

1 Identification

Product identifier

Trade name: 757B35=X - MyoEnergy Integral

Other means of identification

This safety data sheet pertains to the following products:

757B35=0: MyoEnergy Integral

757B35=1: MyoEnergy Integral

Recommended use and restrictions on use

General use: Lithium-ion battery 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

Email: 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:

Flammable liquid and vapour. After contact with water: Formation of Hydrogen fluoride

Suspected of causing cancer. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Causes serious eye damage.

Causes skin irritation. Harmful if swallowed or in contact with skin.

May cause long lasting harmful effects to aquatic life.

vapours irritate eyes, mucous membranes and respiratory system. May cause drowsiness or dizziness.

3 Composition/Information on ingredients

Mixture

Chemical name: Lithium-ion battery - Article, contains:
Steel, Aluminium and Copper 31%
Polypropylene 10%
Organic solvents 13%
Salts 1%
Lithium, metallic: 0%
Electrode, negative: Graphite or Carbon
Electrode, positive: cobalt lithium dioxide
Electrolyte: Lithium hexafluorophosphate, solvent mixture

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 12190-79-3	Cobalt lithium dioxide	20 - 40 %	Respiratory Sensitizer 1. Sensitization - skin 1. Carcinogenicity 2.
CAS 96-49-1	Ethylene carbonate	< 15 %	Eye Damage 1.
CAS 616-38-6	Dimethyl carbonate	< 15 %	Flammable Liquid 2.
CAS 105-58-8	Diethyl carbonate	< 15 %	Skin Irritation 2. Eye Irritation 2A. Specific Target Organ Toxicity (Single Exposure) 3.
CAS 141-78-6	Ethyl acetate	< 15 %	Flammable Liquid 2. Eye Irritation 2A. Specific Target Organ Toxicity (Single Exposure) 3.
CAS 21324-40-3	Lithium hexafluorophosphate	< 15 %	Acute Toxicity 4 (oral). Acute Toxicity 4 (dermal). Eye Damage 1. Sensitization - skin 1.

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. The product may release harmful vapours by heating.
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:	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. Seek medical attention.
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. 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: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Causes serious eye damage. Causes skin irritation. Harmful if swallowed or in contact with skin.

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:
Carbon dioxide (CO₂), extinguishing powder, foam

Unsuitable extinguishing media:
Water

Specific hazards arising from the product

In case of fire may be liberated: Hydrogen fluoride, carbon monoxide and carbon dioxide, Metal oxide smoke

Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing.
Additional information: Do not allow fire water to penetrate into surface or ground water.

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.
In case of development of vapours or dust:
Do not inhale vapours or dust particles.

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

Take up mechanically. Dispose of waste according to applicable legislation.
Avoid generation of dust.
Information about 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 open flames.
Avoid temperatures exceeding 70 °C.
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: <30 °C.

Hints on joint storage:

Do not store together with strong acids, strong oxidizing agents.
Keep away from food, drink and animal feedingstuffs.

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 ³ (metal, dust)
		Canada: Alberta, OEL 8 hour	5 mg/m ³
		Canada: BC, OEL TWA	(Aluminium powder, pyrotechnic) 1 mg/m ³ (Pyrotechnical powders)
7440-50-8	Copper	Canada: Alberta, OEL 8 hour	0.2 mg/m ³ (Smoke)
		Canada: Alberta, OEL 8 hour	1 mg/m ³ (Dusts and mist)
		Canada: BC, OEL TWA	0.2 mg/m ³ (Smoke)
		Canada: BC, OEL TWA	1 mg/m ³ (Dusts and mist)
		Canada: Québec, VEMP	0.2 mg/m ³ (Smoke, calculated as Cu)
		Canada: Québec, VEMP	1 mg/m ³ (Dusts and mist calculated as Cu)
7782-42-5	Graphite	Canada: Alberta, OEL 8 hour	2 mg/m ³ (respirable fraction)
		Canada: BC, OEL TWA	2 mg/m ³ (respirable fraction)
		Canada: Québec, VEMP	2 mg/m ³ (respirable fraction)
7440-44-0	Carbon	Canada: Alberta, OEL 8 hour	10 mg/m ³
			(Dust limit value, inhalable fraction)
		Canada: Alberta, OEL 8 hour	3 mg/m ³
			(Dust limit value, respirable fraction)
		Canada: BC, OEL TWA	10 mg/m ³
			(Dust limit value, inhalable fraction)
141-78-6	Ethyl acetate	Canada: BC, OEL TWA	3 mg/m ³
			(Dust limit value, respirable fraction)
		Canada: Québec, VEMP	10 mg/m ³ (total dust)
		Canada: Québec, VEMP	3 mg/m ³ (total dust, respirable fraction)
		Canada: Alberta, OEL 8 hour	1,440 mg/m ³ ; 400 ppm
		Canada: BC, OEL TWA	150 ppm
		Canada: Québec, VEMP	1,440 mg/m ³ ; 400 ppm

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: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

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	solid
Colour:	No data available
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:	Not applicable
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	Not applicable
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:	No data available

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:
Flammable liquid and vapour. (Electrolyte)
After contact with water: Formation of Hydrogen fluoride.

Conditions to avoid:

> 70 °C: development of gas/vapour possible.
Protect from: humidity, heat, UV-radiation/sunlight
Avoid short circuit. Avoid damage to the battery casing.
In case of damaged battery cases:
Keep away from water. Keep away from sources of ignition - No smoking.

Incompatible materials:

Keep away from strong acids and strong oxidizing agents.

Hazardous decomposition products:

No decomposition when used properly.

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:
Suspected of causing cancer. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Causes serious eye damage. Causes skin irritation. Harmful if swallowed or in contact with skin.

12 Ecological information

Ecotoxicity

Aquatic toxicity:

In case of damaged battery cases:
May cause long lasting harmful effects to aquatic life.

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.

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

Copper: DSL: listed
Cobalt lithium dioxide: DSL: listed
Graphite: DSL: listed
Carbon: DSL: listed
Ethylene carbonate: DSL: listed
Dimethyl carbonate: DSL: listed
Diethyl carbonate: DSL: listed
Ethyl acetate: DSL: listed
Lithium hexafluorophosphate: NDSL: listed

Further regulations, limitations and legal requirements

No data available

16 Other information

Revision date: 1/1/2026
Date of first version: 20/12/2016
Reason of change: Changes in section 14: IATA-DGR 2026

Abbreviations and acronyms:

Acute Toxicity: Acute toxicity
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
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
NDSL: Non-Domestic Substances List
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
Skin Irritation: Skin irritation
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.