SDS

SAFETY DATA SHEET

According to 2012 OSHA Hazard Communication Standard

(29 CFR 1910.1200)

Prepared For : SHENZHEN TOPWAY NEW ENERGY CO.,LTD.
1001,No. 2500106, Junxin Road, Niuhu Community, Guanlan Street, Longhua District, Shenzhen, Guangdong, P.R. China

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Written by: Wendy **Approved by:**

** The SDS is prepared based on the information provided by client. The contents and formats of this SDS are revised as per client's request.*

Section 1- Identification

(a) Product identifier	
Product name	Carbon Zinc Battery
(b) Other means of identification	
Product description	Model: R03P-AAA Nominal Voltage: 1.5V Weight: 6.9g
(c) Recommended use of the chemical and restrictions on use	
Recommended use	DRY BATTERY
Uses advised against	No information available.
(d) Details of the supplier of the safety data sheet	
Applicant Name	SHENZHEN TOPWAY NEW ENERGY CO.,LTD.
Applicant Address	1001,No. 2500106, Junxin Road, Niuhu Community, Guanlan Street, Longhua District, Shenzhen, Guangdong, P.R. China
Manufacture Company	SHENZHEN TOPWAY NEW ENERGY CO.,LTD.
Manufacture Address	1001,No. 2500106, Junxin Road, Niuhu Community, Guanlan Street, Longhua District, Shenzhen, Guangdong, P.R. China
Supplier Phone Number	+86-755-23225527
(e) Emergency telephone number	
+86-755-23225572	

Section 2- Hazards Identification

(a) 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-Inhalation	Category 4
Skin corrosion/Irritation	Category 1
Serious eye damage/eye irritation	Category 2
Hazardous to the aquatic environment , long-term (Chronic)	Category 1

(b) GHS Label elements, including precautionary statements

Emergency Overview

Signal word	Danger

Hazard Statements

Harmful if swallowed
Harmful if inhaled.
Causes severe skin burns and eye damage
Causes serious eye irritation.
Very toxic to aquatic life with long lasting effects.

Appearance: No information available **Physical State**: Solid **Odor**: No information available

P101	If medical advice is needed,,have product containet or label at hand
P261 P264 P270 P271 P260 P280 P273	Avoid breathing dust/fume/gas/mist/vapours/spray Wash ... thoroughly after handling Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.
P301+P312 P330 P304+P340 P312 303+P361+P353 P363 P304+P340 P310 P305+P351+P338 P321 P391 P337+P313	IF SWALLOWED: Call a POISON CENTER/doctor/\u2026if you feel unwell. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor/\u2026if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor/\u2026 Specific treatment (see ... on this label). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Collect spillage. If eye irritation persists: Get medical advice/attention
P405	Store locked up.

P501	Dispose of contents/container to ...

(c) Hazards not otherwise classified (HNOC)

Not applicable

(d) Unknown Toxicity

88.8 % of the mixture consists of ingredient(s) of unknown toxicity
11.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
88.8 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
58.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
58.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
58.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

(e) Other information

Very toxic to aquatic life with long lasting effects.

(f) Interactions with Other Chemicals

No information available.

Section 3- Composition/Information On Ingredients

Chemical Name	CAS Number	EC#	Weight (%)
Manganese Dioxide	1313-13-9	215-202-6	37
Zinc Metal	7440-66-6	231-175-3	33
Carbon Black	1333-86-4	215-609-9	10
Water	7732-18-5	231-791-2	14.2
Ammonium Chloride	12125-02-9	235-186-4	0.6
Paper	65996-61-4	265-995-8	0.5
Ilron	7439-89-6	231-096-4	2
Polypropylene	9003-07-0	202-316-6	1.5
Zinc Chloride	7646-85-7	231-592-0	1.2

Section 4- First-aid Measures

Description of first aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Immediately rinse with water.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** If symptoms persist consult doctor.

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

Section 5- Fire-fighting measures

(a) Suitable Extinguishing Media

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

(b) Unsuitable extinguishing media

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

(c) 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.

(d) Hazardous Combustion Products

Carbon oxides.

(e) 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.

Section 6- Accidental Release Measures

(a) Personal precautions, protective equipment and emergency procedures

If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate. Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed with sand, earth or other inert substance and contaminated area should be ventilated meantime.

(b) Environment precautions

Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

(c) Methods and material for containment and cleaning up

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

Section 7- Handling and Storage

(a) Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

(b) Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

Incompatible Products
Strong acids. Strong oxidizing agents. Strong bases

Section 8- Exposure Controls/Personal Protection

(a) Control parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese dioxide 1313-13-9	TWA: 0.02 mg/m ^{3} Mn respirable particulate matter TWA: 0.1 mg/m ^{3} Mn inhalable particulate matter	(vacated) Ceiling: 5 mg/m ^{3} Ceiling: 5 mg/m ^{3} Mn	IDLH: 500 mg/m ^{3} Mn TWA: 1 mg/m ^{3} Mn STEL: 3 mg/m ^{3} Mn
Zinc 7440-66-6	STEL: 10 mg/m ^{3} respirable fraction TWA: 2 mg/m ^{3} respirable fraction	TWA: 5 mg/m ^{3} fume TWA: 15 mg/m ^{3} total dust TWA: 5 mg/m ^{3} respirable fraction	IDLH: 500 mg/m ^{3} Ceiling: 15 mg/m ^{3} dust TWA: 5 mg/m ^{3} dust and fume STEL: 10 mg/m ^{3} fume

Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Manganese dioxide 1313-13-9	TWA: 0.2 mg/m ^{3}	TWA: 0.2 mg/m^3	TWA: 0.02 mg/m ^{3} TWA: 0.1 mg/m	TWA: 0.2 mg/m^3
Other Exposure Guidelines	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962(11th Cir., 1992) .			

(b) Appropriate engineering controls

Engineering Measures	Showers Eyewash stations Ventilation systems

(c) 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	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. 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.

Section 9- Physical and Chemical Properties

Form	Solid
Color	No information available
Odor	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling Point and Boiling range	Not Available
Flash Point	Not Available
Upper/lower flammability or explosive limits	Not Available
Vapor Pressure	Not Available
Vapor Density	Not Available
Relative density	Not Available
Solubility in Water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available
Evaporation rate	Not Available
Flammability (soil, gas)	Not Available
Viscosity	Not Available

Section 10- Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat.
Incompatible materials	Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products	Carbon oxides.

Section 11 – Toxicological Information

Product Information	Product does not present an acute toxicity hazard based on known or supplied information In case of rupture:
Irritation	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. Harmful by inhalation.
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.
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.
Information on toxicological effects	
Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing.
Numerical measures of toxicity	

Acute Toxicity

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

ATEmix (oral) 749.00 mg/kg

ATEmix (inhalation-gas) 6,174.00 mg/L

ATEmix (inhalation-dust/mist) 2.06 mg/L

ATEmix (inhalation-vapor) 15.09 mg/L

Unknown acute toxicity

88.8 % of the mixture consists of ingredient(s) of unknown toxicity

11.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

88.8 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

58.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

58.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

58.7 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information			
Chemical name	**Oral LD50**	**Dermal LD50**	**Inhalation LC50**
Manganese dioxide 1313-13-9	= 9000 mg/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure	
Skin corrosion/irritation	Classification based on data available for ingredients. Causes burns.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.
Respiratory or skin sensitization	No information available.
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.

Section 12- Ecological Information

Ecological Toxicity	Very toxic to aquatic life with long lasting effects.

Chemical name	**Toxicity to Algae**	**Toxicity to Fish**	**Toxicity to Microorganisms**	**Daphnia Magna (Water Flea)**
Zinc 7440-66-6	96h EC50: 0.11 - 0.271 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.09 - 0.125 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 3.5 mg/L (Lepomis macrochirus) 96h LC50: = 7.8 mg/L (Cyprinus carpio) 96h LC50: = 0.24 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.59 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.41 mg/L (Oncorhynchus mykiss) 96h LC50: 0.211 - 0.269 mg/L (Pimephales promelas) 96h LC50: = 2.66 mg/L (Pimephales promelas) 96h LC50: = 30 mg/L (Cyprinus carpio) 96h LC50: = 0.45	-	48h EC50: 0.139 - 0.908 mg/L

		mg/L (Cyprinus carpio) 96h LC50: 2.16 - 3.05 mg/L (Pimephales promelas)		

Persistence and Degradability	No information available.
Bioaccumulation	

Chemical name	Log Pow
Manganese dioxide 1313-13-9	<0

Section 13- Disposal Considerations

Waste treatment methods	
Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
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
Zinc 7440-66-6	Ignitable powder Toxic

Section 14 – Transport Information

DOT Proper Shipping Name Hazard Class	NOT REGULATED NOT REGULATED N/A
TDG	NOT REGULATED
MEX	NOT REGULATED
ICAO	NOT REGULATED
IATA Proper Shipping Name Hazard Class	NOT REGULATED NON REGULATED N/A
IMDG/IMO Hazard Class Marine Pollutant	NOT REGULATED N/A Product is a marine pollutant according to the criteria set by IMDG/IMO

RID	NOT REGULATED
ADR	NOT REGULATED
ADN	NOT REGULATED

Section 15- Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

Ozone-depleting substances (ODS) Not applicable
Persistent Organic Pollutants Not applicable
Export Notification requirements Not applicable

International Inventories

TSCA Contact supplier for inventory compliance status.
DSL/NDSL Contact supplier for inventory compliance status.
EINECS/ELINCS Contact supplier for inventory compliance status.
ENCS Contact supplier for inventory compliance status.
KECL Contact supplier for inventory compliance status.
PICCS Contact supplier for inventory compliance status.
AICS Contact supplier for inventory compliance status.

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
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

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	Percent	SARA 313 - Threshold Values %
Manganese dioxide - 1313-13-9	1313-13-9	30.1	1.0
Zinc - 7440-66-6	7440-66-6	8.2	1.0

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
Manganese dioxide 1313-13-9	1000 lb			X
Zinc 7440-66-6		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
Manganese dioxide 1313-13-9	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Zinc 7440-66-6	1000 lb		RQ 454 kg final RQ RQ 1000 lb final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Manganese dioxide 1313-13-9	X		X	X	X
Zinc 7440-66-6	X	X	X	X	

Section 16- Other Information

NFPA	**Health hazards 1**	**Flammability 0**	**Instability 0**	**Physical and Chemical Properties -**
HMIS	**Health hazards 0**	**Flammability 0**	**Physical hazards 0**	**Personal Protection X**

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********