UNITED NATIONS
PERFORMANCE CERTIFICATION

4G PERIODIC RETEST

Corrugated fibreboard box (163 x 112 x 197 mm)
containing 6 x 250 ml Plastics Bottles
PACKAGE ID: "BX 39 250 ml Cleaning Liquid"

TEST REPORT: 18-16002

(un) 4G / Y3 / S / *
ZA / +AA6079

* Insert Year the packaging is Manufactured (last two digits)

TESTING PERFORMED FOR:

Parrot Products (Pty) Ltd
22 Cleveland Road, Cleveland, Johannesburg
PO Box 40745, Cleveland, 2049

Attention: Mrs. Sherise Antonio

TESTING PERFORMED BY:

TEN-E Packaging Services, SA (Pty) Ltd
138 Edison Crescent, Hennopspark, Centurion
PO Box 11544
Wierdapark South, South Africa 0057
Phone: (012) 653 8897
Fax: (012) 653 8308

23 January 2018

TABLE OF CONTENTS

REPORT & SAMPLE INFORMATION

DATE LAST SAMPLES RECEIVED: 16 January 2018

TEST COMPLETED ON: 22 January 2018

SAMPLES:

- The samples tested arrived in good condition at TEN-E Packaging Services, SA (Pty) Ltd.
- The following results are based solely on the product samples provided by the manufacturer.

OBJECTIVE

To certify the **Corrugated fibreboard box (163 x 112 x 197 mm) containing 6 x 250 ml Plastics Bottles** to the Periodic Retest performance requirements outlined in Chapter 6 of the UN Recommendations on the Transport of Dangerous Goods; 20th Revised Edition.

PACKAGING CODE DESIGNATION	PACKING GROUP	GROSS MASS	INTERNAL PRESSURE
4G Fibreboard Boxes	**II Medium Danger Hazardous Materials**	**Not Exceeding 3 kg**	**95 kPa**

This package is also certified for shipment under the International Regulatory Codes referenced in Appendix I. However, it is the responsibility of the shipper (end user) to determined package authorization for use under these Dangerous Goods Regulations. Appendix I also references Industry Standard used in conducting this certification.

TEST SAMPLE DESCRIPTION / QUALITY CONTROL AUDIT RESULTS

Corrugated fibreboard box (163 x 112 x 197 mm) containing 6 x 250 ml Plastics Bottles

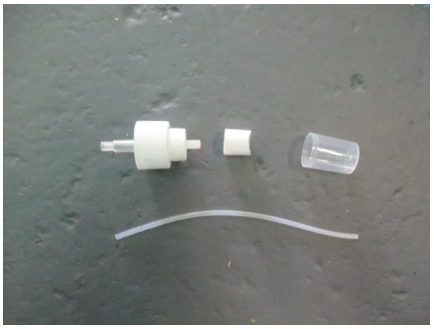
	CLIENT SPECIFICATION INFORMATION	QC AUDIT RESULTS
OUTER PACKAGING (SHIPPER)		
Style:	RSC	Corrugated fibreboard box FEFCO 0215
Material Basis Mass or Grammage		
• Outer Facing:	140 g/m² Nominal	144 g/m² Recycled
• Fluting:	125 g/m² Nominal	141 g/m²
• Center Liner (DWB):	N/A	N/A
• Fluting:	N/A	N/A
• Inner Facing	140 g/m² Nominal	137 g/m² Recycled
Combined grammage:	Not supplied	457 g/m²
Flute Contour:	B-Flute	C-Flute
Tare Mass:	Not supplied	0,080 kg
Board Caliper:	3 mm	2,50 mm
Box/Shipper Dimensions:	**(I.D.)** 153 x 102 x 188 mm	**(O.D.)** 163 x 112 x 197 mm
Manufacturer's Joint:	Stapled	30 mm 5 x Staples
Sealing Mechanism:		
• Top:	48 mm Self-Adhesive Eurocell Sellotape	48 mm Self-Adhesive Eurocell Sellotape
• Bottom:	Lock Bottom	Folded-in bottom
Supplier / Markings:	Sino Path Enterprises Ltd	Parrot Products/Re-Order/ Code: BA0201Z/Handling sign/Barcode Breakable sign/Flammable sign/BX39

SHIPPER	COMPLETE PACKAGE
	

TEST SAMPLE DESCRIPTION / QUALITY CONTROL AUDIT RESULTS

Corrugated fibreboard box (163 x 112 x 197 mm) containing 6 x 250 ml Plastics Bottles

	CLIENT SPECIFICATION INFORMATION	QC AUDIT RESULTS
BOTTLE		
Description:	250 ml Plastics Bottle	237 ml Plastics Bottle
Material/Grade/Pigment:	HDPE/F7650/Natural	Plastics/ Natural
Tare Mass:	24 g	25 g
Capacity		
• **Overflow (Brimful):**	255 ml	0,260 kg
• **98% of Overflow:**	250 ml	0,254 kg
Overall Dimensions:		
• **Height:**	158 mm	159 mm
• **Diameter:**	51 mm	50 mm
Supplier/Markings:	Premier Packaging	Premier Packaging/Flammable sign
CLOSURE		
Description:	Screw cap with spray nozzle CD-PZ02-0150	Screw cap with spray nozzle
Material/Grade/Pigment:	HDPE/F7650/White	Plastics/White
Tare Mass:	Not supplied	7 g
Overall Dimensions		
• **Height:**	41,16 mm	35,63 mm
• **Diameter:**	Ø27,71 mm	Ø27,22 mm
Finish Dimensions:		
• **T:**	21,85 mm	21,93 mm
• **E:**	24,17 mm	24,41 mm
Closure Tape:	N/A	N/A
Markings:	None	None
Liner:		None
• **Material:**	N/A	N/A
• **Tare Mass:**	N/A	N/A
• **Thickness:**	N/A	N/A
Supplier/Markings:	Premier Packaging	None

BOTTLE	CLOSURE
	

SAMPLE PREPARATION

Corrugated fibreboard box (163 x 112 x 197 mm) containing 6 x 250 ml Plastics Bottles

SAMPLE PREPARA406 x 311 x 330 TION AND PACKAGE MASS INFORMATION	
OVERALL PACKAGE TARE MASS:	• 0,272 kg
OVERFLOW (BRIMFUL) CAPACITY:	• 0,260 kg
FILLED CAPACITY: **(98% OF MAXIMUM CAPCACITY)**	• 0,254 kg
PACKAGE TEST MASS:	• 1,796 kg
AUTHORIZED PACKAGE GROSS MASS: **(Based on 1.3 Specific Gravity)**	• 3 kg
INNER PACKAGING CLOSING/SEALING METHOD:	• Screw cap with spray nozzle, Hand tight

TEST	SAMPLE ID:	FILLING SUBSTANCE:	CONDITIONING:
Drop	1,2,3,4,5	Water/Glycol	-18ºC
Stack	6,7,8	Empty	23°C and 50% RH
Pressure Differential	9,10,11	Water	Ambient

TEST PROCEDURES AND RESULTS – DROP TESTS

SAMPLE PREPARATION/CONDITIONING:
- Refer to Sample Preparation Page

DROP TEST EQUIPMENT:
- Hoist Drop Tester

DROP HEIGHT:
- 1.3 meters

DROP HEIGHT CALCULATION:
- Packing Group II Materials

REGULATORY REFERENCES:
- Refer to Appendix I

INDUSTRY STANDARD REFERENCE:
- Refer to Appendix I

DROP TEST RESULTS

*Sample # 1: Flat on Bottom		Sample # 2: Flat on Top		Sample #3: Flat on Long Side	
	**Result:** Pass **Comments:** No leakage or damage.		**Result:** Pass **Comments:** No leakage or damage.		**Result:** Pass **Comments:** No leakage or damage.

DROP TEST RESULTS

Sample #4: Flat on Short Side		Sample # 5: Bottom Corner		*Sample #1: Top Corner	
	**Result:** Pass **Comments:** No leakage or damage.		**Result:** Pass **Comments:** No leakage, slight case deformation at impact corner.		**Result:** Pass **Comments:** No leakage, slight case deformation at impact corner.

CRITERIA FOR PASSING THE TEST

There can be no damage to the outer packaging likely to adversely affect safety during transport. Momentary leakage, which is slight and ceases immediately after impact with no further leakage is acceptable.
No rupture is permitted in packaging for goods of Class 1 which would permit the spillage of loose explosive substances or articles from the outer packaging.

*Sample used for Flat on Bottom Drop is also used for the Top Corner Drop

TEST PROCEDURES AND RESULTS – STACK TESTS

SAMPLE PREPARATION/CONDITIONING:
- Refer to Sample Preparation Page

STACK TEST EQUIPMENT:
- Pressure Test Apparatus

STACK TEST DURATION:
- 24 Hours

TEST LOAD APPLIED:
- 43 kg

REGULATORY REFERENCES:
- Refer to Appendix I

INDUSTRY STANDARD REFERENCE:
- Refer to Appendix I

STACK TEST LOAD CALCULATION

• Height of one package:	197 mm
• Number of packages in a 3 meter high stack (-1):	14,22 Packages
• Package gross mass: (Specific Gravity: 1.3)	3 kg

# of Packages in 3m High Stack (-1) x Package Gross Mass = Minimum Required Load Per Case
14,22 x 3 kg = 42,66 kg
Each sample tested individually using the unguided method
43 kg Total Minimum Load Required

STACK & STABILITY TEST RESULTS

24-Hour Stack Test Setup

Sample #	Maximum Deflection After 24 Hours	Results
6	5 mm	Pass
7	5 mm	Pass
8	5 mm	Pass

One-Hour Stack Stability Test Setup

Not conducted- Unguided method

CRITERIA FOR PASSING THE TEST

No test sample may leak from the inner packaging(s). There can be no deterioration that could adversely affect transport safety or any distortion liable to reduce the packageôs strength or cause instability in stacks of packages. In guided load tests, stacking stability must be assessed after completion of the test; two filled packagings of the same type must be placed on the test sample. The stacked packages must maintain their position for 1 hour.

ICAO – PRESSURE DIFERENTIAL TESTS

SAMPLE PREPARATION/CONDITIONING:
- Refer to Sample Preparation Page

AREA OF PRESSURIZATION:
- Through Bottom

TEST PRESSURE:
- 95 kPa

CLOSURE APPLICATION TORQUE:
- Hand tight

PRESSURE TEST EQUIPMENT:
- Hydraulic Pressure Tester
- Hydraulic Pressure Gauge

TEST DURATION:
- 30 minutes

REGULATORY REFERENCES:
- Refer to Appendix I

INDUSTRY STANDARD REFERENCE:
- Refer to Appendix I

PRESSURE DIFFERENTIAL TEST SET-UP & RESULTS

Sample #	Results	Comments / Observations
1	Pass	All three samples maintained the 95 kPa test pressure for 30 minutes without leakage.
2	Pass	
3	Pass	

CRITERIA FOR PASSING THE TEST

Packaging for which retention of liquid is a basic function must be able to withstand, without leakage, the prescribed test pressure.

TEST PROCEDURES AND RESULTS – COBB WATER ABSORPTION TESTS

SAMPLE SIZE:
(5) 130 x 130 mm Outside Container Surfaces

WATER APPLIED:
- 100 ml / Sample

TEST EQUIPMENT:
- Cobb Tester
- Sartoruis Scale A200S

CONDITIONING:
- 23 °C ± 2 and 50 % R.H. ± 5

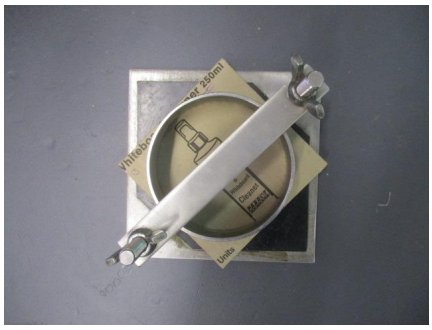
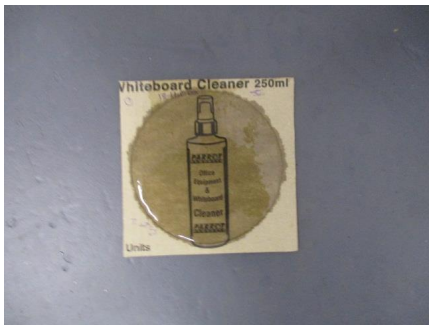
TEST DURATION:
- 30 Minutes / Sample

REGULATORY REFERENCES:
- Refer to Appendix I

INDUSTRY STANDARD REFERENCE:
- Refer to Appendix I

COBB WATER ABSORPTION TEST RESULTS

Sample #	Water Absorbed (g/m²)	Results
1	134,8	Pass
2	143,2	Pass
3	141,3	Pass
4	140,8	Pass
5	139,9	Pass

SET – UP	AFTER TESTING
	

CRITERIA FOR PASSING THE TEST

An increase in mass greater than 155 g/m² over the 30 minute duration represents an unacceptable level of water resistance.

UN PACKAGING CERTIFICATION
PERIODIC RETEST

PACKAGE DESCRIPTION: **Corrugated fibreboard box (163 x 112 x 197 mm) containing 6 x 250 ml Plastics Bottles. PACKAGE ID: "BX 39 250 ml Cleaning Liquid"**

TEN-E PACKAGING SERVICES, SA (PTY) LTD certifies that the **Parrot Products (Pty) Ltd** packaging referenced above has passed the Performance Oriented Packaging Standards outlined in the UN Recommendations on the Transport of Dangerous Goods. This package is also certified under IMDG, ICAO and IATA Regulations. It is the responsibility of the end user to determine authorization for use under these regulations. The use of other packaging methods or components other than those documented in this report may render this certification invalid.

SUMMARY OF PERFORMANCE TESTS

UN / TEST	UN REFERENCE	TEST LEVEL	TEST CONTENTS	TEST DATE	TEST RESULTS
Drop	6.1.5.3	1.3 m	Water/Glycol	19 January 2018	PASS
Stack	6.1.5.6	43 kg ï 24 Hrs.	Empty	23 January 2018	PASS
Pressure Differential	3.1.1.6.1 (ICAO)	95 kPa	Water	11 January 2018	PASS
Cobb	6.1.4.12	30 minutes	---	22 January 2018	PASS

TEST REPORT NUMBER:	18-16002
UN MARKING:	(un) 4G/ Y3 / S / * ZA / +AA6079
PACKAGING IDENTIFICATION CODE:	4G - Fiberboard Box
PERFORMANCE STANDARD:	Packaging meet Group II (Y) and III (Z) tests
AUTHORIZED GROSS MASS:	3 kg
"S" DESIGNATION:	Denotes Inner Packagings
YEAR OF MANUFACTURE: (Apply to packaging manufactured while this certificate is valid)	* Insert Year the packaging is Manufactured (last two digits)
COUNTRY AUTHORIZING ALLOCATION OF THE MARK:	South Africa (ZA)
THIRD PARTY PACKAGE IDENTIFICATION:	+AA6079
PACKAGING CERTIFICATION AGENCY:	TEN-E Packaging Services, SA (Pty) Ltd
PERIODIC RETEST DATE:	19 February 2019

ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY THAT THE PACKAGING TESTED IS MERCHANTABLE OR FIT FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. In no event shall TEN-E Packaging Services, SA (Pty) Ltd liability exceed the total amount paid by **Parrot Products (Pty) Ltd** for services rendered. In the event of future changes to the above referenced test standard, it is the responsibility of **Parrot Products (Pty) Ltd** to determine whether additional testing or updating of past testing is necessary to verify that the packaging we have tested remains in compliance with those standards.

APPLICANT: Mrs. Sherise Antonio
Parrot Products (Pty) Ltd
22 Cleveland Road, Cleveland, Johannesburg
PO Box 40745, Cleveland, 2049

Issie Erlank
SANAS Approved Signatory
Managing Director
TEN-E Packaging Services, SA (Pty) Ltd
138 Edison Crescent, Hennopspark, Centurion
PO Box 11544
Wierdapark South, 0057, South Africa

sanas Testing Laboratory T0058

APPENDIX I: REGULATORY AND INDUSRTY STANDARD REFERENCES

REGULATORY REFERENCES					
TEST	**UN① 20th Edition**	**IMDG② 2016 Edition**	**ICAO③ 17-18 Edition**	**IATA④ 59th Edition**	**SANS 10229-1⑤ 2010 Edition**
Drop:	6.1.5.3	6.1.5.3	6; 4.3	6; 6.3.3	12.3.1
Stack:	6.1.5.6	6.1.5.6	6; 4.6	6; 6.3.6	12.3.5
Vibration:	---	---	---	---	---

① The United Nations Recommendations on the Transport of Dangerous Goods ð Model Regulations (UN ï Orange Book)
② International Maritime Dangerous Goods Code (IMDG)
③ Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO)
④ International Air Transport Association (IATA) Dangerous Goods Regulations
⑤ South African Bureau of Standards Code of Practice ï SANS 10229-1:2010

INDUSTRY STANDARD REFERENCES		
Drop:	ASTM⑥ D5276:	Standard Test Method for Drop Test of Loaded Containers by Free Fall
	ISO⑦ 2248:	Packaging ï Complete, Filled Transport Packages ï Vertical Impact Test By Dropping
Stack:	ASTM⑥ D4577:	Standard Test Method for Compression Resistance of a Container Under Constant Load
	ISO⑦ 2234:	Packaging ï Complete, Filled Transport Packages ï Stacking Tests using Static Load
Vibration:	ASTM⑥ D999:	Standard Test Method for Vibration Testing of Shipping Containers
	ISO⑦ 2247:	Packaging ï Complete, Filled transport Packages ï Vibration Test at Fixed Low Frequency

⑥American Society For Testing and Materials (ASTM)
⑦International Organization For Standardization (ISO)