



LB100-HD

BWI

Chemwatch: 5551-18

Version No: 2.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 4

Issue Date: 04/08/2022

Print Date: 04/08/2022

S.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

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| Product name | LB100-HD |
| Chemical Name | Not Applicable |
| Synonyms | 12V / 100AH HIGH DISCHARGE LITHIUM BATTERY |
| Proper shipping name | LITHIUM ION BATTERIES (including lithium ion polymer batteries) (contains lithium fluorophosphate and lithium iron phosphate) |
| Chemical formula | Not Applicable |
| Other means of identification | Not Available |

Relevant identified uses of the substance or mixture and uses advised against

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| Relevant identified uses | NOTE: Hazard statement relates to battery contents. Potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, physically or electrically abused. Use involves discharge then regenerative charging cycle from external DC power source. CHARGING HAZARD. Completion of charging process includes evolution of highly flammable and explosive hydrogen gas which is readily detonated by electric spark. No smoking or naked lights. Do not attach/detach metal clips or operate open switches during charging process because of arcing/sparking hazard. Overcharging to excess results in vigorous hydrogen evolution - boiling - which may cause generation of corrosive acid mist. Use according to manufacturer's directions. |
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Details of the supplier of the safety data sheet

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|-------------------------|--|
| Registered company name | BWI |
| Address | 1500 Ferntree Gully Road VIC 3180 Australia |
| Telephone | +61397306000 |
| Fax | Not Available |
| Website | www.brownwatson.com.au |
| Email | info@brownwatson.com.au |

Emergency telephone number

| | | |
|-----------------------------------|--------------------------------------|------------------------------|
| Association / Organisation | Australia Poisons Information Centre | CHEMWATCH EMERGENCY RESPONSE |
| Emergency telephone numbers | 13 11 26 (All Hours) | +61 1800 951 288 |
| Other emergency telephone numbers | Not Available | +61 3 9573 3188 |

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

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| Poisons Schedule | Not Applicable |
| Classification [1] | Acute Toxicity (Oral) Category 2, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Germ Cell Mutagenicity Category 1A, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

Label elements

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| Hazard pictogram(s) | |
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| Signal word | Danger |
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Hazard statement(s)

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| H300 | Fatal if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |
| H340 | May cause genetic defects. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary statement(s) Prevention

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| P201 | Obtain special instructions before use. |
| P260 | Do not breathe dust/fume. |
| P264 | Wash all exposed external body areas thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P273 | Avoid release to the environment. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |

Precautionary statement(s) Response

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| P301+P310 | IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313 | IF exposed or concerned: Get medical advice/ attention. |
| P330 | Rinse mouth. |
| P302+P352 | IF ON SKIN: Wash with plenty of water and soap. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P391 | Collect spillage. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |

Precautionary statement(s) Storage

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| P405 | Store locked up. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |

Precautionary statement(s) Disposal

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| P501 | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
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Not Applicable

SECTION 3 Composition / information on ingredients**Substances**

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|------------|-----------|--------------------------------|
| 15365-14-7 | 49 | <u>lithium iron phosphate</u> |
| 7782-42-5 | 24 | <u>graphite</u> |
| 21324-40-3 | 3 | <u>lithium fluorophosphate</u> |
| 7429-90-5 | 6 | <u>aluminium</u> |
| 7440-50-8 | 13 | <u>copper</u> |
| 9003-07-0 | 5 | <u>polypropylene</u> |

Legend: 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures**Description of first aid measures**

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| Eye Contact | If this product comes in contact with the eyes: ▶ Immediately hold eyelids apart and flush the eye continuously with running water. |
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Continued...

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| | <ul style="list-style-type: none"> ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. ▶ Generally not applicable. |
| Skin Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor. ▶ Generally not applicable. |
| Inhalation | <ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. ▶ Generally not applicable. |
| Ingestion | <ul style="list-style-type: none"> ▶ IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. ▶ For advice, contact a Poisons Information Centre or a doctor. ▶ Urgent hospital treatment is likely to be needed. ▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. ▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. ▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. <p>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</p> <ul style="list-style-type: none"> ▶ INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. <p>NOTE: Wear a protective glove when inducing vomiting by mechanical means.</p> <ul style="list-style-type: none"> ▶ Generally not applicable. |

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- ▶ **DO NOT** use halogenated fire extinguishing agents.
- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

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|-----------------------------|--|
| Fire Incompatibility | <ul style="list-style-type: none"> ▶ Reacts with acids producing flammable / explosive hydrogen (H₂) gas ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
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Advice for firefighters

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| Fire Fighting | <ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use water delivered as a fine spray to control fire and cool adjacent area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use. <p>Slight hazard when exposed to heat, flame and oxidisers.</p> |
| Fire/Explosion Hazard | <p>Combustible. Will burn if ignited.</p> <p>Combustion products include:</p> <ul style="list-style-type: none"> carbon monoxide (CO) carbon dioxide (CO₂) phosphorus oxides (PO_x) metal oxides <p>other pyrolysis products typical of burning organic material.</p> <p>Articles and manufactured articles may constitute a fire hazard where polymers form their outer layers or where combustible packaging remains in place.</p> <p>Certain substances, found throughout their construction, may degrade or become volatile when heated to high temperatures. This may create a secondary hazard.</p> |
| HAZCHEM | 2Y |

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Continued...

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

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| Minor Spills | <p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Secure load if safe to do so. ▶ Bundle/collect recoverable product. ▶ Collect remaining material in containers with covers for disposal. |
| Major Spills | <p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Wear protective clothing, safety glasses, dust mask, gloves. ▶ Secure load if safe to do so. Bundle/collect recoverable product. ▶ Use dry clean up procedures and avoid generating dust. ▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use). ▶ Water may be used to prevent dusting. ▶ Collect remaining material in containers with covers for disposal. ▶ Flush spill area with water. <p>Minor hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Control personal contact with the substance, by using protective equipment as required. ▶ Prevent spillage from entering drains or water ways. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal. ▶ Wash area and prevent runoff into drains or waterways. ▶ If contamination of drains or waterways occurs, advise emergency services. |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

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| Safe handling | <ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ DO NOT allow material to contact humans, exposed food or food utensils. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Store away from incompatible materials. |

Conditions for safe storage, including any incompatibilities

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| Suitable container | <p>Generally packaging as originally supplied with the article or manufactured item is sufficient to protect against physical hazards. If repackaging is required ensure the article is intact and does not show signs of wear. As far as is practicably possible, reuse the original packaging or something providing a similar level of protection to both the article and the handler.</p> |
| Storage incompatibility | <ul style="list-style-type: none"> ▶ Many metals may incandesce, react violently, ignite or react explosively upon addition of concentrated nitric acid. ▶ Phosphates are incompatible with oxidising and reducing agents. ▶ Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides. ▶ Partial oxidation of phosphates by oxidizing agents may result in the release of toxic phosphorus oxides. ▶ Avoid reaction with oxidising agents, bases and strong reducing agents. |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|------------------------------|------------|---|---------|------|------|----------------------------------|
| Australia Exposure Standards | graphite | Graphite (all forms except fibres) (respirable) | 3 mg/m3 | Not | Not | (e) Containing no asbestos and < |

Continued...

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|------------------------------|------------|-----------------------------------|-----------|---------------|---------------|------------------------|
| | | dust) (natural & synthetic) | | Available | Available | 1% crystalline silica. |
| Australia Exposure Standards | aluminium | Aluminium, pyro powders (as Al) | 5 mg/m3 | Not Available | Not Available | Not Available |
| Australia Exposure Standards | aluminium | Aluminium (metal dust) | 10 mg/m3 | Not Available | Not Available | Not Available |
| Australia Exposure Standards | aluminium | Aluminium (welding fumes) (as Al) | 5 mg/m3 | Not Available | Not Available | Not Available |
| Australia Exposure Standards | copper | Copper, dusts & mists (as Cu) | 1 mg/m3 | Not Available | Not Available | Not Available |
| Australia Exposure Standards | copper | Copper (fume) | 0.2 mg/m3 | Not Available | Not Available | Not Available |

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|-------------------------|-----------|-----------|-------------|
| graphite | 6 mg/m3 | 330 mg/m3 | 2,000 mg/m3 |
| lithium fluorophosphate | 7.5 mg/m3 | 83 mg/m3 | 500 mg/m3 |
| copper | 3 mg/m3 | 33 mg/m3 | 200 mg/m3 |
| polypropylene | 5.2 mg/m3 | 58 mg/m3 | 350 mg/m3 |


| Ingredient | Original IDLH | Revised IDLH |
|-------------------------|---------------|---------------|
| lithium iron phosphate | Not Available | Not Available |
| graphite | 1,250 mg/m3 | Not Available |
| lithium fluorophosphate | Not Available | Not Available |
| aluminium | Not Available | Not Available |
| copper | 100 mg/m3 | Not Available |
| polypropylene | Not Available | Not Available |

Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|-------------------------|-----------------------------------|----------------------------------|
| lithium fluorophosphate | E | ≤ 0.01 mg/m ³ |

Notes: Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

Exposure controls

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| Appropriate engineering controls | Articles or manufactured items, in their original condition, generally don't require engineering controls during handling or in normal use. Exceptions may arise following extensive use and subsequent wear, during recycling or disposal operations where substances, found in the article, may be released to the environment. |
| Personal protection |  |
| Eye and face protection | <p>No special equipment required due to the physical form of the product.</p> <ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent] |
| Skin protection | See Hand protection below |
| Hands/feet protection | <p>Wear general protective gloves, eg. light weight rubber gloves.</p> <p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C apron. ▶ Barrier cream. ▶ Skin cleansing cream. ▶ Eye wash unit. |

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|-------------------------|
| up to 10 x ES | A-AUS P2 | - | A-PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | A-AUS / Class 1 P2 | - |
| up to 100 x ES | - | A-2 P2 | A-PAPR-2 P2 ^ |

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Respiratory protection not normally required due to the physical form of the product.

Where significant concentrations of the material are likely to enter the breathing zone, a Class P3 respirator may be required.

Class P3 particulate filters are used for protection against highly toxic or highly irritant particulates.

Filtration rate: Filters at least 99.95% of airborne particles

Suitable for:

- Relatively small particles generated by mechanical processes eg. grinding, cutting, sanding, drilling, sawing.
- Sub-micron thermally generated particles e.g. welding fumes, fertilizer and bushfire smoke.
- Biologically active airborne particles under specified infection control applications e.g. viruses, bacteria, COVID-19, SARS
- Highly toxic particles e.g. Organophosphate Insecticides, Radionuclides, Asbestos

Note: P3 Rating can only be achieved when used with a Full Face Respirator or Powered Air-Purifying Respirator (PAPR). If used with any other respirator, it will only provide filtration protection up to a P2 rating.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

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|---|--|--|----------------|
| Appearance | Manufactured battery, article is odourless and immiscible. | | |
| Physical state | article | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | Not Applicable | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Applicable |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Available | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Available | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Available | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Available | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | Immiscible | pH as a solution (Not Available%) | Not Applicable |
| Vapour density (Air = 1) | Not Applicable | VOC g/L | Not Available |

SECTION 10 Stability and reactivity

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| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

Information on toxicological effects

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| Inhaled | <p>There is strong evidence to suggest that this material can cause, if inhaled once, very serious, irreversible damage of organs. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>Impurities found in carbons, including iodine, can be toxic. Carbon dusts in the air may cause irritation of the mucous membranes, eyes and skin. Copper poisoning following exposure to copper dusts and fume may result in headache, cold sweat and weak pulse. Capillary, kidney, liver and brain damage are the longer term manifestations of such poisoning. Inhalation of freshly formed metal oxide particles sized below 1.5 microns and generally between 0.02 to 0.05 microns may result in "metal fume fever". Symptoms may be delayed for up to 12 hours and begin with the sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalised feeling of malaise. Mild to severe headache, nausea, occasional</p> |
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| | vomiting, fever or chills, exaggerated mental activity, profuse sweating, diarrhoea, excessive urination and prostration may also occur. Tolerance to the fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours following removal from exposure. Inhalation of dusts, generated by the material, during the course of normal handling, may produce severely toxic effects; these may be fatal. |
| Ingestion | There is strong evidence to suggest that this material can cause, if swallowed once, very serious, irreversible damage of organs. Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual. |
| Skin Contact | This material can cause inflammation of the skin on contact in some persons. There is strong evidence to suggest that this material, on a single contact with skin, can cause very serious, irreversible damage of organs. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| Eye | If applied to the eyes, this material causes severe eye damage. |
| Chronic | Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited. Based on experiments and other information, there is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited. Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. |

| LB100 HD | TOXICITY | IRRITATION |
|---|--|--|
| | Not Available | Not Available |
| lithium iron phosphate | TOXICITY | IRRITATION |
| | dermal (rat) LD50: 2000 mg/kg ^[1] | Eye: no adverse effect observed (not irritating) ^[1] |
| | Inhalation(Rat) LC50; >3.2 mg/l4h ^[1] | Skin: no adverse effect observed (not irritating) ^[1] |
| Oral (Rat) LD50; >2000 mg/kg ^[1] | | |
| graphite | TOXICITY | IRRITATION |
| | Inhalation(Rat) LC50; >2 mg/L4h ^[1] | Not Available |
| Oral (Rat) LD50; >2000 mg/kg ^[1] | | |
| lithium fluorophosphate | TOXICITY | IRRITATION |
| | Oral (Rat) LD50; 50-300 mg/kg ^[1] | Not Available |
| aluminium | TOXICITY | IRRITATION |
| | Inhalation(Rat) LC50; >2.3 mg/l4h ^[1] | Eye: no adverse effect observed (not irritating) ^[1] |
| Oral (Rat) LD50; >2000 mg/kg ^[1] | Skin: no adverse effect observed (not irritating) ^[1] | |
| copper | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >2000 mg/kg ^[1] | Eye: no adverse effect observed (not irritating) ^[1] |
| | Inhalation(Rat) LC50; 0.733 mg/l4h ^[1] | Skin: no adverse effect observed (not irritating) ^[1] |
| Oral (Mouse) LD50; 0.7 mg/kg ^[2] | | |
| polypropylene | TOXICITY | IRRITATION |
| | Oral (Mouse) LD50; 3200 mg/kg ^[2] | Not Available |

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

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| LITHIUM IRON PHOSPHATE | <p>Goitrogenic: Goitrogens are substances that suppress the function of the thyroid gland by interfering with iodine uptake, which can, as a result, cause an enlargement of the thyroid (a goitre). Goitrogens include:</p> <ul style="list-style-type: none"> - Vitexin, a flavonoid, which inhibits thyroid peroxidase, contributing to goitre - Thiocyanate and perchlorate, which decrease iodide uptake by competitive inhibition and consequently increase release of TSH from the pituitary gland - Lithium, which inhibits thyroid hormone release - Certain foods, such as soy and millet (containing vitexins) and vegetables in the genus Brassica (which includes broccoli, Brussels sprouts, cabbage, cauliflower and horseradish). - Caffeine (found in coffee, tea, cola and chocolate), which acts on thyroid function as a suppressant. |
| COPPER | <p>WARNING: Inhalation of high concentrations of copper fume may cause "metal fume fever", an acute industrial disease of short duration. Symptoms are tiredness, influenza like respiratory tract irritation with fever. The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the</p> |

| | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------------------------|-----------------|---|---------------------------|---|----------------|---|-------------------------------|---|------------------------|---|-----------------------------------|---|--------------------------|---|--------------|---|-------------------|---|--|
| | <p>distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p> <p>for copper and its compounds (typically copper chloride):</p> <p>Acute toxicity: There are no reliable acute oral toxicity results available. In an acute dermal toxicity study (OECD TG 402), one group of 5 male rats and 5 groups of 5 female rats received doses of 1000, 1500 and 2000 mg/kg bw via dermal application for 24 hours. The LD50 values of copper monochloride were 2,000 mg/kg bw or greater for male (no deaths observed) and 1,224 mg/kg bw for female. Four females died at both 1500 and 2000 mg/kg bw, and one at 1,000 mg/kg bw. Symptom of the hardness of skin, an exudation of hardness site, the formation of scar and reddish changes were observed on application sites in all treated animals. Skin inflammation and injury were also noted. In addition, a reddish or black urine was observed in females at 2,000, 1,500 and 1,000 mg/kg bw. Female rats appeared to be more sensitive than male based on mortality and clinical signs.</p> <p>No reliable skin/eye irritation studies were available. The acute dermal study with copper monochloride suggests that it has a potential to cause skin irritation.</p> <p>Repeat dose toxicity: In repeated dose toxicity study performed according to OECD TG 422, copper monochloride was given orally (gavage) to Sprague-Dawley rats for 30 days to males and for 39 - 51 days to females at concentrations of 0, 1.3, 5.0, 20, and 80 mg/kg bw/day. The NOAEL value was 5 and 1.3 mg/kg bw/day for male and female rats, respectively. No deaths were observed in male rats. One treatment-related death was observed in female rats in the high dose group. Erythropoietic toxicity (anaemia) was seen in both sexes at the 80 mg/kg bw/day. The frequency of squamous cell hyperplasia of the forestomach was increased in a dose-dependent manner in male and female rats at all treatment groups, and was statistically significant in males at doses of =20 mg/kg bw/day and in females at doses of =5 mg/kg bw/day doses. The observed effects are considered to be local, non-systemic effect on the forestomach which result from oral (gavage) administration of copper monochloride.</p> <p>Genotoxicity: An in vitro genotoxicity study with copper monochloride showed negative results in a bacterial reverse mutation test with Salmonella typhimurium strains (TA 98, TA 100, TA 1535, and TA 1537) with and without S9 mix at concentrations of up to 1,000 ug/plate. An in vitro test for chromosome aberration in Chinese hamster lung (CHL) cells showed that copper monochloride induced structural and numerical aberrations at the concentration of 50, 70 and 100 ug/mL without S9 mix. In the presence of the metabolic activation system, significant increases of structural aberrations were observed at 50 and 70 ug/mL and significant increases of numerical aberrations were observed at 70 ug/mL. In an in vivo mammalian erythrocyte micronucleus assay, all animals dosed (15 - 60 mg/kg bw) with copper monochloride exhibited similar PCE/(PCE+NCE) ratios and MNPCE frequencies compared to those of the negative control animals. Therefore copper monochloride is not an in vivo mutagen.</p> <p>Carcinogenicity: there was insufficient information to evaluate the carcinogenic activity of copper monochloride.</p> <p>Reproductive and developmental toxicity: In the combined repeated dose toxicity study with the reproduction/developmental toxicity screening test (OECD TG 422), copper monochloride was given orally (gavage) to Sprague-Dawley rats for 30 days to males and for 39-51 days to females at concentrations of 0, 1.3, 5.0, 20, and 80 mg/kg bw/day. The NOAEL of copper monochloride for fertility toxicity was 80 mg/kg bw/day for the parental animals. No treatment-related effects were observed on the reproductive organs and the fertility parameters assessed. For developmental toxicity the NOAEL was 20 mg/kg bw/day. Three of 120 pups appeared to have icterus at birth; 4 of 120 pups appeared runted at the highest dose tested (80 mg/kg bw/day).</p> | | | | | | | | | | | | | | | | | | | | |
| POLYPROPYLENE | <p>* For pyrolyzate</p> <p>For poly-alpha-olefins (PAOs):</p> <p>PAOs are highly branched, isoparaffinic chemicals produced by oligomerisation of 1-octene, 1-decene and/or 1-dodecene. The crude polyalphaolefin mixture is then distilled into appropriate product fractions to meet specific viscosity specifications and hydrogenated.</p> <p>In existing data, there appears to be no data to show that these structural analogs cause health effects. In addition, there is evidence in the literature that alkanes with 30 or more carbon atoms are unlikely to be absorbed when given by mouth. The physical and chemical properties make it unlikely that significant absorption into the body will occur. There are also no functional groups on PAO molecules that are biologically active. PAOs also have low volatility, so that exposure is unlikely to occur by inhalation. The high viscosity of these substances also makes it hard to generate a high concentration of breathable particles in air.</p> <p>Acute toxicity: Animal testing shows that PAOs have relatively low acute toxicity.</p> <p>Repeat dose toxicity: Animal testing shows that PAOs show low repeat dose toxicity – some increased scaling of the skin occurred, with skin inflammation, after exposure at high doses.</p> <p>Reproductive toxicity: Animal testing suggested that application of PAO to skin did not impair reproductive performance.</p> <p>Genetic toxicity: Testing has not shown any evidence that PAOs cause mutations or chromosomal aberrations.</p> <p>Cancer-causing potentials: Animal testing has not shown any propensity to cause tumours. While alpha-olefin polymers have similar properties to mineral oils, they do not contain polycyclic aromatic hydrocarbons, or other known cancer-causing materials.</p> <p>The substance is classified by IARC as Group 3:</p> <p>NOT classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p> | | | | | | | | | | | | | | | | | | | | |
| LITHIUM IRON PHOSPHATE & GRAPHITE & LITHIUM FLUOROPHOSPHATE & ALUMINIUM | No significant acute toxicological data identified in literature search. | | | | | | | | | | | | | | | | | | | | |
| GRAPHITE & LITHIUM FLUOROPHOSPHATE | <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Acute Toxicity</td> <td>✓</td> <td>Carcinogenicity</td> <td>✗</td> </tr> <tr> <td>Skin Irritation/Corrosion</td> <td>✓</td> <td>Reproductivity</td> <td>✗</td> </tr> <tr> <td>Serious Eye Damage/Irritation</td> <td>✓</td> <td>STOT - Single Exposure</td> <td>✓</td> </tr> <tr> <td>Respiratory or Skin sensitisation</td> <td>✓</td> <td>STOT - Repeated Exposure</td> <td>✓</td> </tr> <tr> <td>Mutagenicity</td> <td>✓</td> <td>Aspiration Hazard</td> <td>✗</td> </tr> </table> | Acute Toxicity | ✓ | Carcinogenicity | ✗ | Skin Irritation/Corrosion | ✓ | Reproductivity | ✗ | Serious Eye Damage/Irritation | ✓ | STOT - Single Exposure | ✓ | Respiratory or Skin sensitisation | ✓ | STOT - Repeated Exposure | ✓ | Mutagenicity | ✓ | Aspiration Hazard | ✗ | |
| Acute Toxicity | ✓ | Carcinogenicity | ✗ | | | | | | | | | | | | | | | | | | |
| Skin Irritation/Corrosion | ✓ | Reproductivity | ✗ | | | | | | | | | | | | | | | | | | |
| Serious Eye Damage/Irritation | ✓ | STOT - Single Exposure | ✓ | | | | | | | | | | | | | | | | | | |
| Respiratory or Skin sensitisation | ✓ | STOT - Repeated Exposure | ✓ | | | | | | | | | | | | | | | | | | |
| Mutagenicity | ✓ | Aspiration Hazard | ✗ | | | | | | | | | | | | | | | | | | |

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

| LB100 HD | Endpoint | Test Duration (hr) | Species | Value | Source |
|----------|----------|--------------------|---------|-------|--------|
|----------|----------|--------------------|---------|-------|--------|

Continued...

LB100-HD

| | Not Available | Not Available | Not Available | Not Available | Not Available |
|-------------------------|-----------------|---------------------------|-------------------------------|-----------------|---------------|
| lithium iron phosphate | Endpoint | Test Duration (hr) | Species | Value | Source |
| | EC50 | 72h | Algae or other aquatic plants | >24mg/l | 2 |
| | EC50 | 48h | Crustacea | >28mg/l | 2 |
| | NOEC(ECx) | 72h | Algae or other aquatic plants | >=24mg/l | 2 |
| | LC50 | 96h | Fish | >28mg/l | 2 |
| graphite | Endpoint | Test Duration (hr) | Species | Value | Source |
| | NOEC(ECx) | 72h | Algae or other aquatic plants | >=100mg/l | 2 |
| | EC50 | 72h | Algae or other aquatic plants | >100mg/l | 2 |
| | EC50 | 48h | Crustacea | >100mg/l | 2 |
| | LC50 | 96h | Fish | >100mg/l | 2 |
| lithium fluorophosphate | Endpoint | Test Duration (hr) | Species | Value | Source |
| | EC50 | 72h | Algae or other aquatic plants | 62mg/l | 2 |
| | EC50 | 48h | Crustacea | 98mg/l | 2 |
| | NOEC(ECx) | 528h | Fish | 0.2mg/l | 2 |
| | LC50 | 96h | Fish | 42mg/l | 2 |
| aluminium | Endpoint | Test Duration (hr) | Species | Value | Source |
| | NOEC(ECx) | 48h | Crustacea | >100mg/l | 1 |
| | EC50 | 72h | Algae or other aquatic plants | 0.2mg/l | 2 |
| | EC50 | 48h | Crustacea | 1.5mg/l | 2 |
| | LC50 | 96h | Fish | 0.078-0.108mg/l | 2 |
| copper | Endpoint | Test Duration (hr) | Species | Value | Source |
| | EC50(ECx) | 24h | Algae or other aquatic plants | <0.001mg/L | 4 |
| | EC50 | 72h | Algae or other aquatic plants | 0.011-0.017mg/L | 4 |
| | EC50 | 48h | Crustacea | <0.001mg/L | 4 |
| | LC50 | 96h | Fish | 0.005-0.06mg/l | 4 |
| polypropylene | Endpoint | Test Duration (hr) | Species | Value | Source |
| | Not Available | Not Available | Not Available | Not Available | Not Available |

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and/or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and/or delayed, to the structure and/or functioning of natural ecosystems.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---------------|-------------------------|------------------|
| polypropylene | LOW | LOW |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---------------|-----------------------|
| polypropylene | LOW (LogKOW = 1.6783) |

Mobility in soil

| Ingredient | Mobility |
|---------------|-------------------|
| polypropylene | LOW (KOC = 23.74) |

SECTION 13 Disposal considerations

Waste treatment methods



| Product / Packaging disposal | |
|------------------------------|--|
| | ▶ Recycle wherever possible or consult manufacturer for recycling options. |

Continued...

- ▶ Consult State Land Waste Management Authority for disposal.
- ▶ **DO NOT allow wash water from cleaning or process equipment to enter drains.**
- ▶ It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- ▶ Where in doubt contact the responsible authority.
- ▶ Recycle wherever possible or consult manufacturer for recycling options.
- ▶ Consult State Land Waste Authority for disposal.
- ▶ Bury or incinerate residue at an approved site.
- ▶ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

| | |
|------------------|---|
| |  |
| Marine Pollutant |  |
| HAZCHEM | 2Y |

Land transport (ADG)

| | | |
|------------------------------|---|-------------------------------------|
| UN number | 3480 | |
| UN proper shipping name | LITHIUM ION BATTERIES (including lithium ion polymer batteries) (contains lithium fluorophosphate and lithium iron phosphate) | |
| Transport hazard class(es) | Class | 9 |
| | Subrisk | Not Applicable |
| Packing group | Not Applicable | |
| Environmental hazard | Environmentally hazardous | |
| Special precautions for user | Special provisions | 188 230 310 348 376 377 384 387 390 |
| | Limited quantity | 0 |

Air transport (ICAO-IATA / DGR)

| | | |
|--|---|--|
| UN number | 3480 | |
| UN proper shipping name | Lithium ion batteries (including lithium ion polymer batteries) (contains lithium fluorophosphate and lithium iron phosphate) | |
| Transport hazard class(es) | ICAO/IATA Class | 9 |
| | ICAO / IATA Subrisk | Not Applicable |
| | ERG Code | 12FZ |
| Packing group | Not Applicable | |
| Environmental hazard | Environmentally hazardous | |
| Special precautions for user | Special provisions | A88 A99 A154 A164 A183 A201 A206 A213 A331 A334 A802 |
| | Cargo Only Packing Instructions | See 965 |
| | Cargo Only Maximum Qty / Pack | See 965 |
| | Passenger and Cargo Packing Instructions | Forbidden |
| | Passenger and Cargo Maximum Qty / Pack | Forbidden |
| | Passenger and Cargo Limited Quantity Packing Instructions | Forbidden |
| Passenger and Cargo Limited Maximum Qty / Pack | Forbidden | |

Sea transport (IMDG-Code / GGVSee)

| | | |
|------------------------------|---|---------------------------------|
| UN number | 3480 | |
| UN proper shipping name | LITHIUM ION BATTERIES (including lithium ion polymer batteries) (contains lithium fluorophosphate and lithium iron phosphate) | |
| Transport hazard class(es) | IMDG Class | 9 |
| | IMDG Subrisk | Not Applicable |
| Packing group | Not Applicable | |
| Environmental hazard | Marine Pollutant | |
| Special precautions for user | EMS Number | F-A, S-I |
| | Special provisions | 188 230 310 348 376 377 384 387 |

Limited Quantities | 0

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| Product name | Group |
|-------------------------|---------------|
| lithium iron phosphate | Not Available |
| graphite | Not Available |
| lithium fluorophosphate | Not Available |
| aluminium | Not Available |
| copper | Not Available |
| polypropylene | Not Available |

Transport in bulk in accordance with the ICG Code

| Product name | Ship Type |
|-------------------------|---------------|
| lithium iron phosphate | Not Available |
| graphite | Not Available |
| lithium fluorophosphate | Not Available |
| aluminium | Not Available |
| copper | Not Available |
| polypropylene | Not Available |

SECTION 15 Regulatory information**Safety, health and environmental regulations / legislation specific for the substance or mixture****lithium iron phosphate is found on the following regulatory lists**

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

graphite is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

lithium fluorophosphate is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

aluminium is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

copper is found on the following regulatory lists

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Australian Inventory of Industrial Chemicals (AIIC)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

polypropylene is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | No (lithium iron phosphate) |
| Canada - DSL | No (lithium fluorophosphate) |
| Canada - NDSL | No (lithium iron phosphate; graphite; aluminium; copper; polypropylene) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | No (lithium iron phosphate; polypropylene) |
| Japan - ENCS | No (graphite; lithium fluorophosphate; aluminium; copper) |
| Korea - KECI | Yes |
| New Zealand - NZIoC | No (lithium iron phosphate; lithium fluorophosphate) |
| Philippines - PICCS | No (lithium iron phosphate) |

Continued...

| National Inventory | Status |
|--------------------|---|
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | No (lithium iron phosphate; lithium fluorophosphate) |
| Vietnam - NCI | Yes |
| Russia - FBEPH | No (lithium iron phosphate; lithium fluorophosphate) |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

SECTION 16 Other information

| | |
|----------------------|------------|
| Revision Date | 04/08/2022 |
| Initial Date | 04/08/2022 |

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit.
 IDLH: Immediately Dangerous to Life or Health Concentrations
 ES: Exposure Standard
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index
 AIIC: Australian Inventory of Industrial Chemicals
 DSL: Domestic Substances List
 NDSL: Non-Domestic Substances List
 IECSC: Inventory of Existing Chemical Substance in China
 EINECS: European Inventory of Existing Commercial chemical Substances
 ELINCS: European List of Notified Chemical Substances
 NLP: No-Longer Polymers
 ENCS: Existing and New Chemical Substances Inventory
 KECl: Korea Existing Chemicals Inventory
 NZIoC: New Zealand Inventory of Chemicals
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 TSCA: Toxic Substances Control Act
 TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
 NCI: National Chemical Inventory
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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