Safety Data Sheet

Issue Date: 09-Oct-2013 **Validity Period:** 04-Feb-2025 to 04-Feb-2026 Version 3

Product Name: BL0900CAA651S1PCBT2PC

Product Description: Battery Li-Ion; 3.70(V) ; 900.00(mAh/Hr) ; 3.33(Wh) ;

1. IDENTIFICATION

Product Identifier

Product Name VALO™ X Rechargeable Lithium-Ion Battery

Other means of identification

Article # 471-001.02R01, 5437

Synonyms Lithiated Cobalt Oxide, Li-Ion Secondary Battery, Li-Ion Rechargeable Battery.

Recommended use of the chemical and restrictions on use

Recommended Use Battery.

Details of the supplier of the safety data sheet

Distributor

GlobTek, Inc. for Ultradent Products Inc.
505 W. Ultradent Drive (10200 S)
South Jordan, UT 84095-3942
onlineordersupport@ultradent.com
(800) 552-5512

Emergency Telephone Number

Emergency Telephone (24 hr) CHEMTREC (International): +(703) 527-3887
(North America): +1 (800) 424-9300

2. HAZARDS IDENTIFICATION

Emergency Overview Safety Data Sheets (SDS) are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an "article". OSHA has defined "article" as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees. Because all of our batteries are defined as "articles", they are exempt from the requirements of the Hazard Communication Standard, hence an SDS is not required. However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Appearance Geometric, solid object **Physical state** Solid

Classification

The chemicals listed in section 3 are contained in a sealed container. Risk of exposure only occurs if battery is mechanically, thermally, or electrically abused.

Other hazards

Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Lithiated Cobalt Oxide, Li-Ion Secondary Battery, Li-Ion Rechargeable Battery.

Chemical Composition	Molecular Formula	Weight%	CAS No	OSHA(PEL)	ACGIH(TLV)
NiCoMn	NiCoMn	<40%	/	N/A	N/A
Polyvinylidene fluoride	(CH2CF2) n	<2%	24937799	N/A	N/A
Graphite powder	C	<30%	7782425	N/A	N/A
Electrolyte	LiPF6 C3H4O3 C4H6O3 C3H10O3	<20%	21324403	N/A	N/A
Polyethylene	(C2H4) n	0.55%	9002-88-4	N/A	N/A
Copper foil	Cu	<10%	7440508	N/A	N/A
Nickel	Nickel	0.55%	7440020	N/A	N/A
Aluninum foil	Al	0.55%	7429905	N/A	N/A
PVC	(C2H3Cl)x	0.55%	9002862	N/A	N/A

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

General Advice The following information applies if the battery is mechanically, thermally, or electrically abused.

Eye Contact Immediately flush eyes with water for 30 minutes while lifting the upper and lower lids. Get medical attention.

Skin Contact Flush affected area with lukewarm water for at least 30 minutes. If skin irritation persists, call a physician.

Inhalation If symptoms are experienced, remove source of contamination or move victim to fresh air. Get medical attention.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center. National battery ingestion hotline: 202-625-3333.

Most important symptoms and effects

Symptoms Chemicals may cause burns to skin, eyes, gastrointestinal tract and mucous membranes. Contact with skin may cause chronic eczema or nickel itch. Electrolyte is extremely corrosive to eye tissue and may cause permanent blindness. If swallowed it may cause choking, nausea, persistent vomiting, diarrhea, abdominal pain, dizziness, faintness, unconsciousness and possible liver and kidney injury.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray (fog). Foam. Dry powder.

Unsuitable Extinguishing Media

Not determined.

Specific Hazards Arising from the Chemical

Cells may rupture when exposed to excessive heat. This could result in the release of flammable or corrosive materials. Cells or batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat or fire. Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors. Vapors may be heavier than air and may travel along the ground or be moved by ventilation to an ignition source and flash back. LiPF salt contained in the electrolyte releases hydrogen fluoride in contact with water.

Hazardous Combustion Products

Carbon oxides. Hydrogen fluoride. Phosphorus oxides.

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. During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Use personal protective equipment as required. Wear protective gloves. Ventilate affected area.
Other Information	The material contained within the batteries is only expelled under abusive conditions.
For Emergency Responders	If the battery material is released, remove personnel from the area until fumes dissipate.

Environmental precautions

Environmental precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Damaged batteries that are NOT hot or burning should be placed in a sealed plastic bag or plastic-lined metal container. If cells rupture and a thermal event follows: using shovel or broom, cover battery or spilled substances with dry sand or vermiculite, place in approved container (after cooling if necessary). For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling	Do not expose battery or cell to extreme temperatures or fire. Do not disassemble, crush or puncture battery. Avoid mechanical or electrical abuse. Do not short circuit. Use only approved chargers and charging procedures. Do not disassemble a battery or bypass any safety device.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Batteries should be separated from other materials and stored in a non-combustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks. Do not place batteries near heating equipment; do not expose to direct sunlight for extended periods. Do not store batteries above 60 °C or below -32°C. Store batteries in a cool (below 21°C (70°F)), dry area that is subject to little temperature change. Elevated temperatures can result in reduced battery service life. Battery exposure to temperatures in excess of 130°C will result in the battery venting flammable liquid and gases. Do not store batteries in a manner that allows terminals to short circuit.
Packaging Materials	If packing materials are not available, place masking tape on positive and negative ends of the cells.
Incompatible Materials	If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons. Water with internal contents of battery.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium cobalt oxide 12190-79-3	TWA: 0.02 mg/m3 Co		
Graphite 7782-42-5	TWA: 2 mg/m3 respirable fraction all forms except graphite fibers	TWA: 15 mg/m3 total dust synthetic TWA: 5 mg/m3 respirable fraction synthetic (vacated) TWA: 2.5 mg/m3 respirable dust natural (vacated) TWA: 10 mg/m3 total dust synthetic (vacated) TWA: 5 mg/m3 respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m3 TWA: 2.5 mg/m3 natural respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m3 fume TWA: 1 mg/m3 Cu dust and mist	TWA: 0.1 mg/m3 fume TWA: 1 mg/m3 dust and mist (vacated) TWA: 0.1 mg/m3 Cu dust, fume, mist	IDLH: 100 mg/m3 dust, fume and mist IDLH: 100 mg/m3 Cu dust and mist TWA: 1 mg/m3 dust and mist TWA: 0.1 mg/m3 fume TWA: 1 mg/m3 Cu dust and mist
Aluminum 7429-90-5	TWA: 1 mg/m3 respirable fraction	TWA:15 mg/m3 total dust TWA: 5 mg/m3 respirable fraction (vacated) TWA: 15 mg/m3 total dust (vacated) TWA: 5 mg/m3 respirable fraction (vacated) TWA: 5 mg/m3 Al Aluminum	TWA: 10 mg/m3 total dust TWA: 5 mg/m3 respirable dust TWA: 5 mg/m3 Al

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits. Showers. Eyewash stations. Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Always wear safety glasses when working with batteries and cells. Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection Not necessary under conditions of normal use. In case of battery rupture or leakage, wear rubber apron and Viton rubber gloves, Protective clothing. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection Not necessary under conditions of normal use. In case of battery venting or rupture, use a self contained full face respiratory mask. Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	**Appearance**	Geometric, solid object Odor Not determined
Color	Not determined	**Odor Threshold**	Not applicable

Property	Values	Remarks • Method
pH	Not determined	
Melting Point/Freezing Point	NA	
Boiling Point/Boiling Range	NA	
Flash Point	None	
Evaporation Rate	NA	
Flammability (Solid, Gas)	Not determined	
Flammability Limits in Air		
Upper Flammability Limits	NA	
Lower Flammability Limit	NA	
Vapor Pressure	NA	
Vapor Density	NA	
Relative Density	NA	
Water Solubility	Not applicable	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	NA	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not applicable	

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Reacts with water.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to Avoid

Heating, mechanical and electrical abuse. Electrical shorting. Battery exposure to temperatures in excess of 130°C will result in the battery venting flammable liquid and gases.

Incompatible Materials

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons. Water with internal contents of battery.

Hazardous Decomposition Products

Carbon oxides. Hydrogen fluoride. Phosphorus oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Inhalation, skin contact and eye contact are possible when the battery is opened. The following is based on exposure to internal contents
Eye Contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Irritating to skin. Contents of an open battery may be absorbed through the skin causing localized inflammation.
Inhalation	Contents of an open battery can cause respiratory irritation. Inhalation of vapors may cause irritation of the upper respiratory tract and lungs.
Ingestion	Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of the mouth, esophagus, and gastrointestinal tract.

Component Information

Chemical Name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Iron 7439-89-6	= 984 mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

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

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lithium cobalt oxide 12190-79-3	A3	Group 2B		X

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Iron 7439-89-6		13.6: 96 h Morone saxatilis mg/L LC50 static	
Copper 7440-50-8	0.0426 - 0.0535: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.031 - 0.054: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	0.3: 96 h Cyprinus carpio mg/L LC50 semi-static 0.3: 96 h Pimephales promelas mg/L LC50 static 0.052: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.112: 96 h Poecilia reticulata mg/L LC50 flowthrough 1.25: 96 h Lepomis macrochirus mg/L LC50 static 0.8: 96 h Cyprinus carpio mg/L LC50 static 0.0068 - 0.0156: 96 h Pimephales promelas mg/L LC50 0.2: 96 h Pimephales promelas mg/L LC50 flow-through	0.03: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability

Not determined

Bioaccumulation

Not determined.

Mobility

Not determined

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Cells must be recycled.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

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

Chemical Name	California Hazardous Waste Status
Lithium cobalt oxide 12190-79-3	Toxic
Copper 7440-50-8	Toxic
Aluminum 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

This report applies to by sea, by air and by land;
The Li-ion Battery tested according to the requirements of the 5th revised edition of the UN manual of tests and Criteria, Part III, subsection 38.3;
Lithium ion battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;
The LITHIUM ION BATTERY according to PACKING INSTRUCTION 965~967 of the 2020 IATA Dangerous Goods regulations 61st Edition may be transported and applicable U.S.DOT regulations for the safe transport of Li-ion Battery.
More information concerning shipping, testing, marking and packaging can be obtained from label master at http://www.labelmaster.com/.
The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.
The package must be handled with care and that a flammability hazard exists if the package is damaged; Each package must be labeled with a Li-ion Battery handling label or in addition to the Class 9 hazard label. With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations. UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;
UN Classification (Transport hazard class): Non dangerous;
Marine pollutant (Y/N): N;
-The International Maritime Dangerous Goods (IMDG) Code.
For lithium-ion batteries by sea, provided that packaging is strong and prevent the products from short-circuit. UN number of lithium battery: UN3480 or UN3481;
UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;

Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 310, 348, 957;

- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA
- The Office of Hazardous Materials Safety within the US Department of Transportations' (DOT) Research and Special Programs Administration (RSPA)

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Lithium cobalt oxide	X	X	X	Present	X	Present		X
Iron	X	X	X		X	Present	X	X
Graphite	X	X	X		X	Present	X	X
Copper	X	X	X		X	Present	X	X
Aluminum	X	X	X		X	Present	X	X

Legend:

TSCA	United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL	Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS	European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS	Japan Existing and New Chemical Substances
IECSC	China Inventory of Existing Chemical Substances
KECL	Korean Existing and Evaluated Chemical Substances
PICCS	Philippines Inventory of Chemicals and Chemical Substances
AICS	Australian Inventory of Chemical Substances

US Federal Regulations

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	CERCLA/SARA RQ	Reportable Quantity (RQ)
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

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 - ThresholdValues %
Lithium cobalt oxide - 12190-79-3	12190-79-3	25-40	0.1
Copper - 7440-50-8	7440-50-8	5-15	1.0
Aluminum - 7429-90-5	7429-90-5	2-6	1.0

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		X	X	

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Lithium cobalt oxide 12190-79-3	X		X
Graphite 7782-42-5	X	X	X
Copper 7440-50-8	X	X	X
Aluminum 7429-90-5	X	X	X

16. OTHER INFORMATION

	Health Hazards	Flammability	Instability	Special Hazards
NFPA	Not determined	Not determined	Not determined	Not determined

	Health Hazards	Flammability	Physical hazards	Personal Protection
HMIS	Not determined	Not determined	Not determined	Not determined

Issue Date: 09-Oct-2013
Revision Date: 04-Feb-2025
Revision Note: New product

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