

This product is a consumer product which is used in a hermetically sealed state. So, it is not an object of the SDS system. This document is provided to customers as reference information for the safe handling of the product. The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Panasonic Corporation makes no warranty expressed or implied.

**PRODUCT SAFETY DATA SHEET**

**1 Chemical product and company identification**

Name of Product : Zinc Carbon Battery R20, R6, R03, 6F22  
 Name of Company : Panasonic Energy (Shanghai) Co., Ltd.  
 Address : No.5033, Luoshan Road, Pudong New District,  
 Shanghai, 201204, P. R. CHINA  
 Tel : +86-21-3390-7021(Working hours)  
 Emergency Tel : +86-21-3390-6661 (Holiday)

**2 Hazards identification**

GHS Classification : Not applicable  
 Toxicity : When the leaked liquid adheres to the skin, it may cause the damage of the skin.  
 Hazard : There is the risk of explosion if batteries are disposed in fire, heated above 100 degree C. Stacking or jumbling batteries may cause external short circuits, heat generation and explosion.

**3 Composition/information of ingredients**

Component	Material	CAS No.	Content (wt%)
Positive electrode	Manganese dioxide	1313-13-9	12-30
	Acetylene Black	1333-86-4	2-8
Negative electrode	Zinc	7440-66-6	8-40
Electrolyte	Zinc Chloride	7646-85-7	2-10
	Ammonium chloride	12125-02-9	0.05-2.0
	Water	-	10-20

**4 First aid measures (in case of electrolyte leakage from the battery)**

Eye contact by electrolyte : Do not rub eyes. Wash immediately with large amount of clean water such as tap water 15 minutes or more then receive the ophthalmologist's treatment promptly. Take medical treatment, if appropriate procedures are not taken, this may cause eye irritation.  
 Skin contact by electrolyte : Wash the affected area under tepid running water using a mild soap. If appropriate procedures are not taken, this may cause sores on the skin. Get medical attention if irritation develops or persists.



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- Ingestion of electrolyte : Wash in the mouth immediately with large amount of clean water and make the sufferer drink a lot of water.  
Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.
- Inhalation of electrolyte fume : Remove to fresh air immediately. Take a medical treatment

## 5 Firefighting measures

- Extinguishing Media : Dry chemical, carbon dioxide, great deal of water.
- Specific Fire-Fighting Methods : Be sure on the windward to extinguish the fire, since vapor from burning batteries may make eyes, nose and throat irritate, Wear the respiratory protection equipment in some cases.

## 6 Accidental release measures (in case of electrolyte leakage from the battery)

- Health Considerations and Protective Equipment  
Wear proper protective equipment.
- Environmental Precautions  
Prevent spills form entering sewers, watercourses.
- Spill Clean-Up Procedures  
Collect material to minimize dust generation ; use wet mop, damp sponge.  
Place collected material into a suitable container for disposal.

## 7 Handling and storage

### Handling

- When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.
- Use strong material for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation.
- Do not short-circuit, recharge, deform, throw into fire or disassemble.
- Do not mix different type of batteries.
- Do not solder directly onto batteries.
- Insert the battery correctly in electrical equipment.

### Storage

- Do not let water penetrate into packaging boxes during their storage and transportation.
- Do not store the battery in places of the high temperature or under direct sunlight.
- Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, rain or frozen condition
- For normal storage, the temperature should be between +10°C and +25°C and never exceed +30°C.
- Extremes of humidity (over 95% and below 40% relative humidity) for sustained periods should be avoided since they are detrimental to both batteries and packaging.
- Batteries should therefore not be stored next to radiators or boilers, nor in direct sunlight.

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- The above recommendations are equally valid for storage conditions during prolonged transit. Thus, batteries shall be stowed away from ships' engines and not left for Long periods in unventilated metal box cars (containers) during summer.

## 8. Exposure controls and personal protection

- Acceptable concentration : Not specified about Zinc Carbon Battery.  
Facilities : Nothing in particular.

### Protective Equipment (in case of electrolyte leakage from the battery)

- Respiratory Protection : For most condition no respiratory protection.  
Hand Protection : Safety gloves.  
Eye Protection : Safety glasses must be worn when handling this product.  
Skin and Body Protection : To prevent any contact, wear impervious clothing such as boots or whole body suits as appropriate.

## 9. Physical and chemical properties

- Appearance : Cylindrical shape (R20 ,R6, R03)  
Prismatic shape (6F22)  
Nominal Voltage : 1.5 V (R20, R6, R03)  
9 V (6F22)

## 10. Stability and reactivity

Since batteries utilize a chemical reaction they are actually considered a chemical product. As such, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, the various usage conditions such as discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.

## 11. Toxicological information

Battery is not harmful as its ingredients are in a hermetically sealed state.

## 12. Ecological information

In case of the worn out battery was disposed in land, the battery case may be corroded, and leak electrolyte. But, we have no ecological information.

Mercury (Hg), Cadmium (Cd) and Lead (Pb) are not used in cell.

## 13. Disposal considerations

When the battery is worn out, dispose of it under the ordinance of each local government.

## 14. Transport information

Handling



During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to condensation.

During the transportation do not allow packages to be dropped or damaged.

#### UN Number and UN Class

Not applicable

Not dangerous goods for air transportation and sea transportation.

For air transportation, the words "Not Restricted, as per Special Provision A123" must be included in the description of the substance on the Air Waybill, when an Air Waybill is issued.

#### 15. Regulatory information

- EU Battery Directive (2006/66/EC, 2013/56/EU)
- Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
- Act on Preventing Environmental Pollution of Mercury (Japan)

#### 16. Other information

This PSDS is provided to customers as reference information in order to handle batteries safely. It is necessary for the customer to take appropriate measures depending on the actual situation such as the individual handling, based on this information.

##### References

- IATA Dangerous Goods Regulations 61th Edition (IATA DGR)
- IMO International Maritime Dangerous Goods Code 2018 Edition (IMDG Code)

SHANGHAI

# Product Information Sheet

## Panasonic Batteries

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Panasonic Industrial Company  
A Division of Panasonic Corporation of North America  
5201 Tollview Drive, 1F-3  
Rolling Meadows, IL 60008  
Toll Free: 877-726-2228  
Fax: 847-468-5750  
Internet: [www.panasonic.com/batteries](http://www.panasonic.com/batteries)  
e-mail: [oembatteries@us.panasonic.com](mailto:oembatteries@us.panasonic.com)

**Product:** Alkaline Batteries

**Applicable models/sizes:** All Cylindrical and 9-Volt

**Revision:** October 1, 2008

The batteries referenced herein are exempt articles and are not subject to the OSHA Hazard Communication Standard requirement. This sheet is provided as a service to our customers.

### MSDS

Material Safety Data Sheets (MSDS) are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an "article". OSHA has defined "article" as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

*Because all of our batteries are defined as "articles", they are exempt from the requirements of the Hazard Communication Standard; hence a MSDS is not required.*

The following components are found in a Panasonic Alkaline battery:

Component	Material	Formula	CAS #
Positive Electrode	Manganese Dioxide	MnO <sub>2</sub>	1313-13-9
	Graphite	C	7782-42-5
Negative Electrode	Zinc	Zn	7440-66-6
Electrolyte	Potassium Hydroxide	KOH	1310-58-3

### Disposal

All Panasonic Alkaline batteries are classified by the federal government as a non-hazardous waste and are safe for disposal in the normal municipal waste stream. Exception: California, which as of February 8, 2006 requires disposal of these batteries in accordance with the California Universal Waste Rules. Check local your local regulations for proper disposal.

### Transportation

Panasonic Alkaline 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 the International Maritime Organization (IMO). The only requirements for shipping these batteries by DOT is Special Provision 130 which states: "Batteries, dry are not subject to the requirements of this subchapter when they are securely packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits. . The only requirement for shipping these batteries by air is ICAO and IATA Special Provision A123. By ocean the IMO regulates them under Special Provision 304. These Special Provisions have requirements which are similar to

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the requirements found in Special Provision 130 of the DOT. Under the IATA regulations if your consignment has a waybill, this waybill must contain the words "Non-Restricted" and "Special Provision A123".

### **First Aid**

If you get electrolyte in your eyes, flush with water for 15 minutes without rubbing and immediately contact a physician. If you get electrolyte on your skin wash the area immediately with soap and water. If irritation continues, contact a physician. If a battery is ingested, call the National Capital Poison Center (NCPC) at 202-625-3333 (Collect) or your local poison center immediately

### **General Recommendations**

CAUTION: May explode or leak if recharged, inserted improperly, mixed with different battery types or disposed of in fire. Do not open battery.

### **Fire Safety**

In case of fire, you can use any Class of fire extinguisher. Cooling the exterior of the batteries will help prevent rupturing. Fire fighters should use self-contained breathing apparatus.

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