

## 1 Identification

### Product identifier

Trade name: 4G520 - Akku 7.4V Li-Ion

### Other means of identification

This safety data sheet pertains to the following products:

4G520 - Akku 7.4V Li-Ion

4G520=2 - Akku 7.4V Li-Ion

4G520=3 - Akku 7.2V Li-Ion

### Recommended use and restrictions on use

General use: Lithium-ion battery (7,4V 800 mAh) for orthopedic procedures  
For commercial user only.

### Initial supplier identifier

Company name: Otto Bock HealthCare Canada Ltd.

Street/POB-No.: 5470 Harvester Road

Postal code, city: Burlington, ON L7L 5N5, CA  
Canada

WWW: [www.ottobock.ca](http://www.ottobock.ca)

Email: [info.canada@ottobock.com](mailto:info.canada@ottobock.com)

Telephone: (800) 665-3327

Telefax: (800) 463-3659

Department responsible for information:

Mark Agro, Telephone: (800) 665-3327 (9 am - 5 pm)

Additional information:

Corporate headquarters:  
Ottobock SE & Co. KGaA  
Max-Näder-Straße 15  
Duderstadt  
Germany

### Emergency telephone number

**COLLECT, Telephone: (613) 996-6666**

**Transport:**

**CONSULTANK Lutz Harder GmbH (Contract QUALI003)**

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

## 2 Hazard identification

### Classification

Article not subject to hazard labelling or classification.

### Information elements

not applicable

## Other hazards known to the supplier with respect to the product

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:

May cause cancer. May cause damage to organs. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization by skin contact.

Electrolyte, organic:

Flammable. vapours irritate eyes, mucous membranes and respiratory system. vapours may cause drowsiness and dizziness.

After contact with water: formation of Hydrogen fluoride (Fatal in contact with skin. Fatal if swallowed. Fatal if inhaled. Causes severe skin burns and eye damage.).

## 3 Composition/Information on ingredients

### Mixture

Chemical name:

Lithium-ion battery - Article.

The chemical materials are stored in a hermetically sealed metal case.

Contains Aluminium (10 - 40%), Graphite (10 - 20%), Carbon (10 - 20%), Copper (5 - 15%).

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 12190-79-3	Cobalt lithium dioxide	< 50 %	Respiratory Sensitizer 1. Sensitization - skin 1. Carcinogenicity 2.
CAS 12057-17-9	Lithium manganese oxide	< 50 %	Acute Toxicity 4 (oral). Acute Toxicity 4 (inhalative). Aquatic toxicity - chronic 4.
CAS 182442-95-1	Lithium Cobalt Manganese Nickel Oxide	< 50 %	Respiratory Sensitizer 1. Sensitization - skin 1. Carcinogenicity 1A. Specific Target Organ Toxicity (Single Exposure) 2.
CAS 7439-89-6	Iron	< 50 %	not classified
CAS 7429-90-5	Aluminium	< 50 %	not classified
CAS 7782-42-5	Graphite	< 50 %	not classified
CAS 7440-44-0	Carbon	< 50 %	not classified
CAS 7440-50-8	Copper	< 50 %	not classified
CAS -	Electrolyte, organic	< 50 %	Flammable Liquid 3.

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

### 4 First-aid measures

#### Description of necessary first-aid measures

General information:	In case of damaged battery cases: Release of dangerous ingredients possible. In case of heating: Generates dangerous gases or fumes in contact with.
In case of inhalation:	In case of damaged battery cases: Provide fresh air. Keep victim at rest in half upright position. Seek medical attention.
In case of swallowing:	Induce vomiting when the affected person is not unconscious.  In case of damaged battery cases / In case of exposure to hazardous ingredients: Drink large quantities of water. Do not induce vomiting. Risk of perforation in case of vomiting! Immediately get medical attention. Do not try to neutralize.
In case of 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. Take off immediately all contaminated clothing and wash it before reuse. Seek medical treatment in case of troubles.
In case of 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. Afterwards, consult an ophthalmologist immediately.

#### Most important symptoms and effects, whether acute or delayed

No hazardous reaction when handled and stored according to provisions.  
In case of damaged battery cases / In case of exposure to hazardous ingredients:  
May cause an allergic skin reaction. Irritation. May cause drowsiness or dizziness.

#### Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

### 5 Fire-fighting measures

#### Suitable and unsuitable extinguishing media

Suitable extinguishing media:  
Extinguishing powder, Extinguishing agent on the basis of sodium chloride, sodium hydrogen carbonate, limestone, or with metal extinguishing powder.

Unsuitable extinguishing media:  
Water, foam.

#### Specific hazards arising from the product

In case of fire may be liberated: corrosive gases/vapours, hydrogen fluoride, carbon monoxide and carbon dioxide.

#### Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

In case of damaged battery cases:

Remove all sources of ignition.

Provide fresh air. Avoid contact with skin and eyes.

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

In case of development of vapours or dust:

Do not inhale vapours or dust particles.

Environmental precautions:

Discharge into the environment must be avoided.

### Methods and material for containment and cleaning up

Take up mechanically. Dispose of waste according to applicable legislation.

Electrolyte, organic: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal. Final cleaning.

## 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.

In case of damaged battery cases: Avoid exposure.

Precautions against fire and explosion:

Avoid short circuit. Avoid damage to the battery casing.

In case of damaged battery cases: Remove all sources of ignition.

### Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Provide adequate ventilation. Store in a dry place.

Protect from: humidity, heat, UV-radiation/sunlight.

Storage temperature: -20 °C up to 35 °C.

Air humidity: 45% up to 85%.

Hints on joint storage:

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
7429-90-5	Aluminium	Canada: Alberta, OEL 8 hour	10 mg/m <sup>3</sup> (metal, dust)
		Canada: Alberta, OEL 8 hour	5 mg/m <sup>3</sup>
		Canada: BC, OEL TWA	(Aluminium powder, pyrotechnic) 1 mg/m <sup>3</sup> (Pyrotechnical powders)
7782-42-5	Graphite	Canada: Alberta, OEL 8 hour	2 mg/m <sup>3</sup> (respirable fraction)
		Canada: BC, OEL TWA	2 mg/m <sup>3</sup> (respirable fraction)
		Canada: Québec, VEMP	2 mg/m <sup>3</sup> (respirable fraction)
7440-44-0	Carbon	Canada: Alberta, OEL 8 hour	10 mg/m <sup>3</sup>
			(Dust limit value, inhalable fraction)
		Canada: Alberta, OEL 8 hour	3 mg/m <sup>3</sup>
			(Dust limit value, respirable fraction)
		Canada: BC, OEL TWA	10 mg/m <sup>3</sup>
			(Dust limit value, inhalable fraction)
7440-50-8	Copper	Canada: BC, OEL TWA	3 mg/m <sup>3</sup>
			(Dust limit value, respirable fraction)
		Canada: Québec, VEMP	10 mg/m <sup>3</sup> (total dust)
		Canada: Québec, VEMP	3 mg/m <sup>3</sup> (total dust, respirable fraction)
		Canada: Alberta, OEL 8 hour	0.2 mg/m <sup>3</sup> (Smoke)
		Canada: Alberta, OEL 8 hour	1 mg/m <sup>3</sup> (Dusts and mist)
		Canada: BC, OEL TWA	0.2 mg/m <sup>3</sup> (Smoke)
		Canada: BC, OEL TWA	1 mg/m <sup>3</sup> (Dusts and mist)
		Canada: Québec, VEMP	0.2 mg/m <sup>3</sup> (Smoke, calculated as Cu)
		Canada: Québec, VEMP	1 mg/m <sup>3</sup>
			(Dusts and mist calculated as Cu)

Additional information: The chemical materials are stored in a sealed battery case.

#### Appropriate engineering controls

In case of damaged battery cases: Provide adequate ventilation.

In case of development of vapours or dust:

The use of local exhaust ventilation is recommended.

#### Individual protection measures, such as personal protective equipment

Respiratory protection: In case of damaged battery cases:  
Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded.  
Half mask with particle filter P according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.  
If necessary: When vapours form combination filter Use filter type A, B, K according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Hand protection: In case of damaged battery cases:  
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.  
Glove material: rubber - breakthrough time >480 min.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: In case of damaged battery cases:  
Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

General hygiene considerations:  
In case of damaged battery cases:  
Do not inhale vapours or dust particles.  
Avoid contact with skin and eyes.  
Keep away from sources of ignition - No smoking.  
Wash hands before breaks and after work.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	Form: solid
Colour:	metallic or black
Odour:	odourless
Odour threshold:	No data available
Melting point and freezing point:	No data available
Boiling point or initial boiling point and boiling range:	No data available
Flammability:	No data available
Lower and upper explosion limit or lower and upper flammability limit:	No data available
Flash point/flash point range:	No data available
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	No data available
Solubility:	No data available
Partition coefficient — n-octanol/water:	No data available
Vapour pressure:	No data available
Density and/or relative density	No data available
Vapour density:	No data available
Particle characteristics:	Not applicable

### Additional information

Additional information: No data available

## 10 Stability and reactivity

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions:

Fire hazard in case of technical defects.  
In case of damaged battery cases:  
Electrolyte, organic: Flammable.  
After contact with water: formation of Hydrogen fluoride.

Conditions to avoid:

> 100 °C: Generation of heat. Ignition.  
Protect from: humidity, water, marine water, heat, UV-radiation/sunlight  
Avoid short circuit. Avoid damage to the battery casing.  
In case of damaged battery cases:  
Keep away from sources of ignition - No smoking. Protect from: water.

Incompatible materials:

Keep away from strong acids and strong oxidizing agents.  
In case of damaged battery cases:  
Electrolyte, organic: Keep away from water.

Hazardous decomposition products:

In case of fire may be liberated: hydrogen fluoride, carbon monoxide and carbon dioxide.

## 11 Toxicological information

### Information on the likely routes of exposure

No data available

### Health hazard information

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:  
cobalt lithium dioxide:  
Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.  
(Cobalt: LDLo Guinea pig oral 20 mg/kg)  
Lithium manganese oxide:  
Harmful if swallowed. Harmful if inhaled.  
(Manganese: LD50 Guinea pig oral 9000 mg/kg)  
Lithium Cobalt Manganese Nickel Oxide:  
May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer. May cause damage to organs.  
(Nickel: LD50 Guinea pig oral 5 mg/kg)  
Aluminium:  
LC50 Rat, inhalative 888 mg/L  
Copper:  
Mucous membrane irritation, cough, shortage of breath. TDLo Rabbit, hypodermic 375 mg/kg.  
Electrolyte, organic:  
vapours irritate eyes, mucous membranes and respiratory system.  
vapours may cause drowsiness and dizziness.  
After contact with water: formation of Hydrogen fluoride (Fatal in contact with skin. Fatal if swallowed. Fatal if inhaled. Causes severe skin burns and eye damage.).

## 12 Ecological information

### Ecotoxicity

Aquatic toxicity: Lithium Cobalt Manganese Nickel Oxide:  
Acute Daphnia toxicity EC50: > 0.33 mg/L/48 h

### 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: Discharge into the environment must be avoided.

## 13 Disposal considerations

### Waste treatment methods

#### Product

Recommendation: Dispose of waste according to applicable legislation.



### Package

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

## 14 Transport information

### UN number

TDG: UN3480  
IMDG, IATA-DGR: UN 3480

### UN proper shipping name

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

### Transport hazard class

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



### Packing group

TDG, IATA-DGR: not applicable  
IMDG: -

### Environmental hazards

Marine pollutant: no

### Special precautions in connection with transport or conveyance either within or outside the premises

#### Canada: Transportation of Dangerous Goods (TDG)

Special Provisions: 34, 123, 137, 138, 1  
Explosive limit and limited quantity index: 0  
Passenger carrying road or rail index: 5 kg

### 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 - Canada

Cobalt lithium dioxide:	DSL: listed
Iron:	DSL: listed
Graphite:	DSL: listed
Carbon:	DSL: listed
Copper:	DSL: listed

### Further regulations, limitations and legal requirements

No data available

## 16 Other information

Revision date:	1/1/2026
Date of first version:	18/7/2012
Reason of change:	Changes in section 14: IATA-DGR 2026

### Abbreviations and acronyms:

Acute Toxicity: Acute toxicity  
Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic  
AS/NZS: Australian Standards/New Zealand Standards  
Carcinogenicity: Carcinogenicity  
CAS: Chemical Abstracts Service  
CFR: Code of Federal Regulations  
CLP: Classification, Labelling and Packaging  
DMEL: Derived minimal effect level  
DNEL: Derived no-effect level  
DSL: Domestic Substances List  
EC: European Community  
EC50: Effective Concentration 50%  
EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
EN: European Standard  
EQ: Excepted quantities  
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  
LC50: Median lethal concentration  
LD50: Lethal dose 50%  
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  
Respiratory Sensitizer: Sensitisation to the respiratory tract  
Sensitization - skin: Skin sensitisation  
STOT SE: Specific target organ toxicity - single exposure  
TDG: Transportation of Dangerous Goods Regulation in Canada  
TLV: Threshold Limit Value  
TRGS: Technical Rules for Hazardous Substances  
TSCA: Toxic Substance Control Act  
UN: United Nations  
UV: Ultraviolet  
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.