

# SAFETY DATA SHEET

## SECTION 1 – IDENTIFICATION: PRODUCT IDENTIFIER/CHEMICAL IDENTITY

**1.1 PRODUCT IDENTIFIER:** Stihl AP 115, AP 160, AP180 Battery Pack

**1.2 PRODUCT CODE:** 4850 400 6516, 4850 400 6502, 4850 400 6510

**1.3 RELEVANT IDENTIFIED USES OF THE MIXTURE AND USES ADVISED AGAINST:**  
**RELEVANT IDENTIFIED USES:** Rechargeable Lithium ion battery for electric power tools.  
**RESTRICTIONS ON USE:** Use only with Stihl cordless power tools.

**1.4 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:**  
**SUPPLIER NAME:** Stihl Pty Ltd (ABN: 76 004 881 145),  
**ADDRESS:** 5 Kingston Park Court, Knoxfield, Victoria, Australia, 3180  
9 Bishop Browne Place, East Tamaki, Auckland, New Zealand, 1730.  
**E-MAIL:** [csc@stihl.com.au](mailto:csc@stihl.com.au); [info@stihl.co.nz](mailto:info@stihl.co.nz)  
**TELEPHONE NUMBER:** +61 3 9215 6666 (NZ: +64 9262 4000)  
**1.5 EMERGENCY TEL. NUMBER:** (Poisons Information Centre (Aust 131 126; NZ 0800 764 766))

## SECTION 2 – HAZARD(S) IDENTIFICATION

### 2.1 CLASSIFICATION OF THE HAZARDOUS CHEMICAL:

**NOHSC 1008:** The product is a Lithium ion battery and is therefore classified as an article and is not hazardous when used according to the recommendations of the manufacturer. The hazard is associated with the contents of the battery. Under recommended use conditions, the electrode materials and liquid electrolyte are non-reactive provided that the battery integrity remains and the seals remain intact. The potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, electrically or physically abused/damaged. If the battery is compromised and starts to leak, based upon the battery ingredients, the contents is classified as Hazardous according to the criteria of the National Occupational Health and Safety Commission (SafeWork Australia).

The following is in respect to the Battery liquid electrolyte if it leaks:

**C - Corrosive**  
**Risk Phrases:**

R34 - Causes burns.

**Safety Phrases:**

S1 - Keep locked up.  
S2 - Keep out of reach of children.  
S23 - Do not breathe vapour.  
S24/25 - Avoid contact with skin and eyes.  
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S27/28 - After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.  
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.  
S56 - Dispose of this material and its container at hazardous waste or special waste collection point.  
S62 - If swallowed, DO NOT induce vomiting: seek medical advice immediately and show this container or label.  
S64 - If swallowed, rinse mouth with water, (only if the person is conscious).

# SAFETY DATA SHEET

## SECTION 2 – HAZARD(S) IDENTIFICATION Continued

### GHS CLASSIFICATION HAZARD

**CLASS & CATEGORY:** As per above, the product is an article and the contents from a leaking battery have been assessed under the Model Work Health and Safety Regulations with the following Classification:

Corrosive to Metals Category 1 (HSNO 8.1A).  
Skin Corrosion/Irritation Category 1B (HSNO 8.3A).

**2.2 LABEL ELEMENTS INCLUDING PRECAUTIONARY STATEMENTS:** (Not applicable to an intact Battery. The following information is in respect to any leaking electrolyte from a compromised battery.)

**SIGNAL WORD:** Danger.

**PICTOGRAMS:** Corrosion.

**HAZARD STATEMENTS:** H290 - May be corrosive to metals.  
H314 - Causes severe skin burns and eye damage.

### PRECAUTIONARY STATEMENTS:

**PREVENTION:** P102 - Keep out of reach of children.  
P103 - Read label before use.  
P234 - Keep only in original container.  
P260 - Do not breathe vapour or spray.  
P264 - Wash hands thoroughly after handling.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

**RESPONSE:** P301+P330+P331 - IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.  
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER or doctor/physician.  
P363 - Wash contaminated clothing before reuse.  
P390 - Absorb spillage/leaking electrolyte to prevent material damage.

**STORAGE:** P405 - Store locked up.  
P406 - Store any spilled/leaking electrolyte material in a corrosive resistant container with a resistant inner liner.

**DISPOSAL:** P501 - Dispose of contents/container in accordance with local regulations.

**2.3 OTHER HAZARDS:** Lithium-Ion Batteries have a gas tight seal and are safe as long as they are handled in accordance with the manufacturer's specifications. When re-charging batteries, always use chargers which are suitable for the battery type. Do not short-circuit batteries. Do not cause mechanical damage to batteries, by processes such as puncturing, deforming, disassembling, etc. Do not heat them above the permitted temperature (120°C) or burn them. Keep batteries away from small children. Never assume a battery is fully discharged. Batteries can contain a considerable amount of energy, which may be a source of high electric current and lead to severe electrical shock in the event of a short-circuit.

# SAFETY DATA SHEET

## SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBER	Concentration % W/W	Risk Phrases*	GHS Classification
Cathode material:				
Lithium, Nickel and Cobalt/Lithium Manganese Oxides (active material)				
Polyvinylidene fluoride (binder)				
Graphite (conductive material)	-	20% - 35%	Not Applic	Not Applic
Anode material:				
Graphite, Carbon (active material)				
Polyvinylidene fluoride (binder)	-	5% - 30%	Not Applic	Not Applic
Electrolyte:				
Mixture of organic solvent and lithium salt	-	9% - 20%	R34	Skin Corr 1B - H314

The product does not contain metallic lithium or lithium alloys.  
 Not Applic = Not Applicable (Data as supplied by the manufacturer)  
 \* Please see Section 15 of this SDS for full text of the Risk Phrases

## SECTION 4 – FIRST AID MEASURES

### 4.1 DESCRIPTION OF NECESSARY FIRST AID MEASURES:

The hazardous components of this battery are contained within a sealed unit. The following measures are only applicable if exposure has occurred to components when a battery leaks, is exposed to high temperatures or is mechanically, electrically or physically abused/damaged. The hazardous contents are caustic alkaline electrolytes (Lithium salts in organic solvents) contained in cells with lithium oxide, nickel oxide and cobalt/lithium manganese oxide cathode, graphite and carbon anode and Polyvinylidenfluoride binder.

**INGESTION:** If electrolyte has been ingested, rinse mouth out with water. If swallowed, Do NOT induce vomiting. Seek medical advice immediately as urgent hospital treatment is likely to be required. For advice, contact a Poisons Information Centre (Phone Australia 131 126; New Zealand 0800 764 766) or a doctor at once.

**EYE:** If electrolyte comes into contact with eyes, hold eyelids apart and flush the eye immediately with large amounts of running water. Check for contact lenses after flushing for several minutes. If there are contact lenses present, these should be removed under supervision and then flushing should continue. Continue flushing for at least 15 minutes or until advised to stop by a Poisons Information Centre (Phone Australia 131 126; New Zealand 0800 764 766) or a doctor. After flushing, seek urgent medical assistance.

**SKIN CONTACT:** If skin or hair contact with the electrolyte has occurred remove any contaminated clothing and footwear, wash skin or hair thoroughly with soap and water. If irritation develops or persists, consult a Doctor.

**INHALATION:** If affected by electrolyte vapours, remove the patient from further exposure into fresh air, if safe to do so. If providing assistance, avoid exposure to yourself - only enter contaminated environments with adequate respiratory equipment. Once removed, lay patient down in a well-ventilated area and reassure them whilst waiting for medical assistance. If not breathing, provide artificial respiration and seek immediate medical assistance. PLEASE NOTE: As the electrolyte is corrosive, if the person has inhaled or ingested the product, do not use direct mouth-to-mouth resuscitation techniques. If unconscious, place in a recovery position and seek immediate medical assistance. If irritation develops or persists, consult a Doctor.

# SAFETY DATA SHEET

## SECTION 4 – FIRST AID MEASURES Continued

**PROTECTION FOR FIRST AIDERS:**

No person shall place themselves in a situation that is potentially hazardous to themselves. Due to the corrosive nature of the electrolyte liquid when leaking, never enter the area until you have assessed the environment for oxygen depletion and corrosive vapours. Do not enter corrosive vapour contaminated areas without a respirator or Self Contained Breathing Apparatus once you have assessed the atmosphere. Always ensure that you are wearing gloves when dealing with first aid procedures involving chemicals and/or blood.

**FIRST AID FACILITIES:**

Eye wash fountain and safety showers or at least a source of running water are required in the area where the product is used.

**4.2 MOST IMPORTANT SYMPTOMS & EFFECTS, BOTH ACUTE & DELAYED, CAUSED BY EXPOSURE:**

**ACUTE:**

The contents of the battery are rated as corrosive. Ingestion of the electrolyte could lead to severe gastrointestinal tract irritation with nausea, vomiting and potentially burns. Inhalation of vapours may lead to severe irritation of the mouth and upper respiratory tract with a burning sensation, pain, burns and inflammation in the nose and throat; there may also be coughing or difficulty breathing. Eye contact may lead to severe eye irritation or in worst case scenario irreversible damage and possible eye burns. Skin contact may lead to irritation and possible skin burns.

**CHRONIC:**

Skin contact may aggravate/exacerbate existing skin conditions, such as dermatitis. Chronic inhalation may lead to symptoms as for acute inhalation as mentioned above.

**4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NECESSARY:**

**ADVICE TO DOCTOR:**

Treat symptomatically if the person comes into contact with the corrosive electrolyte liquid contents of a damaged battery.

## SECTION 5 – FIRE FIGHTING MEASURES

**5.1 EXTINGUISHING MEDIA:**

**SUITABLE MEDIA:**

Use extinguishing media appropriate for surrounding fire. Use carbon dioxide, foam, dry chemical or water fog. If batteries are involved in a fire and the hazard situation is unclear, only extinguish with dry chemical extinguishers.

**UNSUITABLE MEDIA:**

Do not use water, carbon dioxide or foam extinguishers on ruptured batteries. Confining or smothering the fire is recommended as reaction of the materials with water may produce flammable and explosive hydrogen gas as well as corrosive hydrogen fluoride gas.

**5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:**

**COMBUSTION HAZARDS:**

Combustion and thermal degradation of the battery may produce hazardous fumes of lithium, cobalt and manganese, hydrofluoric acid, hydrogen and oxides of carbon as well as smoke and irritating vapours.

**5.3 ADVICE FOR FIREFIGHTERS:**

**FIRE:**

This product is not combustible, however electrolyte leakage or battery container rupture is possible under the conditions experienced in a fire. Keep fire exposed surfaces, etc. cool with water spray.

**HAZCHEM CODE:**

4W.

**EXPLOSION:**

Closed containers may explode, burst, rupture or vent when exposed to temperatures above 120°C.

**PROTECTIVE EQUIPMENT:**

In the event of a fire, wear full protective clothing and self-contained breathing equipment with full-face piece operated in the pressure demand or other positive pressure mode.

# SAFETY DATA SHEET

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

**PERSONAL PROTECTION:** For small spills where a battery is leaking, wear PVC gloves, glasses/goggles, boots and full-length clothing. Do not walk through the spill. During routine operation a respirator is not required. However, if mists or vapours are generated, an approved inorganic vapours and gases/acid gases/particulate respirator is required. For large battery spill scenarios, or in confined spaces, a full chemically resistant body-suit with self-contained breathing apparatus is required. NOTE: For anything other than an incident involving less than a couple of batteries only trained personnel should deal with leaking battery incidents.

**CONTROL MEASURES:** Ventilate area to dissipate the vapours. Never enter a spill area unless you know the vapours have dissipated to make the area safe. Stop the leak if safe to do so. Caution: The spilled product will be slippery. Avoid contact with the spilled material.

**EMERGENCY PROCEDURES:** In the event of a spill or accidental release, notify the relevant authorities in accordance with all applicable regulations.

### 6.2 ENVIRONMENTAL PRECAUTIONS:

**SPILL ADVICE:** Do not allow batteries or electrolyte to enter drains, surface water, sewers or watercourses - inform local authorities if this occurs.

### 6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

**CONTAINMENT:** Contain the spill and absorb with a proprietary absorbent material, DRY sand or earth or chalk powder ( $\text{CaCO}_3$ ). Caution: The spilled product will be slippery. For large battery spill scenarios prepare a bund/barrier/dyke ahead of the spill to confine the spill and allow later recovery. If there is the possibility of spills to enter drains, surface water, sewers or watercourses ensure bunding, or that drains are covered, to minimise the potential for this to occur.

**CLEANING PROCEDURES:** Having contained the spill, as mentioned above, collect all material quickly and place used absorbent and spent packaging in suitable plastic containers. Caution: The spilled product will be slippery. Follow local regulations for the disposal of waste. Personnel must wear the appropriate protection as mentioned in Section 6.1 during cleaning procedures. Wash contaminated area and objects with large volumes of detergent and water after spill has been cleared. Rinse the cleaned area with water.

## SECTION 7 – HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

### 7.1 PRECAUTIONS FOR SAFE HANDLING:

**SAFE HANDLING:** Do not open the battery, damage it or allow it to fall from a substantial height. Protect battery from short-circuiting as it may lead to an explosion. Protect the battery from rain and do not immerse in liquids as there is a danger of short-circuiting the unit. Protect the battery from fire and excessive heat. Do NOT incinerate the battery as there is a danger of explosion. Do NOT use or charge damaged, defective or deformed batteries. Use only with Stihl power tools and use only Stihl chargers to charge or discharge the battery. Only connect the battery to the tool when it is going to be used. Always remove the battery from the tool for transportation purposes. Never use the battery for any other purpose than for that which it has been designed.

### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

**SAFE STORAGE:** Store in a dry, well ventilated area away from direct sunlight, oxidising agents including strong acids and foodstuffs. The battery is suitable for use and storage in a relative humidity range of 45 to 85%. Nominated use and storage range is  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ . Optimum preservation of functionality occurs in the range of  $10^{\circ}\text{C}$  to  $20^{\circ}\text{C}$  at a 30% charge state.

# SAFETY DATA SHEET

## SECTION 8 – EXPOSURE CONTROLS & PERSONAL PROTECTION

### 8.1 EXPOSURE CONTROL MEASURES:

**EXPOSURE LIMIT VALUES:** Exposure standards are not applicable to the sealed article.

### 8.2 BIOLOGICAL

**MONITORING:** No data available.

**8.3 CONTROL BANDING:** No data available.

### 8.4 ENGINEERING CONTROLS:

**ENGINEERING CONTROLS:** Special ventilation is not required when using this product in normal use scenarios. Ventilation is required if there is leakage from the battery.

### 8.5 INDIVIDUAL PROTECTION MEASURES:

**EYE & FACE PROTECTION:** Eye protection is not required when handling the battery during normal use. Wear safety glasses/goggles if handling a leaking or ruptured battery. Use eye protection in accordance with AS 1336 and AS 1337.

**SKIN (HAND) PROTECTION:** Hand protection is not required when handling the battery during normal use. PVC gloves are recommended when dealing with a leaking or ruptured battery.

### SKIN (CLOTHING) PROTECTION:

Skin protection is not required when handling the battery during normal use. Wear long sleeved clothing to avoid skin contact if handling a leaking or ruptured battery. Soiled clothing should be washed with detergent prior to re-use.

**RESPIRATORY PROTECTION:** During routine operation a respirator is not required. However, if dealing with an electrolyte leakage and irritating vapours are generated, an approved half face inorganic vapours and gases/acid gases/particulate respirator is required. Use respirators in accordance with AS 1715 and AS 1716.

**THERMAL PROTECTION:** Not applicable.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 PHYSICAL AND CHEMICAL PROPERTIES:

**APPEARANCE:** Manufactured sealed unit.

**ODOUR:** Not applicable.

**ODOUR THRESHOLD:** Not applicable.

**pH @ 20°C:** Not applicable.

**MELTING/FREEZING POINT:** Not applicable.

**INITIAL BOILING POINT:** Not applicable.

**BOILING RANGE (°C):** Not applicable.

**FLASHPOINT (°C):** Not applicable.

**EVAPORATION RATE:** Not applicable.

**FLAMMABILITY LIMITS (%):** Not applicable.

**VAPOUR PRESSURE (kPa):** Not applicable.

**VAPOUR DENSITY:** Not applicable.

**DENSITY (g/mL @ 20°C):** Not applicable.

**SOLUBILITY IN WATER(g/L):** Not applicable.

**PARTITION COEFFICIENT:** Not applicable.

**AUTO-IGNITION TEMP (°C):** Not applicable.

**DECOMPOSITION TEMP (°C):** Not applicable.

**VISCOSITY (cSt @ 100°C):** Not applicable.

**VISCOSITY (cSt @ 40°C):** Not applicable.

**FLOW TIME @ 20°C:** Not applicable.

# SAFETY DATA SHEET

## SECTION 10 – STABILITY AND REACTIVITY

- 10.1 REACTIVITY:** The product does not pose any further reactivity hazards other than those listed in the following sub-sections.
- 10.2 CHEMICAL STABILITY:** Stable under recommended storage and handling conditions (see section 7).
- 10.3 POSSIBILITY OF HAZARDOUS REACTIONS:** Keep away from strong oxidising agents, such as strong acids. Reaction of the leaking electrolyte materials with water may produce flammable and explosive hydrogen gas as well as corrosive hydrogen fluoride gas. Hazardous polymerisation does not occur.
- 10.4 CONDITIONS TO AVOID:** Do not incinerate the battery or heat above 120°C. Above this temperature the battery is at risk of bursting. Do not, puncture, deform, mutilate, crush or disassemble the unit as it may lead to leakage of the hazardous electrolyte. Avoid short-circuiting of the unit as it may lead to an explosion. Avoid prolonged exposure to conditions of high humidity. When stored at temperatures above 50°C, the battery may age faster and lose its functionality.
- 10.5 INCOMPATIBLE MATERIALS:** For the closed unit there are no nominated incompatibilities.
- 10.6 HAZARDOUS DECOMPOSITION PRODUCTS:** Hazardous decomposition products are not expected to form during normal storage requirements. See Section 5.2 for Hazardous Combustion products.

## SECTION 11 – TOXICOLOGICAL INFORMATION

### 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

The hazardous components of the battery are contained within a sealed unit. Under recommended use conditions, the electrode materials and liquid electrolyte are non-reactive provided that the battery integrity remains and the seals remain intact. The potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, electrically or physically abused/damaged. The following toxicology data is in respect to if the person comes into contact with the electrolyte.

### 11.2 ACUTE TOXICITY:

- SWALLOWED:** The electrolyte contained within the battery is a corrosive liquid. Ingestion of this electrolyte would be harmful. Swallowing may result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract. During normal usage ingestion should not be a means of exposure.
- EYE:** The electrolyte contained within the battery is a corrosive liquid and it is expected that it would cause irreversible damage to the eyes. Contact may cause corneal burns. Effects may be slow to heal after eye contact. Correct handling procedures incorporating appropriate eye protection should minimise the risk of eye irritation.
- SKIN:** The electrolyte contained within the battery is a corrosive liquid and it is expected that it would cause skin burns or severe irritation to the skin if not washed off immediately. Correct handling procedures incorporating appropriate protective clothing and gloves should minimise the risk of skin irritation. People with pre-existing skin conditions, such as dermatitis, should take extreme care so as not to exacerbate the condition.
- INHALED:** Inhalation of vapours from a leaking battery is expected to cause severe irritation of the mouth and upper respiratory tract with a burning sensation, pain, burns and inflammation in the nose and throat; there may also be coughing or difficulty breathing.
- 11.3 SKIN CORROSION/IRRITATION:** The electrolyte contained within the battery is classified as a corrosive liquid and is expected to exhibit Dermal Corrosivity/Irritation.

# SAFETY DATA SHEET

## SECTION 11 – TOXICOLOGICAL INFORMATION Continued

### 11.4 SERIOUS EYE DAMAGE/ IRRITATION:

The electrolyte contained within the battery is classified as a corrosive liquid and is expected to exhibit Serious Damage/Corrosivity.

### 11.5 RESPIRATORY OR SKIN SENSITISATION:

The electrolyte contained within the battery is not expected to be a skin sensitiser according to OECD Test 406, based on the available data and the known hazards of the components. The electrolyte contained within the battery is not expected to be a respiratory tract sensitiser, based on the available data and the known hazards of the components.

### 11.6 GERM CELL MUTAGENICITY:

The electrolyte contained within the battery is not expected to be mutagenic according to tests such as OECD Tests 471, 475, 476, 478 and 479, based on the available data and the known hazards of the components.

### 11.7 CARCINOGENICITY:

The electrolyte contained within the battery is not expected to be a carcinogen. The cathode contains Cobalt and Nickel components. These components are classified as IARC 2B – Possibly carcinogenic to humans, however they do not pose a threat when contained in the battery sealed unit.

### 11.8 REPRODUCTIVE TOXICITY:

The electrolyte contained within the battery is not expected to be a reproductive hazard according to tests such as OECD Tests 414 and 421, based on the available data and the known hazards of the components.

### 11.9 SPECIFIC TARGET ORGAN TOXICITY (STOT) - SINGLE EXPOSURE:

The electrolyte contained within the battery is corrosive and is expected to cause respiratory irritation by inhalation. Inhalation of vapours may lead to severe irritation of the mouth and upper respiratory tract with a burning sensation, pain, burns and inflammation in the nose and throat; there may also be coughing or difficulty breathing.

### 11.10 SPECIFIC TARGET ORGAN TOXICITY (STOT) - REPEATED EXPOSURE:

This product is not expected to cause organ damage from prolonged or repeated exposure according to tests such as OECD Tests 410 and 412, based on the available data and the known hazards of the components.

**11.11 ASPIRATION HAZARD:** This product is not classified as an aspiration hazard, based on the available data and the known hazards of the components. However, due to the corrosive nature of the product if swallowed, do NOT induce vomiting. If vomiting has occurred after ingestion the person should be observed to ensure that aspiration into the lungs has not occurred and assessed for chemical burns to the gastrointestinal and respiratory tracts.

**11.12 OTHER INFORMATION:** No additional data is available.

## SECTION 12 – ECOLOGICAL INFORMATION

### 12.1 ECOTOXICITY:

The sealed battery does not pose an Ecotoxicity hazard. In the case of a broken or damaged battery and leakage of the electrolyte, it will react with water and potentially cause damage to flora and fauna.

### 12.2 PERSISTENCE & DEGRADABILITY:

There is no data available.

### 12.3 BIOACCUMULATIVE POTENTIAL:

There is no data available.

### 12.4 MOBILITY IN SOIL:

There is no data available.

### 12.5 OTHER ADVERSE EFFECTS:

There is no data available.



# SAFETY DATA SHEET

## SECTION 13 – DISPOSAL CONSIDERATIONS

### 13.1 DISPOSAL METHODS:

**PRODUCT:**

The battery should not be released to the environment, so they should be recycled wherever possible or be disposed of as hazardous waste at an appropriate collection depot. Follow Government regulations for disposal of such waste. Batteries must be taken for recycling or disposal by suitably licensed contractors in accordance with Government regulations. Note: The risks associated with lithium battery recycling include the potential for a fire or explosion if batteries become over-heated, for example if they short-circuit. Used batteries should be stored in their original packaging, a plastic bag or with their terminals/contacts taped, to minimise the potential for short-circuiting to occur. Batteries should be fully discharged before being sent for recycling. Do not store used batteries near heat sources, chemicals or food. Do not store or transport used Lithium batteries with lead acid batteries as they have different regulatory requirements. Do not break open or damage Lithium batteries prior to disposal. Care should be taken at all times to ensure that used batteries are not damaged during storage or transportation.

**CONTAINERS:**

Not applicable.

## SECTION 14 – TRANSPORT INFORMATION

Lithium batteries are regulated for land, sea and air transportation. It is recommended that Lithium ion batteries should not be fitted to equipment during transportation. **NOTE:** Batteries must always be protected against short-circuiting during transportation. Special precautions should be undertaken when damaged or defective batteries are transported. You must contact the manufacturer before transporting damaged or defective batteries. It is prohibited to carry defective or damaged batteries by air.

### 14.1 LAND (ADG Code):

**UN NUMBER:** 3480 or 3481 (When packed with or inserted in battery operated equipment)

**UN PROPER SHIPPING**

**NAME:** 3480 - LITHIUM ION BATTERIES (including lithium ion polymer batteries).  
3481 - LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or  
3481 - LITHIUM ION BATTERIES PACKED WITH EQUIPMENT

**TRANSPORT HAZARD**

**CLASS(ES):** 9

**PACKAGING GROUP:** II

**ENVIRONMENTAL**

**HAZARDS:** Not applicable

**SPECIAL PROVISIONS**

**FOR USER:** 3480 - 188, 230, 310, 348 (Special Packaging Instruction P903 applies)  
3481 - 188, 230, 348, 360 (Special Packaging Instruction P903 applies)

**HAZCHEM CODE:**

4W

### 14.2 SEA (IMDG):

**UN NUMBER:** 3480 or 3481 (When packed with or inserted in battery operated equipment)

**UN PROPER SHIPPING**

**NAME:** 3480 - LITHIUM ION BATTERIES.  
3481 - LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or  
3481 - LITHIUM ION BATTERIES PACKED WITH EQUIPMENT

**TRANSPORT HAZARD**

**CLASS(ES):** 9

**PACKAGING GROUP:** II

**ENVIRONMENTAL**

**HAZARDS:** Not applicable

**SPECIAL PROVISIONS**

**FOR USER:** 188, 230, 310. (Special Packaging Instruction P903 applies)

**OTHER INFORMATION:**

EmS: F-A, S-I; Stowage Category A

# SAFETY DATA SHEET

## SECTION 14 – TRANSPORT INFORMATION Continued

**14.3 AIR (IATA):**  
**UN NUMBER:** 3480 or 3481 (When packed with or inserted in battery operated equipment)  
**UN PROPER SHIPPING NAME:** 3480 - LITHIUM ION BATTERIES.  
3481 - LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or  
3481 - LITHIUM ION BATTERIES PACKED WITH EQUIPMENT

**TRANSPORT HAZARD CLASS(ES):** 9  
**PACKAGING GROUP:** II

**ENVIRONMENTAL HAZARDS:** Not applicable

**SPECIAL PRECAUTIONS FOR USER:** A88, A99, A154, A164, A183 (Packaging Instructions 965, 966, 967).

## SECTION 15 – REGULATORY INFORMATION

### 15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS:

#### APPLICABLE REGULATIONS:

**SUSMP:** Not applicable  
**AICS:** All ingredients are on the AICS List.  
**MONTREAL PROTOCOL:** Not applicable to this product.  
**STOCKHOLM CONVENTION:** Not applicable to this product.  
**ROTTERDAM CONVENTION:** Not applicable to this product.  
**BASEL CONVENTION:** Not applicable to this product.  
**INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS (MARPOL):** Not applicable.

#### OTHER REGULATORY INFORMATION:

**RISK PHRASES [NOHSC:1008]:**R34 - Causes burns.

#### SAFETY PHRASES

**[NOHSC:1008]:** S1 - Keep locked up.  
S2 - Keep out of reach of children.  
S23 - Do not breathe vapour.  
S24/25 - Avoid contact with skin and eyes.  
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S27/28 - After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.  
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.  
S56 - Dispose of this material and its container at hazardous waste or special waste collection point.  
S62 - If swallowed, DO NOT induce vomiting; seek medical advice immediately and show this container or label.  
S64 - If swallowed, rinse mouth with water, (only if the person is conscious).

#### GHS CLASSIFICATION HAZARD CLASS & CATEGORY

**AND HAZARD STATEMENT:** Corrosive to Metals Category 1; H290 - May be corrosive to metals.  
Corrosion/Irritation Category 1B; H314 - Causes severe skin burns and eye damage.

**HSNO APPROVAL NUMBER:** Not applicable.

**HSNO GROUP TITLE:** Not applicable.

# SAFETY DATA SHEET

## SECTION 16 – ANY OTHER RELEVANT INFORMATION

### SDS INFORMATION:

Date of SDS Preparation: 3<sup>rd</sup> August 2014

Revision: 0.0

REVISION CHANGES: Initial preparation of SDS.

### ACRONYMS:

SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
CAS Number	Chemical Abstracts Service Registry Number
EINECS	European Inventory of Existing Commercial Chemical Substances
UN Number	United Nations Number
OSHA	Occupational Safety and Health Administration
ACGIH	American Conference of Governmental Industrial Hygienists
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association
IUCLID	International Uniform Chemical Information Database
RTECS	Registry of Toxic Effects of Chemical Substances
R-Phrase	Risk Phrases
S-Phrase	Safety Phrases
%W/W	Percent weight for weight
OECD	Organisation for Economic Co-Operation and Development
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
HAZCHEM Code	Emergency action code of numbers & letters which gives information to emergency services
NOHSC	National Occupational Health and Safety Commission
AICS	Australian Inventory of Chemical Substances
TWA	Time-Weighted Average
STEL	Short term Exposure Limit
HSNO	Hazardous Substances and New Organisms Act 1996
GHS	Globally Harmonised System of Classification and Labelling of Chemicals

### LITERATURE REFERENCES AND SOURCES OF DATA:

OECD Guidelines for Testing of Chemicals  
Annex I: OECD Test Guidelines for Studies Included in SIDS  
Manual for the Assessment of Chemicals Chapter 2 Data Gathering  
International Toxicity Testing Guidelines  
Hazardous Substance Information System - Guidance Material for Hazard Classifications  
Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.  
Model Work Health and Safety Regulations.  
Model Work Health and Safety Regulations - Transitional Principles  
Workplace Exposure Standards for Airborne Contaminants  
Australian Dangerous Goods Code 7<sup>th</sup> Edition  
Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]  
Guidance on the Classification of Hazardous Chemicals under the WHS Regulations  
Assigning a Hazardous Substance to a Group Standard  
User Guide to the HSNO Thresholds and Classifications  
Summary User Guide to the HSNO Thresholds and Classifications of Hazardous Substances  
Correlation between GHS and New Zealand HSNO Hazard Classes and Categories  
HSNO Control Regulations  
Record of Group Standard Assignment  
Labelling of Hazardous Substances Hazard and Precautionary Information  
Thresholds and Classifications Under the Hazardous Substances and New Organisms Act 1996  
Workplace Exposure Standards and Biological Exposure Indices  
Handheld Battery Recycling - Guidelines for Lithium Batteries (Australian Battery Recycling Initiative)  
Handheld Battery Recycling - Guidelines for Transport (Australian Battery Recycling Initiative)

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