GP Batteries

Product Specifications

Model No. : Panasonic 9V Alkaline Batteries (1604A)

1. APPLICABILITY

This specification is applicable to **Panasonic 9V Alkaline batteries** (1604A).

2. TYPE

2.1. Six layers built alkaline manganese batteries.
2.2. Nominal weight : 47g

3. NOMINAL VOLTAGE

9 Volts.

4. TERMINALS

Nickel-plated miniature snap fasteners.

5. SHELL

Printed metal jacket.

6. IDENTIFICATION

(a) Expiry code of 6 digits (MM-YYYY) will be printed on the bottom of each battery.

(b) IPKS 5000,Section 1.17 - GP Standard Expiry Code Marking Method on 9V Alkaline Bottom Batteries

7. QUALITY REQUIREMENT

7.1 Conventions:

n = Number of batteries to be tested.
c = Permissible number of defects.
k = Actual number of defects.
x = Average of (n-k) good result.
N0 = Test within 3 months of ex-factory.
N12 = Test within 12 months of maufacture code.
N18 = Test within 18 months of manufacture code.
N24 = Test within 24 months of manufacture code.
N36 = Test within 36 months of manufacture code.
N60 = Test within 60 months of manufacture code.

7.2 Test conditions:

7.2.1 All tests (Voltage, Storage, Service life etc) shall be performed at ambient temperature of 20 ±2°C and relative humidity of 55 ±20% RH. During short periods only, the storage temperature may deviate from these limits without exceeding 20 ±5°C.

7.2.2 Voltmeter shall has a resolution of ± 0.01 V and with internal impedance of 1 MΩ mininum.

7.2.3 Unless otherwise stated, samples for acceptance testing shall be selected per ANSI/ASQ Z1.4, Special Inspection Levels S-4. Definition of "Lot" or "Batch Size" : 10 Pallets.

7.3 Shelf life : 5 years as below conditions,

7.3.1 Open circuit voltage [OCV]

	Minimum voltage (V)	AQL
N0	9.48	0.25%
N12-N24	9.20	0.25%
N36	9.00	0.25%
N60	8.80	0.25%

7.3.2 Closed circuit voltage [CCV] (Load 47 Ω for 0.3 seconds).

	Minimum voltage (V)	AQL
N0	8.00	0.25%
N12	7.80	0.25%
N36	7.50	0.25%
N60	7.20	0.25%

7.3.3 Service life

7.3.3.1 Requirements

Resistance	Discharge duration	End Voltage	SPECIFICATIONS (Hrs), MAD			
			N0	N12	N36	N60
270 Ω	1 h/d	5.40V	20.0	18	16	14
620 Ω	2 h/d	5.40V	48.2	43.4	38.6	33.7
10 kΩ background 24 h/d, 620 Ω 1 s/h pulse		7.50V	SPECIFICATIONS (days), MAD			
			19.0	17.1	15.2	13.3

7.3.3.2 n = 4. In calculating minimum average, no one battery can be lower than 15% of the specified minimum average and the calculated average shall be equal to or greater than the specified minimum average. Only one retest is allowed for each lot tested.

7.4 Visual External Leakage

7.4.1.1 No leakage when CCV drops by 40% of nominal voltage for the first time.

7.4.1.2 No leakage during storage for 30 days under 45±2°C, 90% RH, sample size : 10 pcs.

7.4.2 Zero leakage when stored at 20 +/- 2 °C (Note 1) and 55 +/- 20 % RH for 12 months (Sample size : 12 pcs)

Note 1 : During short periods only, the storage temperature may deviate from these limits without exceeding 20 +/- 5 °C (IEC 60086-1-2011 clause 6.1 Pre-discharge condition)

7.4.3 For undischarged batteries

	Sampling Plan Special Inspection S-4
N0	0.065 %
N12	0.10 %
N18	0.15 %

7.5 For Panasonic Visual Inspection Standard Guidelines (QPKI0055 SECT 11)

7.6 Safety

IEC 60086-5 (Primary batteries - Part 5 : Safety of batteries with aqueous electrolyte)

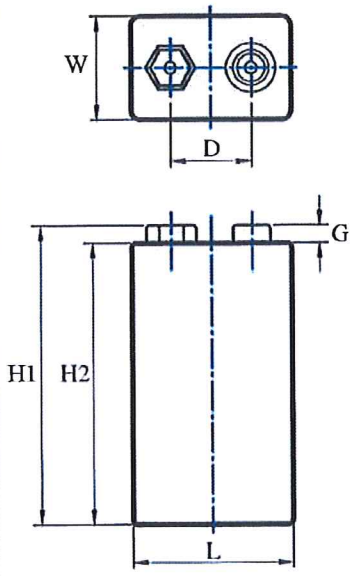
8. MERCURY FREE AND CADMIUM FREE

8.1 Mercury - 1 ppm maximum per battery weight.

8.2 Cadmium - 3 ppm maximum per battery weight.

9. BATTERY DIMENSIONS

Dimensions



UNIT : mm
L: 25.5 ± 1.0
W: 16.5 ± 1.0
H1: 47.5 ± 1.0
H2: 44.7 ± 1.5
D: 12.7 ± 0.25
G: 1.78mm (Min.)

Dimensions shown are IEC/ANSI Standard.

10. RECOMMENDED STORAGE AND OPERATING TEMPERATURE

10.1 Operating Temperature : -20 °C ~ 60 °C, 75 % RH Max.

10.2 Storage Temperature : Batteries shall be stored in well-ventilated, dry and cool conditions. High temperature or high humidity may casue deterioration of the battery performance or surface corrosion.

GP BATTERIES (MALAYSIA) SDN. BHD.

SUBJECT :	APPROVED BY	APPROVAL DATE	NUMBER	REV
WORK INSTRUCTION FOR 9V OQC	**Shamsul**	5 / 12 /2013	**QPKI0055**	**2**
Section 11 - for Panasonic	PREPARED BY	PREPARED DATE	PAGE **1** OF **18**	
Visual Inspection Standard Guidelines	**Erwina**	5 / 12 /2013		

1. Scope :
   9V Batteries Visual Inspection Standard for Outgoing

2. Purpose
   To provide standards against which to monitor, evaluate, improve and sustain attribute 9V quality shipped to customer with the intent to provide consumers with visually appealing product that meeting their expectation,

3. Responsibility :

   3.1 QC Ast Engineer or /and above
   Initiate the standard for Production and OQC base on the actual finding observed.

   3.2 IQC and Production (Supervisor/leaders/optr etc)
   Use the standard as a reference when visual / cosmetic non conformance found at production or during IQC inspection / audit respectively

4. Quality Control Provision

   4.1 Visual Inspection
   Non conformance shall be identifiable using normal vision under normal lighting condition

   4.2 Sampling Plan
   The identified production lot, usually by shift, day etc constitutes the lot size. Inspection will be per approved inspection plan.

   4.3 Grading
   Grade each unit by comparing to 'TAR' guideline / definition for the attribute being assessed. Some photographs are provided as example of visual non-conformance

   If the unit has a variation that is not covered by the standards, the assign the grade by comparing to the standard for a similar attribute. If this is a frequent occurrence then work with Quality Organization to jointly decide how to proceed.

4.4 Classification

4.4.1 **TARGET**

Cell or battery is assembled completely as intended and appearance meets or exceeds consumer expectations.

4.4.2 **ACCEPTABLE**

Cell or battery has a minor deviation from Target but has satisfactory visual appearance.
Deviation from Target may be noticeable to the consumer, but the consumer may not be concerned about it.
The deviation will probably not spur a complaint or affect the consumer's purchase or repurchase decision. Not acceptable on an ongoing basis.

4.4.3 **Reject**

Cell or battery has a defect. The cell or battery safety or functionality is likely compromised or the brand's premium appearance is compromised. The consumer is likely to notice the defect and consider it objectionable (complain or tell someone about the negative experience). The consumer's purchase or repurchase decision will likely be affected.

GP Batteries

Material Safety Data Sheet **Model No.: 1604A**

Product Name : 9V Alkaline Battery
Document Number: RPKS0112 Revision: 2

IDENTITY (As Used on Label and List)	Note: Blank spaces are not permitted if any item is not applicable or no information is available, the space must be marked to indicate that.

Section I – Information of Manufacturer

Manufacturer's Name GPB(M) Sdn. Bhd.	Emergency Telephone Number
Address (Number, Street, City State, and ZIP Code) No.5, Jalan Tampoi 7,	Telephone Number for information 07-3300033
Kawasan Perindustrian Tampoi, Johor Bahru, Malaysia	Date of prepared and revision 19th October, 2015
	Signature of Preparer (optional)

Section II - Hazardous Ingredients / Identity Information

Hazardous Components:

Description:		Approximate % of total weight		Remarks
Mercury (Hg)	:	< 1	ppm	Impurity or non-added content
Lead (Pb)	:	< 25	ppm	Impurity or non-added content
Cadmium (Cd)	:	< 3	ppm	Impurity or non-added content
Hexavalent Chromium (Cr^{6+})	:	< 3	ppm	Impurity or non-added content
Polybrominated Biphenyls (PBBs)	:	N/A		
Polybrominated Diphenyl Ethers (PBDEs)	:	N/A		
MnO2	:	29	%	
Zn	:	10	%	
KOH (40%)	:	15	%	

Section III - Physical / Chemical Characteristics

Boiling Point N.A.	Specific Gravity (H_2O=1) N.A.
Vapor Pressure (mm Hg) N.A.	Melting Point N.A.
Vapor Density (AIR=1) N.A.	Evaporation Rate (Butyl Acetate) N.A.
Solubility in Water N.A.	
Appearance and Odor N.A.	

Section IV – Hazard Classification

Classification

N.A.

Member
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Manufacturer reserves the right to alter or amend the design, model and specification without prior notice.

GP Batteries

Material Safety Data Sheet **Model No.: 1604A**

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Section V – Reactivity Data

Stability	Unstable ( )	Conditions to Avoid
	Stable (X)	Do not heat, crush, disassemble, short circuit or recharge.
Hazardous Reactions Yes = (X)	May Occur ( )	Conditions to Avoid N/A
	Will Not Occur (X)	

Section VI - Health Hazard Data

Route(s) of	Inhalation?	Skin? (N.A.)	Ingestion?
Entry	(N.A.)		(N.A.)

Health Hazard (Acute and Chronic) / Toxicological information

In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte.
In contact with electrolyte can cause severe irritation and chemical burns.
Inhalation of electrolyte vapors may cause irritation of the upper respiratory tract and lungs.

Section VII – First Aid Measures

First Aid Procedures

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.
If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.
If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.

Section VIII - Fire and Explosion Hazard Data

Flash Point (Method Used)	Ignition Temp.	Flammable Limits	LEL	UEL
N.A.	N.A.	N.A.	N.A.	N.A.

Extinguishing Media

As appropriate for surrounding area.

Special Fire Fighting Procedures

N.A.

Unusual Fire and Explosion Hazards

Do not dispose of battery in fire - may explode.
Do not short-circuit battery - may cause burns.

Section IX – Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

Batteries that are leakage should be handled with rubber gloves.
Avoid direct contact with electrolyte.
Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus (SCBA).

Section X – Handling and Storage

Safe handling and storage advice

Batteries should be handled and stored carefully to avoid short circuits.
Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries.
Never disassemble a battery.
Do not mix battery system in same equipment.
Do not breathe cell vapors or touch internal material with bare hands.
Keep batteries at cool and dry storage condition.

Section XI – Exposure Controls / Person Protection

Occupational Exposure Limits: LTEP	N.A.	STEP	N.A.
Respiratory Protection (Specify Type)	N.A.		
Ventilation	Local Exhausts	Special	
	N.A.		N.A.
	Mechanical (General)	Other	
	N.A.		N.A.
Protective Gloves	N.A.	Eye Protection	N.A.
Other Protective Clothing or Equipment	N.A.		
Work/Hygienic Practices	N.A.		

Section XII – Ecological Information

N.A.

Section XIII – Disposal Method

Dispose of batteries according to government regulations.

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Section XIV – Transportation Information

GP batteries are considered to be "Dry cell" batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and International Maritime Dangerous Goods Regulations (IMDG). The only DOT requirement for shipping these batteries is special provision 130 which states: "Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (For example, by the effective insulation of exposed terminals). As of 1/1/97 IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

Section XV – Regulatory Information

Special requirement be according to the local regulatories.

Section XVI – Other Information

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

Section XVII – Measures for fire extinction

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture. Fire fighters should wear self-contained breathing apparatus.

GP BATTERIES (MALAYSIA) SDN. BHD.

SUBJECT : Section 1.17
GP Standard Expiry Code Marking Method On 9V Alkaline Bottom Batteries
(5 years from ex-fac date change
twice a year in JAN & JUL)

SCOPE

This document explains the expiry datecode marking method system on 9V alkaline bottom battery.

a) Expiry Date code on Bottom Battery

Expiry Date code is 5 years from Ex-Factory Date change twice a year in Jan & July

Expiry Date code system

MM-YYYY

Expiry month — -change twice a year in January & July

Expiry year

Example

Ex-Factory Date	Bottom Battery Date Code
01 Feb 2012 to 31 Jul 2012	07-2017
01 Aug 2012 to 31 Jan 2013	01-2018

b) Position of Expiry Code marking