SAFETY DATA SHEET

1. Identification

Product identifier
Lithium-ion and Lithium-ion Polymer Batteries (Li-ion Batteries)

Other means of identification
None.

Recommended use of the chemical and restrictions on use

Recommended use
Lithium ion battery.

Restrictions on use
None known.

Details of manufacturer or importer

Company name
Motorola Solutions Australia Pty Ltd

Address
10 Wesley Court
East Burwood VIC 3151
Australia

General information
+61 3 9847 7500

Emergency phone number

CHEMTREC (Australia): +61 2 9037 2994
CHEMTREC (International): +1-703-741-5500

Customer number
204471

2. Hazard(s) identification

Classification of the hazardous chemical

Physical hazards
Not classified.

Health hazards
Not classified.

Environmental hazards
Not classified.

Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

Label elements, including precautionary statements

Hazard symbol(s)
None.

Signal word
None.

Hazard statement(s)
The product does not meet the criteria for classification.

Precautionary statement(s)

Prevention
Handle with care. For safe handling, see Section 7.

Response
See Sections 4, 6 and 8 for response information.

Storage
Store as indicated in Section 7.

Disposal
Dispose of waste and residues in accordance with local authority requirements.

Other hazards which do not result in classification
In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery.

Supplemental information
None.

3. Composition/information on ingredients

Mixture

<table>
<thead>
<tr>
<th>Identity of chemical ingredients</th>
<th>CAS number and other unique identifiers</th>
<th>Concentration of ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive electrode (One of the following: Lithiated cobalt oxides, Lithiated manganese oxides, Proprietary lithiated nickel-manganese-cobalt oxides)</td>
<td>12190-79-3, 12057-17-9, NA</td>
<td>20-40</td>
</tr>
<tr>
<td>Negative electrode (Graphite)</td>
<td>7782-42-5</td>
<td>10-20</td>
</tr>
<tr>
<td>Binders (Polyvinylidene difluoride and/or polytetrafluoroethylene)</td>
<td>24937-79-9, 9002-84-0</td>
<td>0-3</td>
</tr>
</tbody>
</table>
Electrolyte salt (Lithium salt: one or more of lithium hexafluorophosphate and lithium tetrafluoroborate) 21324-40-3, 14283-07-9 1-5

Electrolyte solvent (Organic solvents including one or more of the following: Ethylene carbonate, Diethyl carbonate, Dimethyl carbonate, Ethyl methyl carbonate, and Propylene carbonate.) 96-49-1, 105-58-8, 521-36-9, 623-53-0, 108-32-7 5-20

Other components (Copper) 7440-50-8 5-10

Other components (Aluminum) 7429-90-5 5-40

Other components (Nickel) 7440-02-0 0-5

Other components (Polyethylene and/or polypropylene) 9002-88-4, 9003-07-0 1-3

All concentrations are in percent by weight unless otherwise indicated.

Ingredients shown are major constituents representative of various compositions for lithium ion cells.

Exposure to hazardous ingredients is not anticipated under normal conditions of use. For further information please refer to Section 8.

4. First-aid measures

Description of necessary first aid measures

Exposure to contents of an open or damaged battery: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control centre immediately.

**Inhalation**

Exposure to contents of an open or damaged battery: Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Call a physician or poison control centre immediately. Chemical burns must be treated by a physician.

**Skin contact**

Exposure to contents of an open or damaged battery: Immediately flush eyes with plenty of water for at least 15 minutes. Provide eyewash station. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately.

**Eye contact**

Exposure to contents of an open or damaged battery: Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn’t get into the lungs.

**Ingestion**

Use personal protective equipment sufficient to prevent direct skin or eye contact or inhalation of this product. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Personal protection for first-aid responders

**Inhalation**

Use personal protective equipment sufficient to prevent direct skin or eye contact or inhalation of this product. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Skin contact**

Use personal protective equipment sufficient to prevent direct skin or eye contact or inhalation of this product. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Eye contact**

Use personal protective equipment sufficient to prevent direct skin or eye contact or inhalation of this product. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Ingestion**

Use personal protective equipment sufficient to prevent direct skin or eye contact or inhalation of this product. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Medical attention and special treatment

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Suitable extinguishing media

Leak from a damaged or opened battery: Do not use water unless flooding amounts are available.

Unsuitable extinguishing media

In the event of fire and/or explosion do not breathe fumes. The evolved combustion products may contain carbon oxides, metal oxides, hydrogen fluoride, and should be considered hazardous.

Specific hazards arising from the chemical

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Special protective equipment and precautions for fire fighters

Fight fire from protected location or safe distance. Keep upwind. Move containers from fire area if you can do so without risk. Avoid discharge into drains, water courses or onto the ground.

Hazchem Code

4W

General fire hazards

Under normal use, the battery does not exhibit flammable properties. In the event that the battery is abused and disassembly of the battery occurs resulting in exposure of internal components, the exposed solution, may be flammable and/or corrosive. Exposure to excessive heat may lead to venting or rupture of the sealed battery, exposing the internal components which may be corrosive and/or flammable. Vented gas would be flammable when in sufficient concentration.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.
6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

None under normal use conditions. In the event of damage resulting in a leak or exposed materials, avoid contact with contents of an open or damaged cell or battery. Wear protective clothing as described in section 8 of this safety data sheet.

For emergency responders

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions

Avoid allowing material from exposed battery to contaminate soil, sanitary sewers, or waterways.

Methods and materials for containment and cleaning up

Leak from a damaged or opened battery: Contain spillage with sand or earth. Collect with absorbent, non-combustible material into suitable containers. For waste disposal, see Section 13 of the SDS.

Other issues relating to spills and releases

Clean up in accordance with all applicable regulations.

7. Handling and storage

Precautions for safe handling

Do not open, disassemble, crush or burn battery. Protect against physical damage. Do not expose battery to extreme heat or fire. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.

Precautions for safe handling

Keep out of reach of children. Prevent short circuits. Store in original packaging. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Store away from incompatible materials (See Section 10).

8. Exposure controls and personal protection

Control parameters

Follow standard monitoring procedures.

Occupational exposure limits

Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium (CAS 7429-90-5)</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>Fume.</td>
</tr>
<tr>
<td>Copper (CAS 7440-50-8)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>3 mg/m3</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>Lithium manganese oxide (CAS 12057-17-9)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust.</td>
</tr>
<tr>
<td>Nickel (CAS 7440-02-0)</td>
<td>TWA</td>
<td>0.1 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium (CAS 7429-90-5)</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>Pyrophoric powder.</td>
</tr>
<tr>
<td>Copper (CAS 7440-50-8)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>3 mg/m3</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>Lithium manganese oxide (CAS 12057-17-9)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust.</td>
</tr>
<tr>
<td>Nickel (CAS 7440-02-0)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium (CAS 7429-90-5)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Cobalt lithium dioxide (CAS 12190-79-3)</td>
<td>TWA</td>
<td>0.02 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Copper (CAS 7440-50-8)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>2 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>
### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium manganese oxide (CAS 12057-17-9)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Lithium tetrafluoroborate, anhydrous (CAS 14283-07-9)</td>
<td>STEL</td>
<td>0.02 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Nickel (CAS 7440-02-0)</td>
<td>TWA</td>
<td>6 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1.5 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>

### UK. EH40 Workplace Exposure Limits (WELs)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium (CAS 7429-90-5)</td>
<td>TWA</td>
<td>4 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Inhalable dust.</td>
</tr>
<tr>
<td>Cobalt lithium dioxide (CAS 12190-79-3)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>Copper (CAS 7440-50-8)</td>
<td>STEL</td>
<td>2 mg/m³</td>
<td>Inhalable dusts and mists.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Inhalable dusts and mists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>4 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Inhalable dust.</td>
</tr>
<tr>
<td>Lithium manganese oxide (CAS 12057-17-9)</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>Nickel (CAS 7440-02-0)</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>Polyethylene (CAS 9002-88-4)</td>
<td>TWA</td>
<td>4 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Inhalable dust.</td>
</tr>
</tbody>
</table>

### Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium (CAS 7429-90-5)</td>
<td>TWA</td>
<td>4 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1.5 mg/m³</td>
<td>Inhalable dust.</td>
</tr>
<tr>
<td>Copper (CAS 7440-50-8)</td>
<td>TWA</td>
<td>0.01 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Graphite (CAS 7782-42-5)</td>
<td>TWA</td>
<td>0.2 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Lithium manganese oxide (CAS 12057-17-9)</td>
<td>TWA</td>
<td>0.02 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Nickel (CAS 7440-02-0)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Polyethylene (CAS 9002-88-4)</td>
<td>TWA</td>
<td>0.3 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
<td>Inhalable dust.</td>
</tr>
</tbody>
</table>

### Biological limit values

**Germany. TRGS 903, BAT List (Biological Limit Values)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium tetrafluoroborate, anhydrous (CAS 14283-07-9)</td>
<td>7 mg/g</td>
<td>Fluorid</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>4 mg/g</td>
<td>Fluorid</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.
ACGIH Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt lithium dioxide (CAS 12190-79-3)</td>
<td>15 µg/l</td>
<td>Cobalt</td>
<td>Urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

Exposure guidelines
Airborne exposures to hazardous substances are not expected when product is used for its intended purpose.

Appropriate engineering controls
General ventilation normally adequate. Leak from a damaged or opened battery: Provide adequate ventilation if fumes or vapours are generated.

Individual protection measures, for example personal protective equipment (PPE)
Eye/face protection
None under normal conditions. Leak from a damaged or opened battery: Wear approved safety glasses or goggles.

Skin protection
Hand protection
None under normal conditions. Leak from a damaged or opened battery: Wear protective gloves.

Other
Respiratory protection
None under normal conditions. Leak from a damaged or opened battery: Wear suitable respiratory protection.

Hygiene measures
Do not store food, drink and tobacco near the product. Practice good housekeeping.

9. Physical and chemical properties

Appearance
Physical state
Solid.
Form
Battery.
Colour
Not available.

Odour
Not available.
Odour threshold
Not available.
pH
Not available.

Melting point/freezing point
Not available.
Initial boiling point and boiling range
Not available.
Flash point
Not available.

Evaporation rate
Not available.

Flammability (solid, gas)
Battery can burst in a fire. Organic electrolyte leaking from a damaged battery is flammable.

Upper/lower flammability or explosive limits
Flammability limit - lower (%)
Not available.
Flammability limit - upper (%)
Not available.

Vapour pressure
Not available.
Vapour density
Not available.
Relative density
Not available.

Solubility(ies)
Solubility (water)
Not available.

Partition coefficient (n-octanol/water)
Not available.

Auto-ignition temperature
Not available.
Decomposition temperature
Not available.
Viscosity
Not available.

Other physical and chemical parameters
Explosive properties
Not explosive.
Oxidising properties
Not oxidising.
10. Stability and reactivity

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Product is stable under normal conditions.

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

Conditions to avoid
Contact with incompatible materials. Elevated temperatures. Shocks and physical damage. Do not open, disassemble, crush or burn battery. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.

Incompatible materials
Do not immerse in seawater or other high conductivity liquids. Organic electrolyte - reacts with water to produce hydrogen fluoride.

Hazardous decomposition products
Thermal decomposition or combustion may produce: carbon oxides, metal oxides, hydrogen fluoride

11. Toxicological information

Information on possible routes of exposure

Inhalation
Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin contact
Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: Causes severe skin burns. May cause an allergic skin reaction.

Eye contact
Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: Causes serious eye damage.

Ingestion
Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: Causes digestive tract burns. Harmful if swallowed.

Symptoms related to exposure
Exposure not expected under normal use conditions. In the event that cell or battery is damaged, open, or leaking - inhalation, skin contact, and/or eye contact may be considered for routes of exposure. Signs and symptoms may include: Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause allergic skin reaction. Difficulty in breathing. Coughing. Prolonged exposure may cause chronic effects.

Acute toxicity
Expected to be a low hazard for usual industrial or commercial handling by trained personnel. Exposure to contents of an open or damaged battery: Harmful if swallowed.

Components | Species | Test results
---|---|---
Copper (CAS 7440-50-8) | Acute | Inhilation LC50 Rat > 2.77 mg/l, 4 hours
 | Acute | Oral LD50 Rat 481 mg/kg
Polyethylene (CAS 9002-88-4) | Acute | Oral LD50 Rat > 2000 mg/kg
Propylene carbonate (CAS 108-32-7) | Acute | Dermal LD50 Rabbit > 2000 mg/kg
 | Acute | Inhilation LC50 Rat > 5 mg/l
 | Acute | Oral LD50 Rat > 5000 mg/kg
Skin corrosion/irritation
Exposure to contents of an open or damaged battery: Causes severe skin burns.

Serious eye damage/irritation
Exposure to contents of an open or damaged battery: Causes serious eye damage.

Respiratory or skin sensitisation
Respiratory sensitisation No data available.
Exposure to contents of an open or damaged battery: May cause an allergic skin reaction.

Skin sensitisation

No data available.

Germ cell mutagenicity

ACGIH Carcinogens

- Aluminium (CAS 7429-90-5) A4 Not classifiable as a human carcinogen.
- Cobalt lithium dioxide (CAS 12190-79-3) A3 Confirmed animal carcinogen with unknown relevance to humans.
- Lithium manganese oxide (CAS 12057-17-9) A4 Not classifiable as a human carcinogen.
- Lithium tetrafluoroborate, anhydrous (CAS 14283-07-9) A4 Not classifiable as a human carcinogen.
- Nickel (CAS 7440-02-0) A5 Not suspected as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

- Cobalt lithium dioxide (CAS 12190-79-3) 2B Possibly carcinogenic to humans.
- Nickel (CAS 7440-02-0) 2B Possibly carcinogenic to humans.
- Polyethylene (CAS 9002-88-4) 3 Not classifiable as to carcinogenicity to humans.
- Polypropylene (CAS 9003-07-0) 3 Not classifiable as to carcinogenicity to humans.
- Polytetrafluoroethylene (CAS 9002-84-0) 3 Not classifiable as to carcinogenicity to humans.

Exposure to contents of an open or damaged battery: May cause cancer.

Carcinogenicity

No data available.

Reproductive toxicity

Specific target organ toxicity - single exposure

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available.

Chronic effects

Exposure to contents of an open or damaged battery: Prolonged inhalation may be harmful.

Prolonged exposure may cause chronic effects.

Other information

Exposure to hazardous ingredients is not anticipated under normal conditions of use.

12. Ecological information

Ecotoxicity

Based on available data, the classification criteria are not met for hazardous to the aquatic environment. However in case of accidental release of large amounts a hazardous effect cannot be excluded.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (CAS 7440-02-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic Crustacea</td>
<td>EC50</td>
<td>1 mg/l, 48 hours</td>
</tr>
<tr>
<td></td>
<td>Water flea (Daphnia magna)</td>
<td>1 mg/l, 48 Hours</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>6.17 - 12.4 mg/l, 72 hours</td>
</tr>
<tr>
<td></td>
<td>Calanoid copepod (Pseudodiaptomus coronatus)</td>
<td></td>
</tr>
</tbody>
</table>

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

No data available.

Partition coefficient

| n-octanol / water (log Kow) | Diethyl carbonate (CAS 105-58-8) | 1.21 |

Mobility in soil

No data available for this product.

Other adverse effects

None known.

13. Disposal considerations

Disposal methods

Recycle the batteries, as the primary disposal method. Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Residual waste

Dispose of in accordance with local regulations. This product and its container must be disposed of in a safe manner.

Contaminated packaging

If contaminated by a leaking or damaged battery, empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

ADG

UN number 3480

UN proper shipping name LITHIUM ION BATTERIES
Transport hazard class(es)
- Class 9
- Subsidiary risk -
- Packing group -
- Environmental hazards No

Hazchem Code 4W

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID
- UN number 3480
- UN proper shipping name LITHIUM ION BATTERIES
- Transport hazard class(es) Class 9
- Subsidiary risk -
- Packing group -
- Environmental hazards No

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA
- UN number 3480
- UN proper shipping name Lithium ion batteries
- Transport hazard class(es) Class 9
- Subsidiary risk -
- Packing group -
- Environmental hazards No
- ERG Code 9FZ

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG
- UN number 3480
- UN proper shipping name LITHIUM ION BATTERIES
- Transport hazard class(es) Class 9
- Subsidiary risk -
- Packing group -
- Environmental hazards No
- Marine pollutant -
- EmS F-A, S-I

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

May also be transported as UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT.

General information
The dangerous goods regulations require that each cell and battery design be subject to tests contained in Part III, subsection 38.3 of the UN Manual of Tests and Criteria prior to being offered for transport. Batteries containing these cells should be transported as Class 9 hazardous materials, except for those battery types declared to be exempt.

15. Regulatory information

Safety, health and environmental regulations
No poison schedule number allocated. This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals (23/12/2011).

Australia National Pollutant Inventory (NPI): Threshold quantity
- Cobalt lithium dioxide (CAS 12190-79-3) 10 TONNES/YR Threshold Category: 1
- Copper (CAS 7440-50-8) 10 TONNES/YR Threshold Category: 1
- Lithium manganese oxide (CAS 12057-17-9) 10 TONNES/YR Threshold Category: 1
- Lithium tetrafluoroborate, anhydrous (CAS 14283-07-9) 10 TONNES/YR Threshold Category: 1
- Nickel (CAS 7440-02-0) 10 TONNES/YR Threshold Category: 1

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High Volume Industrial Chemicals (HVIC)

- Aluminium (CAS 7429-90-5) 100000 - 999999 TONNES See the regulation for additional information.
- Copper (CAS 7440-50-8) 10000 - 99999 TONNES See the regulation for additional information.
- Graphite (CAS 7782-42-5) 1000 - 9999 TONNES See the regulation for additional information.
- Nickel (CAS 7440-02-0) 1000 - 9999 TONNES See the regulation for additional information.
- Polyethylene (CAS 9002-88-4) 1000 - 9999 TONNES See the regulation for additional information.

Importation of Ozone Deleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)
Not listed.

National Pollutant Inventory (NPI) substance reporting list

- Aluminium (CAS 7429-90-5) 2000 TONNES/YR Threshold Category: 2B
  400 TONNES/YR Threshold Category: 2A
- Copper (CAS 7440-50-8) 2000 TONNES/YR Threshold Category: 2B
- Graphite (CAS 7782-42-5) 2000 TONNES/YR Threshold Category: 2B
  400 TONNES/YR Threshold Category: 2A
- Nickel (CAS 7440-02-0) 2000 TONNES/YR Threshold Category: 2B
- Polyethylene (CAS 9002-88-4) 2000 TONNES/YR Threshold Category: 2B
  400 TONNES/YR Threshold Category: 2A

Prohibited Carcinogenic Substances
Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)
Not listed.

Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)
Not listed.

Restricted Carcinogenic Substances
Not regulated.

International regulations

Stockholm Convention
Not applicable.

Rotterdam Convention
Not applicable.

Kyoto protocol
Not applicable.

Montreal Protocol
Not applicable.

Basel Convention
Lithium tetrafluoroborate, anhydrous (CAS 14283-07-9)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
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</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
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<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
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<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
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</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
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<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
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<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
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Lithium-ion and Lithium-ion Polymer Batteries (Li-ion Batteries)  
SDS Australia
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<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
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</thead>
<tbody>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
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*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

<table>
<thead>
<tr>
<th>Issue date</th>
<th>19-January-2017</th>
</tr>
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<tbody>
<tr>
<td>Revision date</td>
<td>-</td>
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**Disclaimer**

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