

## 1. Identification

### Product identifier

Trade name: 757B38 - emPOWER Battery

Nominal voltage: 3.6 V

Capacity: 2.5 Ah

Energy: 9 Wh

### Relevant identified uses of the substance or mixture and uses advised against

General use: Lithium-ion battery for orthopedic procedures  
Reserved for industrial and professional use.

### Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care

Street/POB-No.: 3820 W. Great Lakes Drive

Zip code, city: Salt Lake City, UT 84120

USA

WWW: [www.ottobockus.com](http://www.ottobockus.com)

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Department responsible for information:

Quality Department,

Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),

Email: [USRegulatory@ottobock.com](mailto:USRegulatory@ottobock.com)

Additional information:

Corporate headquarters:

Ottobock SE & Co. KGaA

Max-Näder-Straße 15

Duderstadt

Germany

### Emergency telephone number

CHEMTREC, Telephone: +1 (800) 424-9300

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

## 2. Hazard identification

### Classification of the substance or mixture

Article not subject to hazard labelling or classification.

### Label elements

not applicable

### Other hazards

The battery is hermetically sealed.

danger of releasing ingredients, mentioned in section 3, by damaging the battery

- with strong mechanical action,
- in case of heating and/or Fire,
- with influence of water,
- short circuit

Hazard statements:

Flammable liquid and vapor.

Toxic if swallowed.

Causes severe skin burns and eye damage.

May damage fertility. Suspected of damaging the unborn child.

Causes damage to organs through prolonged or repeated exposure.

Very toxic to aquatic life with long lasting effects.

When in contact with water product decomposes slowly. Formation of Hydrogen fluoride.

## 3. Composition/information on ingredients

### Mixtures

Chemical characterization: Lithium-ion battery - Article. The chemical materials are stored in a hermetically sealed metal case.

Contains:

Electrode, negative: Graphite

Electrode, positive: Cobalt lithium dioxide

Electrolyte: Lithium hexafluorophosphate, carbonates (organic)

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 12190-79-3	Cobalt lithium dioxide	20 - 50 %	Reproductive toxicant - Category 1B.
CAS -	Carbonates (organic)	5 - 20 %	Flammable Liquid - Category 3. Acute Toxicity - oral - Category 4. Eye Irritation - Category 2. Specific Target Organ Toxicity (Repeated Exposure) - Category 2.
CAS 21324-40-3	Lithium hexafluorophosphate	< 5 %	Acute Toxicity - oral - Category 3. Skin Corrosion - Category 1A. Eye Damage - Category 1. Specific Target Organ Toxicity (Repeated Exposure) - Category 1.
CAS 7440-50-8	Copper	3 - 15 %	Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1.

The actual concentration or concentration range is withheld as a trade secret.

Additional information: The product contains: Graphite, aluminium, Polyvinylidene fluoride, steel, nickel compounds: The maximum workplace exposure limits are, where necessary, listed in section 8.

Carbonates (organic) contains: Ethylene carbonate (CAS 96-49-1), Propylene carbonate (CAS 108-32-7), Diethyl carbonate (CAS 105-58-8)

### 4. First aid measures

General information:	In case of damaged battery cases / In case of exposure to hazardous ingredients: First aider: Pay attention to self-protection! Take off immediately all contaminated clothing and wash it before reuse.
In case of inhalation:	In case of damaged battery cases / In case of exposure to hazardous ingredients: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if problems persist.
Following skin contact:	In case of damaged battery cases / In case of exposure to hazardous ingredients: Clean with plenty of water. If possible, also wash with polyethylene glycol 400. Immediately get medical attention.
After eye contact:	In case of damaged battery cases / In case of exposure to hazardous ingredients: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Seek the attention of an ophthalmologist immediately.
After swallowing:	In case of damaged battery cases / In case of exposure to hazardous ingredients: Rinse mouth immediately and drink plenty of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Immediately get medical attention.

#### Most important symptoms/effects, acute and delayed

When used correctly, no damage to health has been observed.  
In case of damaged battery cases:  
Toxic if swallowed.  
Causes severe skin burns and eye damage.  
Causes damage to organs through prolonged or repeated exposure.

#### Information to physician

In case of damaged battery cases / In case of exposure to hazardous ingredients:  
Treat symptomatically.

### 5. Fire-fighting measures

#### Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:

Only in case of small fires: metal fire extinguisher, sand  
In case of large fires: water, dry chemical powder

#### Specific hazards arising from the chemical

Heating causes rise in pressure with risk of bursting. At temperatures > 125 °C: Danger of explosion! May form dangerous gases and vapors in case of fire.  
Furthermore, there may develop: Hydrogen fluoride, metal oxide smoke, carbon monoxide and carbon dioxide.

#### Protective equipment and precautions for firefighters

Additional information:	Wear a self-contained breathing apparatus and chemical protective clothing. Do not inhale explosion and combustion gases. Use fine water spray to cool endangered containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Do not allow fire water to penetrate into surface or ground water. Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.
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## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

In case of damaged battery cases:

Avoid exposure. Avoid generation of dust. Do not breathe dust/mist/vapors. Do not get in eyes, on skin, or on clothing. Remove all sources of ignition.

Provide adequate ventilation. Wear appropriate protective equipment. Take off immediately all contaminated clothing and wash it before reuse.

Keep unprotected people away.

Environmental precautions:

Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary.

### Methods and material for containment and cleaning up

Methods for clean-up:

Take up mechanically, placing in appropriate containers for disposal.

In case of damaged battery cases: Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13). Thoroughly clean surrounding area.

## 7. Handling and storage

### Precautions for safe handling

Advices on safe handling:

Provide adequate ventilation, and local exhaust as needed. Avoid damage to the battery casing. Do not eat, drink or smoke when using this product. Have eye wash bottle or eye rinse ready at work place.

In case of damaged battery cases:

Avoid exposure. Avoid generation of dust. Do not breathe dust/mist/vapors. Do not get in eyes, on skin, or on clothing.

wash off any skin contamination immediately. Wear appropriate protective equipment.

Take off immediately all contaminated clothing and wash it before reuse.

Precautions against fire and explosion:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid short circuit.

### Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container tightly closed and in a well-ventilated place. Keep container dry. Keep only in original container. Protect from heat and direct sunlight.

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs.

Do not store together with: Strong acids, strong oxidizing agents.

## 8. Exposure controls/personal protection

### Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
7782-42-5	Graphite	USA: ACGIH: TWA	2 mg/m <sup>3</sup> (respirable fraction)
		USA: IDLH: TWA	1,250 mg/m <sup>3</sup>
		USA: NIOSH: TWA	2.5 mg/m <sup>3</sup> (respirable fraction)
		USA: OSHA: TWA	15 mg/m <sup>3</sup> (total dust)
		USA: OSHA: TWA	5 mg/m <sup>3</sup> (respirable fraction)
7429-90-5	Aluminium	USA: ACGIH: TWA	1 mg/m <sup>3</sup>
		USA: NIOSH: Ceiling	5 mg/m <sup>3</sup> (inhalable fraction)
		USA: NIOSH: TWA	10 mg/m <sup>3</sup> (inhalable fraction)
		USA: NIOSH: TWA	5 mg/m <sup>3</sup> (inhalable fraction)
		USA: OSHA: TWA	15 mg/m <sup>3</sup> (inhalable fraction)
7440-50-8	Copper	USA: OSHA: TWA	5 mg/m <sup>3</sup> (respirable fraction)
		USA: ACGIH: TWA	0.2 mg/m <sup>3</sup> (Smoke)
		USA: ACGIH: TWA	1 mg/m <sup>3</sup>
			(Dusts and mist calculated as Cu)
		USA: IDLH: TWA	100 Cu/m <sup>3</sup> (dust and mist)
		USA: IDLH: TWA	100 Cu/m <sup>3</sup> (Smoke)
		USA: NIOSH: TWA	1 mg/m <sup>3</sup>
		USA: OSHA: TWA	0.1 mg/m <sup>3</sup> (Smoke; calculated as Cu)
		USA: OSHA: TWA	1 mg/m <sup>3</sup>
			(Dusts and mist calculated as Cu)

### Appropriate engineering controls

In case of damaged battery cases: Provide adequate ventilation.

In case of development of vapors or dust: The use of local exhaust ventilation is recommended.

### Personal protection equipment (PPE)

Respiratory protection:	<p>In case of damaged battery cases:</p> <p>Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded.</p> <p>Recommendation: Half mask with particle filter P according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2. When vapors form combination filter Use filter type A, B, K according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.</p> <p>The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!</p>
Hand protection:	<p>In case of damaged battery cases:</p> <p>Protective gloves according to OSHA Standard - 29 CFR: 1910.138.</p> <p>Glove material: Rubber - breakthrough time &gt; 480 min.</p> <p>Observe glove manufacturer's instructions concerning penetrability and breakthrough time.</p>
Eye protection:	<p>In case of damaged battery cases:</p> <p>Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.</p>
Body protection:	<p>In case of damaged battery cases: Wear appropriate protective equipment.</p>

### General hygiene considerations:

Do not eat, drink or smoke when using this product. Have eye wash bottle or eye rinse ready at work place.

In case of damaged battery cases:

Avoid exposure. Avoid generation of dust. Do not breathe dust/mist/vapors. Do not get in eyes, on skin, or on clothing.

wash off any skin contamination immediately. Take off immediately all contaminated clothing and wash it before reuse.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Physical state at 68 °F and 101.3 kPa	solid
Color:	Form: Battery product-specific
Odor:	odorless
Odor threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flammability:	No data available
Explosion limits:	No data available
Flash point/flash point range:	Not applicable
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	Not applicable
Viscosity:	No data available
Water solubility:	Insoluble
Partition coefficient: n-octanol/water:	No data available
Vapor pressure:	No data available
Density:	No data available
Vapor density:	No data available
Particle characteristics:	No data available

### Additional information

Additional information:	No data available
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## 10. Stability and reactivity

Reactivity:	In case of damaged battery cases: Flammable liquid and vapor.
Chemical stability:	Stable under recommended storage conditions.

Possibility of hazardous reactions:

Fire hazard in case of technical defects. Heating causes rise in pressure with risk of bursting. At temperatures > 125 °C: Danger of explosion!

In case of damaged battery cases:

Electrolyte reacts with water. Formation of Hydrogen fluoride.

Conditions to avoid:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from moisture.

Avoid short circuit. Avoid damage to the battery casing.

Incompatible materials:

Strong acids, strong oxidizing agents

Hazardous decomposition products:

No decomposition when used properly.

## 11. Toxicological information

### Information on toxicological effects

Toxicological effects:

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Lack of data.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Other information:

In case of damaged battery cases:

Toxic if swallowed.

Causes severe skin burns and eye damage.

May damage fertility. Suspected of damaging the unborn child.

Causes damage to organs through prolonged or repeated exposure.

### Symptoms

When used correctly, no damage to health has been observed.

In case of damaged battery cases:

After ingestion: Burns in the mouth, pharynx, oesophagus, and gastrointestinal tract. Risk of perforation in the oesophagus and stomach.

After contact with skin: Causes damage to the skin, necroses, and poorly healing eczemas.

After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

Prolonged eye contact may damage the cornea.

## 12. Ecological information

### Ecotoxicity

Aquatic toxicity: In case of damaged battery cases:  
Very toxic to aquatic life with long lasting effects.

### Persistence and degradability

Further details: Product is not biodegradable.

### Bioaccumulative potential

Partition coefficient: n-octanol/water:  
No data available

### Mobility in soil

No data available

### Other adverse effects

General information: Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary.

## 13. Disposal considerations

### Waste treatment methods

#### Product

Recommendation: Dispose of waste according to applicable legislation. Do not allow to enter drains.

#### Package

Recommendation: Dispose of waste according to applicable legislation.  
Packing can be recycled or disposed of.

## 14. Transport information

### UN number

DOT: UN3480  
IMDG, IATA-DGR: UN 3480

### UN proper shipping name

DOT, IMDG, IATA-DGR: UN 3480, LITHIUM ION BATTERIES

### Transport hazard class(es)

DOT: 9  
IMDG: Class 9, Subrisk -  
IATA-DGR: Class 9

### Packing group

DOT, IATA-DGR: not applicable  
IMDG: -





### Environmental hazards

Marine pollutant: no

### Transport in bulk according to IMO instruments

No data available

### Special precautions for user

#### USA: Department of Transportation (DOT)

Labels: 9  
 Special Provisions: 388, 422, A54, A100  
 Packaging – Exceptions: 185  
 Packaging – Non-bulk: 185  
 Packaging – Bulk: 185  
 Quantity limitations – Passenger aircraft / rail: Forbidden  
 Quantity limitations – Cargo only: 35 kg  
 Vessel stowage – Location: A  
 Vessel stowage – Other: 156

#### Sea transport (IMDG)

EmS: F-A, S-I  
 Special Provisions: 188 230 310 348 376 377 384 387  
 Limited quantities: 0  
 Excepted quantities: E0  
 Package - Instructions: P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906  
 Package - Provisions: -  
 IBC - Instructions: -  
 IBC - Provisions: -  
 Tank instructions - IMO: -  
 Tank instructions - UN: -  
 Tank instructions - Provisions: -  
 Stowage and handling: Category A. SW19  
 Properties and observations: Electrical batteries containing lithium ion may react (e.g., flame, heat, emission of toxic, corrosive or flammable gases or vapours) or disassemble due to damage, defects or short circuit.  
 Marine pollutant: no  
 Segregation group: none

#### Air transport (IATA)

Proper shipping name: UN 3480, LITHIUM ION BATTERIES  
 Hazard label: Lithium batt or Sodium-ion batt  
 Excepted Quantity Code: E0  
 Passenger and Cargo Aircraft: Ltd.Qty.: Forbidden  
 Passenger and Cargo Aircraft: Forbidden  
 Cargo Aircraft only: Pack.Instr. See 965 - Max. Net Qty/Pkg. See 965  
 Special Provisions: A88 A99 A154 A183 A201 A213 A331 A334 A802  
 Emergency Response Guide-Code (ERG): 12FZ

## 15. Regulatory information

### National regulations - U.S. Federal Regulations

This product is an article as defined by TSCA regulations, and is exempt from TSCA inventory listing requirements.

### National regulations - U.S. State Regulations

Copper: New York Right-To-Know: listed

### Further regulations, limitations and legal requirements

No data available

## 16. Other information

Revision date: 1/1/2026

Date of first version: 3/2/2017

Reason of change: Changes in section 14: IATA-DGR 2026

Hazard rating systems:



NFPA Hazard Rating:

Health: 0 (Minimal)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 0 (Minimal)

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

In case of damaged battery cases: NFPA/HMIS: H3 / F2

HEALTH	0
FLAMMABILITY	1
PHYSICAL HAZARD	0
	X

### Abbreviations and acronyms:

Acute Toxicity: Acute toxicity  
 Aquatic toxicity - acute: Hazardous to the aquatic environment - acute  
 Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic  
 AS/NZS: Australian Standards/New Zealand Standards  
 CAS: Chemical Abstracts Service  
 CFR: Code of Federal Regulations  
 CLP: Classification, Labelling and Packaging  
 DMEL: Derived minimal effect level  
 DNEL: Derived no-effect level  
 DOT: Department of Transportation's Safety Regulations (USA)  
 EC: European Community  
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
 EN: European Standard  
 EQ: Excepted quantities  
 Eye Damage: Eye damage  
 Eye Irritation: Eye irritation  
 Flammable Liquid: Flammable liquid  
 IATA: International Air Transport Association  
 IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
 IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IMDG Code: International Maritime Dangerous Goods Code  
 IMO: International Maritime Organization  
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
 OEL: Occupational Exposure Limit Value  
 OSHA: Occupational Safety and Health Administration  
 PBT: Persistent, bioaccumulative and toxic  
 PNEC: Predicted no-effect concentration  
 Reproductive toxicant: Reproductive toxicity  
 Skin Corrosion: Skin corrosion  
 STOT RE: Specific target organ toxicity - repeated exposure  
 TLV: Threshold Limit Value  
 TRGS: Technical Rules for Hazardous Substances  
 TSCA: Toxic Substance Control Act  
 UN: United Nations  
 vPvB: Very persistent and very bioaccumulative  
 WEL: Workplace Exposure Limit

### Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.