

Product Information Sheet

Rockwell Automation
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Product: Lithium Battery
Type: Lithium Battery Cell
Rockwell Automation Catalog No: 1770-XYC
Cell Manufacturer: Panasonic
Cell Manufacturer P/N: BR-A
Assembly Mfg.: Inventus Power Inc.
Lithium Content: 0.6 g

Product Identification

Rockwell Automation has assigned catalog number 1770-XYC to a Lithium Battery Assembly which is supplied by Inventus Power Inc., Inventus Power Inc. part number 95546902. The Battery Assembly contains one (1) Panasonic cylindrical lithium battery cell, part number BR-A. P's Safety Data Sheet (SDS) for this Lithium Battery Cell follows.

Product Classification

The Rockwell Automation Lithium Battery Assembly, catalog no. 1769-BA, is exempted from dangerous goods regulations as the following requirements are met:

- US DOT 49CFR, 173.185
- Dangerous Goods Regulation, per IATA, Packing Instructions 968, Section II
- Special Provisions ADR 188, IMDG 188

Additional Information

Rockwell Automation is committed to demonstrating the highest standard of global environmental management. We embrace this as a core value and an integral part of all operations and seek continual improvement of our environmental management system and performance.

You can find additional information regarding Rockwell Automation Product Environmental Compliance programs at:

<https://www.rockwellautomation.com/en-us/company/about-us/sustainability/product-environmental-compliance.html>

Please send any additional inquiries regarding Product Environmental Compliance to:
ProductStewardship@ra.rockwell.com

Product Safety Data Sheet (SDS) follows

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 : Poly-carbonmonofluoride lithium battery
 Name of Company : Panasonic Corporation
 Address : 1-1 Matsushita-cho, Moriguchi-city, Osaka, 570-8511, Japan
 Emergency Contact : +81-6-6994-4560 (Working hours)
 +81-6-6991-1141 (Holiday)

2 Hazards identification

GHS Classification : Not applicable
 Toxicity : Vapor generated from burning batteries, may irritate eyes, skin and throat.
 Hazard : Electrolyte and lithium metal are inflammable.
 Risk of explosion by fire if batteries are disposed in fire or heated above 100 degrees C.
 Stacking or jumbling batteries may cause external short circuits, heat generation, fire or explosion.

3 Composition/information of ingredients

Component	Material	CAS No.	Content (%)
Positive electrode	Poly-carbonmonofluoride	51311-17-2	14 - 27
Negative electrode	Lithium metal	7439-93-2	2 - 6
Electrolyte	Organic electrolyte	-	13 - 30
Others (Steel or Plastic parts)	Steel	7439-89-6, 7440-47-3	25 - 60
	Polypropylene	9003-07-0	4 - 30

Lithium content per cell

Model Number	Lithium content(g)	Model Number	Lithium content(g)	Model Number	Lithium content(g)	Model Number	Lithium content(g)
BR-1/2AA	0.4	BR-2/3A	0.4	BR-A	0.6		
		BR-2/3AG	0.5	BR-AG	0.7		

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

- Eye contact : Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Get immediate medical treatment. If appropriate procedures are not taken, this may cause eye injury.
- Skin contact : 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.
- Inhalation : Remove to fresh air immediately. Get medical treatment immediately.

5 Firefighting measures

- Fire extinguishing agent : Alcohol-resistant foam and dry sand are effective.
- Extinguishing method : Be sure on the windward to extinguish the fire, since vapor 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)

- Take up with absorbent cloth, treat cloth as inflammable.
- Move the battery away from the fire.

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

8. Exposure controls and personal protection

Acceptable concentration : Not specified about Lithium 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 goggle

9. Physical and chemical properties

Appearance : Cylindrical shape
Nominal Voltage : 3 V

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

Swallowing can lead to chemical burns, perforation of soft tissue, and death. Severe burns can occur within 2 hours of ingestion. Seek medical attention immediately

12. Ecological information

In case of the worn out battery was disposed in land, the battery case may be corroded, and leak electrolyte. However, there is no environmental impact 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.

Proper shipping name : Lithium metal batteries

UN Number, UN Class : UN3090, Class9 (for the Air transport by PI968 Section IA or IB)
: Exemption (for the Marine transport and the Air transport by Section II of PI 968, 969 or 970)
Even though the cells are classified as lithium metal batteries (UN3090 or UN3091), they are not subject to some requirements of Dangerous Goods Regulations because they meet the following:
1. for cells, the lithium content is not more than 1g ;

2. each cell is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3 ;
3. each cell is manufactured in ISO9001 certified factory ;
4. the test summary is available from ;

<https://industrial.panasonic.com/ww/downloads/battery-test-summary>

Please refer to the following reference information about concrete ways of transportation. Actual content of packaging label and shipping documents varies by shipping companies. Make sure to confirm in advance with your shipping company.

Information of reference

	Reference	Packing Instruction(PI)/ Special provision(SP)	Note
Air transport	IATA DGR	PI 968 Section I A	Cells, Cargo Aircraft only; Net quantity per package Max. 35kg
		PI 968 Section I B	Cells, Cargo Aircraft only; net quantity per package Max. 2.5kg
		PI 968 Section II	Cells, on Cargo Aircraft only, not more than one package in any single consignment. Maximum number of cells per package; 8 cells
		PI 969 Section II	Cells packed with equipment
		PI 970 Section II	Cells contained in equipment
Marine transport	IMDG Code	SP 188	

15. Regulatory information

- IATA Dangerous Goods Regulations Edition 62 (IATA DGR)
- IMO International Maritime Dangerous Goods Code 2018 Edition (IMDG Code)
- UN Recommendations on the Transportation of Dangerous Goods, Model Regulations
- UN Recommendations on the Transportation of Dangerous Goods, Manual of Tests and Criteria
- EU Battery Directive (2006/66/EC, 2013/56/EU)
- Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
- State of California Regulations - Best management practices for Perchlorate Materials
- 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.

Prepared by : Engineering Department
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Panasonic Corporation