

Sonata[®] 4400 and Swing[™] 4400

Material Safety Data Sheet



PRODUCT SAFETY DATA SHEET

These products are manufactured articles as described in 29 CFR 1910.1200 and are not subject to OSHA's Hazard Communication Standard requirements for preparation of material safety data sheets (MSDS).

Section 1: Product Information

Product Identification: Lithium-Ion Rechargeable Cell
Trade name: Sonata 4400 and Swing 4400
Chemical System: Lithium ion

Section 2: Composition/Information on Ingredients

The chemical ingredients are contained in a sealed case designed to withstand temperatures and pressures encountered during normal use. The cell should not be opened, disassembled, crushed, burned, or exposed to high temperatures because exposure to the following materials could be harmful under some circumstances. The following information is provided for the user's information only.

Chemical Ingredients	Weight %	CAS Number
Transition Metal Oxide Similar chemical properties to Lithium cobalt dioxide	20-50	Similar chemical properties to 12190-79-3
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Graphite	10-30	7782-42-5
Organic Electrolyte Solvent – Proprietary Similar chemical properties to Ethylene carbonate	10-20	Similar chemical properties to 96-49-1
Electrolyte Salt – Lithium hexafluorophosphate	1-3	21324-40-3
Aluminum, Nickel, Copper and inert materials	Remainder	N/A

Section 3: Health Hazard Data

Emergency Overview

May explode in a fire, which could release gases or solvents irritating to the skin and eyes. Use extinguishing media suitable for materials burning in fire.

Primary Routes of Entry

In the event that internal cell contents are released:

Skin Contact	Yes
Skin Absorption	Yes
Eye Contact	Yes
Inhalation	Yes
Ingestion	Yes

**Symptoms of exposure**

The contents of the battery are contained within a sealed can and under routine handling and use and will have no effect.

Reported as carcinogen

Not applicable

Section 4: First Aid Measures

If exposure to internal materials within cell due to damaged outer casing, the following actions are recommended.

Inhalation

Leave area immediately and seek medical attention.

Eye contact

Check for and remove any contact lenses. Rinse eyes with water or normal saline for 15 minutes and seek medical attention.

Skin contact

Remove contaminated clothes and shoes. Wash area thoroughly with soap and water and seek medical attention.

Ingestion

Wash mouth with water. Drink milk/water and induce vomiting; seek medical attention.

Section 5: Fire Fighting Measures**General Hazard**

Cell is not flammable. Combustion products include, but are not limited to hydrogen fluoride, carbon monoxide and carbon dioxide.

Extinguishing Media

Use extinguishing media suitable for the materials that are burning.

Special Firefighting Instructions

If possible, remove Cell from fire fighting area. If heated above 150°C, cell may explode.

Firefighting Equipment

Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.



Section 6: Accidental Release Measures

On Land

Place material into suitable containers and call local fire/police department.

In Water

If possible, remove from water and call local fire/police department.

Section 7: Handling and Storage

Handling

No special protective clothing required for handling an individual cell.

Storage

Store in a cool, dry place.

Section 8: Exposure Controls / Personal Protection

Engineering Controls

Keep away from heat and open flame. Store in a cool dry place.

Personal Protection

Respirator:

Not required during normal operations. SCBA required in the event of a fire.

Eye/face protection:

Not required beyond safety practices of employer.

Gloves:

Not required for handling of cells.

Foot protection:

Steel toed shoes recommended for large container handling.

Section 9: Physical and Chemical Properties

State	Solid
Odor	N/A
pH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	N/A
Solubility in water	Insoluble
Specific gravity	N/A
Density	N/A



Section 10: Stability and Reactivity

Reactivity

None

Incompatibilities

None during normal operation. Avoid exposure to heat, open flame and corrosives.

Hazardous Decomposition Products

None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.

Conditions to Avoid

Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

Section 11: Toxicological Information

This product does not elicit toxicological properties during routine handling and use.

Sensitization	Teratogenicity	Reproductive Toxicity	Acute Toxicity
NO	NO	NO	NO

If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

Section 12: Ecological Information

Some materials within the cell are bioaccumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

Section 13: Disposal Considerations

California regulated debris

RCRA Waste Code: Nonregulated

Dispose of according to all federal, state, and local regulations.

Section 14: Transport Information

Regulated under U.S. DOT HMR, 49 CFR parts 171-180.

Boston-Power's Sonata[®] 4400 and Swing[™] 4400 rechargeable lithium-ion cells are categorized as small secondary cells which comply with the testing requirements defined by section 38.3 of the UN Manual of Tests and Criteria. Compliance to this testing allows transportation of Boston-Power's Sonata[®]4400 and Swing[™] 4400 lithium-ion cells according to the authority and with reference to the packaging defined in the following transportation regulations:

- UN Recommendations on the Transportation of Dangerous Goods Model Regulations
- U.S. Department of Transportation hazardous materials regulations (HMR)



- International Civil Aviation Organization (ICAO) Technical Instructions
- International Air Transport Association (IATA) Dangerous Goods Regulations UN 3480 Packing Instruction 965 Part 1
 - Cell Wh rating = 16Wh (requirement < 20Wh)
 - Packaging conforms to 5.0.2.4, 5.0.2.6.1, 5.0.2.12.1
 - Inner packaging completely encloses the cell to prevent short circuits
- International Maritime Dangerous Goods (IMDG) Code

Section 15: Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

_____ Hazardous

_____ Non-hazardous

Section 16: Other Information

This product is designed for use by persons trained in the handling and use of lithium-ion cells and is not intended for individual sale. Under normal use this product poses no exposure risk. In the event that internal contents of lithium-ion cell are released due damage or severe heating, then precautions should be taken to avoid any exposure and properly trained safety personnel should be contacted for clean up and disposal.