

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Rechargeable Lithium Ion Battery Pack

Product Code: BL1203; BL1203-BULK, BL2005; BL2005-BULK; BL2010; BL2010-BULK; BL2012; BL2012-BULK; BL2013; BL2013-BULK; BL2022; BL2022-BULK; BL2023; BL2023-BULK; BL4011; BL4011-BULK; BL4013; BL4013-BULK

Additional Information: This product is a sealed battery pack and considered an article containing an integral substance/mixture. The battery pack contains hazardous substances, which under normal conditions of use are not in contact with the user unless the battery is altered outside of its normal conditions of use, or there is a spill, leak, or other emergency. This Safety Data Sheet provides important information on potential hazards for exposure to the internal contents of the battery, specifically the hazardous substances encased within it.

1.2. Intended Use of the Product

Lithium-Ion battery pack.

1.3. Name, Address, and Telephone of the Responsible Party

Company

Ingersoll Rand
800-A Beaty Street, P.O. Box 1600
Davidson, NC 28036
T 1-800-483-4981 (Product Support)
Email: irtechsupport@irco.com

European Contact

Ingersoll Rand Industrial Ltd
165 Lakeview Drive
Swords, Co Dublin
Ireland

1.4. Emergency Telephone Number

Emergency Number : 24-hour emergency Chemtrec numbers: Inside US: 1-800-424-9300 Outside US: 703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

Acute Tox. 3 (Oral)	H301
Acute Tox. 2 (Inhalation:dust,mist)	H330
Skin Corr. 1A	H314
Eye Dam. 1	H318
Resp. Sens. 1B	H334
Skin Sens. 1	H317
Carc. 1A	H350
STOT SE 3	H335
STOT RE 1	H372
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Full text of hazard classes and H-statements : see section 16

2.2. Label Elements

GHS-US/CA Labeling

Hazard Pictograms (GHS-US/CA)



Signal Word (GHS-US/CA)

: Danger

Hazard Statements (GHS-US/CA)

: H301 - Toxic if swallowed.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.

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H330 - Fatal if inhaled.
H334 - May cause an allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H350 - May cause cancer (inhalation).
H372 - Causes damage to organs (lungs, brain, bones/teeth, and kidneys) through prolonged or repeated exposure.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statements (GHS-US/CA) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe mist, spray, vapors.
P264 - Wash hands, forearms, and other exposed 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.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
P304+P340 - IF INHALED: Remove person to fresh air and keep 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.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a POISON CENTER or doctor.
P314 - Get medical advice/attention if you feel unwell.
P320 - Specific treatment is urgent (see section 4 on this SDS).
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, respiratory, and kidney conditions. Substances within this product may be reactive with water or air, and are flammable if released. Thermal decomposition of this product may generate corrosive, and toxic vapors. Cells or batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat, fire or short circuit condition. Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors. Vapors may be heavier than air and may travel along the ground or be moved by ventilation to an ignition source and flash back. Exposure may aggravate those with pre-existing eye, skin, respiratory, and kidney conditions. Substances within this product may be reactive with water or air, and are flammable if released. Thermal decomposition of this product may generate corrosive, and toxic vapors. Cells or batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat, fire or short circuit condition. Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors. Vapors may be heavier than air and may travel along the ground or be moved by ventilation to an ignition source and flash back.

Hazards Not Otherwise Classified (HNOC): Reacts violently with water.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Aluminum	Aluminium / Aluminium metal / Aluminium, metal / Aluminum metal / Aluminum, elemental / Aluminum, metal / C.I. 77000 / CI 77000 / Aluminium powder (stabilised) / Aluminium powder (stabilized) / Aluminium powder / Pigment Metal 1 / Aluminum powder / Aluminium metal, powder / Aluminium powder (pyrophoric) / aluminum	(CAS-No.) 7429-90-5	≤ 50	Comb. Dust
Cobaltate (CoO21-), lithium	Cobalt lithium dioxide / Cobalt lithium oxide (CoLiO2) / Cobaltate, lithium	(CAS-No.) 12190-79-3	≤ 50	Skin Sens. 1, H317 Carc. 2, H351
Nickel	Nickel metal / Nickel, elemental / Nickel, metallic / Nickel, metal / C.I. 77775	(CAS-No.) 7440-02-0	≤ 50	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 3, H412 Comb. Dust
Manganese	Manganese, elemental / Manganese metal / manganese	(CAS-No.) 7439-96-5	≤ 50	Comb. Dust
Carbon	Carbon, activated / CARBON / Activated carbon / Carbon Black / Graphite / Active carbon	(CAS-No.) 7440-44-0	< 30	Comb. Dust
Nickel oxide (NiO)	Nickel(2+) oxide / Nickel monoxide / Nickel(II) oxide / Nickel oxide / Nickel oxide, (NiO) / Nickel oxide (nickel monoxide, nickel(II) oxide)	(CAS-No.) 1313-99-1	< 30	Skin Sens. 1, H317 Carc. 1A, H350 STOT RE 1, H372 Aquatic Chronic 4, H413
Manganese oxide (MnO2)	Manganese dioxide / Black manganese oxide / C.I. Pigment Black 14 / C.I. Pigment Brown 8 / Manganese Black / Manganese(IV) oxide / Pyrolusite Brown / MANGANESE DIOXIDE / Manganese peroxide / C.I. 77728 / Manganese dioxide (MnO2)	(CAS-No.) 1313-13-9	< 30	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332 STOT RE 2, H373
Cobalt oxide (CoO)	Cobalt(II) oxide / C.I. Pigment Black 13 / Cobalt Black / Cobalt monooxide / Cobalt monoxide / Cobalt oxide / Cobalt(2+) oxide / Cobaltous oxide	(CAS-No.) 1307-96-6	< 30	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Inhalation:dust,mist), H330 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 1B, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Phosphate(1-), hexafluoro-, lithium	Lithium hexafluorophosphate(1-) / Lithium phosphohexafluoride / Phosphate(1-), hexafluoro-, lithium (1:1) / Lithium	(CAS-No.) 21324-40-3	< 20	Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT RE 1, H372

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	hexafluorophosphate			
Dimethyl carbonate	Carbonic acid, dimethyl ester / Methyl carbonate / DIMETHYL CARBONATE / dimethyl carbonate	(CAS-No.) 616-38-6	< 20	Flam. Liq. 2, H225
1,3-Dioxolan-2-one	Ethylene carbonate / Carbonic acid, cyclic ethylene ester / Cyclic ethylene carbonate / Ethylene glycol carbonate / Glycol carbonate / ETHYLENE CARBONATE / 2-Oxo-1,3-dioxolan / 2-Dioxolanone	(CAS-No.) 96-49-1	< 20	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 STOT RE 2, H373
Carbonate, methyl ethyl	Ethyl methyl carbonate / Carbonic acid, ethyl methyl ester / ethyl methyl carbonate	(CAS-No.) 623-53-0	< 20	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Propylene carbonate	Carbonic acid cyclic methylethylene ester / Carbonic acid, cyclic propylene ester / Carbonic acid, propylene ester / Cyclic 1,2-propylene carbonate / Cyclic methylethylene carbonate / Cyclic propylene carbonate / 1,3-Dioxolan-2-one, 4-methyl- / 4-Methyl-1,3-dioxolan-2-one / 4-Methyl-1,3-dioxolane-2-one / 4-Methyl-2-oxo-1,3-dioxolane / 1,2-Propanediol carbonate / 1,2-Propanediol cyclic carbonate / 1,2-Propanediyl carbonate / 1,2-Propylene carbonate / Propylene glycol cyclic carbonate / 1,2-Propanediolcyclic carbonate / PROPYLENE CARBONATE / Propylene glycol carbonate / 2-Oxo-4-methyl-1,3-dioxolan / 4-Methyl-2-dioxolanone	(CAS-No.) 108-32-7	≤ 20	Eye Irrit. 2A, H319
Diethyl carbonate	Carbonic acid, diethyl ester / Ethyl carbonate	(CAS-No.) 105-58-8	≤ 20	Flam. Liq. 3, H226 STOT SE 3, H335
Copper	C.I. 77400 / C.I. Pigment Metal 2 / Copper, elemental / Cl 77400 / Copper metal / Copper, metallic / Pigment Metal 2 / Granulated copper / copper	(CAS-No.) 7440-50-8	≤ 18	Comb. Dust
Graphite	C.I. Pigment Black 10 / C.I. 77265 / graphite	(CAS-No.) 7782-42-5	13 – 18	Comb. Dust
Carbon black	C.I. 77266 / C.I. Pigment Black 6 / C.I. Pigment Black 7 / Lampblack / Vegetable carbon / Microjet Black CW / Pigment Black 7 / Coal soot / Channel black / Bonjet Black CW / D and C Black No. 4 / CARBON BLACK / D and C Black No. 2 / Carbon Black	(CAS-No.) 1333-86-4	13 – 18	Comb. Dust
1,1-Difluoroethylene polymer	Ethene, 1,1-difluoro-, homopolymer / Homopolymer, ethene, 1,1-difluoro- / Polyvinylidene fluoride / Polyvinylidene fluoride resin / Poly(1,1-difluoroethene) / POLYVINYLIDENE DIFLUORIDE	(CAS-No.) 24937-79-9	< 10	Comb. Dust

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	/ Poly(vinylidene fluoride) / Vinylidene fluoride homopolymer / Polymer of 1,1-difluoroethene			
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Full text of H-statements: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: The following first aid measures apply in case of exposure to the interior battery components, if the battery is damaged and exposure occurs. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Application of 2.5% calcium gluconate gel/solution to any affected area is recommended.

Inhalation: For exposure to battery contents: . First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

Skin Contact: For exposure to battery contents: . Remove contaminated clothing. Immediately flush skin with plenty of water for at least 30 minutes. Get immediate medical advice/attention. Wash contaminated clothing before reuse. If available, apply calcium gluconate ointment to the exposed area.

Eye Contact: For exposure to battery contents: . Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Exposure to battery contents may result in the following: Causes severe skin burns and eye damage. Toxic if swallowed. Fatal if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Skin sensitization. Causes damage to organs (lungs, brain, bones/teeth, and kidneys) through prolonged or repeated exposure. May damage fertility or the unborn child. May cause respiratory irritation. May cause cancer (Inhalation).

Inhalation: For exposure to the internal contents of the battery: Inhalation of this material can cause serious health effects in small amounts, leading to unconsciousness and death. Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction. May be corrosive to the respiratory tract. May cause respiratory irritation.

Skin Contact: For exposure to the internal contents of the battery: Causes severe irritation which will progress to chemical burns. May cause an allergic skin reaction.

Eye Contact: For exposure to the internal contents of the battery: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: For exposure to the internal contents of the battery: This material is toxic in small amounts orally, and can cause adverse health effects or death. . May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: For exposure to the internal contents of the battery: May cause cancer by inhalation. May damage fertility or the unborn child. Causes damage to organs (lungs, brain, bones/teeth, and kidneys) through prolonged or repeated exposure.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand. Application of 2.5% calcium gluconate gel/solution to any affected area is recommended.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Internal contents may react with water to generate hazardous gases. Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but will burn at high temperatures.

Explosion Hazard: Product is not explosive. If heated above 125°C (257°F) cells can explode.

Reactivity: Product itself is stable, but if damaged or opened . can release toxic and corrosive hydrofluoric acid on contact with water or other incompatible materials. . May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction. Contact with acids liberates toxic gas. Hazardous reactions may occur on contact with certain chemicals. Refer to incompatible materials.

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5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. Do not get water inside containers. Do not apply water stream directly at source of leak. Remove containers from fire area if this can be done without risk. Do not breathe fumes from fires or vapours from decomposition. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂). Metal oxides. Oxides of nickel. Oxides of manganese. Oxides of cobalt. Lithium Compounds. Lithium oxides. Phosphorus oxides. Copper oxides. Aluminum oxides. Hydrogen Fluoride (HF). . Corrosive vapors. Toxic fumes may be released.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses. Batteries may explode in fire. Damaged batteries can result in rapid heating and the release of flammable vapors.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Exposure to materials housed in battery: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, fume, dust, or mist. Do not handle until all safety precautions have been read and understood.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area. Evacuate unnecessary personnel. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions. Ventilate area.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. If battery is not damaged cleanup spills mechanically, and put into approved container for disposal. If battery is damaged and/or leaking: Cautiously neutralize spilled liquid. Absorb and/or contain spill with inert material. Transfer spilled material to a suitable container for disposal. Use only non-sparking tools. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Do not open or damage enclosure, or battery cell as this could cause a potential exposure and release of hazardous materials. Under normal conditions of use this product is considered an article and exposure to the ingredients contained within this product is unlikely. . Batteries are designed to be recharged. However, improperly charging may cause the battery to flame. Use only approved chargers and procedures. Never disassemble a battery or bypass any safety device. Do not crush, pierce, short (+) and (-) battery terminals with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not expose to heat, or ignition sources as this could cause an explosion. If heated above 125°C (257°F) may explode. Do not puncture or incinerate container. May release corrosive vapors.

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Precautions for Safe Handling: Since this product is a sealed battery, normal handling hazards are minimal unless the battery is damaged or the internal contents are exposed. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. If the battery is damaged: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not get in eyes, on skin, or on clothing. Do not breathe dust, vapors, spray from inner battery components. Use only outdoors or in a well-ventilated area. Handle empty containers with care because they may still present a hazard. Use appropriate personal protective equipment (PPE).

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks. Do not store batteries in a manner that allows terminals to short circuit. Do not place batteries near heating equipment, nor expose to direct sunlight for long periods. Store in a dry, cool and well-ventilated place. Keep/Store away from extremely high or low temperatures, ignition sources, direct sunlight, incompatible materials. Store in original container or corrosive resistant and/or lined container. Store locked up.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Water. Combustible materials. Peroxides. Moisture. Reducing agents. Alkalis.

Storage Temperature: 20 °C (68 °F); Room temperature

7.3. Specific End Use(s)

Lithium-Ion battery pack.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Nickel oxide (NiO) (1313-99-1)		
USA ACGIH	ACGIH OEL TWA	0.1 mg/m ³ (soluble Ni compounds) 0.2 (insoluble Ni compounds)
USA OSHA	OSHA PEL (TWA) [1]	1 mg/m ³ (as Ni)
Copper (7440-50-8)		
USA ACGIH	ACGIH OEL TWA	0.2 mg/m ³ (fume)
USA OSHA	OSHA PEL (TWA) [1]	0.1 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
USA NIOSH	NIOSH REL (TWA)	1 mg/m ³ (dust and mist) 0.1 mg/m ³ (fume)
USA IDLH	IDLH	100 mg/m ³ (dust, fume and mist)
Alberta	OEL TWA	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
British Columbia	OEL TWA	1 mg/m ³ (dust and mist) 0.2 mg/m ³ (fume)
Manitoba	OEL TWA	0.2 mg/m ³ (fume)
New Brunswick	OEL TWA	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Newfoundland & Labrador	OEL TWA	0.2 mg/m ³ (fume)
Nova Scotia	OEL TWA	0.2 mg/m ³ (fume)
Nunavut	OEL STEL	3 mg/m ³ (dust and mist) 0.6 mg/m ³ (fume)
Nunavut	OEL TWA	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Northwest Territories	OEL STEL	3 mg/m ³ (dust and mist) 0.6 mg/m ³ (fume)
Northwest Territories	OEL TWA	0.2 mg/m ³ (fume)

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		1 mg/m ³ (dust and mist)
Ontario	OEL TWA	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Prince Edward Island	OEL TWA	0.2 mg/m ³ (fume)
Québec	VEMP (OEL TWA)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Saskatchewan	OEL STEL	0.6 mg/m ³ (fume) 3 mg/m ³ (dust and mist)
Saskatchewan	OEL TWA	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Yukon	OEL STEL	0.2 mg/m ³ (fume) 2 mg/m ³ (dust and mist)
Yukon	OEL TWA	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Aluminum (7429-90-5)		
USA ACGIH	ACGIH OEL TWA	1 mg/m ³ (respirable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Alberta	OEL TWA	10 mg/m ³ (dust)
British Columbia	OEL TWA	1 mg/m ³ (respirable)
Manitoba	OEL TWA	1 mg/m ³ (respirable particulate matter)
New Brunswick	OEL TWA	10 mg/m ³ (metal dust)
Newfoundland & Labrador	OEL TWA	1 mg/m ³ (respirable particulate matter)
Nova Scotia	OEL TWA	1 mg/m ³ (respirable particulate matter)
Nunavut	OEL STEL	20 mg/m ³ (metal-dust)
Nunavut	OEL TWA	10 mg/m ³ (metal-dust)
Northwest Territories	OEL STEL	20 mg/m ³ (metal-dust)
Northwest Territories	OEL TWA	10 mg/m ³ (metal-dust)
Ontario	OEL TWA	1 mg/m ³ (respirable particulate matter)
Prince Edward Island	OEL TWA	1 mg/m ³ (respirable particulate matter)
Québec	VEMP (OEL TWA)	10 mg/m ³
Saskatchewan	OEL STEL	20 mg/m ³ (dust)
Saskatchewan	OEL TWA	10 mg/m ³ (dust)
Nickel (7440-02-0)		
USA ACGIH	ACGIH OEL TWA	1.5 mg/m ³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Suspected as a Human Carcinogen
USA ACGIH	BEI (BLV)	5 µg/l Parameter: Nickel - Medium: urine - Sampling time: post-shift at end of workweek (background)
USA OSHA	OSHA PEL (TWA) [1]	1 mg/m ³
USA NIOSH	NIOSH REL (TWA)	0.015 mg/m ³
USA IDLH	IDLH	10 mg/m ³
Alberta	OEL TWA	1.5 mg/m ³
British Columbia	OEL TWA	0.05 mg/m ³
Manitoba	OEL TWA	1.5 mg/m ³ (inhalable particulate matter)
New Brunswick	OEL TWA	1 mg/m ³
Newfoundland & Labrador	OEL TWA	1.5 mg/m ³ (inhalable particulate matter)
Nova Scotia	OEL TWA	1.5 mg/m ³ (inhalable particulate matter)
Nunavut	OEL STEL	3 mg/m ³ (inhalable fraction)
Nunavut	OEL TWA	1.5 mg/m ³ (inhalable fraction)

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Northwest Territories	OEL STEL	3 mg/m ³ (inhalable fraction)
Northwest Territories	OEL TWA	1.5 mg/m ³ (inhalable fraction)
Ontario	OEL TWA	1 mg/m ³ (inhalable fraction)
Prince Edward Island	OEL TWA	1.5 mg/m ³ (inhalable particulate matter)
Québec	VEMP (OEL TWA)	1.5 mg/m ³ (inhalable dust)
Saskatchewan	OEL STEL	3 mg/m ³ (inhalable fraction)
Saskatchewan	OEL TWA	1.5 mg/m ³ (inhalable fraction)
Yukon	OEL STEL	3 mg/m ³
Yukon	OEL TWA	1 mg/m ³
Graphite (7782-42-5)		
USA ACGIH	ACGIH OEL TWA	2 mg/m ³ (all forms except graphite fibers-respirable particulate matter)
USA OSHA	OSHA PEL (TWA) [1]	15 mg/m ³ (synthetic-total dust) 5 mg/m ³ (synthetic-respirable fraction)
USA OSHA	OSHA PEL (TWA) [2]	15 mppcf (natural) (See 29 CFR 1910.1000 TABLE Z-3)
USA NIOSH	NIOSH REL (TWA)	2.5 mg/m ³ (natural-respirable dust)
USA IDLH	IDLH	1250 mg/m ³ (Graphite (natural))
Alberta	OEL TWA	2 mg/m ³ (all forms except Graphite fibres-respirable)
British Columbia	OEL TWA	2 mg/m ³ (all forms except Graphite fibres-respirable)
Manitoba	OEL TWA	2 mg/m ³ (all forms except Graphite fibers-respirable particulate matter)
New Brunswick	OEL TWA	2 mg/m ³ (all forms except graphite fibres)
Newfoundland & Labrador	OEL TWA	2 mg/m ³ (all forms except Graphite fibers-respirable particulate matter)
Nova Scotia	OEL TWA	2 mg/m ³ (all forms except Graphite fibers-respirable particulate matter)
Nunavut	OEL STEL	4 mg/m ³ (natural, all forms, except Graphite fibres-respirable fraction)
Nunavut	OEL TWA	2 mg/m ³ (natural, all forms, except Graphite fibres-respirable fraction)
Northwest Territories	OEL STEL	4 mg/m ³ (natural, all forms, except Graphite fibres-respirable fraction)
Northwest Territories	OEL TWA	2 mg/m ³ (natural, all forms, except Graphite fibres-respirable fraction)
Ontario	OEL TWA	2 mg/m ³ (except Graphite fibres-respirable particulate matter)
Prince Edward Island	OEL TWA	2 mg/m ³ (all forms except Graphite fibers-respirable particulate matter)
Québec	VEMP (OEL TWA)	2 mg/m ³ (containing no Asbestos and <1% Crystalline silica, except Graphite fibres-respirable dust)
Saskatchewan	OEL STEL	4 mg/m ³ (natural, except Graphite fibres-respirable fraction)
Saskatchewan	OEL TWA	2 mg/m ³ (natural, except Graphite fibres-respirable fraction)
Yukon	OEL TWA	20 mppcf 30 mppcf (synthetic) 10 mg/m ³ (synthetic)
Carbon black (1333-86-4)		
USA ACGIH	ACGIH OEL TWA	3 mg/m ³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans

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USA OSHA	OSHA PEL (TWA) [1]	3.5 mg/m ³
USA NIOSH	NIOSH REL (TWA)	3.5 mg/m ³ 0.1 mg/m ³ (Carbon black in presence of Polycyclic aromatic hydrocarbons)
USA IDLH	IDLH	1750 mg/m ³
Alberta	OEL TWA	3.5 mg/m ³
British Columbia	OEL TWA	3 mg/m ³ (inhalable)
Manitoba	OEL TWA	3 mg/m ³ (inhalable particulate matter)
New Brunswick	OEL TWA	3.5 mg/m ³
Newfoundland & Labrador	OEL TWA	3 mg/m ³ (inhalable particulate matter)
Nova Scotia	OEL TWA	3 mg/m ³ (inhalable particulate matter)
Nunavut	OEL STEL	7 mg/m ³
Nunavut	OEL TWA	3.5 mg/m ³
Northwest Territories	OEL STEL	7 mg/m ³
Northwest Territories	OEL TWA	3.5 mg/m ³
Ontario	OEL TWA	3 mg/m ³ (inhalable particulate matter)
Prince Edward Island	OEL TWA	3 mg/m ³ (inhalable particulate matter)
Québec	VEMP (OEL TWA)	3 mg/m ³ (inhalable dust)
Saskatchewan	OEL STEL	7 mg/m ³
Saskatchewan	OEL TWA	3.5 mg/m ³
Yukon	OEL STEL	7 mg/m ³
Yukon	OEL TWA	3.5 mg/m ³
Manganese (7439-96-5)		
USA ACGIH	ACGIH OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (Ceiling)	5 mg/m ³ (fume)
USA NIOSH	NIOSH REL (TWA)	1 mg/m ³ (fume)
USA NIOSH	NIOSH REL (STEL)	3 mg/m ³
USA IDLH	IDLH	500 mg/m ³
Alberta	OEL TWA	0.2 mg/m ³
British Columbia	OEL TWA	0.2 mg/m ³ (total) 0.02 mg/m ³ (respirable)
Manitoba	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
New Brunswick	OEL TWA	0.2 mg/m ³
Newfoundland & Labrador	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
Nova Scotia	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
Nunavut	OEL STEL	0.6 mg/m ³
Nunavut	OEL TWA	0.2 mg/m ³
Northwest Territories	OEL STEL	0.6 mg/m ³
Northwest Territories	OEL TWA	0.2 mg/m ³
Ontario	OEL TWA	0.2 mg/m ³
Prince Edward Island	OEL TWA	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
Québec	VEMP (OEL TWA)	0.2 mg/m ³ (total dust and fume)
Saskatchewan	OEL STEL	0.6 mg/m ³
Saskatchewan	OEL TWA	0.2 mg/m ³
Yukon	OEL C	5 mg/m ³

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8.2. Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Gas detectors should be used when toxic gases may be released. Gas detectors should be used when flammable gases or vapors may be released. Ensure all national/local regulations are observed.

Personal Protective Equipment: Not required under normal conditions of use. When handling damaged batteries: . Gloves. Protective goggles. Corrosionproof clothing. Face shield. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Chemically resistant materials and fabrics. Corrosion-proof clothing.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Environmental Exposure Controls: Avoid release to the environment.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Manufactured Battery Cell
Odor	: Odorless
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Lower Flammable Limit	: No data available
Upper Flammable Limit	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available
Specific Gravity	: No data available
Solubility	: Water: Insoluble
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Product itself is stable, but if damaged or opened . can release toxic and corrosive hydrofluoric acid on contact with water or other incompatible materials. . May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction. Contact with acids liberates toxic gas. Hazardous reactions may occur on contact with certain chemicals. Refer to incompatible materials.

10.2. Chemical Stability:

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions:

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Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Do not use unauthorized charger or charging method. Do not deconstruct or disassemble battery or solder battery. . Damaging, puncturing, or opening the battery cell. Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers. Water. Combustible materials. Peroxides. Moisture. Reducing agents. Alkalis.

10.6. Hazardous Decomposition Products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition generates: Corrosive vapors. May release flammable gases. Carbon oxides (CO, CO₂). Metal oxides. Hydrogen chloride. Hydrogen fluoride.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity (Oral): Toxic if swallowed.

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Fatal if inhaled.

LD50 and LC50 Data:

Rechargeable Lithium Ion Battery Pack	
ATE US/CA (oral)	145.21 mg/kg body weight
ATE US/CA (dust, mist)	0.19 mg/l/4h

Skin Corrosion/Irritation: Causes severe skin burns.

Eye Damage/Irritation: Causes serious eye damage.

Respiratory or Skin Sensitization: May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer.

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs through prolonged or repeated exposure.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: For exposure to the internal contents of the battery: Inhalation of this material can cause serious health effects in small amounts, leading to unconsciousness and death. Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction. May be corrosive to the respiratory tract. May cause respiratory irritation.

Symptoms/Injuries After Skin Contact: For exposure to the internal contents of the battery: Causes severe irritation which will progress to chemical burns. May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: For exposure to the internal contents of the battery: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Injuries After Ingestion: For exposure to the internal contents of the battery: This material is toxic in small amounts orally, and can cause adverse health effects or death. . May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: For exposure to the internal contents of the battery: May cause cancer by inhalation. May damage fertility or the unborn child. Causes damage to organs (lungs, brain, bones/teeth, and kidneys) through prolonged or repeated exposure.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Carbon (7440-44-0)	
LD50 Oral Rat	> 10000 mg/kg
Nickel oxide (NiO) (1313-99-1)	
LD50 Oral Rat	> 5000 mg/kg
LC50 Inhalation Rat	> 5.08 mg/l/4h
LC50 Inhalation Rat	> 5.08 mg/l/4h
Manganese oxide (MnO ₂) (1313-13-9)	

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LC50 Inhalation Rat	> 1500 mg/m ³ (Exposure time: 4 h)
ATE US/CA (oral)	500.00 mg/kg body weight
ATE US/CA (dust, mist)	1.50 mg/l/4h
Cobalt oxide (CoO) (1307-96-6)	
LD50 Oral Rat	159 mg/kg
LD50 Dermal Rat	> 2000 mg/kg
LC50 Inhalation Rat	0.06 mg/l/4h
LC50 Inhalation Rat	0.06 mg/l/4h
Phosphate(1-), hexafluoro-, lithium (21324-40-3)	
LD50 Oral Rat	50 – 300 mg/kg
Dimethyl carbonate (616-38-6)	
LD50 Oral Rat	13 g/kg
LD50 Dermal Rabbit	> 5 g/kg
LC50 Inhalation Rat	> 5.36 mg/l/4h
1,3-Dioxolan-2-one (96-49-1)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 26420 mg/kg
LC50 Inhalation Rat	> 730 mg/m ³ (Exposure time: 8 h)
ATE US/CA (oral)	500.00 mg/kg body weight
Carbonate, methyl ethyl (623-53-0)	
LD50 Oral Rat	> 15000 mg/kg
LC50 Inhalation Rat	> 17.6 mg/l/4h
Copper (7440-50-8)	
LC50 Inhalation Rat	> 5.11 mg/l/4h
Aluminum (7429-90-5)	
LC50 Inhalation Rat	> 0.888 mg/l/4h
Propylene carbonate (108-32-7)	
LD50 Oral Rat	29000 mg/kg
LD50 Dermal Rabbit	> 3000 mg/kg
Diethyl carbonate (105-58-8)	
LD50 Oral Rat	> 15000 mg/kg
LC50 Inhalation Rat	> 1268 mg/m ³ (Exposure time: 7 h)
Cobaltate (CoO21-), lithium (12190-79-3)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.05 mg/l/4h
Nickel (7440-02-0)	
LD50 Oral Rat	> 9000 mg/kg
LC50 Inhalation Rat	> 10.2 mg/l (Exposure time: 1 h)
Graphite (7782-42-5)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 2000 mg/m ³ (Exposure time: 4 h)
Carbon black (1333-86-4)	
LD50 Oral Rat	> 8000 mg/kg
Manganese (7439-96-5)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.14 mg/l/4h
Nickel oxide (NiO) (1313-99-1)	
IARC Group	1

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National Toxicology Program (NTP) Status	Evidence of Carcinogenicity.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Cobalt oxide (CoO) (1307-96-6)	
IARC Group	2B
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Nickel (7440-02-0)	
IARC Group	2B
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Carbon black (1333-86-4)	
IARC Group	2B
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Exposure to materials housed in battery: Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Ecology - Water: This information applies to the materials enclosed inside of the battery pack. If the battery is misused, altered outside of its normal conditions of use, or there is a spill, leak, fire, or other emergency, and the contents are released: the internal contents are considered very toxic to aquatic life, and very toxic to aquatic life with long lasting effects.

Nickel oxide (NiO) (1313-99-1)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
Dimethyl carbonate (616-38-6)	
LC50 Fish 1	> 100 mg/l Species: Danio rerio
EC50 - Crustacea [1]	> 100 mg/l Species: Daphnia magna
ErC50 algae	> 100 mg/l Species: Pseudokirchnerella subcapitata
NOEC Chronic Fish	> 100 mg/l Species: Danio rerio
NOEC Chronic Crustacea	25 mg/l Species: Daphnia magna
NOEC Chronic Algae	> 100 mg/l Species: Pseudokirchnerella subcapitata
1,3-Dioxolan-2-one (96-49-1)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
Carbonate, methyl ethyl (623-53-0)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
Propylene carbonate (108-32-7)	
LC50 Fish 1	> 1000 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 - Crustacea [1]	> 500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
ErC50 algae	> 929 mg/l (Exposure time: 96 h - Species: Selenastrum capricornutum [static])
Nickel (7440-02-0)	
LC50 Fish 1	100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 - Crustacea [1]	121.6 µg/l (Exposure time: 48h - Species: Ceriodaphnia dubia [static])
LC50 Fish 2	15.3 mg/l
EC50 - Crustacea [2]	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 2	0.174 (0.174 – 0.311) mg/l (Exposure time: 96 h - Species: Pseudokirchnerella subcapitata [static])
Graphite (7782-42-5)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Danio rerio [semi-static])
EC50 - Crustacea [1]	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna [static])
ErC50 algae	> 100 mg/l (Exposure time: 72 h - Species: Pseudokirchnerella subcapitata [static])
NOEC Chronic Fish	> 100 mg/l (Exposure time: 96 h - Species: Danio rerio [semi-static])
NOEC Chronic Crustacea	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna [static])

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NOEC Chronic Algae	> 100 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
Carbon black (1333-86-4)	
EC50 - Crustacea [1]	5600 mg/l (Exposure time: 24 h - Species: Daphnia magna)
Manganese (7439-96-5)	
LC50 Fish 1	> 3.6 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
NOEC Chronic Fish	3.6 mg/l (Exposure time: 96h; Species: Oncorhynchus mykiss)

12.2. Persistence and Degradability

Rechargeable Lithium Ion Battery Pack	
Persistence and Degradability	For exposure to battery contents: . May cause long-term adverse effects in the environment.

Copper (7440-50-8)

Persistence and Degradability	Not readily biodegradable.
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12.3. Bioaccumulative Potential

Rechargeable Lithium Ion Battery Pack	
Bioaccumulative Potential	Not established.

Manganese oxide (MnO2) (1313-13-9)

BCF Fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water (Log Pow)	< 0 (at 20 °C)

Propylene carbonate (108-32-7)

Partition coefficient n-octanol/water (Log Pow)	0.48 (at 25 °C)
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12.4. Mobility in Soil

Rechargeable Lithium Ion Battery Pack	
Ecology - Soil	Not established.

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Batteries should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. Recycle the material as far as possible. Do not puncture or incinerate container.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name	: LITHIUM ION BATTERIES INCLUDING LITHIUM ION POLYMER BATTERIES
Hazard Class	: 9
Identification Number	: UN3480
Label Codes	: 9
Marine Pollutant	: Marine pollutant
ERG Number	: 147



14.2. In Accordance with IMDG

Proper Shipping Name	: LITHIUM ION BATTERIES
Hazard Class	: 9A
Identification Number	: UN3480
Label Codes	: 9A



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EmS-No. (Fire) : F-A
 EmS-No. (Spillage) : S-I
 Marine pollutant : Marine pollutant
 MFAG Number : 147

14.3. In Accordance with IATA

Proper Shipping Name : LITHIUM ION BATTERIES
 Hazard Class : 9A
 Identification Number : UN3480
 Label Codes : 9A
 ERG Code (IATA) : 12FZ



14.4. In Accordance with TDG

Proper Shipping Name : LITHIUM ION BATTERIES
 Hazard Class : 9
 Identification Number : UN3480
 Label Codes : 9
 Marine Pollutant (TDG) : Marine pollutant



Battery Information by Models

Models	Capacity (Ah)	Capacity (Wh)	Weight (Kg)
BL1203/BL1203-BULK	2	24	0.25
BL2005/BL2005-BULK	1.5	30	0.43
BL2012/BL2012-BULK	2.5	50	0.43
BL2010/BL2010-BULK	3	60	0.73
BL2022/BL2022-BULK	5	90	0.73
BL4011/BL4011-BULK	2.5	90	0.70
BL2013/BL2013-BULK	2.8	50	0.43
BL2023/BL2023-BULK	5.6	101	0.73
BL4013/BL4013-BULK	2.8	101	0.70

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

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SARA Section 311/312 Hazard Classes

Health hazard - Acute toxicity (any route of exposure)
 Health hazard - Serious eye damage or eye irritation
 Health hazard - Skin corrosion or Irritation
 Health hazard - Respiratory or skin sensitization
 Health hazard - Carcinogenicity
 Health hazard - Specific target organ toxicity (single or repeated exposure)

Carbon (7440-44-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Nickel oxide (NiO) (1313-99-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Manganese oxide (MnO₂) (1313-13-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Cobalt oxide (CoO) (1307-96-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

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EPA TSCA Regulatory Flag	PMN - PMN - indicates a commenced PMN substance.
Dimethyl carbonate (616-38-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
1,3-Dioxolan-2-one (96-49-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Carbonate, methyl ethyl (623-53-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
1,1-Difluoroethylene polymer (24937-79-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %
Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1 % (dust or fume only)
Propylene carbonate (108-32-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Diethyl carbonate (105-58-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Cobaltate (CoO21-), lithium (12190-79-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Nickel (7440-02-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb (only applicable if particles are < 100 µm)
SARA Section 313 - Emission Reporting	0.1 %
Graphite (7782-42-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Carbon black (1333-86-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1 %

15.2. US State Regulations

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State or local regulations

California Proposition 65

 **WARNING:** This product can expose you to Nickel oxide (NiO), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Nickel oxide (NiO) (1313-99-1)	X			

Rechargeable Lithium Ion Battery Pack

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Cobalt oxide (CoO) (1307-96-6)	X			
Nickel (7440-02-0)	X			
Carbon black (1333-86-4)	X			
Cadmium compounds	X			
Lead compounds		X	X	X
Mercury compounds		X		

Carbon (7440-44-0)

U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term

Nickel oxide (NiO) (1313-99-1)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List

RTK - U.S. - Pennsylvania - RTK (Right to Know) List

RTK - U.S. - Massachusetts - Right To Know List

RTK - U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

U.S. - New Jersey - Special Health Hazards Substances List

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)

U.S. - Massachusetts - Threshold Effects Exposure Limits (TELEs)

U.S. - Massachusetts - Allowable Ambient Limits (AALs)

U.S. - Illinois - Toxic Air Contaminant Carcinogens

U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term

RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)

U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories

U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations

U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute

U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic

U.S. - California - SCAQMD - Toxic Air Contaminants - Carcinogens

U.S. - California - SDAPCD - Toxic Air Contaminants - Carcinogenic Impacts Must Be Calculated

U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour

U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual

U.S. - Maine - Chemicals of Concern

U.S. - Minnesota - Chemicals of High Concern

U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

Manganese oxide (MnO2) (1313-13-9)

U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term

U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour

U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual

Cobalt oxide (CoO) (1307-96-6)

U.S. - Illinois - Toxic Air Contaminants

U.S. - Illinois - Toxic Air Contaminant Carcinogens

U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term

U.S. - Maine - Chemicals of Concern

U.S. - Minnesota - Chemicals of High Concern

U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term

Dimethyl carbonate (616-38-6)

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Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - Delaware - Volatile Organic Compounds Exempt from Requirements
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Massachusetts - Volatile Organic Compounds Exempt From Requirements

1,3-Dioxolan-2-one (96-49-1)

RTK - U.S. - Pennsylvania - RTK (Right to Know) List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

Copper (7440-50-8)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Illinois - Toxic Air Contaminants
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - California - Priority Toxic Pollutants - Saltwater Criteria
U.S. - California - Priority Toxic Pollutants - Freshwater Criteria
U.S. - California - Priority Toxic Pollutants - Human Health Criteria
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELEs)
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - South Carolina - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Connecticut - Water Quality Standards - Health Designations
U.S. - Connecticut - Water Quality Standards - Consumption of Water and Organisms
U.S. - Connecticut - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Texas - Drinking Water Standards - Secondary Constituent Levels (SCLs)
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances

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Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

U.S. - Connecticut - Drinking Water Quality Standards - Maximum Contaminant Levels
U.S. - Connecticut - Drinking Water Quality Standards - Groundwater Sources
U.S. - Massachusetts - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Massachusetts - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Michigan - Polluting Materials List
RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - New Jersey - Primary Drinking Water Standards - Action Levels - ALs
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute
U.S. - Maryland - Surface Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
U.S. - Maryland - Surface Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Maryland - Surface Water Quality Standards - Chronic Freshwater Aquatic Life
U.S. - Maryland - Surface Water Quality Standards - Acute Freshwater Aquatic Life
U.S. - Maryland - Surface Water Quality Standards - Consumption of Water and Organisms
U.S. - North Dakota - Water Quality Standards - Human Health Value for Classes I, IA, II
U.S. - North Dakota - Water Quality Standards - Aquatic Life Chronic Value for Classes I, IA, II, III
U.S. - North Dakota - Water Quality Standards - Aquatic Life Acute Value for Classes I, IA, II, III
U.S. - Pennsylvania - Beneficial Use of Sewage Sludge by Land Application - Pollutant Ceiling Limits
U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less
U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Water and Aquatic Organisms
Gas concentrations are expressed as percentages by volume.
All concentrations are expressed as percentages by weight unless the ingredient is a gas.
U.S. - Rhode Island - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Virginia - Water Quality Standards - Chronic Saltwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Acute Saltwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Chronic Freshwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Acute Freshwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Public Water Supply Effluent Limits
U.S. - West Virginia - Water Quality - Groundwater Standards - Ceiling Concentrations
U.S. - Pennsylvania - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Missouri - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - New Hampshire - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - New Hampshire - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Utah - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Utah - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Missouri - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Nevada - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Florida - Drinking Water Standards - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S. - Arkansas - Surface Water Quality Standards - Chronic Aquatic Life Criteria
U.S. - Arkansas - Surface Water Quality Standards - Acute Aquatic Life Criteria
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour

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Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Fresh Water
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Fresh Water
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Marine Water
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Marine Water
U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)
U.S. - Colorado - Primary Drinking Water Regulations - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

Aluminum (7429-90-5)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - South Carolina - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Connecticut - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Texas - Drinking Water Standards - Secondary Constituent Levels (SCLs)
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - Massachusetts - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - New Jersey - Secondary Drinking Water Standards - Recommended Upper Limits (RULs)
U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less
All concentrations are expressed as percentages by weight unless the ingredient is a gas.
U.S. - Pennsylvania - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Missouri - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - New Hampshire - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Utah - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Nevada - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Florida - Drinking Water Standards - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual

Rechargeable Lithium Ion Battery Pack

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Fresh Water
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Fresh Water
U.S. - Colorado - Primary Drinking Water Regulations - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

Propylene carbonate (108-32-7)

U.S. - Delaware - Volatile Organic Compounds Exempt from Requirements
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Massachusetts - Volatile Organic Compounds Exempt From Requirements

Diethyl carbonate (105-58-8)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

Nickel (7440-02-0)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List
RTK - U.S. - Massachusetts - Right To Know List
RTK - U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Illinois - Toxic Air Contaminants
U.S. - North Carolina - Control of Toxic Air Pollutants
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Washington - Permissible Exposure Limits - STELS
U.S. - California - Priority Toxic Pollutants - Saltwater Criteria
U.S. - California - Priority Toxic Pollutants - Freshwater Criteria
U.S. - California - Priority Toxic Pollutants - Human Health Criteria
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELEs)
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Idaho - Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Illinois - Toxic Air Contaminant Carcinogens
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Water Quality Standards - Health Designations
U.S. - Connecticut - Water Quality Standards - Consumption of Water and Organisms

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Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

U.S. - Connecticut - Water Quality Standards - Consumption of Organisms Only
U.S. - Connecticut - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - Washington - Dangerous Waste - Dangerous Waste Constituents List
U.S. - Connecticut - Drinking Water Quality Standards - Maximum Contaminant Levels
U.S. - Vermont - Hazardous Waste - Hazardous Constituents
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Michigan - Polluting Materials List
RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Massachusetts - Drinking Water Guidelines
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories
U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic
U.S. - California - SCAQMD - Toxic Air Contaminants - Carcinogens
U.S. - California - SDAPCD - Toxic Air Contaminants - Carcinogenic Impacts Must Be Calculated
U.S. - Maryland - Surface Water Quality Standards - Consumption of Organisms Only
U.S. - Maryland - Surface Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
U.S. - Maryland - Surface Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Maryland - Surface Water Quality Standards - Chronic Freshwater Aquatic Life
U.S. - Maryland - Surface Water Quality Standards - Acute Freshwater Aquatic Life
U.S. - Maryland - Surface Water Quality Standards - Consumption of Water and Organisms
U.S. - North Dakota - Water Quality Standards - Human Health Value for Classes I, IA, II
U.S. - North Dakota - Water Quality Standards - Human Health Value for Class III
U.S. - North Dakota - Water Quality Standards - Aquatic Life Chronic Value for Classes I, IA, II, III
U.S. - North Dakota - Water Quality Standards - Aquatic Life Acute Value for Classes I, IA, II, III
U.S. - Pennsylvania - Beneficial Use of Sewage Sludge by Land Application - Pollutant Ceiling Limits
U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less
U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Aquatic Organisms Only
U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Water and Aquatic Organisms
Gas concentrations are expressed as percentages by volume.
All concentrations are expressed as percentages by weight unless the ingredient is a gas.
U.S. - Rhode Island - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Virginia - Water Quality Standards - Chronic Saltwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Acute Saltwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Chronic Freshwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Acute Freshwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Surface Waters Not Used for the Public Water Supply Effluent Limits

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U.S. - Virginia - Water Quality Standards - Public Water Supply Effluent Limits
U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Utah - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Nebraska - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants
U.S. - Florida - Drinking Water Standards - Inorganic Contaminants - Maximum Contaminant Levels (MCLs)
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S. - New Hampshire - Prohibited Volatile Organic Compounds
U.S. - Arkansas - Surface Water Quality Standards - Chronic Aquatic Life Criteria
U.S. - Arkansas - Surface Water Quality Standards - Acute Aquatic Life Criteria
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - Maine - Chemicals of Concern
U.S. - New York - Priority Chemical Avoidance List
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Fresh Water
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Fresh Water
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Marine Water
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Marine Water
U.S. - Minnesota - Chemicals of High Concern
U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

Graphite (7782-42-5)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - STELS
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - Oregon - Permissible Exposure Limits - Mineral Dusts
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - New York - Occupational Exposure Limits - Mineral Dusts
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual

Carbon black (1333-86-4)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)

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According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

U.S. - Illinois - Toxic Air Contaminants
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Illinois - Toxic Air Contaminant Carcinogens
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - Maine - Chemicals of Concern
U.S. - Minnesota - Chemicals of High Concern
U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

Manganese (7439-96-5)

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List
RTK - U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Illinois - Toxic Air Contaminants
U.S. - North Carolina - Control of Toxic Air Pollutants
U.S. - Tennessee - Occupational Exposure Limits - STELs
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Vermont - Permissible Exposure Limits - STELs
U.S. - Vermont - Permissible Exposure Limits - Ceilings
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - Ceilings
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Illinois - Toxic Air Contaminant Carcinogens
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - STELs
U.S. - Minnesota - Permissible Exposure Limits - STELs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - South Carolina - Secondary Maximum Contaminant Levels (SMCLs)

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U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Texas - Drinking Water Standards - Secondary Constituent Levels (SCLs)
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - Massachusetts - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - Oregon - Permissible Exposure Limits - Ceilings
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Massachusetts - Drinking Water Guidelines
U.S. - New Jersey - Secondary Drinking Water Standards - Recommended Upper Limits (RULs)
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic
U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less
U.S. - Pennsylvania - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Missouri - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - New Hampshire - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Utah - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Nevada - Drinking Water - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants
U.S. - Minnesota - Groundwater Health Risk Limits
U.S. - Florida - Drinking Water Standards - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - Colorado - Primary Drinking Water Regulations - Secondary Maximum Contaminant Levels (SMCLs)
U.S. - Minnesota - Chemicals of High Concern
U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

15.3. Canadian Regulations

Carbon (7440-44-0)

Listed on the Canadian DSL (Domestic Substances List)

Nickel oxide (NiO) (1313-99-1)

Listed on the Canadian DSL (Domestic Substances List)

Manganese oxide (MnO₂) (1313-13-9)

Listed on the Canadian DSL (Domestic Substances List)

Cobalt oxide (CoO) (1307-96-6)

Listed on the Canadian DSL (Domestic Substances List)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

Dimethyl carbonate (616-38-6)

Listed on the Canadian DSL (Domestic Substances List)

1,3-Dioxolan-2-one (96-49-1)

Listed on the Canadian DSL (Domestic Substances List)

Carbonate, methyl ethyl (623-53-0)

Listed on the Canadian NDSL (Non-Domestic Substances List)

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1,1-Difluoroethylene polymer (24937-79-9)
Listed on the Canadian DSL (Domestic Substances List)
Copper (7440-50-8)
Listed on the Canadian DSL (Domestic Substances List)
Aluminum (7429-90-5)
Listed on the Canadian DSL (Domestic Substances List)
Propylene carbonate (108-32-7)
Listed on the Canadian DSL (Domestic Substances List)
Diethyl carbonate (105-58-8)
Listed on the Canadian DSL (Domestic Substances List)
Cobaltate (CoO21-), lithium (12190-79-3)
Listed on the Canadian DSL (Domestic Substances List)
Nickel (7440-02-0)
Listed on the Canadian DSL (Domestic Substances List)
Graphite (7782-42-5)
Listed on the Canadian DSL (Domestic Substances List)
Carbon black (1333-86-4)
Listed on the Canadian DSL (Domestic Substances List)
Manganese (7439-96-5)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 01/11/2022

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Aquatic Chronic 4	Hazardous to the aquatic environment - Chronic Hazard Category 4
Carc. 1A	Carcinogenicity Category 1A
Carc. 1B	Carcinogenicity Category 1B
Carc. 2	Carcinogenicity Category 2
Comb. Dust	Combustible Dust
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids Category 3
Resp. Sens. 1	Respiratory sensitization, Category 1
Resp. Sens. 1B	Respiratory sensitization, Category 1B
Skin Corr. 1A	Skin corrosion/irritation Category 1A

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Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization, Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H301	Toxic if swallowed
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H330	Fatal if inhaled
H332	Harmful if inhaled
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H350	May cause cancer
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

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

NA GHS SDS 2015 (Can, US)