

SAFETY DATA SHEET



Date Issued : 10/24/2012

MSDS No : 317-001.1

Valo® Cordless Rechargeable Battery

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

PRODUCT NAME: Valo® Cordless Rechargeable Battery
PRODUCT DESCRIPTION: Rechargeable Lithium Battery
MANUFACTURER
 Ultradent Products, Inc.
 505 W. 10200 S.
 South Jordan, UT 84095

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (NORTH AMERICA) :(800) 424 - 9300
(INTERNATIONAL) :+1(703) 527 - 3887

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS	EINECS	Classification	Wt.%
Copper	7440-50-8	231-159-6	N/A	5 - 15
Aluminum	7429-90-5	231-072-3	F+; R11, R15, R17, R38	2 - 10
Lithium Metal	7439-93-2	231-102-5	C, Xi; R14/15, R34, R36/37/38	2 - 3
Nickel Metal	7440-02-0	231-111-4	T; R40, R43, R48/23, R52/53	0.5 - 5
Lithium Cobalt Oxide	12190-79-3	235-362-0	R22, R43	25 - 50
Organic Solvent (EC)	96-49-1	202-510-0	Xi; R21, R22, R41, R42/43	10 - 20
Organic Solvent (DMC)	616-38-6	210-478-4	F, Xi; R21, R22, R41, R42/43	10 - 20
Organic Solvent (DEC)	105-58-8	203-311-1	F, Xi; R21, R22, R41, R42/43	10 - 20
Activated Carbon	7440-44-0	231-153-3	R36	10 - 30

(Full text of R-Phrases can be found under heading 16)

3. HAZARDS IDENTIFICATION

HAZARD DESIGNATION

- R14: Reacts violently with water.
- R21/22: Harmful in contact with skin and if swallowed.
- R41: Risk of serious damage to eyes.
- R42/43: May cause sensitization by inhalation and skin contact.

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: The Lithium-ion Cylindrical battery described in this MSDS are sealed units which are not hazardous when used according to the recommendations of the manufacturer. Under normal conditions of use, the solid electrode materials and liquid

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electrolyte they contain are non-reactive provided the battery integrity is maintained and seals remain intact. Risk of exposure only in case of abuse (mechanical, thermal, electrical) which leads to the activation of the safety valve and/or the rupture of the battery container. Electrolyte leakage, electrode materials reaction with moisture/water or battery vent/explosion/fire may follow, depending upon the circumstances.

POTENTIAL HEALTH EFFECTS

EYES: Causes severe eye burns.

SKIN: Corrosive, causes skin burning.

INGESTION: Harmful if swallowed.

SENSITIZATION: R42/43: May cause sensitization by inhalation and skin contact.

4. FIRST AID MEASURES

EYES: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.

SKIN: Remove all contaminated clothing and flush affected areas with plenty of water and soap for at least 15 minutes. Do not apply grease or ointment

INGESTION: Dilute by giving plenty of water and get immediate medical attention. Assure that the victim does not aspirate vomited material by use of positional drainage. Assure that mucus does not obstruct the airway. Do not give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air and ventilate the contaminated area. Give oxygen or artificial respiration if needed.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Suitable CO₂, Dry chemical or Foam extinguishers, *Not to be used:* Type "D" extinguishers

EXPLOSION HAZARDS: The batteries can leak and/or spout vaporized or decomposed and combustible electrolyte fumes in case of exposure above 60°C resulting from inappropriate use or from the environment. Possible formation of hydrogen fluoride (HF) and phosphorous oxides during fire. LiPF₆ salt contained in the electrolyte releases hydrogen fluoride (HF) in contact with water.

FIRE FIGHTING PROCEDURES: General: Evacuate all personnel; use protective equipment for fire-fighting. Use self-contained breathing apparatus when the product is involved in fire.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: The material contained within the batteries would only be expelled under abusive conditions. Using shovel or broom, cover battery or spilled substances with dry sand or vermiculite, place in approved container (after cooling if necessary) and dispose in accordance with local regulations.

7. HANDLING AND STORAGE

HANDLING: The batteries should not be opened, destroyed nor incinerated since they may leak or rupture and release in the environment the ingredients they contain. Do not crush, pierce, short(+) and (-) battery terminals with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not mix new and used batteries. Keep batteries in non-conductive (i.e. plastic) trays. Do not strike or throw the battery against hard surface. Do not directly solder the battery and pierce the battery with a nail or other sharp object. Do not immerse in water or cleaning fluids.

STORAGE: Store in a cool (preferably below 30°C) and ventilated area away from moisture, sources of heat, open flames, food and drink. Keep adequate clearance between walls and batteries. Temperature above 70°C may result in battery leakage and rupture. Keep batteries in original packaging until use.

Follow manufacturer recommendations regarding maximum recommended currents and operating temperature range. Applying pressure on or deforming the battery may lead to disassembly followed by eye, skin and throat irritation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear eye protection if handling a damaged or leaking battery.

SKIN: Wear suitable protective clothing and gloves if handling a damaged or leaking battery.

OTHER USE PRECAUTIONS: No specific hazards are encountered under normal product use.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Metal squares, hermetically sealed and fitted with an external plastic box

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Heat above 70°C or incinerate. Deform, mutilate, crush, pierce, disassemble, Short circuit. Prolonged exposure to humid conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Corrosive/Irritant Hydrogen fluoride (HF) is produced in case of reaction of lithium hexafluorophosphate with water. Combustible vapors and formation of Hydrogen fluoride (HF) and phosphorous oxides during fire.

INCOMPATIBLE MATERIALS: N/A

11. TOXICOLOGICAL INFORMATION

GENERAL COMMENTS: Not Available

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: When properly used or disposed, ENCEL Lithium-ion Cylindrical battery do not present environmental hazard.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: It is recommended that Rechargeable Batteries be recycled. Please check with your local governmental regulations for recycling.

GENERAL COMMENTS: Lithium-Ion batteries should have their terminals insulated and be preferably wrapped in plastic bags prior to disposal. Incineration should never be performed by battery users but eventually by trained professionals in authorized facilities with proper gas and fumes treatment.

14. TRANSPORT INFORMATION

ROAD AND RAIL (ADR/RID)

LABEL: Not Regulated

AIR (ICAO/IATA)

LABEL: Not Regulated

VESSEL (IMO/IMDG)

LABEL: Not Regulated

15. REGULATORY INFORMATION

EUROPEAN COMMUNITY

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EEC LABEL SYMBOL AND CLASSIFICATION

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- R42/43: May cause sensitization by inhalation and skin contact.

COMMENTS The transport of rechargeable Lithium-ion Cylindrical battery is regulated by various bodies (IATA, IMO, ADR, US-DOT) that follow the United Nations "Recommendations on the Transport of Dangerous Goods, Model Regulations, 13th Revised edition-2003 - Ref. ST/SG/AC.10/1 Rev. 13". Depending on their lithium metal equivalent weight content, design, and ability to pass safety tests defined by the UN in the "Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria- 3rd Revised edition- 2002- Ref. ST/SG/AC.10/11 Rev.3 Amendment 1 «Lithium Batteries»", the lithium-ion cells and battery packs with respectively less than 1.5 and 8 grams of equivalent lithium metal content that pass the UN-defined safety test, are not restricted for transport (1.0 Ah of declared nominal capacity = 0.3 gram of Li equivalent weight content).

16. OTHER INFORMATION

- RELEVANT R-PHRASES:** R11: Highly flammable.
- R15: Contact with water liberates extremely flammable gases.
 - R17: Spontaneously flammable in air.
 - R38: Irritating to skin.
 - R14/15: Reacts violently with water, liberating highly flammable gases.
 - R34: Causes burns.
 - R36/37/38: Irritating to eyes, respiratory system and skin.
 - R40: Limited evidence of a carcinogenic effect.
 - R43: May cause sensitization by skin contact.
 - R48/23: Toxic : danger of serious damage to health by prolonged exposure through inhalation.
 - R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 - R22: Harmful if swallowed.
 - R21: Harmful in contact with skin.
 - R41: Risk of serious damage to eyes.
 - R42/43: May cause sensitization by inhalation and skin contact.

PREPARED BY: Susan Scott

MANUFACTURER DISCLAIMER: Use as directed. The information and recommendations are taken from sources (raw material MSDS(s) and manufacturer's knowledge) believed to be accurate; however, the manufacturer, makes no warranty with respect to the accuracy of the information or the suitability of the recommendation and assumes no liability to any user thereof. Each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.