
1. Identification

Product identifier	Lithium-Ion Batteries (4780-0, 4780-1, 4781-00, 4781-01)
Other means of identification	Not available.
Recommended use	Sealed battery
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	
Company name	Nu-Calgon
Address	2611 Schuetz Road St. Louis, MO 63043 United States
Telephone	314-469-7000 / 800-554-5499
E-mail	Not available.
Emergency phone number	1-800-424-9300 (CHEMTREC)
Supplier	See above.

2. Hazard identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
WHMIS 2015 defined hazards	Not classified
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC)	None known
WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC)	None known
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	This product is a manufactured article and is exempt. US: As per OSHA, 1910.1200(b)(6)(v), articles are not regulated under HCS 2012. As per OSHA Definitions: 1910.1200 (c). Article means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees. CANADA: As per the Hazardous Products Act: A manufactured article means any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product.

3. Composition/Information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Cobalt Lithium Manganese Nickel Oxide		182442-95-1	15 - 40
Graphite		7782-42-5	10 - 30
Copper		7440-50-8	5 - 10
Phosphate(1-), Hexafluoro-, Lithium		21324-40-3	5 - 10
Aluminium		7429-90-5	1 - 5
Ethene, homopolymer		9002-88-4	1 - 5

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments CANADA GHS: The exact percentage (concentration) of composition has been withheld as a trade secret.
US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.
*This composition applies to the cell of the battery

4. First-aid measures

Inhalation	Not a normal route of exposure. Inhalation of the ruptured battery vapors may be corrosive to the upper airways, cause a burning sensation in the nose, mouth and throat as well as leading to sneezing, coughing, breathing difficulties and chest pain. If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Skin contact	Not a normal route of exposure. Direct contact with the ruptured battery may cause chemical burns. Immediately flush with water. Wash with soap and water. Obtain medical attention if irritation persists.
Eye contact	Not a normal route of exposure. Direct contact with the ruptured battery may cause chemical burns. Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 15 minutes. Obtain medical attention immediately.
Ingestion	Not a normal route of exposure. Direct contact with the ruptured battery may cause chemical burns. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious or is convulsing. Obtain medical attention.
Most important symptoms/effects, acute and delayed	Direct contact with the ruptured battery may cause chemical burns.
Indication of immediate medical attention and special treatment needed	Symptoms may be delayed. Treat patient symptomatically.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Wear rubber gloves and chemical splash goggles. Keep out of reach of children.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical powder. Sand.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
Hazardous combustion products	May include and are not limited to: Oxides of carbon. Oxides of phosphorus. Toxic fumes.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep out of low areas. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

In the case of a leaking battery: Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice.

Environmental precautions

Do not discharge into lakes, streams, ponds or public waters.

7. Handling and storage

Precautions for safe handling

Do not puncture or incinerate container. Avoid short-circuiting the battery. Avoid mechanical damage to the battery. Do not open or disassemble. Battery may explode or cause burns if disassembled, crushed or exposed to fire or high temperatures. Do not install with incorrect polarity. Do not immerse in liquids. Use good industrial hygiene practices in handling this material.

Conditions for safe storage, including any incompatibilities

Keep out of the reach of children. Keep this material away from food, drink and animal feed. Keep away from heat, sparks, and flame. Store in a cool dry place below 30°C (86°F). Do not store below -20°C.

8. Exposure controls/Personal protection

Occupational exposure limits**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3 10 mg/m3	Pyrophoric powder. Dust.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.2 mg/m3	Dust and mist. Fume.
Ethene, homopolymer (CAS 9002-88-4)	TWA	3 mg/m3 10 mg/m3	Respirable particles. Total
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m3	Respirable.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.2 mg/m3	Dust and mist. Fume.
Ethene, homopolymer (CAS 9002-88-4)	TWA	3 mg/m3 10 mg/m3	Respirable fraction. Total dust.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.2 mg/m3	Dust and mist. Fume.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	

Canada. New Brunswick Regulation 91-191, as amended

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3 10 mg/m3	Dust.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.2 mg/m3	Dust.
Ethene, homopolymer (CAS 9002-88-4)	TWA	3 mg/m3 10 mg/m3	Respirable. Inhalable
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.2 mg/m3	Dust and mist. Fume.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3 5 mg/m3	Welding fume.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.2 mg/m3	Dust and mist. Fume.
Ethene, homopolymer (CAS 9002-88-4)	TWA	10 mg/m3	Total dust.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable dust.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 2020. S-15.1 Reg. 10. Table 18)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	15 minute	20 mg/m3 10 mg/m3	Dust. Pyrophoric powder.
Copper (CAS 7440-50-8)	15 minute	3 mg/m3 0.6 mg/m3	Dust and mist. Fume.
Ethene, homopolymer (CAS 9002-88-4)	15 minute	6 mg/m3 20 mg/m3	Respirable fraction. Inhalable fraction.
Graphite (CAS 7782-42-5)	15 minute	4 mg/m3	Respirable fraction.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	15 minute	5 mg/m3	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	PEL	5 mg/m3 15 mg/m3	Respirable fraction. Total dust.
Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)	Ceiling	5 mg/m3	
Copper (CAS 7440-50-8)	PEL	1 mg/m3 0.1 mg/m3	Dust and mist. Fume.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	PEL	2.5 mg/m3	

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value	Form
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	Dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3 15 mg/m3 50 Mppcf 15 Mppcf	Respirable fraction. Total dust. Total dust. Respirable fraction.
Ethene, homopolymer (CAS 9002-88-4)	TWA	5 mg/m3 15 mg/m3 50 Mppcf 15 Mppcf	Respirable fraction. Total dust. Total dust. Respirable fraction.
Graphite (CAS 7782-42-5)	TWA	15 Mppcf	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.2 mg/m3	Dust and mist. Fume.
Graphite (CAS 7782-42-5)	TWA	2 mg/m3	Respirable fraction.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3 5 mg/m3 10 mg/m3	Welding fume or pyrophoric powder. Respirable. Total
Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)	STEL	3 mg/m3	Fume.
Copper (CAS 7440-50-8)	TWA	1 mg/m3 0.1 mg/m3	Dust and mist. Fume.
Graphite (CAS 7782-42-5)	TWA	2.5 mg/m3	Respirable.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	TWA	2.5 mg/m3	

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)	15 µg/l	Cobalt	Urine	*
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	3 mg/L	Fluoride	Urine	*
	2 mg/L	Fluoride	Urine	*

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

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Not normally required under normal use conditions. When handling in large quantities or responding to emergency situations, the use of appropriate eye protection is recommended.

Skin protection**Hand protection**

Not normally required under normal use conditions. When handling in large quantities or responding to emergency situations, the use of appropriate skin protection is recommended.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

Not normally required if good ventilation is maintained. Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).

Thermal hazards

Not available.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Cylinder
Physical state	Liquid.
Form	Solid.
Colour	Black
Odour	Odourless
Odour threshold	Not available.

pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Specific gravity	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Pour point	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	Reaction with water or moist air will release toxic, corrosive or flammable gases.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Heat, open flames, static discharge, sparks and other ignition sources. Humid air. Exposure to water or water vapour. Avoid direct sunlight. High temperatures.
Incompatible materials	Strong acids. Strong oxidising agents. Conductive materials. Seawater.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon. Oxides of lithium. Oxides of phosphorus.

11. Toxicological information

Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Information on likely routes of exposure	
Ingestion	Direct contact with the ruptured battery may cause chemical burns.
Inhalation	Inhalation of the ruptured battery vapors may be corrosive to the upper airways, cause a burning sensation in the nose, mouth and throat as well as leading to sneezing, coughing, breathing difficulties and chest pain.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with the ruptured battery may cause chemical burns. May cause blindness.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with the ruptured battery may cause chemical burns.
Information on toxicological effects	
Acute toxicity	See below.

Components	Species	Test Results
Aluminium (CAS 7429-90-5)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Rat	> 0.9 mg/L, 4 Hours, ECHA
<i>Oral</i>		
LD50	Rat	> 2000 mg/kg, ECHA
Copper (CAS 7440-50-8)		
Acute		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg, ECHA
<i>Inhalation</i>		
LC50	Rat	> 5.1 mg/l/4h, ECHA
<i>Oral</i>		
LD50	Rat	300 - 500 mg/kg, ECHA
Ethene, homopolymer (CAS 9002-88-4)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	> 11280 mg/kg
Graphite (CAS 7782-42-5)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Rat	> 2000 mg/m3, 4 Hours, ECHA
<i>Oral</i>		
LD50	Rat	> 2000 mg/kg, ECHA
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	50 - 300 mg/kg, ECHA
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Direct contact with the electrolyte may cause chemical burns.	
Corneal opacity value	Not available.	
Iris lesion value	Not available.	
Conjunctival reddening value	Not available.	
Conjunctival oedema value	Not available.	
Recover days	Not available.	

Respiratory or skin sensitisation

ACGIH sensitisation

Cobalt and inorganic compounds, inhalable fraction, as Co (CAS 182442-95-1)

Dermal sensitisation

Respiratory sensitisation

Canada - Alberta OELs: Irritant

Aluminium (CAS 7429-90-5)

Irritant

Ethene, homopolymer (CAS 9002-88-4)

Irritant

Graphite (CAS 7782-42-5)

Irritant

Canada - Manitoba OELs Hazard: Dermal sensitization

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

Dermal sensitisation

Canada - Manitoba OELs Hazard: Respiratory sensitization

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

Respiratory sensitisation

Respiratory sensitisation

The finished product is not expected to have chronic health effects.

Skin sensitisation

The finished product is not expected to have chronic health effects.

Mutagenicity

The finished product is not expected to have chronic health effects.

Carcinogenicity

The finished product is not expected to have chronic health effects.

ACGIH Carcinogens

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

A3 Confirmed animal carcinogen with unknown relevance to humans.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)
Nickel (CAS 7440-02-0)

Canada - Manitoba OELs: carcinogenicity

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

Confirmed animal carcinogen with unknown relevance to humans.

Canada - Quebec OELs: Carcinogen category

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

Detected carcinogenic effect in animals.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ethene, homopolymer (CAS 9002-88-4)

Volume 19, Supplement 7 - 3 Not classifiable as to carcinogenicity to humans.

Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)

Volume 27, Supplement 7 - 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not listed.

US NTP Report on Carcinogens: Anticipated carcinogen

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

Reasonably Anticipated to be a Human Carcinogen.

US NTP Report on Carcinogens: Known carcinogen

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

Known To Be Human Carcinogen.

Reproductive toxicity

The finished product is not expected to have chronic health effects.

Teratogenicity

The finished product is not expected to have chronic health effects.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not an aspiration hazard.

Chronic effects

The finished product is not expected to have chronic health effects.

12. Ecological information

Ecotoxicity

See below

Ecotoxicological data

Components

Species

Test Results

Aluminium (CAS 7429-90-5)

Aquatic

Fish

LC50

Rainbow trout,donaldson trout
(Oncorhynchus mykiss)

0.16 mg/L, 96 hours

Components	Species		Test Results
Copper (CAS 7440-50-8)	Algae	IC50	Algae
	Crustacea	EC50	Daphnia
	Aquatic		
	Crustacea	EC50	Water flea (Daphnia magna)
	Fish	LC50	Fathead minnow (Pimephales promelas)
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.		
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Mobility in general	Not available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

Transport of Dangerous Goods (TDG) Proof of Classification	Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below.
General	Canada: See special provisions to determine the packaging requirements and exemptions for shipping lithium batteries. US: See special provisions to determine the packaging requirements and exemptions for shipping lithium batteries.
U.S. Department of Transportation (DOT)	
Basic shipping requirements:	
UN number	UN3480
Proper shipping name	Lithium ion batteries including lithium ion polymer batteries
Hazard class	9
Transportation of Dangerous Goods (TDG - Canada)	
Basic shipping requirements:	
UN number	UN3481
Proper shipping name	Lithium ion batteries contained in equipment including lithium ion polymer batteries
Hazard class	9
IATA/ICAO (Air)	
Basic shipping requirements:	
UN number	UN3480
Proper shipping name	Lithium ion batteries including lithium ion polymer batteries
Hazard class	9
IMDG (Marine Transport)	
Basic shipping requirements:	
UN number	UN3481
Proper shipping name	Lithium ion batteries contained in equipment including lithium ion polymer batteries
Hazard class	9



15. Regulatory information

Canadian federal regulations

This product is a manufactured article and is exempt.

As per the Hazardous Products Act: A manufactured article means any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product.

Canada CEPA Schedule I: Listed substance

Aluminium (CAS 7429-90-5)	Listed.
Ethene, homopolymer (CAS 9002-88-4)	Listed.
Graphite (CAS 7782-42-5)	Listed.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	Listed.

Canada Priority Substances List (Second List): Listed substance

Aluminium (CAS 7429-90-5)	Listed.
Ethene, homopolymer (CAS 9002-88-4)	Listed.
Graphite (CAS 7782-42-5)	Listed.

Canada SNAc Reporting Requirements: Listed substance/Publication date

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)	01/21/2012 Listed.
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Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

WHMIS 2015 Exemptions

Not applicable

US Federal regulations

This product is a manufactured article and is exempt.

As per OSHA Definitions: 1910.1200 (c). Article means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)	0.1 % One-Time Export Notification only.
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CERCLA Hazardous Substance List (40 CFR 302.4)

Copper (CAS 7440-50-8)	Listed.
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SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminium	7429-90-5	1 - 5
Copper	7440-50-8	5 - 10

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

US state regulations**US - California Hazardous Substances (Director's): Listed substance**

Aluminium (CAS 7429-90-5)	Listed.
Copper (CAS 7440-50-8)	Listed.
Graphite (CAS 7782-42-5)	Listed.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	Listed.

US - Illinois Chemical Safety Act: Listed substance

Copper (CAS 7440-50-8)

US - Louisiana Spill Reporting: Listed substance

Copper (CAS 7440-50-8) Listed.

US - Michigan Critical Materials Register: Parameter number

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)
Copper (CAS 7440-50-8)

US - Minnesota Haz Subs: Listed substance

Aluminium (CAS 7429-90-5)	Listed.
Copper (CAS 7440-50-8)	Listed.
Ethene, homopolymer (CAS 9002-88-4)	Listed.
Graphite (CAS 7782-42-5)	Listed.

US - North Carolina Toxic Air Pollutants: Listed substance

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)

US - Texas Effects Screening Levels: Listed substance

Aluminium (CAS 7429-90-5)	Listed.
Copper (CAS 7440-50-8)	Listed.
Ethene, homopolymer (CAS 9002-88-4)	Listed.
Graphite (CAS 7782-42-5)	Listed.
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)	Listed.

US - Washington Chemical of High Concern to Children: Listed substance

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)

US. Massachusetts RTK - Substance List

Aluminium (CAS 7429-90-5)
Copper (CAS 7440-50-8)
Graphite (CAS 7782-42-5)

US. New Jersey Worker and Community Right-to-Know Act

Aluminium (CAS 7429-90-5)
Copper (CAS 7440-50-8)
Graphite (CAS 7782-42-5)
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Aluminium (CAS 7429-90-5)
Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)
Copper (CAS 7440-50-8)
Graphite (CAS 7782-42-5)
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)

US. Rhode Island RTK

Aluminium (CAS 7429-90-5)
Copper (CAS 7440-50-8)
Ethene, homopolymer (CAS 9002-88-4)
Graphite (CAS 7782-42-5)
Phosphate(1-), Hexafluoro-, Lithium (CAS 21324-40-3)

US. California Proposition 65

This product can expose you to chemicals including Cobalt Lithium Manganese Nickel Oxide, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Cobalt Lithium Manganese Nickel Oxide (CAS 182442-95-1)	Listed: May 7, 2004
Nickel (CAS 7440-02-0)	Listed: October 1, 1989

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No**
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region

United States & Puerto Rico

Inventory name

Toxic Substances Control Act (TSCA) Inventory

On inventory (yes/no)*

No

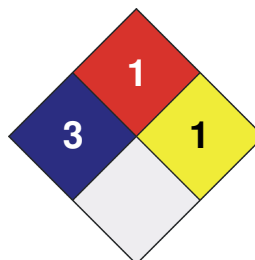
*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**If manufacturing or importing over 1000 kg/yr, new substance notification must be submitted 30 days before exceeding amount

16. Other information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	*	3
FLAMMABILITY		1
PHYSICAL HAZARD		1
PERSONAL PROTECTION		

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Prepared by

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Further information

Not available.