CPSC Accredited Testing Laboratory Identification number: 1221

# Test Report

**Date : 2019-10-12**
**No. : SP19100001**



**Applicant** : Hayes Specialties Corporation
1761 East Genesee Saginaw, MI 48601-2407

**Description of Samples** : One (1) group of submitted samples said to be:
17764/GP17764
TRAIN SET-BATTERY OPERATED W/4 CARS AND 12 TRACKS IN CARRYING CASE
COUNTRY OF ORIGIN: CHINA
AGE GRADING FOR APPLICANT: 3+
AGE GRADING FOR TESTING: 3+

**Date Samples Received** : 2019-10-08

**Date Tested** : 2019-10-08 to 2019-10-12

| Requirements | Conclusion |
|---|---|
| 1. ASTM Standard Consumer Safety Specification For Toy Safety F 963-17<br>- physical and mechanical test(Apart from clause 7.1)<br>- flammability test<br>- heavy metal test | Pass |
| 2. US Consumer Product Safety Improvement Act<br>- Total Lead content in paint and surface coating in accordance with Sec. 101 (f) and 16 CFR 1303.<br>- Total Lead content in substrate in accordance with Sec. 101(a).<br>- Phthalates content in accordance with Sec 108 and 16 CFR 1307. | Pass |
| 3. The Total Lead content requirements according to the California Proposition 65 | Pass |
| 4. The BBP, DBP, DEHP, DnHP, DINP and DIDP content requirements according to the California Proposition 65. | Pass |
| 5. Total cadmium content requirements according to the California Proposition 65. | Pass |
| 6. The Total Lead content requirements according to Illinois Public Act 095-1019 | Pass |
| 7. The Phthalates content requirements according to California Assembly Bill NO.1108 | Pass |
| 8. San Francisco Health Code<br>- Phthalates content in accordance with Article 34, sec 34.2 | Pass |

HUANG Qinglai, Owen
Authorized Signatory

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The following test item(s) was/were performed on submitted sample(s) and/or components confirmed by applicant.

| Item No. | Component Description |
|---|---|
| Coating materials: | |
| 1 | Coating on Locomotive:white |
| Plastic materials: | |
| 2 | Plastic on Locomotive:black |
| 3 | Plastic on Locomotive:red |
| 4 | Plastic knobs:white |
| Metal materials: | |
| 5 | Metal:silver *4 |

**Test Results:**

**1.ASTM Standard Consumer Safety Specification for Toy Safety F 963-17**

**AGE GRADING:**

The sample did not contain an age grade; however, the applicant requested it be tested according to the age grade of 36 months and up.

**AGE GRADING FOR TESTING:**

36 months and up.

**1.1 Mechanical and physical hazards of the submitted sample**

Ref.: ASTM F 963-17

Applicable requirements before and after use and abuse testing:

| Applicable Section | Description | Result |
|---|---|---|
| 4 | Safety requirements | ---- |
| 4.1 | Material Quality | Pass |
| 4.2 | Flammability | Pass*1 |
| 4.7 | Accessible Edges | Pass |
| 4.8 | Projections | Pass |
| 4.9 | Accessible Points | Pass |
| 4.17 | Wheels, Tires, and Elastics | Pass |
| 4.18 | Holes, clearance and Accessibility of Mechanisms | Pass |
| 5 | Labeling Requirements | ---- |
| 5.2 | Age grading labeling | *2 |
| 7 | Producer's Markings | ---- |
| 7.1 | Producer's Name and Address | *3 |

*1 = Please refer to section 1.2 of this report for details.
*2 = See age grading.
*3 = There were no producer's/distributor's name and address on the submitted sample.


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**Test Results:**

Use and abuse testing:

| Applicable Section | Description | Test Condition |
|---|---|---|
| 8.5 | Normal Use Testing | |
| 8.6 | Abuse Testing | |
| 8.7 | Drop Tests | 4 drops at 3 ft |
| 8.8 | Torque Tests | 4 in-lbs or ±180° |
| 8.9 | Tension Tests | 15 lbs. |
| 8.10 | Compression Tests | 30 lbs. |

**1.2 Flammability test for solids and soft toys**
Ref.: ASTM F963-17 Section 4.2
Method used: FHSA 16CFR 1500.44
Result: pass

| Sample | Burn rate (in/sec.) |
|---|---|
| TRAIN SET-BATTERY OPERATED W/4 CARD AND 12 TRACHS IN CARRYING CASE | DNI |

DNI = Did not ignite

Note: In accordance with the FHSA, the burn rate should not be greater than 0.1 in. per second.

**1.3 Heavy metal test**
Ref.: ASTM F963-17 Section 4.3.5
Method: ASTM F963-17 Section 8.3
Determined by: Inductively Coupled Plasma-Optical Emission Spectrometer & Inductively Coupled Plasma Mass Spectrometry

4.3.5.1 Paint and similar surface-coating

Total lead analysis

| Sample | Result | Limit |
|---|---|---|
| 1 | <10ppm | 90ppm |

Soluble metals test

| | 1 | Limit |
|---|---|---|
| Soluble lead..... | <5ppm | 90ppm |
| Soluble cadmium..... | <5ppm | 75ppm |
| Soluble chromium..... | <5ppm | 60ppm |
| Soluble barium..... | <5ppm | 1000ppm |
| Soluble antimony..... | <5ppm | 60ppm |
| Soluble arsenic..... | <2ppm | 25ppm |
| Soluble mercury..... | <5ppm | 60ppm |
| Soluble selenium..... | <5ppm | 500ppm |


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**Test Results:**

4.3.5.2 Toys Substrate Materials

Total lead analysis

| Sample | Result | Limit |
|---|---|---|
| 2+3+4 | <10ppm | 100ppm |
| 5 | <10ppm | 100ppm |

Soluble metals test

*4 = According to requirement of ASTM F963-17, materials such as metal, glass, and ceramic are exempted if they are not small parts.

| | 2 | 3 | 4 | Limit |
|---|---|---|---|---|
| Soluble lead..... | <5ppm | <5ppm | <5ppm | 90ppm |
| Soluble cadmium..... | <5ppm | <5ppm | <5ppm | 75ppm |
| Soluble chromium..... | <5ppm | <5ppm | <5ppm | 60ppm |
| Soluble barium..... | <5ppm | <5ppm | <5ppm | 1000ppm |
| Soluble antimony..... | <5ppm | <5ppm | <5ppm | 60ppm |
| Soluble arsenic..... | <2ppm | <2ppm | <2ppm | 25ppm |
| Soluble mercury..... | <5ppm | <5ppm | <5ppm | 60ppm |
| Soluble selenium..... | <5ppm | <5ppm | <5ppm | 500ppm |

Note: < denotes less than.

## 2. US Consumer Product Safety Improvement Act

### 2.1 Children's products containing lead - Total Lead content in paint and surface coating

Ref.: CPSIA Sec 101(f) and 16 CFR 1303
Determined by: Inductively Coupled Plasma-Optical Emission Spectrometer

| Sample | Result | Limit |
|---|---|---|
| 1 | <10ppm | 90ppm |

Note: < denotes less than.

### 2.2 Children's products containing lead - Total Lead content in substrate

Ref.: CPSIA Sec 101(a)
Determined by: Inductively Coupled Plasma-Optical Emission Spectrometer

| Sample | Result | Limit |
|---|---|---|
| 2+3+4 | <10ppm | 100ppm |
| 5 | <10ppm | 100ppm |

Note: < denotes less than.

### 2.3 Phthalates content

Ref.: CPSIA Sec 108 and 16 CFR PART 1307
Determined by: Gas Chromatography with Mass Selective Detector


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**Test Results:**

| Test Item | CAS No. | Result(ppm) | | Limit (ppm) |
|---|---|---|---|---|
| | | 1 | 2+3+4 | |
| Di-n-butyl phthalate (DBP) | 84-74-2 | <100 | <100 | 1000 |
| Benzyl-n-butyl phthalate (BBP) | 85-68-7 | <100 | <100 | 1000 |
| Di (2-ethylhexyl) phthalate (DEHP) | 117-81-7 | <100 | <100 | 1000 |
| Diisononyl phthalate (DINP) | 28553-12-0 | <100 | <100 | 1000 |
| Di-n-Hexyl phthalate (DnHP) | 84-75-3 | <100 | <100 | 1000 |
| Di-isobutyl phthalate(DIBP) | 84-69-5 | <100 | <100 | 1000 |
| Di-n-penty1 phthalate(DPENP) | 131-18-0 | <100 | <100 | 1000 |
| Di-cyclohexyl phthalate(DCHP) | 84-61-7 | <100 | <100 | 1000 |

Note: < denotes less than.

**3. The Total Lead Content**
Ref.: California Proposition 65
Determined by: Inductively Coupled Plasma-Optical Emission Spectrometer

| Sample | Result | Limit |
|---|---|---|
| 1 | <10ppm | 90ppm |
| 2+3+4 | <10ppm | 100ppm |
| 5 | <10ppm | 100ppm |

Note: < denotes less than.

**4. The BBP, DBP, DEHP, DnHP, DINP and DIDP content**
Ref.: California Proposition 65
Determined by: Gas Chromatography with Mass Selective Detector

| | | 1 | 2+3+4 |
|---|---|---|---|
| - | Di-n-butyl phthalate (DBP) | <100ppm | <100ppm |
| - | Benzyl-n-butyl phthalate (BBP) | <100ppm | <100ppm |
| - | Di (2-ethylhexyl) phthalate (DEHP) | <100ppm | <100ppm |
| - | Di-n-Hexyl phthalate (DnHP) | <100ppm | <100ppm |
| - | Di-iso-nonyl phthalate(DINP) | <100ppm | <100ppm |
| - | Di-iso-decyl phthalate(DIDP) | <100ppm | <100ppm |

Requirement: Each of the above phthalates shall not be greater than 1000ppm by mass of the tested material.

Note: < denotes less than.

**5. The Total cadmium content**
Ref.: California Proposition 65
Determined by: Inductively Coupled Plasma-Optical Emission Spectrometer

| Sample | Result | Limit |
|---|---|---|
| 1 | <5ppm | 75ppm |
| 2+3+4 | <5ppm | 75ppm |
| 5 | <5ppm | 75ppm |

Note: < denotes less than.


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**Test Results:**

**6. The Total Lead Content requirements according to Illinois Public Act 095-1019**
Determined by: Inductively Coupled Plasma-Optical Emission Spectrometer

| Sample | Result | Limit |
|---|---|---|
| 1 | <10ppm | 40ppm |
| 2+3+4 | <10ppm | 40ppm |
| 5 | <10ppm | 40ppm |

Note: < denotes less than.

**7. Phthalates content**
Ref.: California Assembly Bill NO.1108
Determined by: Gas Chromatography with Mass Selective Detector

**A. Any toy or children article**

| Test Item | CAS No. | Result(ppm) | | Limit(ppm) |
|---|---|---|---|---|
| | | 1 | 2+3+4 | |
| Dibutyl phthalate(DBP) | 84-74-2 | <100 | <100 | 1000 |
| Butyl benzyl phthalate (BBP) | 85-68-7 | <100 | <100 | 1000 |
| Di -2-ethylhexyl phthalate (DEHP) | 117-81-7 | <100 | <100 | 1000 |

**B. Any toys and children articles which can be placed in mouth for children under 3 years**

| Test Item | CAS No. | Result(ppm) | | Limit(ppm) |
|---|---|---|---|---|
| | | 1 | 2+3+4 | |
| Di-n-octyl phthalate(DNOP) | 117-84-0 | <100 | <100 | 1000 |
| Di-iso-decyl phthalate(DIDP) | 26761-40-0 | <100 | <100 | 1000 |
| Di-iso-nonyl phthalate(DINP) | 28553-12-0 | <100 | <100 | 1000 |

Note: < denotes less than.

**8. Phthalates content**
Ref.: San Francisco Health Code Article 34, sec 34.2
Determined by: Gas Chromatography with Mass Selective Detector

| | | 1 | 2+3+4 |
|---|---|---|---|
| - | Di-n-butyl phthalate (DBP) | <100ppm | <100ppm |
| - | Benzyl-n-butyl phthalate (BBP) | <100ppm | <100ppm |
| - | Di (2-ethylhexyl) phthalate (DEHP) | <100ppm | <100ppm |
| - | Di-n-octyl phthalate(DNOP) | <100ppm | <100ppm |
| - | Di-iso-nonyl phthalate(DINP) | <100ppm | <100ppm |
| - | Di-iso-decyl phthalate(DIDP) | <100ppm | <100ppm |

Requirement: Each of the above phthalates shall not be greater than 1000ppm by mass of the tested material.

Note: < denotes less than.


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**The photo of submitted samples**

******* End of Test Report *******


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