5.7 明确规定此类产品仅需满足其要求（不可触及或牢固固定），即不需固定螺钉。而§5.6 Exception No. 2 却又在§5.6 的框架下为这类产品提供了“不需要固定螺钉”的例外。两个不同条款处理了同一类产品（非消费者更换电池）的同一问题（固定螺钉豁免），造成标准结构冗余和适用不确定性。CPSC 在回应评论时对§5.6 Exception No. 2 解释额外增加了“常见家用工具”要求与§5.7 的直接适用路径冲突。建议标准应回归文本，明确§5.6 Exception No. 2 不适用于“不可更换电池”产品，该类产品应由§5.7 统一管辖。

11.针对 UL 4200A-2023§6.2 和§6.3，建议明确§5.5(b)的验证时机和方式以及滥用测试后§5.5(b)的量化验证方法。理由如下：

UL 4200A-2023§6.2 和§6.3 规定了完整的使用与滥用测试序列。但缺失了以下两点：一是§5.5(b)机构的初始功能验证时机未明确说明，应在预处理前还是预处理后验证“两个动作”的有效性？二是滥用测试后功能验证的量化方法，只验证了“电池不可触及”，但未验证“两个独立动作”是否仍有效。基于行业实验室的通用实践和标准已有框架，建议明确§5.5(b)的初始验证时机与方式，在§6.2 预处理之前，增加“初始结构验证”环节（如，样品按§6.2 进行热处理和模拟电池更换之前，先验证§5.5(b)的开启机构是否符合设计要求）；建议明确滥用测试后§5.5(b)的量化判定方法，在§6.3.5 的符合性测试中，补充对§5.5(b)机构功能的判定要求（如滥用测试后的动作序列验证或开启力值测试）。

12.针对 UL 4200A-2023§4.3A 和§6.3.2，建议在标准中引入“预期使用方式”作为跌落测试的分组。理由如下：

UL 4200A-2023§4.3A 中 4.5kg 的重量分界原是为便携式电气设备设计的通用测试要求，被直接引用到小家电产品（如厨房秤、小型加湿器等）后，出现了测试强度与产品实际使用场景的严重脱节。绝大多数小家电产品（如厨房秤约 500g、电动牙刷约 100g、小型搅拌器约 1.5kg）质量均远低于 4.5kg 上限，且设计为“可单手或双手持握使用”，但却被归类为“手持式设备”，须承受 10 次跌落测试。在实际使用中，这类产品多为“放置使用”，极少经历频繁的意外跌落，10 次测试的严苛程度远超其真实使用场景。且 CPSC 在联邦公报中承认“10 次跌落要求对所有消费品而言并非合理必要”（88 FR 65284）。CPSC 也未提供小家电产品的事故数据证明其跌落频率足以支持 10 次跌落的测试要求。建议在标准中引入“预期使用方式”作为跌落测试的分组，对于设计为放置使用、且重量超过 1kg 的产品，跌落测试次数可减少为 3 次；在标准正式修订前，可发布针对含纽扣电池小家电产品的测试指南，明确对防止使用的小家电产品跌落测试的适用性解释，为制造商和实验室提供一致的操作依据，减少测试中的不确定性和过度解读。

13.针对 UL 4200A-2023§6.3.4A/B/C，建议补充软质材料适配的专用工装说

明。理由如下：

§6.3.4A/B/C 直接引用 ASTM F963 的 torque (0.5Nm)、tension (72N) 和 compression (136N)。ASTM F963 是为硬质塑料玩具设计的，但 UL 4200A 适用范围扩展到了非玩具消费品。对于童装刺绣电池包、布料+热熔胶封装的贺卡发声模块、毛绒电子宠物等软基材消费品，ASTM F963 的夹具工装可能无法有效夹持或模拟儿童的实际施力方式，导致测试结果失真。建议对 textile/pliable substrate 类含电池产品，补充软质材料适配的专用工装说明，或将扭矩/拉伸测试阈值适度下调（如 torque 降至 0.35Nm、tension 降至 50N），确保测试的可重复性和公平性。

14.针对 UL 4200A-2023§6.4，建议对“电池被 PCB+外壳双层物理阻挡”的 SMD 方案豁免 20N 钩拉测试。理由如下：

CR2016/CR2032 若是 SMD 焊接到 PCB 且底部胶封，由于电池被 PCB 阻挡，处于不可向外钩拉状态，20N 钩拉方向在真实跌落场景中无法实现。IEC 62368-1 通过 robustness 综合测试覆盖该项测试。建议对“电池被 PCB+外壳双层物理阻挡”的 SMD 方案豁免§6.4 单点 20N 钩拉测试，改为通过§6.3（跌落+压缩+探针）测试即为合格，与 IEC 62368-1 协调。

15.针对 UL 4200A-2023§7，建议与国际标准符号协调一致。理由如下：

UL 4200A-2023§7 允许使用“Keep Out of Reach”图标或“Warning: Contains Coin Battery”图标，这些符号组合与国际通用的 ISO 7000 设备用图形符号、IEC 60417 电气设备图形符号和 ISO 3864 安全颜色与安全标志标准体系不一致。CPSC 回应评论时表示可以使用 ISO 7000 和 IEC 60417 中的符号，但标准正文未明确允许，可能会造成执行中的不确定性。§7 的多色要求不合理，中国大量 CR2032/AG13 电池零售卡采用 1-2 色柔印，强行改为 4 色凹印将导致单价上涨 15-20%。最小字号基于 PDP 面积对小卡不友好。对 CR 系列电池小泡壳卡（PDP < 50in²），警示内容挤占 UPC 码、品牌名和认证标志空间。建议在标准正文中明确接受 ISO 7000-W0001、IEC 60417-6367 和符合 ISO 3864 要求的安全标志等国际通用符号和颜色规范；对于 PDP < 100in² 的电池零售卡，允许黑白高对比（≥70%）替代“多色必用”要求；对于 PDP < 50in² 的电池小泡壳卡，允许警示缩放到 ANSI 535.4 最小可接受字号下限，避免被迫更换大卡。