

SAFETY DATA SHEET

Issuing Date No data available

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Revision Number 1



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name 56V Battery 4.0 AH

Other means of identification

UN-No. UN3480

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Chervon North America, Inc.

Supplier Address 975 Cobb Place Blvd NW
Suite 214
Kennesaw
GA
30144
US

Supplier Phone Number Phone:336-209-2024
Fax:770-514-7784
Contact Phone888-826-2285 Ext. 5703

Supplier Email phartwick@chervon-na.com

Emergency telephone number

2. HAZARDS IDENTIFICATION

Classification


This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.



Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Danger	
Hazard Statements		
Causes severe skin burns and eye damage		
May cause an allergic skin reaction		
Suspected of causing cancer		
		
<p>This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.</p>		
Appearance	Physical state	Odor
Green	Solid containing liquid Solid	Odorless

Precautionary Statements - Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Wear protective gloves/protective clothing/eye protection/face protection
- Do not breathe dust/fume/gas/mist/vapors/spray
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves

Precautionary Statements - Response

- Specific treatment (see .? on this label)
- Immediately call a POISON CENTER or doctor/physician
- Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Skin

IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse



IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

22% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10 - 30	*
Lithium carbonate	554-13-2	10 - 30	*
Cobalt(II) oxide	1307-96-6	10 - 30	*
Copper	7440-50-8	5 - 10	*
Aluminum foil	7429-90-5	5 - 10	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures**General Advice**

First aid is upon rupture of sealed battery.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.



Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice. May cause an allergic skin reaction. Remove and isolate contaminated clothing and shoes.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Itching. Rashes. Hives. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO₂, water spray or regular foam. Move containers from fire area if you can do it without risk.

Large Fire

Move containers from fire area if you can do it without risk.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

Product is or contains a sensitizer. May cause sensitization by skin contact. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material.

Other Information

Refer to protective measures listed in Sections 7 and 8. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Environmental precautions

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Products

Acids. Bases. Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 2.5 mg/m ³	
Cobalt(II) oxide 1307-96-6	TWA: 0.02 mg/m ³ Co	-	
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ Al Aluminum	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

Face protection shield.



Skin and body protection	Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Hygiene Measures	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid containing liquid, Solid	Odor	Odorless
Appearance	Green	Odor Threshold	No information available
Color	No information available		
<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Insoluble in water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing properties	No data available		

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:.

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium carbonate 554-13-2	-	-	> 2.17 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms

Itching. Rashes. Hives. Erythema (skin redness). Burning. May cause blindness. Coughing



and/ or wheezing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization of susceptible persons. May cause sensitization by skin contact.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Cobalt(II) oxide 1307-96-6	A3	Group 2B		X

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects Skin. Respiratory system. Eyes. Gastrointestinal tract (GI). Blood. Central Nervous System (CNS). Central Vascular System (CVS). Kidney. Liver. Lungs. Nasal cavities. Cardiovascular system. Heart.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

650.00 mg/kg

ATEmix (dermal)

1,064.00 mg/kg (ATE)

12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a severe marine pollutant according to DOT

Ecotoxicity

Very toxic to aquatic life with long lasting effects. Harmful to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper 7440-50-8	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Cobalt(II) oxide 1307-96-6	Toxic
Copper 7440-50-8	Toxic
Aluminum foil 7429-90-5	Ignitable powder



14. TRANSPORT INFORMATION

Note:

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Marine Pollutant	This product contains a chemical which is listed as a severe marine pollutant according to DOT
Description	UN3480, LITHIUM ION BATTERIES, 9, II
Emergency Response Guide Number	147

TDG

UN-No.	Not regulated UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Marine Pollutant	This product contains a chemical which is listed as a severe marine pollutant according to TDG.
Description	UN3480, LITHIUM ION BATTERIES, 9, II

MEX

UN-No.	Not regulated UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II

ICAO

UN-No.	Not regulated UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II

IATA

UN-No.	Not regulated UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9

IMDG/IMO

Not regulated



UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Packing Group II
EmS-No. F-A, S-I
Description UN3480, LITHIUM ION BATTERIES, 9, II

RID Not regulated
UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Packing Group II
Classification code M4
Description UN3480, LITHIUM ION BATTERIES, 9, II

ADR Not regulated
UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Packing Group II
Classification code M4
Description UN3480, LITHIUM ION BATTERIES, 9, II

ADN Not regulated
UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Packing Group II
Classification code M4
Special Provisions 188, 230, 310, 348, 636, 661
Description UN3480, LITHIUM ION BATTERIES, 9, II
Limited Quantity 0

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium carbonate - 554-13-2	554-13-2	10 - 30	1.0
Cobalt(II) oxide - 1307-96-6	1307-96-6	10 - 30	0.1
Copper - 7440-50-8	7440-50-8	5 - 10	1.0
Aluminum foil - 7429-90-5	7429-90-5	5 - 10	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard No
Chronic Health Hazard No
Fire Hazard No
Sudden release of pressure hazard No



Reactive Hazard

No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Aluminum foil 7429-90-5			

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Cobalt(II) oxide - 1307-96-6	Carcinogen
Lithium carbonate - 554-13-2	Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Carbon 7440-44-0			X		
Cobalt(II) oxide 1307-96-6			X	X	X
Lithium carbonate 554-13-2	X	X		X	
Copper 7440-50-8	X	X	X	X	X
Aluminum foil 7429-90-5		X		X	

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Copper 7440-50-8 (5 - 10)		Mexico: TWA= 1 mg/m ³ Mexico: TWA= 0.2 mg/m ³ Mexico: STEL= 2 mg/m ³
Aluminum foil 7429-90-5 (5 - 10)		Mexico: TWA 10 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION



NFPA	Health Hazards 3	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 24-Mar-2014
Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

SAFETY DATA SHEET

Issuing Date No data available

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Revision Number 3



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name 56V Battery 2.5AH

Other means of identification

UN-No. UN3480
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Chervon North America, Inc.

Supplier Address 975 Cobb Place Blvd NW
Suite 214
Kennesaw
GA
30144
US

Supplier Phone Number Phone:336-209-2024
Fax:770-514-7784
Contact Phone888-826-2285 Ext. 5703

Supplier Email phartwick@chervon-na.com

Emergency telephone number

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Classification


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Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Danger		
Hazard Statements	<p>Causes severe skin burns and eye damage May cause an allergic skin reaction May cause cancer</p>		
			
<p>This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.</p>			
Appearance	Green	Physical state	Solid containing liquid Solid
			Odor Odorless

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
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 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection
 Do not breathe dust/fume/gas/mist/vapors/spray
 Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements - Response

Specific treatment (see .? on this label)
 Immediately call a POISON CENTER or doctor/physician
 Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician

Skin

Call a POISON CENTER or doctor/physician if you feel unwell
 Wash contaminated clothing before reuse

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

15% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10 - 30	*
Lithium carbonate	554-13-2	10 - 30	*
Cobalt(II) oxide	1307-96-6	10 - 30	*
Nickel oxide	1313-99-1	7 - 13	*
Copper	7440-50-8	5 - 10	*
Aluminum foil	7429-90-5	5 - 10	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures**General Advice**

First aid is upon rupture of sealed battery. Immediate medical attention is required.
Show this safety data sheet to the doctor in attendance.



Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice. May cause an allergic skin reaction.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Itching. Rashes. Hives. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

Product is or contains a sensitizer. May cause sensitization by skin contact. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Products

Acids. Bases. Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 2.5 mg/m ³	
Cobalt(II) oxide 1307-96-6	TWA: 0.02 mg/m ³ Co	-	
Nickel oxide 1313-99-1	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³ Ni (vacated) TWA: 1 mg/m ³ Ni	IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ except Nickel carbonyl Ni
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ Al Aluminum	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems



Individual protection measures, such as personal protective equipment

Eye/face protection	Face protection shield.
Skin and body protection	Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES
--

Physical and Chemical Properties

Physical state	Solid containing liquid, Solid	Odor	Odorless
Appearance	Green	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Insoluble	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing properties	No data available		

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture: . .

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium carbonate 554-13-2	-	-	> 2.17 mg/L (Rat) 4 h
Nickel oxide 1313-99-1	> 5000 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms Itching. Rashes. Hives. Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization of susceptible persons. May cause sensitization by skin contact.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Cobalt(II) oxide 1307-96-6	A3	Group 2B		X
Nickel oxide 1313-99-1	A1	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects Skin. Respiratory system. Eyes. Gastrointestinal tract (GI). Blood. Central Nervous System (CNS). Central Vascular System (CVS). Kidney. Liver. Lungs. Nasal cavities. Cardiovascular system. Heart.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

708.00 mg/kg



ATEmix (dermal)

1,214.00 mg/kg (ATE)

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life with long lasting effects. Harmful to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Nickel oxide 1313-99-1	72h EC50: > 127.3 mg/L (Pseudokirchneriella subcapitata)	96h LC50: > 100 mg/L (Brachydanio rerio)		48h EC50: > 100 mg/L
Copper 7440-50-8	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L

Persistence and Degradability

No information available.

Bioaccumulation**Other adverse effects**

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Cobalt(II) oxide 1307-96-6	Toxic
Copper 7440-50-8	Toxic
Aluminum foil 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

Note:

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT

NOT REGULATED
 Proper Shipping Name NON REGULATED
 Hazard Class N/A
 Emergency Response Guide Number 147

TDG

UN-No. UN3480
 Proper Shipping Name LITHIUM ION BATTERIES
 Hazard Class 9
 Packing Group II
 Description UN3480, LITHIUM ION BATTERIES, 9, II



MEX

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II

ICAO

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II

IATA

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9

IMDG/IMO

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
EmS-No.	F-A, S-I
Description	UN3480, LITHIUM ION BATTERIES, 9, II

RID

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Description	UN3480, LITHIUM ION BATTERIES, 9, II

ADR

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Description	UN3480, LITHIUM ION BATTERIES, 9, II

ADN

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Special Provisions	188, 230, 310, 348, 636, 661
Description	UN3480, LITHIUM ION BATTERIES, 9, II
Limited Quantity	0

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium carbonate - 554-13-2	554-13-2	10 - 30	1.0
Cobalt(II) oxide - 1307-96-6	1307-96-6	10 - 30	0.1
Nickel oxide - 1313-99-1	1313-99-1	7 - 13	0.1
Copper - 7440-50-8	7440-50-8	5 - 10	1.0
Aluminum foil - 7429-90-5	7429-90-5	5 - 10	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel oxide 1313-99-1		X		
Copper 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Aluminum foil 7429-90-5			

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Nickel oxide - 1313-99-1	Carcinogen
Cobalt(II) oxide - 1307-96-6	Carcinogen

U.S. State Right-to-Know Regulations



Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Manganese dioxide 1313-13-9			X	X	X
Nickel oxide 1313-99-1	X	X	X	X	X
Carbon 7440-44-0			X		
Cobalt(II) oxide 1307-96-6			X	X	X
Copper 7440-50-8	X	X	X	X	X
Aluminum foil 7429-90-5		X		X	

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Copper 7440-50-8 (5 - 10)		Mexico: TWA= 1 mg/m ³ Mexico: TWA= 0.2 mg/m ³ Mexico: STEL= 2 mg/m ³
Aluminum foil 7429-90-5 (5 - 10)		Mexico: TWA 10 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 06-May-2015

Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

Issuing Date No data available

Revision Date 06-May-2015

Revision Number 3



The supplier identified below generated this SDS using the UL SDS template. UL did not test, certify, or approve the substance described in this SDS, and all information in this SDS was provided by the supplier or was reproduced from publically available regulatory data sources. UL makes no representations or warranties regarding the completeness or accuracy of the information in this SDS and disclaims all liability in connection with the use of this information or the substance described in this SDS. The layout, appearance and format of this SDS is © 2014 UL LLC. All rights reserved.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name 56V Battery 2.0AH

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Chervon North America, Inc.

Supplier Address 975 Cobb Place Blvd NW
Suite 214
Kennesaw
GA
30144
US

Supplier Phone Number Phone:336-209-2024
Fax:770-514-7784
Contact Phone888-826-2285 Ext. 5703

Supplier Email phartwick@chervon-na.com

Emergency telephone number

2. HAZARDS IDENTIFICATION

Classification


This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3



Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview		
Signal word	Danger	
<p>Hazard Statements Harmful if swallowed Toxic in contact with skin Causes severe skin burns and eye damage May cause an allergic skin reaction Suspected of causing cancer</p>		
		
<p style="text-align: center;">This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.</p>		
Appearance Green	Physical state Solid containing liquid Solid	Odor Odorless

Precautionary Statements - Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Do not breathe dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves

Precautionary Statements - Response

- Specific treatment (see .? on this label)
- Immediately call a POISON CENTER or doctor/physician
- Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician

Skin

Call a POISON CENTER or doctor/physician if you feel unwell
 Wash contaminated clothing before reuse
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 If skin irritation or rash occurs: Get medical advice/attention



Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

18 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10 - 30	*
Lithium carbonate	554-13-2	10 - 30	*
Cobalt(II) oxide	1307-96-6	10 - 30	*
Copper	7440-50-8	5 - 10	*
Aluminum foil	7429-90-5	5 - 10	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures**General Advice**

First aid is upon rupture of sealed battery.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. May cause an allergic skin reaction. Remove and isolate contaminated clothing and shoes.



Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Itching. Rashes. Hives. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO₂, water spray or regular foam. Move containers from fire area if you can do it without risk.

Large Fire Move containers from fire area if you can do it without risk.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

Product is or contains a sensitizer. May cause sensitization by skin contact. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material.

Other Information

Refer to protective measures listed in Sections 7 and 8. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Environmental precautions

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Products

Acids. Bases. Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust	



		(vacated) TWA: 2.5 mg/m ³	
Cobalt(II) oxide 1307-96-6	TWA: 0.02 mg/m ³ Co	-	
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ Al Aluminum	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield.

Skin and body protection Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use. No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid containing liquid, Solid	Odor	Odorless
Appearance	Green	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	



Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Insoluble in water	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture: .

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. Toxic in contact with skin. May be absorbed through the skin in harmful amounts.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium carbonate 554-13-2	-	-	> 2.17 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms Itching. Rashes. Hives. Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization in susceptible persons. May cause sensitization by skin contact.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Cobalt(II) oxide 1307-96-6	A3	Group 2B		X

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects

Skin. Respiratory system. Eyes. Gastrointestinal tract (GI). Blood. Central Nervous System (CNS). Central Vascular System (CVS). Kidney. Liver. Lungs. Nasal cavities. Cardiovascular system. Heart.

Aspiration Hazard

No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

641.00 mg/kg

ATEmix (dermal)

984.00 mg/kg (ATE)

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects. Harmful to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper 7440-50-8	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Cobalt(II) oxide 1307-96-6	Toxic
Copper 7440-50-8	Toxic
Aluminum foil 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

Note:

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT

Proper Shipping Name	NOT REGULATED
Hazard Class	NON REGULATED
Emergency Response Guide Number	N/A
	147

TDG

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II

MEX

UN-No.	UN3480
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Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II

ICAO

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II

IATA

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9

IMDG/IMO

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
EmS-No.	F-A, S-I
Description	UN3480, LITHIUM ION BATTERIES, 9, II

RID

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Description	UN3480, LITHIUM ION BATTERIES, 9, II

ADR

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Tunnel restriction code	(E)
Description	UN3480, LITHIUM ION BATTERIES, 9, II

ADN

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Special Provisions	188, 230, 310, 348, 636, 661
Description	UN3480, LITHIUM ION BATTERIES, 9, II
Limited Quantity	0

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.



TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium carbonate - 554-13-2	554-13-2	10 - 30	1.0
Cobalt(II) oxide - 1307-96-6	1307-96-6	10 - 30	0.1
Copper - 7440-50-8	7440-50-8	5 - 10	1.0
Aluminum foil - 7429-90-5	7429-90-5	5 - 10	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Aluminum foil 7429-90-5			

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Nickel oxide - 1313-99-1	Carcinogen
Cobalt(II) oxide - 1307-96-6	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Carbon 7440-44-0			X		
Nickel oxide 1313-99-1	X	X	X	X	X
Manganese dioxide 1313-13-9			X	X	X
Cobalt(II) oxide			X	X	X



1307-96-6					
Copper 7440-50-8	X	X	X	X	X
Aluminum foil 7429-90-5		X		X	

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Copper 7440-50-8 (5 - 10)		Mexico: TWA= 1 mg/m ³ Mexico: TWA= 0.2 mg/m ³ Mexico: STEL= 2 mg/m ³
Aluminum foil 7429-90-5 (5 - 10)		Mexico: TWA 10 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

NFPA	Health Hazards 3	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 06-May-2015

Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

Issuing Date 24-Jun-2015

Revision Date 24-Jun-2015

Revision Number 4



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name 56 Volt 7.5 Ah Battery

Other means of identification

UN-No. UN3480

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Chervon North America, Inc.

Supplier Address 975 Cobb Place Blvd NW
Suite 214
Kennesaw
GA
30144
US

Supplier Phone Number Phone:336-209-2024
Fax:770-514-7784
Contact Phone888-826-2285 Ext. 5703

Supplier Email phartwick@chervon-na.com

Emergency telephone number

2. HAZARDS IDENTIFICATION

Classification


This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.



Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Danger
Hazard Statements	
Causes severe skin burns and eye damage May cause an allergic skin reaction May cause cancer	
	
<p>This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist. .</p>	
Appearance Green	Physical state Solid containing liquid Solid
	Odor Odorless

Precautionary Statements - Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Do not breathe dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves

Precautionary Statements - Response

- Specific treatment (see .? on this label)
- Immediately call a POISON CENTER or doctor/physician
- Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Skin

Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention



Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

16 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10 - 30	*
Lithium carbonate	554-13-2	10 - 30	*
Nickel oxide	1313-99-1	7 - 13	*
Aluminum foil	7429-90-5	3 - 7	*
Copper	7440-50-8	3 - 7	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures**General Advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice. May cause an allergic skin reaction. Remove and isolate contaminated clothing and shoes.



Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects	Itching. Rashes. Hives. Burning sensation.
--	--

Indication of any immediate medical attention and special treatment needed

Notes to Physician	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO₂, water spray or regular foam. Move containers from fire area if you can do it without risk.

Large Fire	Move containers from fire area if you can do it without risk.
-------------------	---

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

Product is or contains a sensitizer. May cause sensitization by skin contact. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

Move containers from fire area if you can do it without risk.



6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material.

Other Information

Refer to protective measures listed in Sections 7 and 8. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Environmental precautions

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Products

Acids. Bases. Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 2.5 mg/m ³	
Nickel oxide 1313-99-1	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³ Ni (vacated) TWA: 1 mg/m ³ Ni	IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ except Nickel carbonyl Ni

Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ Al Aluminum	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield.

Skin and body protection Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid containing liquid, Solid	Odor	Odorless
Appearance	Green	Odor Threshold	No information available
Color	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	



Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Insoluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture: . .

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on

components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium carbonate 554-13-2	-	-	> 2.17 mg/L (Rat) 4 h
Nickel oxide 1313-99-1	> 5000 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms Itching. Rashes. Hives. Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization in susceptible persons. May cause sensitization by skin contact.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Nickel oxide 1313-99-1	A1	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects

Skin. Respiratory system. Eyes. Gastrointestinal tract (GI). Blood. Central Nervous System (CNS). Central Vascular System (CVS). Kidney. Liver. Lungs. Nasal cavities. Cardiovascular system. Heart.

Aspiration Hazard

No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

677.00 mg/kg

ATEmix (dermal)

1,260.00 mg/kg (ATE)

ATEmix (inhalation-gas)

37,800.00 ppm (4 hr)

ATEmix (inhalation-dust/mist)

12.60 mg/l

ATEmix (inhalation-vapor)

92.00 ATEmix

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects. Harmful to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Nickel oxide 1313-99-1	72h EC50: > 127.3 mg/L (Pseudokirchneriella subcapitata)	96h LC50: > 100 mg/L (Brachydanio rerio)		48h EC50: > 100 mg/L
Copper 7440-50-8	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L

Persistence and Degradability

No information available.

Bioaccumulation**Other adverse effects**

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Aluminum foil 7429-90-5	Ignitable powder
Copper 7440-50-8	Toxic

14. TRANSPORT INFORMATION

Note:

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II
Emergency Response Guide Number	147

TDG

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Marine Pollutant	This product contains a chemical which is listed as a severe marine pollutant according to TDG.



Description	UN3480, LITHIUM ION BATTERIES, 9, II
<u>MEX</u>	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II
<u>ICAO</u>	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9, II
<u>IATA</u>	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3480, LITHIUM ION BATTERIES, 9
<u>IMDG/IMO</u>	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
EmS-No.	F-A, S-I
Description	UN3480, LITHIUM ION BATTERIES, 9, II
<u>RID</u>	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Description	UN3480, LITHIUM ION BATTERIES, 9, II
<u>ADR</u>	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Tunnel restriction code	(E)
Description	UN3480, LITHIUM ION BATTERIES, 9, II
<u>ADN</u>	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Packing Group	II
Classification code	M4
Special Provisions	188, 230, 310, 348, 636, 661
Description	UN3480, LITHIUM ION BATTERIES, 9, II
Limited Quantity	0

15. REGULATORY INFORMATION



International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium carbonate - 554-13-2	554-13-2	10 - 30	1.0
Nickel oxide - 1313-99-1	1313-99-1	7 - 13	0.1
Aluminum foil - 7429-90-5	7429-90-5	3 - 7	1.0
Copper - 7440-50-8	7440-50-8	3 - 7	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel oxide 1313-99-1		X		
Copper 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Aluminum foil 7429-90-5			
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Cobalt(II) oxide - 1307-96-6	Carcinogen
Nickel oxide - 1313-99-1	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois



Carbon 7440-44-0			X		
Manganese dioxide 1313-13-9			X	X	X
Nickel oxide 1313-99-1	X	X	X	X	X
Cobalt(II) oxide 1307-96-6			X	X	X
Aluminum foil 7429-90-5		X		X	
Copper 7440-50-8	X	X	X	X	X

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Aluminum foil 7429-90-5 (3 - 7)		Mexico: TWA 10 mg/m ³
Copper 7440-50-8 (3 - 7)		Mexico: TWA= 1 mg/m ³ Mexico: TWA= 0.2 mg/m ³ Mexico: STEL= 2 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

NFPA	Health Hazards 3	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 24-Jun-2015
Revision Date 24-Jun-2015
Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

Issuing Date 10-May-2016

Revision Date 05-May-2015

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name 56V Battery 5.0AH

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Chervon North America, Inc.

Supplier Address 975 Cobb Place Blvd NW
Suite 214
Kennesaw
GA
30144
US

Supplier Phone Number Phone:888-826-2285 ext. 5703
Fax:770-514-7784

Supplier Email phartwick@chervon-na.com

Emergency telephone number

Company Emergency Phone Number 336-209-2024

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.


Acute toxicity - Oral	Category 4
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Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Danger	
Hazard Statements	<p>Harmful if swallowed Harmful in contact with skin Causes severe skin burns and eye damage May cause an allergic skin reaction May cause cancer Causes damage to organs through prolonged or repeated exposure</p>	
		
<p>This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.</p>		
Appearance	Physical state	Odor
Green	Solid containing liquid Solid	Odorless

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Skin

Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

26 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%	Trade Secret
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10 - 30	*
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	7 - 13	*
Nickel oxide	1313-99-1	7 - 13	*
Lithium manganese oxide (LiMn2O4)	12057-17-9	7 - 13	*
Aluminum foil	7429-90-5	3 - 7	*
Copper	7440-50-8	3 - 7	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures**General Advice**

First aid is upon rupture of sealed battery.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice. May cause an allergic skin



reaction. Remove and isolate contaminated clothing and shoes.

Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects	Itching. Rashes. Hives. Burning sensation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by skin contact.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

Move containers from fire area if you can do it without risk. Damaged cylinders should be handled only by specialists.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other Information	Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil.
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Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling	In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.
-----------------	--

Conditions for safe storage, including any incompatibilities

Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.
Incompatible Products	Acids. Bases. Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 2.5 mg/m ³	
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	-	
Nickel oxide 1313-99-1	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³ Ni (vacated) TWA: 1 mg/m ³ Ni	IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ except Nickel carbonyl Ni
Lithium manganese oxide	TWA: 0.2 mg/m ³ Mn	(vacated) Ceiling: 5 mg/m ³	IDLH: 500 mg/m ³ Mn

(LiMn2O4) 12057-17-9		Ceiling: 5 mg/m ³ Mn	TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ Al Aluminum	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield.

Skin and body protection Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid containing liquid, Solid	Odor	Odorless
Appearance	Green	Odor Threshold	No information available
Color	No information available		
Property	Values	Remarks	Method
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	



Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Insoluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:.

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on

components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nickel oxide 1313-99-1	> 5000 mg/kg (Rat)	-	-

Information on toxicological effects**Symptoms**

Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Sensitization**

May cause sensitization by skin contact.

Mutagenic Effects

No information available.

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	A3	Group 2B		X
Nickel oxide 1313-99-1	A1	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from

chronic or repeated exposure. (STOT RE).

Chronic Toxicity

Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects

Skin. Respiratory system. Eyes. Gastrointestinal tract (GI). Blood. Central Nervous System (CNS). Central Vascular System (CVS). Kidney. Liver. Lungs. Nasal cavities. Cardiovascular system. Heart.

Aspiration Hazard

No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

948.00 mg/kg

ATEmix (dermal)

1,110.00 mg/kg (ATE)

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Nickel oxide 1313-99-1	72h EC50: > 127.3 mg/L (Pseudokirchneriella subcapitata)	96h LC50: > 100 mg/L (Brachydanio rerio)		48h EC50: > 100 mg/L
Copper 7440-50-8	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio)		48h EC50: = 0.03 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	Toxic
Aluminum foil 7429-90-5	Ignitable powder
Copper 7440-50-8	Toxic

14. TRANSPORT INFORMATION

Note:

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT

Proper Shipping Name	NOT REGULATED
Hazard Class	NON REGULATED
Emergency Response Guide Number	N/A
	147

TDG

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
Description	UN3480, LITHIUM ION BATTERIES, 9

MEX

UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES



Hazard Class 9
Description UN3480, LITHIUM ION BATTERIES, 9

ICAO

UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Description UN3480, LITHIUM ION BATTERIES, 9

IATA

UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Description UN3480, LITHIUM ION BATTERIES, 9

IMDG/IMO

UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
EmS-No. F-A, S-I
Description UN3480, LITHIUM ION BATTERIES, 9

RID

UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Classification code M4
Description UN3480, LITHIUM ION BATTERIES, 9

ADR

UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Classification code M4
Description UN3480, LITHIUM ION BATTERIES, 9

ADN

UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
Classification code M4
Special Provisions 188, 230, 310, 348, 636, 661
Description UN3480, LITHIUM ION BATTERIES, 9
Limited Quantity 0

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical



or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium Cobalt Oxide (CoLiO ₂) - 12190-79-3	12190-79-3	7 - 13	0.1
Nickel oxide - 1313-99-1	1313-99-1	7 - 13	0.1
Lithium manganese oxide (LiMn ₂ O ₄) - 12057-17-9	12057-17-9	7 - 13	1.0
Aluminum foil - 7429-90-5	7429-90-5	3 - 7	1.0
Copper - 7440-50-8	7440-50-8	3 - 7	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel oxide 1313-99-1		X		
Copper 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Aluminum foil 7429-90-5			
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Cobalt(II) oxide - 1307-96-6	Carcinogen
Nickel oxide - 1313-99-1	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Cobalt(II) oxide 1307-96-6	X		X	X	X
Manganese dioxide 1313-13-9	X		X	X	X
Nickel oxide 1313-99-1	X	X	X	X	X
Copper 7440-50-8	X	X	X	X	X
Aluminum foil 7429-90-5	X	X	X	X	

International Regulations



Mexico**National occupational exposure limits**

Chemical name	Carcinogen Status	Exposure Limits
Lithium manganese oxide (LiMn2O4)		Mexico: TWA 0.2 mg/m ³
Aluminum foil		Mexico: TWA 10 mg/m ³
Copper		Mexico: TWA= 1 mg/m ³ Mexico: TWA= 0.2 mg/m ³ Mexico: STEL= 2 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada**WHMIS Hazard Class**

Non-controlled

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards - Personal Protection X
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	

Prepared By Product Stewardship
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Latham, NY 12110
1-800-572-6501

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Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet