

RESTRICTED
TEST REPORT

REPORT NO: STRIDE/TP/14-015

	<p>INSTITUT PENYELIDIKAN SAINS DAN TEKNOLOGI PERTAHANAN BAHAGIAN TEKNOLOGI PERSENJATAAN KEMENTERIAN PERTAHANAN 48100 BATU ARANG, SELANGOR, MALAYSIA TEL: 603-60352121 FAX: 603-60352134</p>	
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Job No: OR/07-14	Date of Issue: May 2014	Page 1 of 7
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Authority/Reference **KLIA rpt:3279/14 bth 8 April 2014**

For Test :-

Client's Details :-

Name : **Polis Di Raja Malaysia**
Address : **Jabatan Siasatan Jenayah,
Ibu Pejabat Polis Di Raja Malaysia,
Bukit Aman, 50560 Kuala Lumpur**

Tel No : **03 - 2266 6003**

Fax No **03 - 8776 9356**

Test Location: **600m Closed Firing Range and
Ordnance Laboratory
Weapon Technology Division
STRIDE, Bt. Arang, Selangor**

Date Received: **29 Apr 2014**

Date of Test : **6 Mei - 7 Mei 2014**

Test Specifications : **Using Standard Operating
Procedure and Equipments in 600m Closed Firing
Ranges and Ordnance Laboratory**

Measuring /Test Equipment:

1. Electrical Oven - Elba (Model EOT-0988)
2. Temperature Data Logger - TSH DOSHMANN
3. K-Type Thermocouple with Sensor
4. Scope Meter - Model Fluke 99 Series II
5. Digital Multimeter - Model Fluke 87 True RMS
6. Gas Detector - VelociCalc/Q-Trak 7575
- Model: 9565-X
7. Digital Camera - Nikon D7000
8. Video Camera - Sony HDR - XR520E

Testers:

- | | | | |
|---------------------------|-------------------------|-------------------------------|------------------|
| 1. Mohd Jalis b. Md Jelas | Director I&E Tech. Div. | 6. Hanafiah b. Hussein | Research Officer |
| 2. Osmara b. Ismail | Senior Research Officer | 7. Muhammad Shahrir b. Saidin | Asst. Engineer |
| 3. Kamsani b. Kamal | Research Officer | 8. Muhamad Yusof b. Maulud | Asst. Engineer |
| 4. Azmi b. Minal | Research Officer | 9. Abdul Hakeem b. Selamat | Asst. Researcher |
| 5. Mohd Fauzy b. Mohd Nor | Research Officer | 10. Rosly b. Othman | Skill Assistant |

Prepared by :



(OSMERA BIN ISMAIL)
Senior Research Officer
Weapon Technology Division, STRIDE

Item Type: **Lithium Ion Battery (Motorola)**

Nature of Test: **Lab. Test - High Temperature Test**

Test Sample's Details:-

Manufacturer: **Motorola**

Origin: **Cell Origin Taiwan**

Finished in Malaysia

Description: **MOTOROLA - Lithium Ion Battery
Model: PMNN 4081BRC**

Quantity: **2 (Two) units**

Identification: **Barang Kes bertanda: MK31
Barang Kes bertanda: MK32**

Environmental Conditions During Test:

Ambient Temperature: **30 - 32 °C**

Relative Humidity: **81 % - 86 %**

Approved for Issue :



(H.J. MD/ZAINI BIN ZAINAL)
Director
Weapon Technology Division, STRIDE

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REPORT OF HIGH TEMPERATURE TEST

TEST PREPARATION

Using non conductive base (hard wood), the test samples Barang Kes Bertanda: MK31 and Barang Kes Bertanda: MK32 was placed in an Electric Oven. All heat sensors (thermocouples) with their respective temperature meter and Gas Detector unit was also in placed. Optical Camera and Video Camera were used to record the test event. The test process were carefully timed and all event such as sample undergo bulging, fuming and to the point of eruption were carefully recorded and observed. The test sample was heated up from room temperature until 250 °C. The test were conducted in STRIDE 600m Close Firing Range. The test preparation footage are as below:





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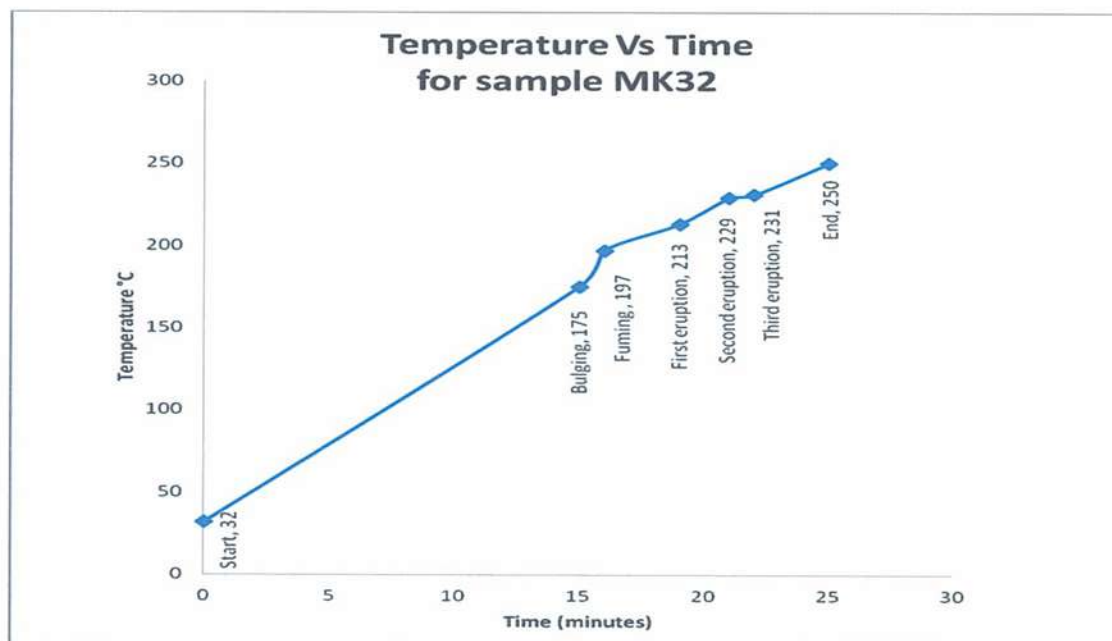
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RESULTS

Test No. 1: Test Results On Barang Kes Bertanda: MK32

Test Date		6 May 2014 (start at 1435 hrs)	
Event Sequence	Duration (Minutes)	Temperature Applied	Observation
1	0	32°C	Starting
2	15	175°C	Sample surface starts bulging (observable)
3	16	197°C	Fuming starts to developed
4	19	213°C	The first eruption sound with thick fumes
5	21	229°C	The second eruption sound with thick fumes
6	22	231°C	The third eruption sound with thick fumes
7	25	250°C	Fumes continue but subside. Test end.





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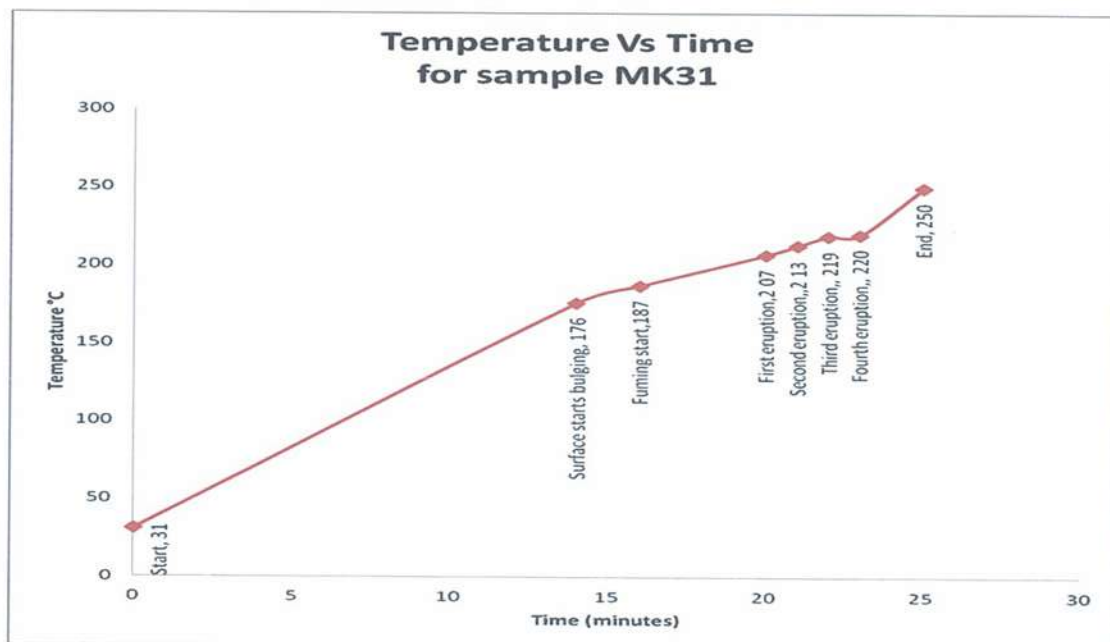
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RESULTS

Test No. 2: Test Results On Barang Kes Bertanda: MK31

Test Date		7 May 2014 (start at 1505 hrs)	
Event Sequence	Duration (Minutes)	Temperature Applied	Observation
1	0	31°C	Starting
2	14	176°C	Sample surface starts bulging (observable)
3	16	187°C	Fuming starts to developed
4	20	207°C	The first eruption sound with thick fumes
5	21	213°C	The second eruption sound with thick fumes
6	22	219°C	The third eruption sound with thick fumes
7	23	220°C	The fourth eruption sound with thick fumes
8	25	250°C	Fumes continue but subside, end test.





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RESULTS

**Recorded Data for the rate of Carbon Monoxide (CO) and Carbon Dioxide (CO₂)
gasses Release during High Temperature Test for Barang Kes Bertanda: MK31**

Time	CO ₂ (ppm)	CO (ppm)
15:27:07	404	0
15:27:12	408	0
15:27:17	406	0
15:27:22	401	0.3
15:27:27	400	0.2
15:27:32	399	0
15:27:37	401	0.2
15:27:42	404	0.6
15:27:47	414	0.9
15:27:52	434	0.6
15:27:57	463	0.3
15:28:02	448	0.2
15:28:07	431	0.2
15:28:12	434	0.9
15:28:17	458	6.8
15:28:22	464	17.8
15:28:27	471	28.6
15:28:32	471	43.2
15:28:37	467	115
15:28:42	448	176.5
15:28:47	433	134.5
15:28:52	433	89.4
15:28:57	430	56.2
15:29:02	432	38.2
15:29:07	438	30.4
15:29:12	438	25.9
15:29:17	434	25.2
15:29:22	429	23.4
15:29:27	425	20.5
15:29:32	426	20.7
15:29:37	429	24.1
15:29:42	420	24.5

Time	CO ₂ (ppm)	CO (ppm)
15:29:47	426	19.7
15:29:52	429	16.7
15:29:57	433	15.7
15:30:02	437	14.4
15:30:07	438	16
15:30:12	437	20.5
15:30:17	425	19.4
15:30:22	435	14.3
15:30:27	435	12.5
15:30:32	424	12.8
15:30:37	420	14.5
15:30:42	422	14.5
15:30:47	423	11.9
15:30:52	423	9.5
15:30:57	425	7.9
15:31:02	419	7.6
15:31:07	415	9.2
15:31:12	421	10.2
15:31:17	424	9.5
15:31:22	424	8.4
15:31:27	427	7.4
15:31:32	430	8.2
15:31:37	422	8.8
15:31:42	427	7.7
15:31:47	429	6.3
15:31:52	422	5.6
15:31:57	422	5.1
15:32:02	427	4.9
15:32:07	437	4.8
15:32:12	433	4.8
15:32:17	429	4.6

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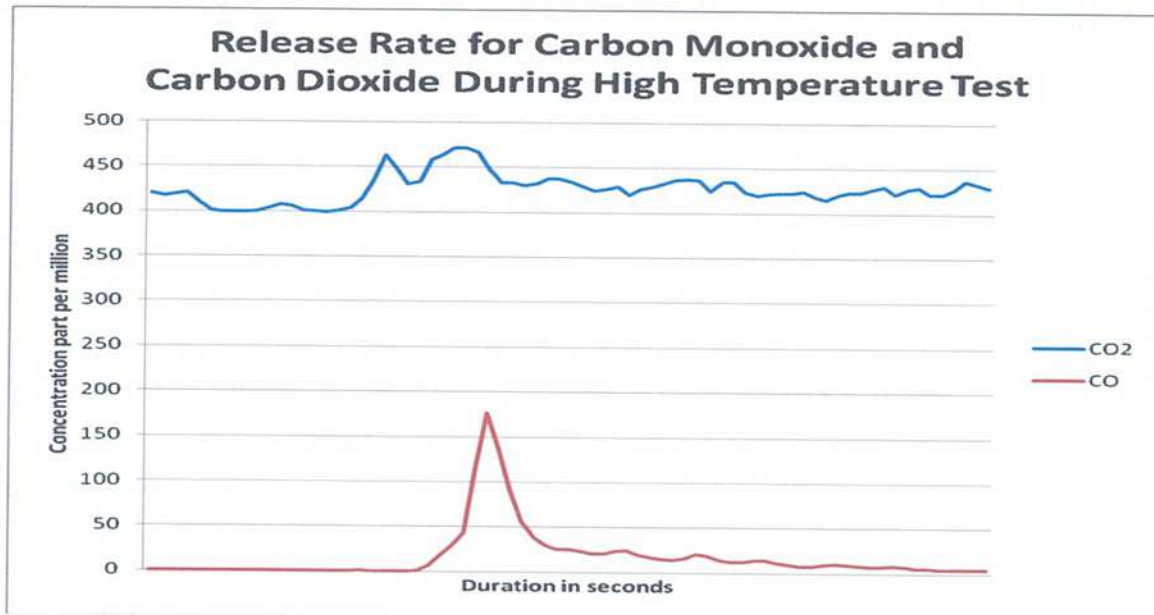
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KEMENTERIAN PERTAHANAN
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TEL: 603-60352121 FAX: 603-60352134



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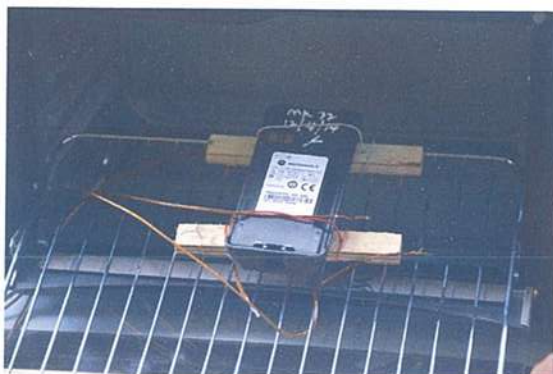
RESULTS



Maximum Fume Release Rate of Carbon Monoxide (CO) is 176.5 ppm

Maximum Fume Release Rate of Carbon Dioxide (CO₂) is 471 ppm

Test Conducted



Beginning of Test




During Testing

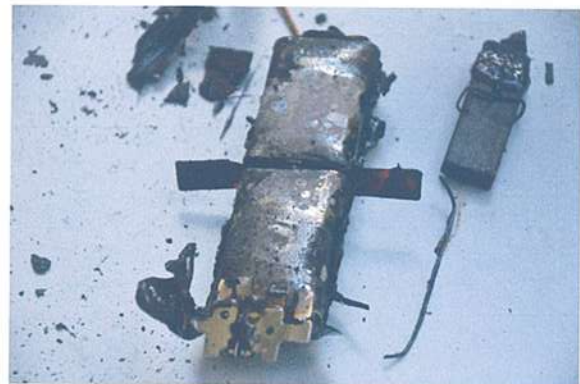
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Left overs after High Temperature Test were applied to Barang Kes bertanda: MK32 of Lithium Ion Battery Model: PMNN 4081BRC

Findings and Conclusion

- a. It is found that both Barang Kes Bertanda: MK31 and Barang Kes Bertanda: MK32 experience 'Bulging' and then produced toxic fumes (such as Carbon Monoxide and Carbon Dioxide) if they are exposed to high temperature between 175 °C to 197 °C.
- b. It is found that both Barang Kes Bertanda: MK31 and Barang Kes Bertanda: MK32 experience ruptured and then eruption (small explosion with released of fumes), if they are exposed to high temperature between 207 °C to 231 °C.

END

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Job No: MML/14/38

TEST CERTIFICATE

Date of Issue: 19 May 2014

Page 1 of 3

Authority/Reference For **KLIA rpt:3279/14 bth 8 April 2014**

Test :-

Client's Details :-

Name : **Polis Di Raja Malaysia**
Address : **Jabatan Siasatan Jenayah,
Ibu Pejabat Polis Di Raja Malaysia,
Bukit Aman, 50560 Kuala Lumpur**
Tel No : **03 - 2266 6003**
Fax No : **03 - 8776 9356**
Test Location: **Mechanical Metrology Laboratory
(Accredited),
Instrumentation & Electronic
Technology Division, STRIDE**

Item Type: **Lithium Ion Battery (Motorola)**

Nature of Test: **Lab. Test - Observation and Physical Test**

Test Sample's Details:-

Manufacturer: **Motorola**
Origin: **Cell Origin Taiwan
Finished in Malaysia**
Description: **MOTOROLA - Lithium Ion Battery
Model: PMNN 4081BRC**

Quantity: **2 (two) unit**

Date Received: **14 May 2014**

Identification: **Barang Kes bertanda: MK35**

Date of Test : **15 May 2014**

Barang Kes bertanda: MK 36

Test Specifications : **Using Standard Physical
Measurement Equipments**

Measuring /Test Equipment:

- 1. Verneer Caliper - Model: Mitutoyo 5671A**
- 2. Weighing Balance - Mitter Toledo**

Testers:

- 1. Hanafiah bin Hussein Research Officer**
- 2. Mohd Hasrol Hisam Asst. Researcher**

Environmental Conditions During Test:

Ambient Temperature: **20°C**

Relative Humidity: **55 %**

Approved for Issue :


**Norkamizah Mohd Nor
(Head of Branch)**

Approved Signatory:


**Hanafiah Hussein
(Lab. Manager)**

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RESULTS

OBSERVATION:

- a. Packed Set consist of the following components:
 - 1 unit Dark Beige colour paper Casing (big box)
 - 1 pc of Lithium Ion Battery product Specification information and Manual (in Chinese)
 - 2 unit small paper box (not wrapped with air-tight plastics)
 - 2 unit of Lithium Ion Battery (Barang Kes: MK35 and Barang Kes: MK 36) where both batteries were not wrapped with air-tight plastics.
- b. It is observed that Barang Kes: MK35 and Barang Kes: MK 36 was packed separately in a white hard paper box. Both of this boxes that contain Barang Kes: MK35 and Barang Kes: MK 36 were then again packed in a bigger dark Beige colour paper casing (the photo footage below were referred).

PHYSICAL TEST

A. White Card Paper Casing (small)

	Physical Dimension	Barang Kes : MK35	Barang Kes : MK 36
1.	Dimension of Li Ion Battery (LxWxH)	50.50 x 119.00 x 21.41cm	50.50 x 119.00 x 21.41cm
2.	Weight of Li Ion Battery	145.00 gm	145.62 gm
3.	Weight of Li Ion Battery + white box	155.75 gm	156.43 gm
4.	Dimension of White Box (LxWxH)	57.62 x 122.36 x 24.81cm	57.31 x 122.94 x 24.44cm
5.	Thickness of white paper	1.50mm	1.50mm

B. Dark Beige Colour Paper Casing (big)

1.	Dimension of Box (LxWxH)	132.06 x 136.47 x 34.170cm
2.	Total Weight (Beige box + 2 x Li Ion Battery and white box + 1 x Operating Manual document)	44.33 gm
3.	Thickness of Beige Colour paper:	1.62 mm

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<p>Job No: MML/14/38</p>	<p>Date of Issue: 19 Mei 2014</p>	<p>Page 3 of 3</p>



Fig. 1: Top View of Li Ion Battery

- a. Barang Kes Serial number.
- b. 3 battery terminals
- c. Motorola Trade Mark
- d. Warning instruction (in Chinese)
- e. Barr Code



Fig. 2 :Back View of Li Ion Battery

- a. Barang Kes Serial number.
- b. 4 battery terminals
- c. Motorola Trade Mark



Fig. 3 : Li Ion Battery and battery casing

- a. Barang Kes Serial Number (hand written).
- b. 2x white small battery casing for each battery
- c. 1x Beige colour casing
- d. 2x Li Ion battery (1expose and 1 hidden in white casing)



- END -

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Job No: CSIE/BL/2014/21	TEST CERTIFICATE	Date of Issue: 15 May 2014 Page 1 of 2
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Authority/Reference For **KLIA rpt:3279/14 bth 8 April 2014**
Test :-

Client's Details :-

Name : **Polis Di Raja Malaysia**
Address : **Jabatan Siasatan Jenayah,
Ibu Pejabat Polis Di Raja Malaysia,
Bukit Aman, 50560 Kuala Lumpur**
Tel No : **03 - 2266 6003**
Fax No **03 - 8776 9356**
Test Location: **Battery Laboratory (Accredited),
Instrumentation & Electronic
Technology Division, STRIDE**
Date Received: **14 May 2014**
Date of Test : **15 May 2014**

Test Specifications : **UL 2271**

Measuring /Test Equipment:

1. Digital Multimeter – Model: Fluke 289
2. Test Rig 24 Hours Computerized Monitoring
Lithium Ion Battery Performance
3. Simulate Load Resistor
4. Short Test Cable
5. Video Camera – Samsung Model: Note III N9000

Testers:

- | | |
|--------------------------|-----------------------|
| 1. Hanafiah bin Hussein | Research Officer |
| 2. Siti Robiah bt. Abdul | Senior Asst. Engineer |
| 3. Mohd Yusof b. Maulud | Asst. Engineer |
| 4. Maizurina bt. Kefli | Asst Researcher |

Item Type: **Lithium Ion Battery (Motorola)**

Nature of Test: **Lab. Test – Battery Capacity and
Functional Test**

Test Sample's Details:-

Manufacturer: **Motorola**
Origin: **Cell Origin Taiwan
Finished in Malaysia**
Description: **MOTOROLA – Lithium Ion Battery
Model: PMNN 4081BRC**
Quantity: **10 (sepuluh) unit**

Identification: **Barang Kes: MK 27
Barang Kes: MK 28
Barang Kes: MK 29
Barang Kes: MK 30
Barang Kes: MK 31
Barang Kes: MK 32
Barang Kes: MK 33
Barang Kes: MK 34
Barang Kes: MK 35
Barang Kes: MK 36**

Environmental Conditions During Test:

Ambient Temperature: **20°C**
Relative Humidity: **55 %**

Approved for Issue :


**Norkamizah Mohd Nor
(Head of Branch)**

Approved Signatory


**Hanafiah Hussein
(Lab Manager)**

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Job No: CSIE/BL/2014/21	TEST RESULTS	Date of Issue: 15 May 2014 Page 2 of 2
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Identification	Storage Voltage	Percentage (%)
Barang Kes: MK 27 Barang Kes: MK 28 Barang Kes: MK 29 Barang Kes: MK 30 Barang Kes: MK 31 Barang Kes: MK 32 Barang Kes: MK 33 Barang Kes: MK 34 Barang Kes: MK 35 Barang Kes: MK 36	<p>All sample give same quantity of Storage Voltage as follows:</p> <p>From Outside of battery (4 Charging Terminal)</p> <p>Between terminal T1 & T3 Voltage measured is 7.3 V (up to 1 decimal)</p> <p>Between terminal T3 & T4 Voltage measured is 6.8 V (up to 1 decimal)</p> <p>From Inside of battery (3x Walkie talkie Terminal)</p> <p>Between terminal T1 & T3 Voltage measured is 7.6 V (up to 1 decimal)</p>	<p>For all sample the Average Storage capacity is about 60% from the original maximum Storage Voltage of 11 V.</p>

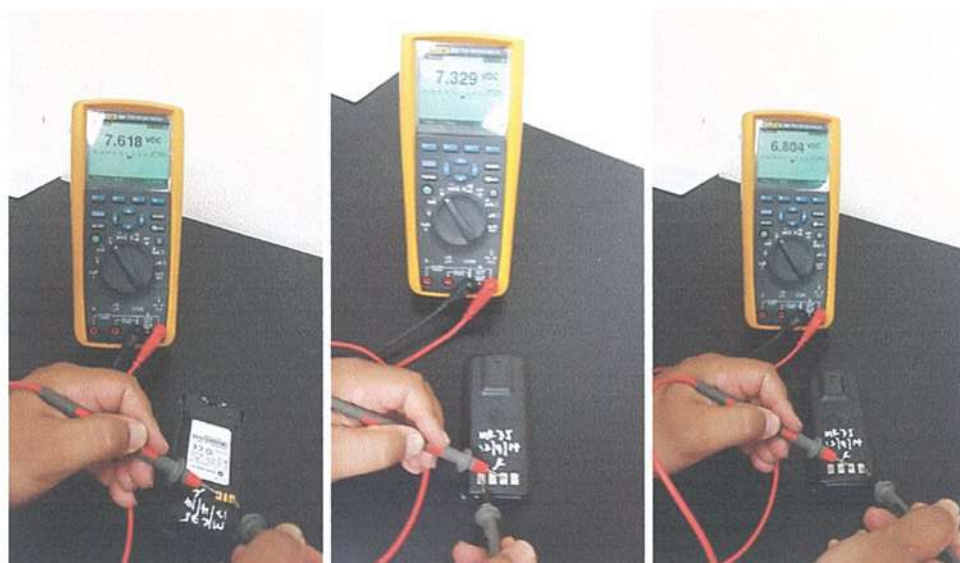


Fig. 1 : Functional Test of Sample Battery Capacity

- END -

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Report. No. : **STRIDE/BL/2014/22**

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Job No: CSIE/BL/2014/22	TEST CERTIFICATE	Date of Issue: 15 May 2014 Page 1 of 2

Authority/Reference **KLIA rpt:3279/14 bth 8 April 2014**
For Test :-

Client's Details :-

Name : **Polis Di Raja Malaysia**
Address : **Jabatan Siasatan Jenayah,
Ibu Pejabat Polis Di Raja Malaysia,
Bukit Aman, 50560 Kuala Lumpur**
Tel No : **03 – 2266 6003**
Fax No : **03 – 8776 9356**
Test Location: **Electrical Laboratory (Accredited),
Instrumentation & Electronic
Technology Division, STRIDE**
Date Received: **29 Apr 2014**
Date of Test : **6 May – 7 May 2014**

Test Specifications : **UL 2271**

Measuring /Test Equipment:
1. Digital Multimeter – Model: Fluke 289
2. Short Test Cable
3. Video Camera – Samsung Model: Note III N9000

Testers:
1. Hanafiah bin Hussein Research Officer
2. Siti Robiah bt. Abdul Senior Asst. Engineer
3. Mohamad Yusof b. Maulud Asst. Engineer
4. Siti Selmah bt. Khalid Senior Reserch Asst.

Item Type: **Lithium Ion Battery (Motorola)**

Nature of Test: **Lab. Test – Spark and Short Circuit Test**

Test Sample's Details:-

Manufacturer: **Motorola**

Origin: **Cell Origin Taiwan
Finished in Malaysia**

Description: **MOTOROLA – Lithium Ion Battery
Model: PMNN 4081BRC**


Quantity: **1 (satu) unit**


Identification: **Barang Kes: MK 35**

Environmental Conditions During Test:

Ambient Temperature: **25 °C**

Relative Humidity: **62 %**

Approved for Issue : 
**Norkamizah Mohd Nor
(Head of Branch)**

Approved Signatory : 
**Hanafiah Hussein
(Lab. Manager)**

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Job No: CSIE/BL/2014/22	Date of Issue: 15 May 2014	Page 2 of 2
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PURPOSE OF TEST:

The Short Circuit Test was conducted to show that the Barang Kes: MK 35, is functioning and capable of giving out 'sparks' when the 2 opposite terminals of it were directly in contact (via connecting wire) due to presence of 60% of its storage voltage (but not to the extent of eruption).

Test Methodology

The test was conducted by using a piece of connection wire, when the 2 ends of the wire was allows to touch the 2 opposite battery terminals, the sparking light will be observed and follows with sound which indicate the sample battery is functioning and having reasonable storage voltage.



Figure 1:

The battery sample of Barang Kes: MK 35 was tested in a dark environment. This set up will be able for the tester to visually 'see' the minute sparks light clearly.

Test Result



Figure 2:

When touching the 2 opposite terminals of the sample test battery, it is clearly observed the light due to sparking and the sparking sound is also heard. (without explosion).

- END -

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TEST REPORT

KEMBARAN 15

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Job No: BTIE/2014/	Date of Issue: 25 April 2014	Page 1 of 2
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Authority/Reference KLIA rpt:3279/14 bth 8 April 2014
For Test :-

Client's Details :-

Name : *Polis Di Raja Malaysia*
Address : Jabatan Siasatan Jenayah,
Ibu Pejabat Polis Di Raja Malaysia,
Bukit Aman, 50560 Kuala Lumpur
Tel No : 03 - 2266 6003
Fax No : 03 - 8776 9356
Test Location: Metrology Mechanical Laboratory
(Accredated),
Instrumentation & Electronic
Technology Division, STRIDE

Item Type: Freescale MPC5534 Microcontroller Chip

Nature of Test: Functional Observation

Test Sample's Details:-

Manufacturer: Freescale
Origin: Petaling Jaya Selangor, Malaysia
Description: Freescale Microcontroller Chip
Model: MPC5534

Quantity: One (1) unit

Date Received: 24 Apr 2014

Identification: Barang Kes bertanda MK37 ✓

Date of Test : 24 Apr 2014

Test Specifications : MPC5534 Microcontroller
Data Sheet

Measuring /Test Equipment: N/A

Testers:

Dr. Dinesh a/l Sathyamoorthy Research Officer

Environmental Conditions During Test: N/A

Prepared by

(DR. DINESH A/L SATHYAMOORTHY)
Research Officer
Radar & Geospatial Branch
Instrumentation & Electronic Technology Division
STRIDE

Approved for Issue :

(MOHD FAUDZI BIN MUHAMMAD)
Head, Radar & Geospatial Branch
Instrumentation & Electronic Technology Division
STRIDE

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Job No: BTIE/2014/

Date of Issue: 25 April 2014

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RESULTS

1. **Dimension of Chip (L x W) (Figure 1):** 1.70 cm x 1.70 cm

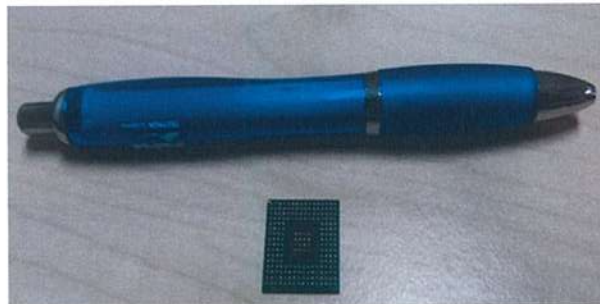


Figure 1: Comparison of the chip with a ballpen.

2. **Chip Holder (Figure 2):** Holds up to 90 chips.

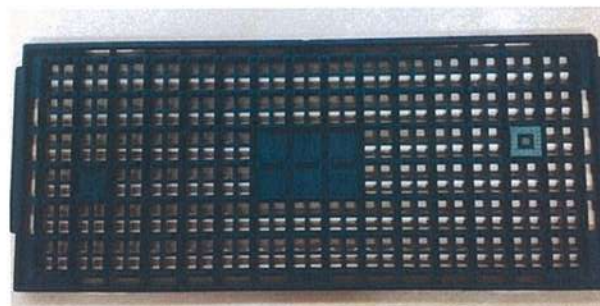


Figure 2: The provided chip holder.

3. **Chip Function:** According to the MPC5534 Microcontroller Data Sheet (http://cache.freescale.com/files/32bit/doc/data_sheet/MPC5534.pdf), the chip has **NO FUNCTIONAL CAPABILITIES UNLESS IT IS CONNECTED TO A VOLTAGE SUPPLY.**

- END -

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LAMPIRAN 19

CARBON MONOXIDE DANGER LEVELS

Levels of Carbon Monoxide are considered dangerous. The chart below shows the health effects of CO exposure.

<u>Carbon Monoxide Concentration</u> (parts per million)	<u>Symptoms</u>
50	No. adverse effects with 8 hours of exposure
200	Mild headache after 2-3 hours of exposure
400	Headache and nausea after 1-2 hours of exposure
800	Headache, nausea, and dizziness after 45 minutes; collapse and loss of consciousness after 1 hours of exposure
1,000	Loss of consciousness after 1 hour of exposure
1,600	Headache, nausea, and dizziness after 20 minutes of exposure
3,200	Headache, nausea, and dizziness after 5 - 10 minutes; collapse and loss of consciousness after 30 minutes of exposure
6,400	Headache and dizziness after 1-2 minutes; loss of consciousness and danger of death after 10-15 minutes of exposure
12,800	Immediate physiological effects, loss of consciousness and danger of death after 1-3 minutes of exposure

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KEMBARAN 8

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Job No: BTPB/2014/ 70/0	Date of Issue: 28 Mei 2014	Page 1 of 3
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Authority/Reference KLIA rpt:3279/14 bth 8 April 2014
For Test :-

Client's Details :-

Name : Polis Di Raja Malaysia
Address : Jabatan Siasatan Jenayah,
Ibu Pejabat Polis Di Raja Malaysia,
Bukit Aman, 50560 Kuala Lumpur
Tel No : 03 – 2266 6003
Fax No 03 – 8776 9356
Test Location: Product Development Laboratory
Nutrition and Ration Branch
Protection & Biophysical
Technology Division, STRIDE
Date Received: 29 Apr 2014
Date of Test : 6 Mei – 7 Mei 2014

Test Specifications : -

Measuring /Test Equipment:

1. Blender – Model: National Model MX-491N
2. Waring Commercial Laboratory Blender
3. Distilled water
4. Beaker
5. Measuring Cylinder
6. Merck pH Indicator Strips
7. Mettler Toledo Weight Scales Model SB16001
8. Video Camera – Sony Model: EEZ-2

Item Type: Mangosteen fruits
Liquid from elastic sponge

Nature of Test:

- i. Extraction of mangosteen juice and blended the whole mangosteen.
- ii. Measuring the quantity of water trapped in the sponge use as a packaging absorber and cover for the plastic basket with lid.
- iii. pH for the juice, the whole mangosteen and water trapped in the sponge.

Test Sample's Details:-

Manufacturer:

Origin: Mangosteen fruits and liquid from elastic sponge obtain from Syarikat Poh Seng Kian, No. 322, Batu 6 ¼, Kesang 84000 Muar, Johor

Description:

1. 3 plastic basket with lid of mangosteen were brought back from Syarikat Poh Seng Kian.
2. The colour of the mangosteen were mixed with green colour when not ripe, dark red when half ripe and dark purple when ripe and they were packed according to their gred as determined by the size 2A, 3A and 4A.
3. Elastic sponge is a white color plastics foams used to cover the mangosteen fruit to maintain their freshness.

Quantity:

1. 3 x plastic basket with lid of mangosteen , each contain 55 -90 numbers of mangosteen fruit (or 8 kg weight each)
2. 3 x elastic sponge.

Identification:

- i. Mangosteen Case 1,
- ii. Mangosteen Case 2
- iii. Mangosteen Case 3.
- iv. Elastic Sponge: No. 1
- v. Elastic Sponge: No. 2
- vi. Elastic Sponge: No. 3

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KEMBARAN 8

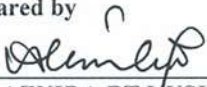
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	Job No: BTPB/2014/ 7010	

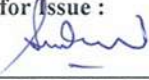
Testers:

- | | | |
|-------------------------------------|-------------------------|--|
| 1. Dr. Aznida bt Yusuf @ Md Yusuf | Senior Research Officer | Environmental Conditions During Test: |
| 2. Mrs. Aznizah bt Ahmad | Research Officer | Ambient Temperature: 31°C |
| 3. Mr. Mohd Badrolnizam bin Jamhari | Asst. Research Officer | Relative Humidity: 62 – 66 % |

Prepared by


(DR. AZNIDA BT YUSUF @ MD YUSUF)
Head, Nutrition and Ration Branch
Protection & Biophysical Technology
Division, STRIDE

Approved for Issue :


(SALMAH BT MUDA)
Director
Protection & Biophysical Technology
Division, STRIDE

RESULTS


1. The physical dimension (LxWxH) of mangosteen plastic basket with lid is 45cm x 32cm x 15cm.
2. The physical dimension (LxWxH) of elastic sponge inside the mangosteen plastic basket with lid is 44.5cm x 30.5cm x 0.8cm.
3. The total weight (plastic basket with lid, mangosteen fruits, soggy elastic sponge, wetted laminated white paper, plastic tapes) of each casing is 8.0 kg.
4. The number of mangosteen fruit is 80 - 90 pieces for grade 2A, 70 – 80 pieces for grade 3A and 55 – 65 pieces for grade 4A.
5. The total quantity of mangosteen juice prepared by BTPB is 201 ml, (which was tagged as BTPB 1, later was sent to Instrumentation and Electronic Technology Division for further test). The detailed extraction result were as follows:
 - i. For mangosteen of grade 4A
Number of mangosteen use is 6.
Quantity of mangosteen juice is 107 ml.
pH is 3

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Job No: BTPB/2014/ 7010	Date of Issue: 28 Mei 2014	Page 3 of 3

ii. For mangosteen of grade 2A

Number of mangosteen use is 8.
Quantity of mangosteen juice is 94 ml.
pH is 3.

6. The quantity of liquid collected from 2 x elastic sponge is 310 ml, (which was later tagged as BTPB, 2 was sent to Instrumentation and Electronic Technology Division for further test),
7. The pH value of blended whole mangosteen is 4.
8. The pH value of liquid collected from elastic sponge is 6 ,

- END -

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