

# Lihtium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
Issue date: 15/03/2024 Version: 1.0  
SDS No: 10736-0088

### SECTION 1: Product identifier

#### 1.1. GHS Product identifier

Product form : Article  
Product name : Lihtium ion rechargeable battery cell

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

No additional information available

#### 1.4. Details of manufacturer or importer

##### Supplier

Stryker South Pacific  
8 Herbert St  
St. Leonards, NSW, 2065  
Australia  
T +61 2 9467 1000  
E-mail address of competent person responsible for the SDS: sds@gbk-ingelheim.de

#### 1.5. Emergency phone number

Emergency number : 1300 366 961

### SECTION 2: Hazard identification

#### 2.1. Classification of the hazardous chemical

##### Classification according to the model Work Health and Safety Regulations (WHS Regulations)

Not classified

#### 2.2. GHS Label elements, including precautionary statements

No labelling applicable

#### 2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : In case of electrolyte leakage: According to concentration, aqueous solution causes irritations or burns of eyes, skin and mucous membranes. In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

### SECTION 3: Composition and information on ingredients

Chemical characterization :

Name	CAS-No.	%	Classification according to the model Work Health and Safety Regulations (WHS Regulations)
Carbon	7440-44-0	≥ 10 – < 35	Not classified
copper	7440-50-8	≥ 1 – < 20	Not classified
Aluminium	7429-90-5	≥ 1 – < 15	Not classified

# Lihtium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
SDS No: 10736-0088

Name	CAS-No.	%	Classification according to the model Work Health and Safety Regulations (WHS Regulations)
Specific concentration limits:			

## SECTION 4: First aid measures

### 4.1. Description of necessary first-aid measures

First-aid measures general	: The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing. Undamaged, closed cells do not represent a danger to the health.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell.

### 4.2. Symptoms caused by exposure

Symptoms/effects	: In case of electrolyte leakage: According to concentration, aqueous solution causes irritations or burns of eyes, skin and mucous membranes.
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### 4.3. Medical attention and special treatment

Treatment	: Treat symptomatically.
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## SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Cold water and dry powder in large amount are applicable. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Do not use a heavy water stream. Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Specific hazards arising from the chemical

Fire hazard	: If possible, remove cell(s) from fire fighting area. If heated above 125°C, cell(s) can explode/vent. Cell is not flammable but internal organic material will burn if the cell is incinerated.
General measures	: Wear personal protective equipment. Avoid contact with skin and eyes.
Hazardous decomposition products in case of fire	: Carbon monoxide. Carbon dioxide.

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

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Hazchem Code	: 2Y

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Wear personal protective equipment. Avoid contact with skin and eyes.
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# Lihtium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
SDS No: 10736-0088

### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area.

## 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

## 6.3. Methods and materials for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Avoid short circuiting the cell. Avoid mechanical damage of the cell. Do not open or disassemble.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in original container. Store in a well-ventilated place. Keep cool. Store in a well-ventilated place. Keep cool.

Storage temperature : < 40 °C

## SECTION 8: Exposure controls and personal protection

### 8.1. Control parameters - exposure standards

Aluminium (7429-90-5)	
Australia - Occupational Exposure Limits	
Local name	Aluminium
OES TWA	10 mg/m <sup>3</sup> metal dust 5 mg/m <sup>3</sup> welding fumes (as Al) 2 mg/m <sup>3</sup> alkyls (NOC) (as Al) 5 mg/m <sup>3</sup> pyro powders (as Al) 2 mg/m <sup>3</sup> soluble salts (as Al)
Regulatory reference	Workplace exposure standards for airborne contaminants (2022)
Carbon (7440-44-0)	
Australia - Occupational Exposure Limits	
OES TWA	4 mg/m <sup>3</sup>
Remark (AU)	(respirable dust)
copper (7440-50-8)	
Australia - Occupational Exposure Limits	
Local name	Copper
OES TWA	0.2 mg/m <sup>3</sup> fume 1 mg/m <sup>3</sup> dusts & mists (as Cu)

# Lihtium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
SDS No: 10736-0088

### copper (7440-50-8)

Regulatory reference

Workplace exposure standards for airborne contaminants (2022)

### 8.2. Biological Monitoring

No additional information available

### 8.3. Engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

### 8.4. Individual protection measures, such as personal protective equipment (PPE)

Hand protection : In case of electrolyte leakage: natural rubber gloves  
Eye protection : In case of electrolyte leakage: Protective goggles (EN 166). Safety glasses  
Skin and body protection : Wear suitable protective clothing  
Respiratory protection : In case of electrolyte leakage: Wear respiratory protection  
Environmental exposure controls : Avoid release to the environment.  
Other information : In case of electrolyte leakage: Do not breathe gas/fumes, Avoid contact with skin, eyes and clothing, Eliminate ignition sources, Wear personal protective equipment.

## SECTION 9: Physical and chemical properties

Physical state : Solid  
Appearance : No data available  
Colour : Metallic Black  
Odour : Odourless  
Odour threshold : No data available  
pH : No data available  
pH solution : No data available  
Relative evaporation rate (butylacetate=1) : No data available  
Melting point / Freezing point : Freezing point: Not applicable  
Boiling point : No data available  
Flash point : No data available  
Auto-ignition temperature : No data available  
Flammability : No data available  
Vapour pressure : No data available  
Relative density : No data available  
Density : No data available  
Solubility : No data available  
Log Pow : No data available  
Viscosity, kinematic : Not applicable  
Explosive properties : No data available  
Explosive limits : Not applicable  
Minimum ignition energy : No data available  
Fat solubility : No data available

## SECTION 10: Stability and reactivity

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : Electrolyte and electrodes may react with water or moisture.  
Conditions to avoid : Do not puncture, crush or incinerate. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. High temperature.  
Incompatible materials : No additional information available  
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

# Lihtium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
SDS No: 10736-0088

### SECTION 11: Toxicological information

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)  
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)  
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

#### Carbon (7440-44-0)

LD50 oral rat	> 10000 mg/kg
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Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)  
Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)  
Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)  
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)  
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)  
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)  
STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)  
STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)  
Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)  
Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met

### SECTION 12: Ecological information

#### 12.1. Ecotoxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.  
Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)  
Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)  
Other information : Avoid release to the environment.

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Ozone : Not classified (Based on available data, the classification criteria are not met)  
Other adverse effects : No additional information available

### SECTION 13: Disposal considerations

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

### SECTION 14: Transport information

In accordance with ADG / IMDG / IATA

ADG	IMDG	IATA
<b>14.1. UN number</b>		
3480	3480	3480

# Lithium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
SDS No: 10736-0088

ADG	IMDG	IATA
<b>14.2. UN Proper Shipping Name</b>		
LITHIUM ION BATTERIES	LITHIUM ION BATTERIES	Lithium ion batteries
<b>14.3. Transport hazard class(es)</b>		
9	9	9
		
<b>14.4. Packing group</b>		
Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>		
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No

### 14.6. Special precautions for user

Specific storage requirement : No data available  
Shock sensitivity : No data available

### 14.7. Additional information

Other information : No supplementary information available

#### Transport by road and rail

UN-No. (ADG) : 3480  
Special provision (ADG) : 188, 230, 310, 348, 376, 377, 384, 387  
Limited quantities (ADG) : 0  
Excepted quantities (ADG) : E0  
Packing instructions (ADG) : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906

#### Transport by sea

UN-No. (IMDG) : 3480  
Special provisions (IMDG) : 188, 230, 310, 348, 376, 377, 384, 387  
Limited quantities (IMDG) : 0  
Excepted quantities (IMDG) : E0  
Packing instructions (IMDG) : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906  
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE  
EmS-No. (Spillage) : S-I - SPILLAGE SCHEDULE India - FLAMMABLE SOLIDS (REPACKING POSSIBLE)  
Stowage category (IMDG) : A  
Stowage and handling (IMDG) : SW19  
MFIAG-No : 147

#### Air transport

UN-No. (IATA) : 3480  
PCA Excepted quantities (IATA) : E0  
PCA Limited quantities (IATA) : Forbidden  
PCA limited quantity max net quantity (IATA) : Forbidden  
PCA packing instructions (IATA) : Forbidden  
PCA max net quantity (IATA) : Forbidden  
CAO packing instructions (IATA) : See 965  
CAO max net quantity (IATA) : See 965  
Special provisions (IATA) : A88, A99, A154, A164, A183, A201, A213, A331, A334, A802  
ERG code (IATA) : 12FZ

### 14.8. Hazchem or Emergency Action Code

Hazchem Code : 2Y

# Lihtium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
SDS No: 10736-0088

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations specific for the product in question

No additional information available

#### 15.2. International agreements

No additional information available

### SECTION 16: Other information

Other information

: Note: This product is an "article" and is not an object that is required to issue Safety Data Sheets (SDS) by regulations concerning chemical substances. This SDS voluntarily offers helpful information for your safe handling and environmental care. Depending on the use case further UN numbers may be considered: UN 3171 BATTERY POWERED VEHICLE, UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT. The application of this UN numbers and compliance with the associated transport regulations is in the responsibility of the sender. Data of sections 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge. The delivery specifications are contained in the corresponding product sheet. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

Abbreviations and acronyms:	
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds

# Lihtium ion rechargeable battery cell

## Safety Data Sheet

according to the WHS Regulations  
SDS No: 10736-0088

Abbreviations and acronyms:	
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
ED	Endocrine disrupting properties
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
vPvB	Very Persistent and Very Bioaccumulative
DOT	Department of Transport
TDG	Transportation of Dangerous Goods
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
GHS	Globally Harmonized System of Classification, Labelling and Packaging of Chemicals
IBC-Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
MARPOL 73/78	MARPOL 73/78: International Convention for the Prevention of Pollution From Ships
ADG	Transport of Australian Dangerous Goods

Classification	
Not classified	

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should therefore not be construed as guaranteeing any specific property of the product.