Cambridge
materials testing limited

Product Development
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ISO 17025 Accredited

Report For:	Scepter Corporation 170 Midwest Road Scarborough, Ontario M1P 3A9 Phone: 416-751-9445 Fax: 416-751-4451 Email: gsirbu@scepter.ca	**Laboratory #:**	543075A-10
		Report Date:	June 16, 2010
		Received Date:	April 7, 2010
Attention:	Grigore Sirbu		
Specimen:	Portable, Fuel Container Spout, Sleeve Lock		

TEST REPORT

RE: DETERMINATION OF CHILD RESISTANCE OF THE SLEEVE LOCK ON A PORTABLE, FUEL CONTAINER SPOUT FOR CONSUMER USE IN ACCORDANCE WITH ASTM F2517-09

1.0 INTRODUCTION

On April 7, 2010 CMTL received one (1) style of a portable, fuel container spout for evaluation of its child-resistance. The testing was performed in accordance with ASTM F2517-09, "Standard Specification for Determination of Child Resistance of Portable Fuel Containers for Consumer Use".

The testing program involved the Sequential Protocol evaluation of fifty (50) children

The testing of the children took place at various locations between May 10, 2010 and May 17, 2010

Observations and times were recorded for every participant that took part in the testing.

CMTL is an independent testing laboratory accredited to ISO 17025 requirements audited by the Standard Council of Canada. CMTL is not affiliated in any way to nor has any commercial interests in the manufacturer or supplier conducting the protocol test of the child resistant packages.

Cambridge Materials Testing Limited

Per_____
QUALITY ASSURANCE

Per_____
TECHNICIAN

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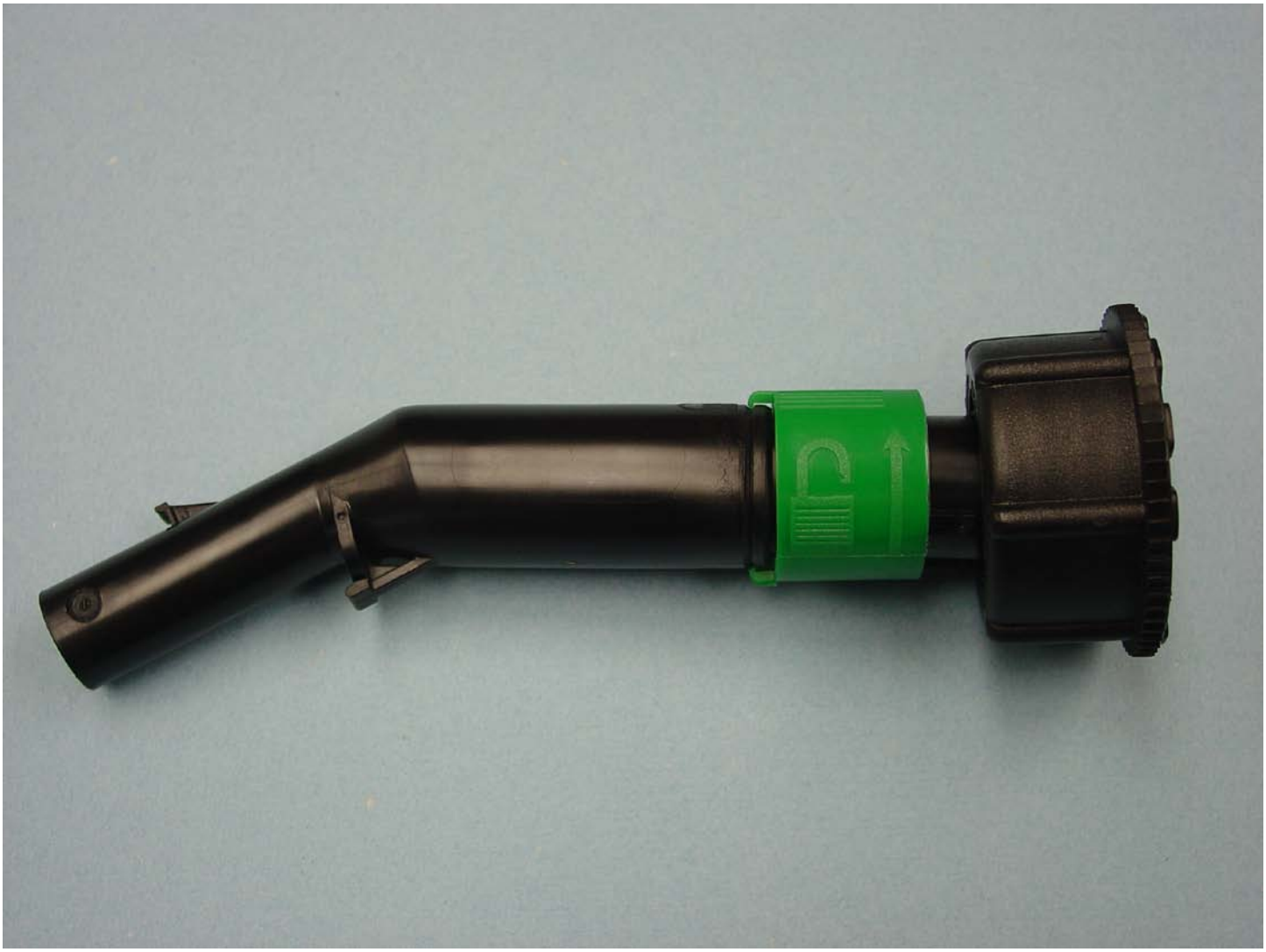
2.0 IDENTIFICATION OF SCEPTER, PORTABLE, FUEL CONTAINER SPOUT WITH SLEEVE LOCK



Photograph #1: Portable, Fuel Container Spout with Green, Lock Sleeve showing diagram of an unlocked lock and an arrow indicating the direction to turn in order to release the child lock

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2.0 IDENTIFICATION OF SCEPTER PORTABLE FUEL CONTAINER & SPOUT

Photograph #2: Full assembly of portable, fuel container with spout attached

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2.0 IDENTIFICATION OF SLEEVE LOCK FOR FUEL CONTAINER SPOUT

The product name was “Eco Spout G3”.

The product manufacturer was Scepter Corporation, 170 Midwest Road, Scarborough, Ontario.

The closure model was an “Eco Spout” with a sleeve lock that measured 2.4 cm wide.

The closure manufacturer was Scepter Corporation, 170 Midwest Road, Scarborough, Ontario.

There were two child-resistant closure mechanisms present on the container. Only the spout sleeve lock was tested at this time.

The spout attachment consisted of five parts, namely a spout, a spout sleeve lock, an outer cap with teeth, a ring with a lock flange and a rubber seal on the spout end.

All of the parts were black in colour with the exception of the sleeve lock, which was green in colour.

All of the spout parts were made of polyamide with the exception of the seal, which was made of Buna-n rubber.

The spout attachment sleeve lock had a diagram of an unlocked lock with an arrow, indicating the direction to turn in order to release the child lock on the spout. There were no other symbols, numbers, or letters found on the sleeve lock.

The container, to which the spout was attached, was referred to as a portable, fuel container.

The container material was composed of red, blow-molded high density polyethylene.

There were three sizes of container with the following net contents:

- 1.25 Gal. /5L
- 2.5 Gal./10L
- 5 Gal./18.8L

The symbols, numbers, and letters found on the bottom of the package were as follows:

- Scepter
- HDPE, 2
- Made in Canada, November 19, 2008

Non-metallic flammable liquid container classified in accordance with the standard specification for portable gasoline containers for consumer use.

3.0 CHILD PROTOCOL TESTING

Scepter Corporation performed the following preparation of the test containers by subjecting them to:

- Low-temperature exposure at 0ºF (-17.8ºC) for 8 hours
- Elevated temperature exposure at 140ºF (608ºC) for 8 hours
- Opening and closing of each closure for 250 cycles

CMTL prepared the test containers 72 hours prior to testing by half-filling them with water, applying a normal amount of torque to close the containers and then inverting the containers to determine any leakage.

The evaluation of the children's performance to open the child-resistant closures (spout sleeve locks) was performed on three different age groups.

The age groups were identified as follows:

Group #1 - Children Between 51 and 49 Months (Total # of children: 15; Male: 8; Female: 7)
Group #2 - Children Between 48 and 45 Months (Total # of children: 20; Male: 10; Female: 10)
Group #3 - Children Between 44 and 42 Months (Total # of children: 15; Male: 7; Female: 8)

The children required documented parental consent prior to participation in the evaluation of the child-resistant closures and were selected from five (5) test sites with no more than 20% of the children being obtained from any given site.

The children were tested in pairs, in the presence of one of their teachers, in a well-lit, unused classroom.

The children received one 5L portable, fuel container with a child-resistant closure (spout sleeve lock) for evaluation of their effectiveness. The children were instructed to try and get the water to come out of the container using whatever method they liked and they were told that their attempts would be observed during a timed, maximum 5 minute period.

The children were not given the impression that they were taking part in a game or test and no rewards were offered. The tester only encouraged the children to continue trying if they lost interest or gave up trying.

If the children were unable to get the water to come out of the containers after the maximum 5 minute period, the tester demonstrated how to gain access to the contents without verbal instruction and using their own, demonstration container. The children were then allowed another 5 minute period in which to attempt to gain access to the contents.

The children were allowed to talk to each other, watch each other, but not open/gain access to each other's container.

If the child was able to gain access to the contents of the container, the tester said, "Thank you" and took the container away from the child.

3.0 CHILD PROTOCOL TESTING CONT'D

The container's child resistant closure (spout, sleeve lock) was considered a failure if the child was able to get the water to come out of the container.

At the conclusion of testing, the tester thanked the children for helping and told them that they should never try to open containers like this in the absence of an adult and that this type of container might have something in it that could make them sick. The children's teacher then escorted the children back to their regular classroom.

4.0 RESULTS OF CHILD PROTOCOL TESTING

TABLE 1: First 5 min Test Period (Before Demonstration)

Age Groups	# Openings Males	# Openings Females	Total # Openings Males and Females	Mean Opening Time (seconds)	Standard Deviation (seconds)	Child Resistant Effectiveness
51 to 49 Months	0	0	0	NA	0	100%
48 to 45 Months	0	0	0	NA	0	
44 to 42 Months	0	0	0	NA	0	

TABLE 2: Second 5 min Test Period (After Demonstration)

Age Groups	# Openings Males	# Openings Females	Total # Openings Males and Females	Mean Opening Time (seconds)	Standard Deviation (seconds)	Child Resistant Effectiveness
51 to 49 Months	1	0	1	37	N/A	96%
48 to 45 Months	1	0	1	240	N/A	
44 to 42 Months	0	0	0	NA	0	

TABLE 3: ContainersTested

# of Sites	# of Testers	Total # Containers Tested	# Containers Tested / Site	# Containers Tested / Tester	% of Total Containers Tested / Tester	% of Total Containers Tested / Site
5	5	50	10	10	20%	20%

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4.0 RESULTS OF CHILD PROTOCOL TESTING (CONT'D)

TABLE 4: OPENING METHODS

Opening Method	# Children who Used Method 1st 5 Minute Test Period	# Children who Used Method 2nd 5 Minute Test Period
Lifting & trying to pour	41	50
Twisting black nozzle	18	25
Twisting green sleeve lock	16	33
Pushing down on spout	2	7
Shaking	3	0
Looking inside spout end	4	0
Consulting directions	0	1
Turned container upside down & pressed spout end into bottom of tub	1	2
Pulling on nozzle	2	3
Banging	2	0

CONCLUSION;

The child-resistant sleeve lock closure on the portable, fuel container spout was 100% effective for the children tested between the ages of 42 to 51 months before the demonstration and 96% effective after the demonstration. Therefore, the sleeve lock closure ***passes*** the acceptance criteria for the Children's Protocol Testing as per ASTM F2517-09, Standard Specification for Determination of Child Resistance of Portable Fuel Containers for Consumer Use.