SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1 **Issue Date** 20-Apr-2014
Product Name WX254L SD Driver **Revision date** 20-Apr-2014

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

Product identifier

Product Name	Worx SD driver
Product Code	WX254L
Battery Name	Lithium Ion Battery
Product Code	ISR18650

Other means of identification

Product description:

Nominal Voltage: 3.7V
Ampere-hour: 1.5Ah

Lithium content(g): 0.6-0.9g

Recommended use of the chemical and restrictions on use

Recommended Use	Battery for electronic products
Uses advised against	No information available

Details of the supplier of the safety data sheet

Supplier	Jiangsu Highstar Battery Manufacturing Co., Ltd.
Address	No.306 Heping Road(s), Qidong City, Jiangsu, China
Postal Code	226200
Phone	86- 513-80795666
FAX	86-513-83312306
E-mail	chenj@highstar.net.cn

Emergency telephone number

In USA and Canada 1-800-424-9300. Outside USA and Canada 1-703-741-5970

2. HAZARDS IDENTIFICATION

GHS - Classification

Not classified.

Label elements

Symbols/Pictograms	None
Signal word	None
Hazard Statements	Not classified
Precautionary Statements	Not applicable

Hazards not otherwise classified (HNOC)

In case of mistreatment (abusive over charge, reverse charge, external short circuit…) and in case of fault some electrolyte can leak from the cell through the safety device. In these cases refer to the risk of the electrolyte. Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin. The electrode materials are only hazardous, if the materials are released by mechanical damaging of the cell or if exposed to fire.

Skin touch: Contact with battery electrolyte may cause burns and skin irritation.

Eyes touch: Contact with battery electrolyte may cause burns. Eye damage is possible.

Inhalation: Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.

Ingestion: Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

Unknown acute toxicity

91 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature Mixture

Chemical Name	CAS No	Weight-%
Nickel cobalt manganese composite hydroxide	-	30-32%
Iron	7439-89-6	25-26%
Graphite	7782-42-5	14-15%
Copper	7440-50-8	13-15%
Aluminum foil	7429-90-5	6-7%
Polypropylene	9003-07-0	2-3%
Lithium	7439-93-2	1-2%

4. FIRST AID MEASURES

Description of first aid measures

General advice: In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice / attention if you feel unwell.

Skin Contact: Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Get medical advice / attention if you feel unwell.

Ingestion: Have victim drink 60 to 240 mL (2-8 oz.) of water. and DO NOT induce vomiting. Get medical aid.

Most important symptoms and effects, both acute and delayed

Contact with internal components may cause allergic skin sensitization (rash) and irritate eyes, skin, nose, throat, respiratory system.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

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

Unsuitable extinguishing media: No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors

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

Ensure adequate ventilation, especially in confined areas
Avoid contact with skin, eyes or clothing
Do not touch or walk through spilled material
Use personal protection recommended in Section 8
Avoid breathing vapors or mists
Evacuate personnel to safe areas

Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so
Pick up and transfer to properly labeled containers

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice
Ensure adequate ventilation, especially in confined areas
Avoid contact with skin, eyes or clothing
Wash contaminated clothing before reuse
Take precautionary measures against static discharges
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product
Wash thoroughly after handling
Use personal protection recommended in Section 8

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place
Keep away from heat

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Graphite 7782-42-5	TWA: 2 mg/m^3 respirable fraction all forms except graphite fibers	-	-
Copper 7440-50-8	TWA: 0.2 mg/m^3 fume TWA: 1 mg/m Cu dust and mist	-	-
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 respirable dust TWA: 5 mg/m^3 Al

Appropriate engineering controls

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

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.
Hand Protection	Wear protective gloves.
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Cylindrical battery
Color	blue
Odor	None
Odor Threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling point / boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	No information available
Vapor Pressure	No information available
Vapor density	No information available
Density	No information available
Bulk density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Explosive properties	Not an explosive
Oxidizing properties	Not applicable

Other information

No information available

10. STABILITY AND REACTIVITY

Reactivity

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

Chemical stability

Stable under recommended storage conditions

Possibility of Hazardous Reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight

Incompatible materials

None known based on information supplied

Hazardous Decomposition Products

None known based on information supplied

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system
Eye contact	Contact with eyes may cause irritation
Skin Contact	Substance may cause slight skin irritation
Ingestion	Ingestion may cause irritation to mucous membranes

Information on toxicological effects

Acute toxicity
No data available.

Skin corrosion/irritation
The liquid in the battery irritates.

Serious eye damage/eye irritation
The liquid in the battery irritates.

Sensitization
The liquid in the battery may cause sensitization to some person.

Germ cell mutagenicity
No information available

Carcinogenicity
No information available

Reproductive toxicity
No information available

STOT - single exposure
No information available

STOT - repeated exposure
No information available

Aspiration hazard
No information available

Target Organ Effects eyes, Respiratory system, Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants EC50	Fish LC50	Crustacea EC50
Iron 7439-89-6	-	-	> 100 mg/L/48h (Daphnia magna)
Copper 7440-50-8	0.031 - 0.054 mg/L/96h Pseudokirchneriella subcapitata static 0.0426 - 0.0535 mg/L/72h Pseudokirchneriella subcapitata static	-	-

Persistence and degradability
No information available

Bioaccumulative potential
No information available

Mobility in soil

No information available

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations
Contaminated packaging	Dispose of in accordance with federal, state and local regulations

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

14. TRANSPORT INFORMATION

DOT

UN/ID No.	Not regulated
Proper shipping name	Not regulated
Hazard Class	Not regulated
Packing Group	Not regulated
Special Provisions	None
Marine pollutant	This product contains a chemical which is listed as a severe marine pollutant according to DOT

IATA Not regulated

IMDG Not regulated

The Lithium Ion Battery has passed the test UN38.3 test, according to the test report ID: No. 1112050127

According to the packaging instruction 967 section II of IATA DGR 54th Edition for transportation.

According to the packaging provision 188 of IMDG or the Recommendation on the Transportation of Dangerous Goods-Model Regulation (17th).

The products are not subjects to dangerous.

15. REGULATORY INFORMATION

International Inventories

Component	AICS	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	TSCA
Iron 7439-89-6 (10 - 30)	X	X	X	-	X	X	X	X
Graphite 7782-42-5 (10 - 30)	X	X	X	-	X	X	X	X
Copper 7440-50-8 (10 - 30)	X	X	X	-	X	X	X	X
Aluminum foil 7429-90-5 (5 - 10)	X	X	X	-	X	X	X	X
Polypropylene 9003-07-0 (1 - 5)	X	X	-	X	X	X	X	X
Lithium 7439-93-2 (1 - 5)	X	X	X	-	X	X	X	X

"-" Not Listed
"X" Listed

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	SARA 313 - Threshold Values %
Aluminum foil - 7429-90-5	1.0

SARA 311/312 Hazard Categories

CWA (Clean Water Act)

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

CERCLA

US State Regulations

California Proposition 65

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Aluminum foil 7429-90-5	X	X	X
Lithium 7439-93-2	X	X	X

16. OTHER INFORMATION

Revision Note

Issue Date	20-Apr-2014
Revision date	20-Apr-2014
Revision Note	Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

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

Disclaimer

The information provided in this Material 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 --------