

TECHNICAL REPORT

Report # 23207

Thames & Kosmos, LLC
77 Long Wharf
Newport, RI 02840

September 15, 2003



Requested by: Ted McGuire
Authorization Received: September 12, 2003
Sample Name: Balloon Adventure: Scientific Exploration with Balloons
Model/Style #: #653514
Sample Received: August 26, 2003
Number of Samples: 3
Condition Received: Good
Age Label on Product: 8 +
Age Grading to be Applied: 8 +
Testing Completed: September 12, 2003

SUMMARY:

Flammability:

ASTM F963-96a & 16 CFR 1500.44

- Straw/Retest Straw
- Car, Syringe Plunger, Helicopter Blade, Styrofoam

Mechanical Hazards:

ASTM F963-96a

RESULTS

DOES NOT COMPLY
DOES COMPLY

DOES NOT COMPLY

Reviewed by:

Handwritten signature of Albert J. Rapella in black ink.

Albert J. Rapella
Supervisor, Technical Services

Handwritten signature of Jeffrey D. Lipko in black ink.

Jeffrey D. Lipko
Technical Director, Hardlines

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Flammability Test: Federal Hazardous Substances Act and ASTM F963-96a

Procedure:

The method of testing was that described in **16 CFR 1500.44** of the *Federal Hazardous Substances Act and ASTM F963-96a* for rigid and pliable solids.

Requirement:

A material is considered "flammable" if it ignites and burns with a self-sustained flame at a rate greater than 0.1 inches per second along its major axis.

NOTE:

It is our understanding that a sample is considered as having passed the test requirement if it self-extinguishes before burning 6 inches and prior to the lapse of 60 seconds.

Sample ID: Balloon Adventure #653514 - Straw

Test Results:

	<u>Area of Initial Flame Contact</u>	<u>Burn Length (inches)</u>	<u>Time (seconds)</u>	<u>Burn Rate (inches/second)</u>
Burn 1	Straw	6.00	37	0.16
Burn 2	Straw	6.00	30	0.20
Burn 3	Straw	6.00	32	0.19
Burn 4	Straw	6.00	30	0.20

This sample exhibited Flaming Dripping Residue

*DNI = Did not Ignite

**IBE = Ignited but Extinguished

Conclusion: Based upon the results of the test reported above, the submitted sample **does not comply** with the requirements of the U.S. Federal Hazardous Substances Act, 16 CFR 1500.44 and ASTM F963-96a, Section 4.2.

Flammability Test: Federal Hazardous Substances Act and ASTM F963-96a

Sample ID: Balloon Adventure #653514 - Car

Test Results:

	<u>Area of Initial Flame Contact</u>	<u>Burn Length (inches)</u>	<u>Time (seconds)</u>	<u>Burn Rate (inches/second)</u>
Burn 1	Car	--	--	DNI
Burn 2	Car	--	--	DNI
Burn 3	Car	--	--	DNI
Burn 4	Car	--	--	DNI

This sample exhibited Flaming Dripping Residue

*DNI = Did not Ignite

**IBE = Ignited but Extinguished

Conclusion: Based upon the results of the test reported above, the submitted sample **does comply** with the requirements of the U.S. Federal Hazardous Substances Act, 16 CFR 1500.44 and ASTM F963-96a, Section 4.2.

Sample ID: Balloon Adventure #653514 – Syringe

Test Results:

	<u>Area of Initial Flame Contact</u>	<u>Burn Length (inches)</u>	<u>Time (seconds)</u>	<u>Burn Rate (inches/second)</u>
Burn 1	Syringe Plunger	2.75	60	0.05
Burn 2	Syringe Tip	1.50	60	0.02
Burn 3	Syringe Plunger	2.50	60	0.04
Burn 4	Syringe Tip	1.00	60	0.02

*DNI = Did not Ignite

**IBE = Ignited but Extinguished

Conclusion: Based upon the results of the test reported above, the submitted sample **does comply** with the requirements of the U.S. Federal Hazardous Substances Act, 16 CFR 1500.44 and ASTM F963-96a, Section 4.2.

Flammability Test: Federal Hazardous Substances Act and ASTM F963-96a

Sample ID: Balloon Adventure #653514 – Helicopter Blade

Test Results:

	<u>Area of Initial Flame Contact</u>	<u>Burn Length (inches)</u>	<u>Time (seconds)</u>	<u>Burn Rate (inches/second)</u>
Burn 1	Helicopter Blade	--	--	DNI
Burn 2	Helicopter Blade	--	--	DNI
Burn 3	Helicopter Blade	--	--	DNI
Burn 4	Helicopter Blade	--	--	DNI

This sample exhibited Flaming Dripping Residue

*DNI = Did not Ignite

**IBE = Ignited but Extinguished

Conclusion: Based upon the results of the test reported above, the submitted sample **does comply** with the requirements of the U.S. Federal Hazardous Substances Act, 16 CFR 1500.44 and ASTM F963-96a, Section 4.2.

Sample ID: Balloon Adventure #653514 - Styrofoam

Test Results:

	<u>Area of Initial Flame Contact</u>	<u>Burn Length (inches)</u>	<u>Time (seconds)</u>	<u>Burn Rate (inches/second)</u>
Burn 1	Styrofoam	5.00	60	0.08
Burn 2	Styrofoam	5.40	57	0.09
Burn 3	Styrofoam	5.00	49	0.10
Burn 4	Styrofoam	5.40	57	0.09

This sample exhibited Flaming Dripping Residue

*DNI = Did not Ignite

**IBE = Ignited but Extinguished

Conclusion: Based upon the results of the test reported above, the submitted sample **does comply** with the requirements of the U.S. Federal Hazardous Substances Act, 16 CFR 1500.44 and ASTM F963-96a, Section 4.2.

Flammability Test: Federal Hazardous Substances Act and ASTM F963-96a

Sample ID: Balloon Adventure #653514 – Straw Retest

Test Results:

	<u>Area of Initial Flame Contact</u>	<u>Burn Length (inches)</u>	<u>Time (seconds)</u>	<u>Burn Rate (inches/second)</u>
Burn 1	End	6.0	30	0.20
Burn 2	End	6.0	32	0.19
Burn 3	End	6.0	27	0.22
Burn 4	End	6.0	35	0.17

This sample exhibited Flaming Dripping Residue

*DNI = Did not Ignite

**IBE = Ignited but Extinguished

Conclusion: Based upon the results of the test reported above, the submitted sample **does not comply** with the requirements of the U.S. Federal Hazardous Substances Act, 16 CFR 1500.44 and ASTM F963-96a, Section 4.2.

MECHANICAL HAZARDS, ASTM F963-96a

Sample ID: Balloon Adventure #653514 **Packaging Included:** Yes
Age Label on Product: 8 + **Appropriate Warning Labeling:** No
See Comment 1
Age Grading to be Applied: 8 + **Number of Samples:** 3

Procedure: The submitted samples were tested to the applicable sections of *ASTM F963-96a* requirements for Mechanical Hazard.

P = Pass		F = Fail	N/A = Not Applicable		
Clause	Description	P	F	N/A	
4.0	Safety Requirements				
4.1	Material	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2	Flammability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			<small>See Comment 3</small>		
4.3	Toxicology	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.3.7	Stuffing Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.4	Electrical/Thermal Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.5	Impulsive Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.6	Small Objects				
4.6.1	Children under 36 months – no small parts allowed	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
				<small>See Comment 2</small>	
4.6.1.3	Adult Assembly Warning	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.6.2	Mouth Actuated Toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.7	Accessible Edges				
4.7.1	Children under 8 years old – no metal or glass sharp edges	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Functional sharp edges (48 to 96 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.7.2	Functional sharp edges (0 to 48 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.7.3	Metal Toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.7.4	Molded Toys (no hazardous edges)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.7.5	Exposed Bolts & Threaded Rods	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.8	Accessible Points				
4.8.1	Children under 8 years old – no sharp points	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Functional sharp point (48 to 96 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.8.2	Functional sharp point (0 to 48 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.8.3	Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.9	Projections	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.10	Nails and Fasteners	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.11	Wires or Rods	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.12	Packaging Film	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.13	Cords and Elastics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.13.1	Self-retracting pull strings: Cords and Elastics in Toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

P = Pass		F = Fail		N/A = Not Applicable		
Clause	Description	P	F	N/A		
4.13.2	Pull toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.13.3	Strings and lines for flying devices	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.14	Wheels, tires and axles	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.15	Folding mechanisms and hinges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.15.1	Folding mechanisms	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.15.2	Hinge-line clearance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16	Holes, clearance and accessibility of mechanisms	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.1	Clearances for moveable segments	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.2	Circular holes in rigid materials	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.3	Chains and belts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.3.1	Supporting chains	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.3.2	Chains or belts for ride-on toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.4	Inaccessibility of mechanisms	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.5	Winding keys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.16.6	Coil springs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17	Stability and over-load requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17.1	Stability of ride-on toys and seats	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17.2	Sideways stability requirement	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17.2.1	Sideways stability, feet available for stabilization	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17.2.2	Sideways stability, feet unavailable for stabilization	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17.3	Fore and aft stability	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17.4	Stability of stationary floor toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.17.5	Overload requirements for ride-on toys and seats	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.18	Confined Spaces	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.18.1	Ventilation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.18.2	Closures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.18.3	Toys that enclose the head	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.19	Simulated protective devices	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.19.1	Eye protection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.19.2	Simulated protective devices	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.20	Projectile toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.21	Rattles	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.22	Pacifiers	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.23	Squeeze Toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.24	Teethers and teething toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.25	Crib gyms, crib exercisers and similar toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.26	Toy chests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.26.1	Lid support	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.26.2	Hinge line clearance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.26.3	Closures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.26.4	Ventilation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27	Battery-Operated Toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.1	Marking of Battery compartment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

P = Pass		F = Fail		N/A = Not Applicable		
Clause	Description	P	F	N/A		
4.27.2	Maximum DC potential	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.3	Unable to charge non-rechargeable batteries	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.4	Accessibility of batteries (under 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.5	Accessibility of batteries - small parts	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.6	Isolated circuits	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.7	Surface temperature of batteries (less than 71°C)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.8	No short circuits	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.9	No electrical contact (other than battery)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.10	Emitted gases	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.27.11	Instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.28	Flotation toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.29	Stroller/carriage toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.30	Stuffed/beanbag type toys	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.31	Art material	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.32	Toy guns	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.33	Balloons	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
			See Comment 1			
4.34	Marbles	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.35	Balls	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.36	Preschool Play Figures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4.37	Pom Poms	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
5.0	Labeling (as applicable)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
			See Comment 1			
6.0	Instructional literature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7.0	Producers markings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Testing Comments:

1.  **WARNING:**

CHOKING HAZARD – Children under 8 years old can choke or suffocate on uninflated or broken balloons.

Adult supervision required

Keep uninflated balloons from children.

Discard broken balloons at once.

- a) The equilateral triangle shall be equal to or larger than the proper height of the signal word.
- b) The Exclamation Point inside the triangle shall be at least half the height of the triangle.
- c) The triangle shall be separated from the signal word by a distance of at least equal to the space occupied by the first letter of the signal word i.e. "W".

- d) The statements shall be blocked together within a square or rectangular area, with or without a border. The statements must appear on at least 2 lines. The statement shall be separated from all other graphic materials by a space no smaller than the minimum allowable height of the type size for "other cautionary material". If not separated by that distance, the warning statements must be surrounded by a border.
- e) The warning background and type shall be in contrast to the primary packaging background.

The measurement of the primary packaging is 79.625 sq. in. therefore the following type sizes must be strictly adhered to:

- The Signal word of "WARNING" shall be no smaller than 5/32" in height.
 - The Statement of Hazard of "CHOKING HAZARD" shall be no smaller than 7/64" in height.
 - Other Cautionary Material shall be no smaller than 3/32" in height.
2. Small parts are exempt due to age grading.
 3. The straw burned at a faster rate than that allowable by this standard.

Conclusion: When tested as specified, the submitted sample **does not comply** with the *ASTM F963-96a* requirements for Mechanical Hazards.

