



## 1 SCOPE

### 范围

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### 1.1 Products and Components Covered

产品和组分包括

- Accessible portions of all products, including ***promotional items*** and packaging intended to remain with the product.

所有产品上可触及的部分，包括和产品一起保留下来的包装以及用于促销的物品。

- Inaccessible components that are contained within accessible small parts.

不可触摸部件包含在可触及的小部件之间的部件。

- Inaccessible parts of all products (applicable to total cadmium requirements only).

所有产品不可触摸部分（仅适用于总镉要求）。

### 1.2 Exemptions

豁免

- 1.2.1 Children's ***Jewelry Items*** – test per QSOP [0006-3604](#), Heavy Elements - Children's Jewelry

儿童珠宝-按照 QSOP [0006-3604](#), 重金属元素-儿童珠宝进行测试。

- 1.2.2 Children's Wearing Apparel – test per QSOP [0006-3606](#), Heavy Elements – Children's Wearing Apparel.Withdrawals

儿童服装-按照 QSOP [0006-3606](#), 重金属元素-儿童服装,退回进行测试。

- 1.2.3 Children's Cosmetics – test per QSOP [0006-3607](#), Heavy Elements – Children's Cosmetics

儿童化妆品-按照 QSOP [0006-3607](#), 重金属元素-儿童化妆品进行测试。

- 1.2.4 Inaccessible parts of electrical and electronic products – test per QSOP [0006-3602](#), Restriction of Hazardous Substances (RoHS)

电子和电器产品的不可触及部分测试按 QSOP [0006-3602](#), 有害物质限制 (RoHS) 范围影响，有害物质限制。

- 1.2.5 Components that are listed in Appendix A of QSOP [0006-3602](#), Restriction of Hazardous Substances (RoHS) are exempt from “additional requirements for accessible parts of electrical and electronic products only” shown in §2.1 and §2.4-§2.7.

列于 QSOP [0006-3602](#), 有害物质限制 (RoHS) 附录 A 的部件从 2.1 节和 2.4-2.7 节 “仅电子和电器产品的可接触部分的额外要求” 豁免。

- 1.2.6 Soluble method 1 if sample material is <10 mg.

如果样品材料小于 10mg, 则不用进行可溶性方法 1 测试。

- 1.2.7 Components that are not **accessible** at any point during assembly, use, and foreseeable abuse. Inaccessible components that are contained within accessible small parts are not covered by this exemption. Products intended to be assembled by an adult should be evaluated after assembly.

在任何部件上的装配、使用和可预知的滥用下的点是不可接触的。不可触摸部件不包含在可触及的小部件之间的已豁免的部件。

- 1.2.8 Promotional items intended for adults

专为成年人的促销物品

### 1.3 Definitions (Words that are defined are italicized and bolded once per section)

定义 (每节开头的斜体和粗体字)

**Accessible:** Any area of the product that can be contacted by any portion forward of the collar of the accessibility probes when inserted to the depth determined in QSOP [0006-3010](#), Accessibility.

可触性: 在 QSOP 0006-3010 规定的通过使用可触探针深入开口处插入产品的任何部位一定深度可以触碰到。

**Art materials:** Any substance marketed or represented by the producer or repackaged for use in any phase of the creation of any work of visual or graphic art in any medium such as crayons, clay/modeling compounds, glues (liquid and stick), paints (finger, watercolor, liquid), markers and similar “wet” medium, colored pencils, chalk, ball point pens and pencils.

艺术材料: 指所有有生产者或包装商提供的市售或附赠的在任何状态下用于视觉图像美术创作的材料, 如蜡笔、粘土模型、胶水 (液体和粘性)、涂料 (指状物、水彩、液体)、标记物、类似 “湿润” 的材质、彩笔、粉笔、圆珠笔和铅笔。

**Composite Sample:** A sample made from combining more than one material or color e.g. paint (red, yellow and blue), vacuum metalized coating (silver and gold). It is not considered compositing when colors or materials that can not be separated (e.g. thin stripes, doll eyes, etc.) are tested together.

复合样品: 由一种以上的材料或颜色的, 例如油漆 (红、黄和蓝), 真空镀层 (银和金)。当颜色或材料无法被分开时 (例如极细的条纹、公仔的眼睛等) 可以混在一起测试。

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STZ CHEMICAL EMBASSY  
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**Jewelry Items:** Ornamental items that are intended to be worn in the hair or on the body. Examples would include rings, necklaces, bracelets, etc. This definition also includes jewelry kits that are intended to create jewelry items.

珠宝产品：指用来穿戴在身上或头发上的装饰物。例如戒指、项链、手镯等。用来创造珠宝的工具套装也属于这个范畴。

**Paints:** solid or liquid intended for use by the consumer.

涂料：给用户使用的固体或液体。

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**Promotional Items:** Items provided to the consumer to promote a product or brand. These items may or may not be included in, or with, a product. Examples include items such as booklets, catalogs, bookmarks, growth charts, and posters. In some instances, a promotional item may be an actual product in package that is given away.

促销物品：为某产品或品牌做促销而提供给客户的物品。这些物品可能包含在产品内，也可能不在或和产品一起。例如包含有小册子、目录册、书签。成长图和海报。在某些场合下，促销品可能是一件有包装的成品被派送。

**Substrate:** The base material of an item, regardless of whether or not it has a **surface coating**.

底材：物品上的基质材料，不管是否有表面涂层。

**Suitable:** Suitability of a toy for a child of a particular age. Reference data compiled by the Consumer Product Safety Commission (CPSC) in “Guidelines for Relating Children’s Ages to Toy Characteristics.” This guideline describes mental, physical and motor skill development of children from birth to 14 years. See United States regulations 16 CFR 1501.2 and 1501.3 for additional reference to suitability of small parts.

合适性：指儿童玩具对应的特定年龄。相关数据参考CPSC编制的“儿童玩具的特定年龄指导”。这份指导描述了从出生到14岁的儿童的智力、身体和运动技能的发展。参考美国16 CFR 1501.2和1501.3中关于细小部件的额外规定。

**Surface Coating:** All layers of materials such as paint or similar materials, that dry to a solid film when applied to a **substrate** and that can be scraped off with a sharp blade or washed off with a solvent such as acetone or ethanol, without removing the substrate (base) material. These are factory applied coatings on products.

表面涂层：指所有能在底材表面形成薄层，并且能够被锋利的刀片从底材上刮下来或用丙酮、乙醇之类的溶剂洗脱下来又不含底材（基质）的材料。工厂使用在产品上的涂料。

NOTE: Labels are not considered surface coatings because they do not meet the definition of a surface coating in 16 CFR 1303. Labels may contain surface coatings—those coatings should be tested according to §2.4 *Surface Coatings*. The base material of the label should be tested according to the appropriate section for substrates (e.g. PVC labels would be tested according to §2.7). If the surface coating on a label is made inaccessible by way of a permanent seal, such as lamination, then the coating would no longer be considered a surface coating—the label should be tested as a substrate.

注：标签不视作表面涂层，因为它们不符合16 CFR 1303关于表面涂层的定义。标签可能含有表面涂层 — 那些涂层需要按照§2.4节 表面涂层进行测试。标签的基体材料根据适当的底材测试条款测试（例如PVC标签按照§2.7节进行测试）。如果标签上的涂层钎永久密封而不可触及到，例如跌片结构，此时这种涂层不再视作表面涂层 — 标签就当作底材测试。

1.4 Purpose

目的  
Evaluate product for compliance to worldwide safety standards for heavy metals content.  
评估产品是否符合重金属含量的安全标准。

2 PERFORMANCE REQUIREMENTS

执行要求  
The following requirements are evaluated before and after all applicable use and abuse testing. See Appendix 1, Heavy Elements Testing Flow Chart for Accessible Materials.  
测试按以下要求进行可用和滥用的评估比较。看附录1。可接触性材料的重金属测试流程。

2.1 Products, Accessories, or Peripherals Intended to be Used Exclusively by Adults\*

Must be ≤ the following limits:  
必须≤以下限值：

COMPONENT 部件	ELEMENT 元素	TOTAL 总含量 (ppm)
Surface Coatings 表面涂层	Lead (Pb) 铅	90
Plastics 塑胶	Lead (Pb) 铅	200
Surface Coatings and Plastics 表面涂层和塑胶	Cadmium (Cd) 镉	75 <sup>1</sup>
Additional Requirements for Electrical/Electronic Products Only 只对有电子功能产品的额外要求	Cadmium (Cd) 镉	75
	Lead (Pb) 铅	100
	Hexavalent Chromium (CrVI) 六价铬	1000
	Mercury (Hg) 汞	1000

<sup>1</sup>75 ppm total cadmium limit is applied to **accessible** and inaccessible components.

<sup>1</sup>75ppm总镉的限制应用于可接触部分和不可接触部分。

\*Fashion dolls intended for Brazil should not be tested according to §2.1. The product should be tested according to all other applicable sections.

销往巴西的时尚公仔不按照§2.1测试。这类产品按其他适合的条款测试。

2.2 All other products

所有其他产品



### 2.2.1 Art Materials (except finger paints)

艺术材料（不包括指画油漆）

Must be ≤ the following limits:

ELEMENT 元素	TOTAL 总量 (ppm)	SOLUBLE METHOD1 可溶性方法1 (ppm)
Antimony (Sb) 锑	-	60
Arsenic (As) 砷	-	25
Barium (Ba) 钡	-	250
Cadmium (Cd) 镉	75 <sup>1</sup>	50
Chromium (Cr) 铬	-	25
Lead (Pb) 铅	90	90
Mercury (Hg) 汞	-	25
Selenium (Se) 硒	-	500

### 2.2.2 Finger Paints

指画油漆

Must be ≤ the following limits:

必须≤以下限值：

ELEMENT 元素	TOTAL 总量 (ppm)	SOLUBLE METHOD1 可溶性方法1 (ppm)
Antimony (Sb) 锑	-	10
Arsenic (As) 砷	-	10
Barium (Ba) 钡	-	350
Cadmium (Cd) 镉	75 <sup>1</sup>	15
Chromium (Cr) 铬	-	25
Lead (Pb) 铅	90	25
Mercury (Hg) 汞	-	10
Selenium (Se) 硒	-	50

### 2.2.3 Surface Coatings

表面涂层

Must be ≤ the following limits:

必须≤以下限值：

受控文件

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ELEMENT 元素	TOTAL 总量 (ppm)	SOLUBLE METHOD1 可溶性方法1 (ppm)	SOLUBLE METHOD2 可溶性方法2 (ppm)
Antimony (Sb) 锑	-	60	1000
Arsenic (As) 砷	-	25	1000
Barium (Ba) 钡	-	500	1000
Cadmium (Cd) 镉	75 <sup>1</sup>	75	1000
Chromium (Cr) 铬	-	60	-
Lead (Pb) 铅	40	90	-
Mercury (Hg) 汞	10	25	-
Selenium (Se) 硒	-	300	1000
<b>ADDITIONAL REQUIREMENTS ACCESSIBLE PARTS OF ELECTRICAL/ELECTRONIC PRODUCTS ONLY</b> 只对电子/电器产品的可接触部分额外要求			
Hexavalent Chromium (CrVI) 六价铬	1000		

#### 2.2.4 Metal, glass, gemstone, and ceramic that is not a small part<sup>2</sup>

非细小的金属、玻璃、宝石和陶瓷部件

Must be ≤ the following limits:

必须≤以下限值:

ELEMENT 元素	TOTAL 总量 (ppm)
Lead (Pb) 铅	40 <sup>3</sup> /100 <sup>4, 5</sup>
Cadmium (Cd) 镉	75 <sup>1</sup>
<b>ACCESSIBLE PARTS OF Electrical/Electronic PRODUCTS ONLY</b> 只对电子/电器产品可接触部分	
Hexavalent Chromium (CrVI) 六价铬	1000
Lead 铅	1000
Mercury (Hg) 汞	1000

#### 2.2.5 Metal, glass, gemstone, and ceramic that is a small part<sup>2</sup>

小的金属、玻璃、宝石和陶瓷部件

Must be ≤ the following limits:

必须≤以下限值:

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STZ CHEMICAL EMBASSY  
CONTROLLED DOCUMENT



ELEMENT 元素	TOTAL 总量 (ppm)	SOLUBLE METHOD1 可溶性方法1 (ppm)
Antimony (Sb) 锑	-	60
Arsenic (As) 砷	-	25
Barium (Ba) 钡	-	500
Cadmium (Cd) 镉	75 <sup>1, 6</sup>	75
Chromium (Cr) 铬	-	60
Lead (Pb) 铅	40 <sup>3</sup> /300 <sup>4, 5</sup>	90
Mercury (Hg) 汞	-	60
Selenium (Se) 硒	-	300
<b>ADDITIONAL REQUIREMENTS – ACCESSIBLE PARTS OF ELECTRICAL/ELECTRONIC PRODUCTS ONLY</b> 只对有电子功能产品的额外要求		
Hexavalent Chromium (CrVI) 六价铬	1000	
Lead 铅	1000	
Mercury (Hg) 汞	1000	

<sup>2</sup> Product intended to be adult-assembled should be evaluated in the assembled state before and after use and abuse testing. This includes the determination of small parts.

成人玩的组装产品要求进行可用和滥用的测试评估比较。这包括小部件的判定。

<sup>3</sup> The 40 ppm limit is applicable to child care items intended to be placed in the mouth. Examples of child care items intended to be placed in the mouth include pacifiers, baby bottles, teethers, cups, utensils, etc. The 300 ppm requirement is to be used for all other items including toys.

40ppm的限值适合于放入口中的儿童护理品。例如放入口中的儿童护理品包括安慰器、奶瓶、出牙器杯子、器具等。300ppm要求适用于包括玩具在内的其他物品。

<sup>4</sup> Product intended for the adult collector is exempted from this requirement. Fashion Dolls do not qualify for this exemption in Brazil.

成人收藏品是豁免该要求的。在巴西，时尚公仔不受这项豁免。

<sup>5</sup> See Appendix 4 for products and materials that are not subject to this requirement

不受此要求限制的产品和材料请参看附录4。

<sup>6</sup> Glass Beads are exempt from total Cd testing. Soluable testing still applies.

<sup>6</sup> 玻璃珠豁免总镉测试。但可溶性测试要进行。

## 2.2.6 Plastic and All Other Materials

塑胶和所有其他材料

Must be ≤ the following limits:

必须≤以下限值：

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STZ CHEMICAL EMBASSY  
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ELEMENT 元素	TOTAL 总量 (ppm)	SOLUBLE METHOD1 可溶性方法1 (ppm)
Antimony (Sb) 锑	-	60
Arsenic (As) 砷	-	25
Barium (Ba) 钡	-	500
Cadmium (Cd) 镉	75 <sup>7</sup>	75
Chromium (Cr) 铬	-	60
Lead (Pb) 铅	40 <sup>7</sup> /100 <sup>8</sup>	90
Mercury (Hg) 汞	-	60
Selenium (Se) 硒	-	300
<b>ADDITIONAL REQUIREMENTS – ACCESSIBLE PARTS OF ELECTRICAL/ELECTRONIC PRODUCTS ONLY</b> 只对电子/电器产品的可接触部分额外要求		
Hexavalent Chromium (CrVI) 六价铬	1000	
Lead 铅	1000	
Mercury 汞	1000	

<sup>7</sup> The 40 ppm limit is applicable to child care items intended to be placed in the mouth. Examples of child care items intended to be placed in the mouth include pacifiers, baby bottles, teethers, cups, utensils, etc. The 200 ppm requirement is to be used for all other items including toys.

40ppm的限值适合于放入口中的儿童护理品。例如放入口中的儿童护理品包括安慰器、奶瓶、出牙器杯子、器具等。200ppm要求适用于包括玩具在内的其他物品。

<sup>8</sup> See Appendix 4 for products and materials that are not subject to this requirement  
不受此要求限制的产品和材料请参看附录4。

### 3 TEST METHODS

测试方法

#### 3.1 Test Environment (not applicable)

测试环境（不可用）

#### 3.2 Equipment

设备

Use equipment specified in procedures referenced in §3.4  
使用程序§3.4中指定的仪器

#### 3.3 General Test Requirements

一般测试要求

3.3.1 All accessible materials must be tested—surface coatings, substrates, base materials, etc.

所有可接触的材料必须进行测试—表面涂层、底材、基本原料等。





3.3.2 If feasible, samples are to be tested in the same form they appear on the finished product, e.g. paint is tested in the dry state.

如果可行，样品要按照成品上的一样状态进行测试，例如涂料要烘干测试。

3.3.3 Coated surfaces require testing of both the surface coating and the base material with the coating removed.

涂覆在表面的涂层需要测试和移除涂层后的基材需要测试。

3.3.4 Colors or materials can be combined if they cannot be physically separated (e.g. overlapping colors of paint, adhesive on a label). This is not considered composite testing. For example, glues or adhesives that can not be physically separated from the substrate (e.g. adhesive on a paper label) should be tested together with the substrate.

如果颜色或材料的混合体不能用物理方法分离（例如标签上重叠的颜色、胶水）。这种不视作混合样品测试。例如胶水或黏胶不能从底材通过物理的方法分离下来（例如在纸质标签上的黏胶），需要与底材一起进行测试。

3.3.5 Composite testing is not permitted for Soluble 1 and 2 testing. This does not apply to Total digestion testing that is used to satisfy Soluble 1 and 2 limits per § 3.4.1.

混合测试不允许用在可溶性方法1和2上。它不适用于步骤 § 3.4.1所述的总量消解测试结果满足可溶性方法1和2。

3.3.6 The analytical correction factors found in EN71-3/ISO 8124-3 should be applied to Soluble 1 results. These correction factors should not be applied to total digestion results or Soluble 2 results.

可溶性方法1的结果要按照EN71-3/ISO 8124-3的校正因子进行校正。该校正因子不可用于总量测试和可溶性方法2。

3.3.7 Composite testing, when permitted, must meet the following criteria:

混合测试，如果允许，必须满足以下要求：

- No more than 3 samples may be used  
不超过3个样品混合。
- Equal weights of each sample should be used  
每个样品所称质量要相等
- Compositing must be done using similar materials with similar properties  
混合必须是相似的材料。
- Measures must be taken to ensure a failing result is not masked by the other samples in a composite. Acceptable methods for calculating the maximum possible concentration of an analyte in a single sample are detailed in CPSC test method CPSC-CH-E1003-09 and Mattel GLOP [0006-7406](#), Total Digestion for Heavy Element Analysis  
混合测试必须确保不合格的结果不会因其他样品的混合而被掩盖。可靠的计算方法是计算单个样品的最大可能的浓度。详情参看CPSC中的CPSC-CH-E1003-09测试方法和Mattel GLOP [0006-7406](#), 重金属总量消解分析

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**STZ CHEMICAL EMBASSY**  
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### 3.3.8 Test frequency is per the following:

测试频率按下列要求

- GQMP [0006-2112](#), Heavy Elements Control on Surface Coatings for Mattel and Mattel OEM
- GQMP [0006-2113](#), Heavy Elements Control on Surface Coatings for Specialty Vendors
- GQMP [0006-2118](#), Heavy Elements Control on Substrates for Mattel Owned and Operated Plants
- GQMP [0006-2119](#), Heavy Elements Control on Substrates for Mattel OEM and Specialty Vendors

### 3.4 Procedure

程序

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CONTROLLED DOCUMENT

- 3.4.1 Laboratories may use the results from the Total test to satisfy Soluble 1 and Soluble 2 requirements, if they have demonstrated that the Total digestion and analysis methods they employ are capable of accurately testing for all analytes of interest (As, Ba, Cd, Cr, Hg, Pb, Sb, and Se).

如果有充分示例证明总含量的测试结果（As、Ba、Cd、Cr、Hg、Pb、Sb和Se）足够精确，实验室可以用总含量的结果满足可溶性方法1和2的要求。

- 3.4.1.1 For As, Cd, Cr, Hg, Pb, Sb, and Se, if the total element test result is  $\leq$  the total and soluble limits, soluble test methods 1 and 2 are not required. For Barium (Ba), total result must be  $\leq 50\%$  of the respective Soluble 1 or Soluble 2 limit. If result is  $> 50\%$  of the respective limit, then the related soluble test must be performed (e.g. if the result is greater than 50% of Soluble 1 requirement, then the Soluble 1 test must be performed).

对于As、Cd、Cr、Hg、Pb、Sb和Se，如果总含量结果小于总含量和可溶性要求，则可溶性方法1和2就不要求测试了。对于钡（Ba），总含量必须小于等于可溶性方法1或2的各自限值50%，如果结果大于各自限值的50%，则需要做可溶性测试（例如如果结果超过可溶性方法1限值的50%，则需要进行可溶性方法1的测试）。

- 3.4.1.2 If the total test result is  $>$  the total limit the material fails and no further testing is performed.

如果总量测试结果大于总量限值，则该材料不合格，无需再进行更多的测试。

See Appendix 2 for examples.

参看附录2的示例。

- 3.4.1.3 For surface coatings, follow Appendix 3 if sufficient sample to conduct the testing cannot be collected from 12 samples.

对于表面涂层，按照附录3，如果样品量足够就不用从12套样品上取样。

### 3.4.2 Mattel Internal Labs

美泰内部实验室

Mattel internal test laboratories must follow appropriate Global Laboratory Operating Procedure

美泰内部测试实验室必须按照合适的全球实验室操作规程进行测试

#### 3.4.2.1 Total Test Methods

总量测试方法

- Test Glass and Ceramic at an external laboratory.

玻璃和陶瓷送外部实验室测试。

- Test all other materials per GLOP [0006-7406](#), Total Digestion for Heavy Element Analysis

所有其他测试按照GLOP [0006-7406](#)，重金属总量消解分析进行

- For surface coatings, follow Appendix 3 if sufficient sample to conduct the testing cannot be collected from 12 samples.

对于表面涂层，按照附录3，如果样品量足够就不用从12套样品上取样。

#### 3.4.2.2 Soluble Method 1

可溶性方法1

- Test per GLOP [0006-7408](#), Soluble Extractions for Heavy Metal Analysis

按照GLOP [0006-7408](#),重金属可溶性萃取分析进行测试

- If 10 mg of sample cannot be collected from 1 sample, do not perform an analysis.

如果从1个样品上取样不到10mg，就无需进行分析操作。

#### 3.4.2.3 Soluble Method 2

可溶性方法2

- Test per GLOP [0006-7408](#), Soluble Extractions for Heavy Metal Analysis

按照GLOP [0006-7408](#),重金属可溶性萃取分析进行测试

- Follow Appendix 3 if sufficient sample to conduct the testing cannot be collected from 12 samples.

按照附录3，如果样品量足够就不用从12套样品上取样。

### 3.4.3 External Labs

外部实验室

#### 3.4.3.1 Total Test Methods

总量测试方法

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### 3.4.3.1.1 Total Hexavalent Chromium - Cr VI

六价铬总含量- Cr VI

Use one of the following methods as applicable:

选用以下一种合适的方法:

- ISO 3613, Chromate Conversion Coatings on Zinc, Cadmium, Aluminum-zinc Alloys, Zinc-aluminum – Test Methods or equivalent.

ISO 3613, 锌、镉、铝-锌合金和锌-铝合金的铬酸盐转化膜试验方法或等同的。

- EPA Test Method 3060, Alkaline Digestion for Hexavalent Chromium or equivalent.

EPA 测试方法 3060, 六价铬的碱性消解或等同的。

Variations of these extraction and analysis methods and/or use of an alternate method are acceptable if, in the expert opinion of the test laboratory, they are declared to be equivalent or better.

根据这些萃取和分析方法衍生出来的方法和/或交替使用的方法室可以被接受的, 依实验室专家的意见, 它们的效果室相当的或更好。

### 3.4.3.1.2 Total All Other Elements

其他元素的总量

#### 3.4.3.1.2.1 Use one of the following digestion methods as applicable:

选用以下一种合适的方法:

- AOAC Official Method 974.02, Lead in Paint  
官方农业化学家协会官方方法974.02, 油漆中的铅
- EPA Method 3051A, Microwave Assisted Digestion of Sediments, Sludge, Soils, and Oils  
EPA方法3051A, 沉淀物、淤泥、土壤和油类的微波辅助酸解法。
- EPA Method 3052, Microwave Assisted Digestion of Siliceous and Organically Based Matrices.  
EPA方法3052, 含硅和有机基体材料的微波辅助酸消化法。

Variations of these digestion methods are acceptable if, in the expert opinion of the test laboratory, they are declared to be equivalent or better.

根据这些萃取和分析方法衍生出来的方法和/或交替使用的方法室可以被接受的, 依实验室专家的意见, 它们的效果室相当的或更好。

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3.4.3.1.2.2 Analyze the digestion utilizing any suitable method based on the equipment used (AA or ICP) and the element content to be determined.

根据方法选用合适的仪器(AA或ICP)分析元素的含量。

3.4.3.1.3 Follow Appendix 3 if sufficient sample to conduct the testing cannot be collected from 12 samples

按照附录3, 如果样品量足够就不用从12套样品上取样。

#### 3.4.3.2 Soluble Method 1

可溶性方法1

3.4.3.2.1 Test and evaluate surface coating material per the latest revision ASTM F963.

按照最新版本的ASTM F963测试和评估表面涂层材料。

3.4.3.2.2 Test and evaluate non-surface coated material per the latest revision EN 71-3.

按照最新版本的EN 71-3测试和评估表面涂层材料。

3.4.3.2.3 Analyze the solution for heavy elements content using either atomic absorption spectroscopy (AA) or inductively coupled plasma spectrometry (ICP).

选用原子吸收光谱仪(AA)或等离子体原子发射光谱仪(ICP)分析溶液重金属含量。

#### 3.4.3.3 Soluble Method 2

可溶性方法2

3.4.3.3.1 Test and evaluate for soluble cadmium, barium, antimony, selenium and Arsenic per the latest revision of Health Canada Book 5 Laboratory Policies and Procedures, Part B, test method "C03-1, Determination of Leachable Cadmium, Barium, Antimony, Selenium and Arsenic in Applied Coatings".

按照最新版本的加拿大产品安全参考手册卷5—实验室方针和程序—B部分, 测试方法“C03-1, 油漆中可溶性镉、钡、锑、硒和砷的测定”。

3.4.3.3.2 Follow Appendix 3, if sufficient sample to conduct the testing cannot be collected from 12 samples

按照附录3, 如果样品量足够就不用从12套样品上取样

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## 4 HISTORY

历史



## 4.1 Significance

意义

Compliance can be assured by using a testing and compliance system that will reduce the risk of finished products having an excessive amount of heavy elements.

符合测试和适用系统的要求将降低成品重金属含量超标的风险。

Total Lead testing is required per CFR 1303 and the Consumer Product Safety Improvement Act of 2008. No testing methodology is specified.

总铅测试按照CFR 1303和2008消费者产品安全改进法案的要求。并不指定测试方法。

Soluble test method 1 is required per ASTM F963-07, EN 71-3, ISO 8124-3, Mexico's NOM's, and India's IS 9873-3.

可溶性测试方法1按照ASTM F963-07, EN 71-3, ISO 8124-3, Mexico's NOM's, and India's IS 9873-3要求。

Soluble test method 2 is required per Canada's Hazardous Products Act (HPA). The HPA specifies that the test sample must be stirred in 5% hydrochloric acid for ten minutes at 20°C. A detailed methodology has been supplied by Health Canada (C03-1, Determination of Leachable Cadmium, Barium, Antimony, Selenium and Arsenic in Applied Coatings).

可溶性测试方法2按照加拿大危险品法规（HPA）。HPA明确要求样品测试必须在20°C下，5%的盐酸溶液中振荡十分钟。详细的方法由加拿大产品安全参考手册（C03-1，油漆中可溶性镉、钡、锑、硒和砷的测定）提供。

Total Cadmium testing is required per European Regulation (EC) No 1907/2006 Restriction, Evaluation, Authorization, and Restriction of Chemicals (REACH) and Danish Ordinance prohibiting the importation, sale and manufacture of cadmium containing products (BEK nr 858 of 05 Sept 2009)

总镉测试按照欧盟（EC）1907/2006限制、评估、认可和化学品控制（REACH）和丹麦含镉产品、销售和制造禁令（BEK nr 858 of 05 Sept 2009）

The total mercury testing is also required per Canada's Hazardous Products Act. The Canadian HPA does not allow mercury to be intentionally added to the surface coating materials (SCM). A test result of  $\leq 10$  mg/kg (ppm) total mercury is considered the most reliable way to determine that no mercury has been introduced. No testing methodology is specified in the HPA.

总汞测试也按照HPA要求。加拿大HPA不允许故意向表面涂层材料（SCM）中加入汞。当总汞测试结果小于等于10mg/kg时确定不含汞是最可靠的。HPA未指定测试方法。

## 4.2 Reason for Revision

修订





Section 节	Revision S 版本 S	Implementation date: 执行日期:
1.1	Adds inaccessible portions of all products for the total cadmium testing into the scope 增加所有产品的不可接触部分总镉测试至范围内。	All product manufactured on or after July 1, 2010 2010年6月15日（含）后的所有产品
1.2.5	Accessible parts of electrical/electronic items may be exempt from RoHS requirements per QSOP 3602, RoHS 按照QSOP 3602, RoHS要求豁免电子/电器产品可接触部分的RoHS要求	Immediate 即刻
1.3	Deletes definition for Off-set printing inks as it is not referenced within the document. 从文件中删除没有参考的平版印刷油墨的定义。	Editorial 待论
2.1 through 2.7	Adds total cadmium limit 75 ppm across the board including for inaccessible portions of all products; Reduces the total cadmium limit for electrical/electronic products from 100 ppm to 75 ppm 增加所有产品不可接触部分的总镉75ppm的限值。 电子/电器产品总镉要求从100ppm降至75ppm	All product manufactured on or after July 1, 2010 2010年6月15日（含）后的所有产品
	Reduces total lead requirement for substrates to 100 ppm to meet new TRU requirements 减低底材总铅100ppm至新的TRU要求	All products shipped after June 1, 2010 所有2010年6月1日后装运的产品
2.1, 2.4-2.7	Additional requirements for electrical/electronic parts apply to accessible parts only. Inaccessible parts are covered by QSOP 3602, RoHS 电子/电器部件额外要求仅用于可接触部分。不可接触部分被QSOP 3602, RoHS覆盖	Editorial 待论
2.1	Accessible metal parts of electrical/electronic items intended for use by adults require lead testing to 1000 ppm per RoHS requirements 电子/电器金属可接触部分打算按照RoHS要求用成人铅测试要求为1000ppm。	Immediate 即刻
2.4	Cd requirement removed from requirement for surface coating of accessible parts of electrical/electronic items. 75 ppm total Cd limit is already required for all surface coatings per line 4 of the table. 从电子/电器可接触部分表面涂层移除镉要求。按此表第4行所有表面涂层总镉要求至75ppm。	Editorial 待论

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4.2.1  2.5-2.7	1000 ppm Pb limit added to additional requirements for accessible electrical/electronic items. Electrical/Electronic components that are exempt from the overall limits of the upper part of the table must still meet RoHS limits of 1000 ppm total. 电子./电器可接触部分增加1000ppm铅的额外要求。 电子/电器组件的豁免从此表上面的全部限值仍然参照RoHS1000ppm总量	Immediate 即刻 <b>受控文件</b> <b>STZ CHEMICAL EMBASSY</b> <b>CONTROLLED DOCUMENT</b>
2.6	Exempts glass beads from total testing due to nature of Cd in glass. Required to continue to meet soluble limits. 由于镉在玻璃中的性质豁免玻璃珠中总镉测试。要求继续参考可溶性限值。	All product manufactured on or after July 1, 2010 2010年6月15日（含）后的所有产品
4.1 & 4.3	Revises the significance and reference of total cadmium testing 修订意义和总镉测试参考	Editorial 待论
Appendix 1	Changes the name to Heavy Elements Testing Flow Chart 改名为重金属测试流程图。	Editorial 待论
Appendix 3	Adds “plant” to table to clarifies IQC is based on incoming inspection at a Mattel Plant. 增加“场地”至表中阐明IQC是从美泰场地引进检查。	Editorial 待论
Appendix 4	Points to sections 2.5 and 2.6 which reference Appendix 4. 参考附录4指向2.5和2.6节。	Editorial 待论

Section 节	Revision R 版本 R	Implementation date: 执行日期:
2.4	Adds requirement for Total cadmium in surface Coatings 增加表面涂层中总镉的要求	All product manufactured on or after March 15, 2010 2010年3月15日后（含此天）的所有产品
2.7	Adds requirement for Total cadmium in plastics from QSOP 0006-5010, Environmental – Total Cadmium in Plastics. QSOP 5010 will be made obsolete 增加来自 QSOP 0006-5010塑胶中总镉要求，环境-塑胶中总镉。QSOP 5010被废除	Immediate 即刻
2.7	Reduces limit for total cadmium in plastics (from QSOP 5010) from 100ppm to 75ppm to be aligned with Swedish enforcement policies 塑胶中总镉要求从100ppm降低至75ppm以便与瑞典执行方针接轨。	All product manufactured on or after March 15, 2010 2010年3月15日后（含此天）的所有产品

3.4.1, Appendix 2	Changes parameter for using Total data to satisfy Soluble limits, requiring $\leq 50\%$ of respective soluble limit instead of 250ppm for both Soluble 1 and 2. Modifies Appendix 2 accordingly. 改变参数，用总含量数据满足可溶性限值要求，小于等于可溶性方法1和2各自标准50%的要求代替250ppm。	Immediate 即刻
4.1	Adds source of Total Cadmium requirement to This Section 这节增加总镉要求的来源	Editorial 待论

#### 4.3 The following documents contain requirements related to this procedure

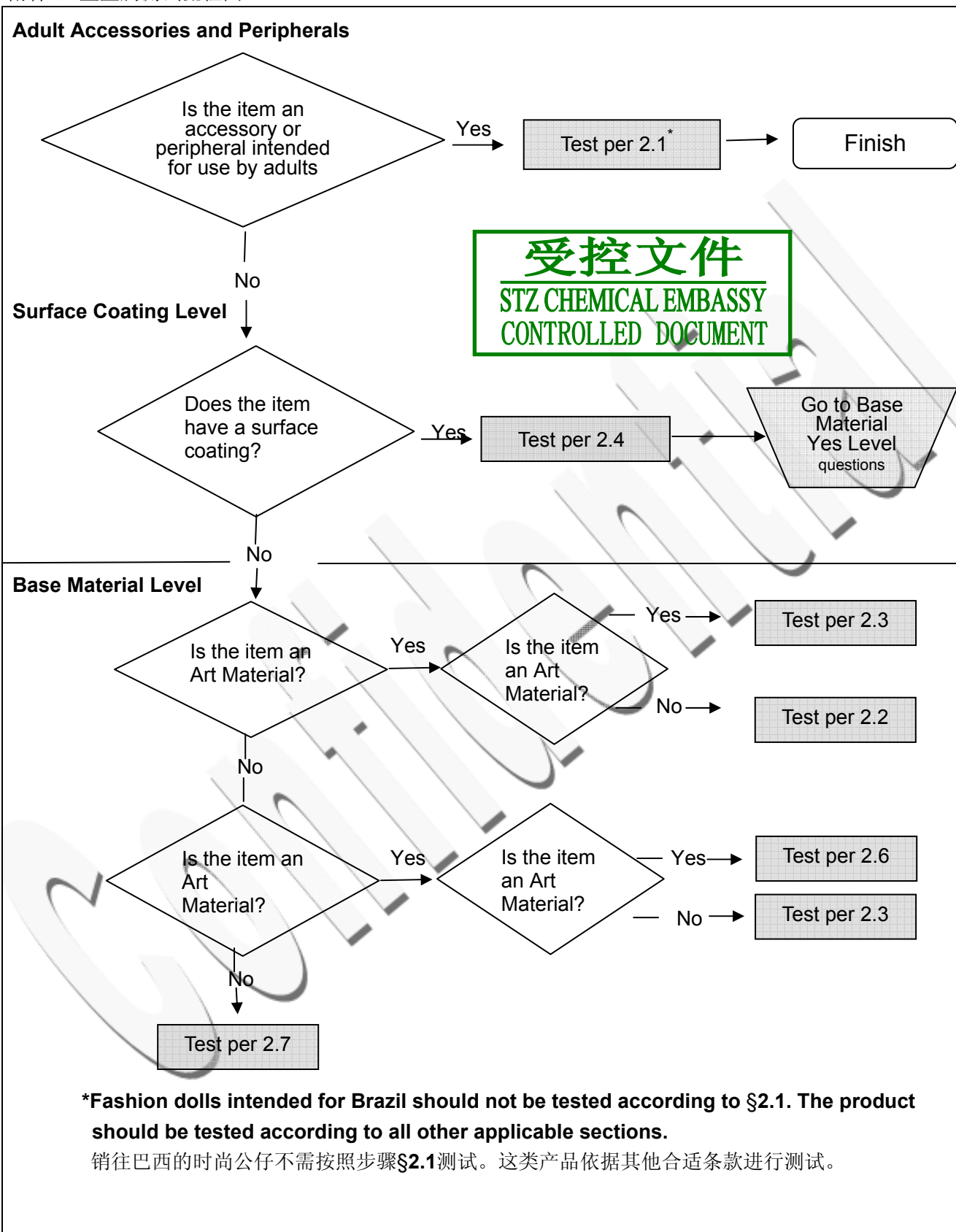
以下文献包含该程序的相关要求

- 16 CFR 1303
- EN71-3 1994 with amendment A1:2000
- ASTM F963-08 *Standard Consumer Safety Specification for Toy Safety*
- California Proposition 65
- Canadian Hazardous Products Act and Health Canada's Guideline for Lead in Children's Products
- ISO 8124-3, 1997
- Mexico NOM's
- EU Council Directive 91/338/EEC
- U.S. CPSC Policy on Lead in Certain Art Materials
- Official Methods of Analysis of the AOAC, 16th Ed, Section 25, 1995, standard method 974.02
- Health Canada Book 5, Laboratory Policies and Procedures, Part B, Test Method C-07, Determination of Total Mercury in Paints and Applied Coatings and C03-1, Determination of Leachable Cadmium, Barium, Antimony, Selenium and Arsenic in Applied Coatings
- Directive 2002/95/EC – Restriction of Hazardous Substances (R.o.H.s)
- Guidelines for Children's Products – Wal-Mart (1/29/2008)
- Washington state House Bill 2647
- EPA Method 3051A, Microwave Assisted Digestion of Sediments, Sludge, Soils, and Oils
- EPA Method 3052, Microwave Assisted Digestion of Siliceous and Organically Based Matrices.
- Consumer Product Safety Improvement Act (CPSIA) of 2008
- EN71-7:2002
- Illinois Public Act 095-1019
- European Regulation (EC) No 1907/2006 Restriction, Evaluation, Authorization, and Restriction of Chemicals (REACH)
- Danish Ordinance prohibiting the importation, sale and manufacture of cadmium containing products (BEK nr 858 of 05 Sept 2009)

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## Appendix 1, Heavy Elements Testing Flow Chart

附件1, 重金属测试流程图



## Appendix 2, Totals Results to Satisfy Soluble Requirements

附件2，总含量结果满足可溶性要求

### Example 1: Antimony Result in Surface Coating

例子1：表面涂层中的锑含量

<b>Total Result Antimony (ppm)</b> 总锑结果	<b>Soluble Antimony Method 1 limit: 60 ppm</b> 可溶性方法1锑的限值：60ppm	<b>Soluble Antimony Method 2 limit: 1000 ppm</b> 可溶性方法2锑的限值：1000ppm
40	Less than soluble limit; do not test 小于可溶性限值；不必测试	Less than soluble limit; do not Test 小于可溶性限值；不必测试
60	Exceeds soluble limit; test 超过可溶性限值；测试	Less than soluble limit; do not Test 小于可溶性限值；不必测试
1200	Exceeds soluble limit; test 超过可溶性限值；测试	Exceeds soluble limit; test 超过可溶性限值；测试

### Example 2: Barium Result in Surface Coating

例子2：表面涂层中的钡含量

<b>Total Result Barium (ppm)</b> 总钡结果	<b>Soluble Barium Method 1 limit:500 ppm</b> 可溶性方法1钡的限值：60ppm	<b>Soluble Barium Method 2 limit: 1000 ppm</b> 可溶性方法2钡的限值：1000ppm
40	≤250 ppm; do not test 小于等于250ppm；不必测试	≤500 ppm; do not test 小于等于500 ppm；不必测试
250	≤250 ppm; do not test 小于等于250ppm；不必测试	≤500 ppm; do not test 小于等于500 ppm；不必测试
7500	Exceeds 250ppm; test 超过250ppm；测试	Exceeds 500ppm; test 超过500ppm；测试
1200	Exceeds 250ppm; test 超过250ppm；测试	Exceeds 500ppm; test 超过500ppm；测试

### Example 3: Lead Result in Surface Coating

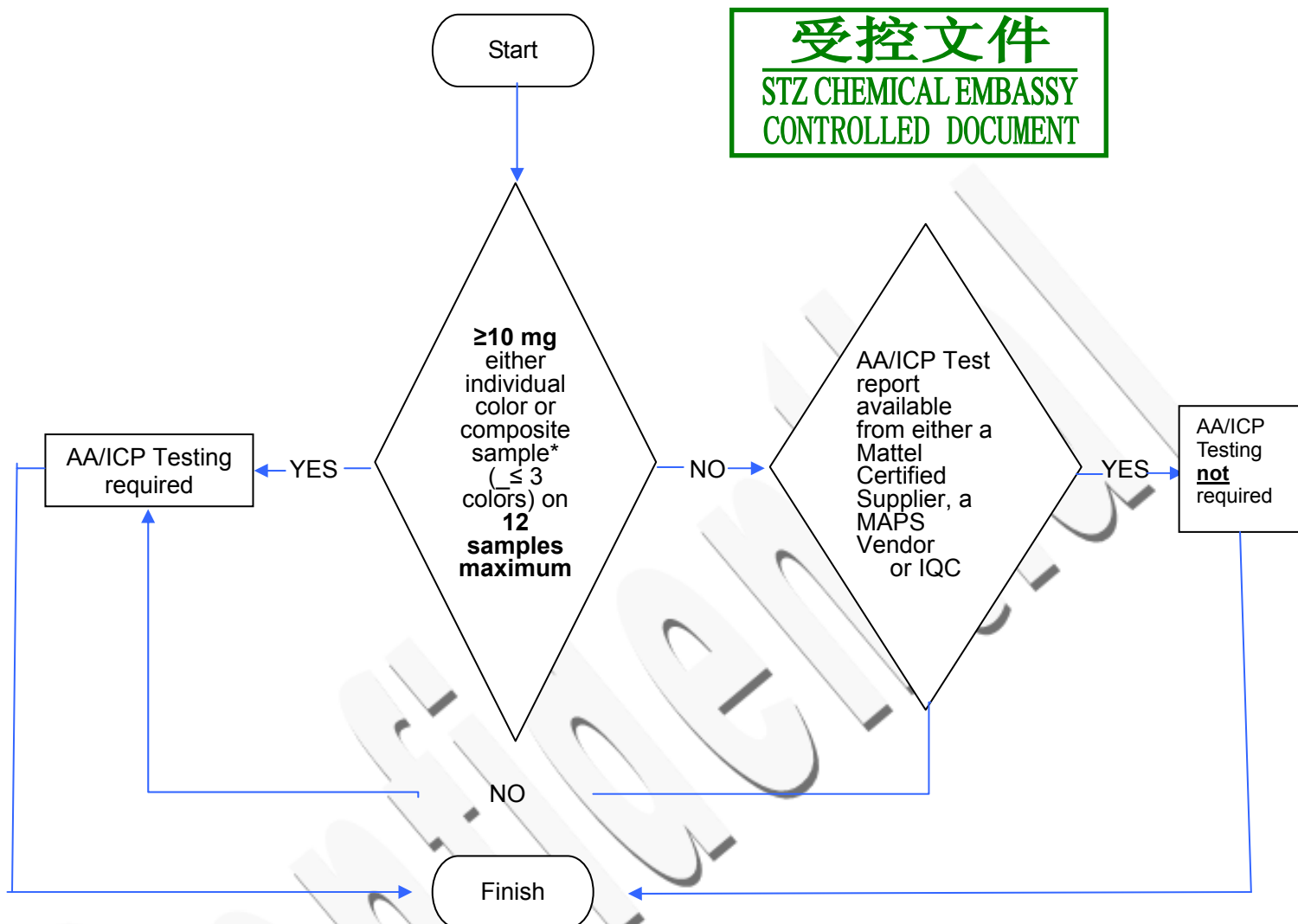
例子3：表面涂层中的铅含量

<b>Total Result Lead (ppm)</b> 总铅结果	<b>Soluble Lead Method 1 limit: 90 ppm</b> 可溶性方法1铅的限值：90ppm
30	Less than soluble limit; do not test 小于可溶性限值；不必测试
100	Exceeds <b>total</b> limit; sample fails, 超过总量限值；样品不合格

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## Appendix 3, Heavy Elements Sample Requirements for Surface Coatings

附件3，表面涂层重金属样品要求。



### Considerations:

需要考虑的事项:

- Applicable for finished goods testing (Reference GQMP 0006-2112 and 0006-2113)  
适用于成品测试（参考GQMP 0006-2112和0006-2113）
- Limit of 12 samples applies to initial testing for Total digestion. If the results indicate that Soluble 1 and/or Soluble 2 testing is required, then additional samples should be used to perform those tests (1 sample for Soluble 1 testing and a maximum of 12 samples to perform soluble 2 testing). If all three tests are needed, a maximum of 25 samples should be used: twelve (12) for Totals, one (1) for Soluble 1, and twelve (12) for Soluble 2. \*Composite testing should not be used when performing Soluble 1 or Soluble 2 testing.



12套样品的限制应用于早期的总含量测试。如果结果表明可溶性1和2需要测试，额外的样板需要测试，额外的样品需要拿来测试（1套样品做可溶性1，最多12套样品做可溶性2）。如果3种测试都进行，则最多需要25套样品：12套做总含量，1套做可溶性1和12套做可溶性2。\*混合测试不可用于可溶性1或2的测试。

- Any facility that manufactures products that Mattel sells as finished goods to a wholesale or retail customer is considered a vendor. Vendor is also known as Mattel Original Equipment Manufacturer (Mattel OEM). There are 2 Vendor categories:

任何美泰销售制造的工具作为成品批发或零售给消费者都被看成卖主。卖主也被认为是美泰原始设备制造商（Mattel OEM）。有两种卖主：

- Major Vendor: A manufacturer that has demonstrated acceptable finished goods manufacturing capabilities to supply Mattel's on-going needs, and who typically produces a significant quantity of Mattel product.

主要卖主：制造商被证明获得成品制造能力供应美泰必须品，并且特有生产美泰大数量产品的。

- Specialty Vendor: A manufacturer that fulfills unique finished goods needs, and that typically produces a small quantity of Mattel product with infrequent production runs.

专业卖主：制造商完成唯一成品必需品，并且专业生产小批量的美泰稀有的产品。

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## Appendix 4, Items which are exempt from the Total Lead requirement for substrates[as footnoted in §2.5 and §2.6]\*

附件4，豁免底材总铅含量测试的物品[作为2.5和2.6节的脚注] \*

- Metal that is an integral part of an accessible electronic component (e.g. plug of USB cable, prong of AC adaptor, etc.) unless it is contained within a small part . The exemption must be based on a functional requirement both for the use of the lead-containing component and for the use of lead in such component. For example, the prong of the AC adaptor serves a function to conduct electricity, and the lead has a function as a necessary part of the copper alloy contained in the prong.

构成可触及的电子元件上的金属部分（例如USB接口，AC插头等）除非它含有细小部件。豁免必须基于功能上要求全使用含铅成分和由铅的组成的。例如AC插头用于供电，铅有这个功能必须的使用铜铅合金。

- Surgical Steel

手术用不锈钢

- Precious metals

贵金属

- Gold (at least 10 karat)  
金（至少10K）
- Sterling silver (at least 925/1000)  
纯银（至少为925/1000）
- Platinum  
铂
- Palladium  
钯
- Rhodium  
铑
- Osmium  
锇
- Iridium  
铱
- Ruthenium  
钌

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The following materials, when untreated or unadulterated by the addition of materials or chemicals and which has not undergone any processing which could introduce lead

下面的材料，增加的材料或化学品未经处理或钝化，并且没有任何处理过程会引入铅。

- Precious Gemstones

贵重宝石

- Diamond

钻石

- Ruby

红宝石

- Sapphire

蓝宝石

- Emerald

翡翠

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- Certain ***semiprecious gemstones*** provided that the mineral or material is not based on lead or lead compounds and is not associated in nature with any mineral that that is based on lead or lead compounds (e.g. aragonite, bayldonite, boleite, cerussite, crocoite, linarite, mimetite, phosgenite, vanadinite, wulfenite)

某些规定，半宝石不是基于铅或铅的化合物和在自然界不与任何基于铅或铅的化合物矿物（例如文石、乳砷铅矿、银铜氯铅矿、白铅矿、赤铅矿、青铅矿、砷铅矿、角铅矿、钒铅矿、钼铅矿）结合在一起的之类的矿物或材料

- Natural or cultured pearls

天然的或人工养殖的珍珠

- Wood

木材

- Natural fibers, including cotton, silk, wool, hemp, flax, and linen

天然纤维，包括棉花、丝绸、羊毛、大麻纤维、亚麻纤维和亚麻制品。

- Other natural materials including coral, amber, feathers, fur, and untreated leather

其他天然材料包括珊瑚、琥珀、羽毛、毛皮和生皮。

\* The substrates of the above items are only exempt from total lead requirement; they still need comply with other requirements.

大部分底材仅豁免总铅要求；它们仍然要遵从其他要求。