深圳市电科电源股份有限公司

Material Safety Data Sheet

Report No.: BST-MSDS-01

Product Name: Ni-Cd Rechargeable Battery

Date: 2021-1-15

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深圳市电科电源股份有限公司 技术专用章

1. Chemical Product and Company Identification

Product Identification

Product model:
D-AA,D-2/3AA,D-1/3AA,D-A, D-AAA, D-C, D-D, D-1/2D,D-SC, D-F
Nominal Voltage: 1.2V

Manufacturer

BST POWER (SHENZHEN) LIMITED
No.37 Xinlong Road, Dakang, Henggang Street ,Longgang District, Shenzhen.

Applicant

PowerBase Industrial (HK) Ltd.
Room 901, Cheung Lee Commercial Building, 25 Kimberley Road, Tsimshatsui, Kowloon, Hong Kong

Emergency Telephone Number

Emergency Telephone: 0755-84260300
Fax: 0755-84260306
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2. Composition Information

Chemical Composition	Percent of Content(%)	CAS No.
Nickel hydroxide	25.8%	12054-48-7
Cobalt oxide	1.6%	11104-61-3
Cadmium	10.4%	7440-43-9
Cadmium oxide	26.7%	1306-19-0
Graphite	0.3%	7782-42-5
Sodium hydrogen phosphate	0.3%	7558-79-4
The diaphragm	4.3%	31175-20-9
Carboxymethyl cellulose	0.2%	9004-32-4
Ploytetrafluoroethylene	0.8%	9002-84-0
Ploy(vinyl alcohol)	0.2%	9002-89-5
Styrene 1,3-butadiene polymer	0.1%	9003-55-8
Nickel	4.9%	7440-02-0
Sodium hydroxide	4.8%	1310-73-2
Potassium hydroxide	0.5%	1310-58-3

Water	17.8%	7732-18-5
Cobalt	0.5%	7440-48-4
Zinc	0.8%	7440-66-6

3. Hazards Identification

Fatalness:

Basically non-toxic, but exposure to the ingredients contained or their ingredients products could be dangerous.

Invasion route: Skin touch: There will be no dangerous during normal use.

Eye touch: There will be no dangerous during normal use.

Inhalation: There will be no dangerous during normal use.

Ingestion: Ingestion of internal chemical materials may cause mouth, throat and intestinal buns irritation and damage. Get medical aid.

Health hazards:

For internal components, chemical materials are stored in a hermetically sealed shell, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials leakage.

Environment hazards:

Ingredients contained or their ingredients products could be harmful to environment.

Burn & Burst danger:

If heated strongly by the surrounding fire, acrid gas and flammable gas may be emitted and may case explode dangerous.

4. First Aid Measures

The cell is not hazard with eye and skin contact under normal circumstance. In case of the enclosure is damaged, the cell can't be used and touched. It is safety except that the cell is damaged by fire or rupture. The leakage of internal hazardous substance and formation of hazardous substance would occur, take the following measures if contact with the cell.

Skin touch:

If there is any unwell felling, wash thoroughly with soap & water, flush with plenty of water. If irritation persists, seek medical advice.

Eyes touch:

Rinse immediately with plenty of water for at least 15 mins. Contact a doctor if symptoms persist.

Inhalation:

Remove from exposure site to fresh air. Keep at rest. Obtain medical attention.

Ingestion:

Rinse mouth out with water. Seek medical advice immediately.

5. Fire Fighting Measures

Danger characteristic:

Meet high fever, flame, there may cause explode danger.

Extinguishing Media:

Use dry graphite, sandy soil as appropriate for materials in surrounding fire.

Fire-Fighting:

The staff must wear the clothes which can deference the fire and toxic gas. Put out the fire in the upwind direction. Avoid using direct streams of water or foam on molten burning material as it may scatter and spread the fire.

Recommended: N/A

Special measures: N/A

Extinguishing procedures: N/A

6. Accidental Release Measures

Personal precautions:

If the cell is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate. Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the cell happens, liquid could be absorbed with sand, earth or other inert substance and contaminated area should be ventilated meantime.

Environment precautions:

Make a limitation for burning and throwing into garbage. Do not flush into surface water.

Cleaning up methods: N.A

7. Handling and Storage

Precautions in handling:

Do not expose the cell to excessive physical shocked or vibration. Short-circuiting should be avoided. Prolonged short circuits may damage the cell.

Storage conditions:

Store in a well-ventilated area away from incompatible substances. Don't place the cell near heating equipment, nor expose to direct sunlight for long periods. Elevated temperatures can result in shortened cell life and degrade performance.

8. Exposure Controls/Personal Protection

Respiratory protection:

No necessary under normal use. In case electrolyte leakage from the cell, protect hand with chemical resistant rubber gloves. If cell is burning, leave the area immediately.

Hand protection:

None under normal use. In case of spilling, use PVC, neoprene or nitrile gloves of 15miles (0.015 inch) or thicker.

Eye protection:

None required under normal conditions. Use approved chemical work safety goggles or face shield, if handling a leaking or rupture cell.

Skin protection:

No necessary under normal use. Use rubber apron and protective working in case of handling of a rupture cell.

Other protective equipment:

Chemical resistance clothing is recommended along with eye wash station and safety shower should be available. Work hygienic practices: Use good chemical hygiene practice. Wash hands after use and before drinking, eating or smoking. Wash hands thoroughly after cleaning-up component spill caused by leaking cell. No eating, drinking, or smoking in cell storage area.

9. Physical and Chemical Properties

Physical State:

The sample is not single chemical material; there are no specific physical and chemical properties

Color: The sample is composed of several components, there is no specific color.

Odor: N.A

Boiling point: N.A

Melting point: N.A

10. Stability and Reactivity

Stability: Stable during normal operation conditions.

Conditions/materials to avoid:

Incompatible with water, moisture, strong oxidizing agents, reducing agents, acids and bases.

Hazardous decomposition or byproducts:

None under normal operating conditions. Carbon dioxide and hydrogen fluoride gas may be generated during combustion of cell.

Ventilation requirements: Well-ventilated area away from incompatible substances

11. Toxicological Information

Not applicable under normal conditions of use.

12. Ecological Information

Degradability: N.A

Precautions: Not available

13. Disposal Considerations

Nature of waste: Hazardous Waste

Waste disposal methods:

a. Disposal of the cell should be performed by permitted, professional disposal firms knowledgeable in federal, state or local requirements of hazardous waste treatment and hazardous waste transportation.
b. Incineration should never be performed by cell used. The batteries contained recyclable materials. Recycling options available in your local area should be considered when disposing of this product, through licensed waste carrier.
c. The cell should have their terminal insulated in order to prevent short circuits during transportation to the disposal site.

Note: Consult your local or region authorities, disposal maybe subject to national, state, or local laws.

14. Transport Information

These cells can be classified as alkali-manganese of "Dry cell" and should not be transported as Class 9 hazardous material, which have been tested under provisions of the UN Manual of Tests and Criteria, sub-section 38.3 and are classified as non-dangerous goods. "Dry cell" batteries are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), ICAO, IATA and IMO. The only requirements for shipping these cells by DOT 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)."
The only requirements for shipping these cells by ICAO and IATA is Special Provision A123 which states: "An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation."
The IMDG regulate them for ocean transportation under Special Provision 304 which says:"Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject the provisions of this Code provided the batteries are securely packed and protected against short-circuits.

Examples of such batteries are: "alkali-manganese. Zinc-carbon, nickel metal hydride and nickel-cadmium batteries."

15.Regulatory Information

Special requirement should be according to the local regulatory.

16.Other Information

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.