Carbon Zine Battery
R6(R6P,ER6MX,ER6X,HR6MX)

Article Information Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations (According to HCS-2012 APPENDIX D TO §1910.1200)

Issue date: 03/30/2020 Revision date: 13/30/2023 Version: 2.0

Safety Data Sheet is not available to article according to the OSHA Hazard Communication Standard 29 CFR 1910.1200, so AIS is provided instead of SDS.

Batteries are considered Articles under Global Harmonized Standards. This Article Information Sheet is provided according to the request of the customers.

SECTION 1: Identification

1.1. Identification

Product form : Article

Trade name : Carbon Zine Battery R6(R6P,ER6MX,ER6X,HR6MX)

1.2. Recommended use and restrictions on use

Recommended use : Power supply.

Restrictions on use : No information available

1.3. Supplier

Supplier

Guangzhou Tiger Head Battery Group Co., Ltd.

Floor 28, Top Plaza East Tower, No. 222 Xingmin Road, Zhujiang New Town, Tianhe District, Guangdong, China 510000

+86-020-85525623

1.4. Emergency telephone number

Emergency number : +86-020-85525623

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) : None

Signal word (GHS US) : None

Hazard statements (GHS US) : Not applicable

Precautionary statements (GHS US) : Not applicable

2.3. Other hazards which do not result in classification

Batteries contain manganese dioxide which may boost combustion of other substances that may vent, ignite and produce sparks when subjected to high temperature, when damaged or abused (e.g., mechanical damage); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Article

Name	Product identifier	%
Zinc	(CAS-No.) 7440-66-6	23.70
Manganese oxide (MnO2)	(CAS-No.) 1313-13-9	22.85
Iron	(CAS-No.) 7439-89-6	20.75
Water	(CAS-No.) 7732-18-5	12.65
Graphite	(CAS-No.) 7782-42-5	9.70

Name	Product identifier	%
Zinc chloride	(CAS-No.) 7646-85-7	5.20
Ethene, homopolymer	(CAS-No.) 9002-88-4	2.80
Cellulose	(CAS-No.) 9004-34-6	1.65
Ammonium chloride	(CAS-No.) 12125-02-9	0.70

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Not an expected route of exposure.

First-aid measures after skin contact : Not expected to present a skin hazard under anticipated conditions of normal use. No special technical protective measures are necessary.

First-aid measures after eye contact : Not an expected route of exposure.

First-aid measures after ingestion : Rinse mouth. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing agent suitable for surrounding fire.

Unsuitable extinguishing media : No information available.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Thermal decomposition can lead to release of irritating and toxic gases and vapors.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate personnel to a safe area;Ensure adequate ventilation, especially in confined areas;No flames, no sparks. Eliminate all sources of ignition. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes and inhalation of vapors.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not use organic solvents or other chemical cleaners on battery. Do not disassembly or decompose. Avoid contacting with water, avoid straight sunlight. Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation, especially in confined areas. Wash contaminated clothing before reuse. Keep away from heat, sparks, flame and other sources of ignition.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Do not stack battery directly on another battery. Do not store batteries on electrically conductive surfaces. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep locked up and out of reach of children. Keep away from food, drink and animal feeding stuffs. Store in accordance with local regulations.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Zinc (7440-66-6)	
No additional information available	
Manganese oxide (MnO2) (1313-13-9)	
No additional information available	
Iron (7439-89-6)	
No additional information available	
Water (7732-18-5)	
No additional information available	
Graphite (7782-42-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m³)	2 mg/m³ (all forms except graphite fibers-respirable particulate matter)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) (mg/m³)	15 mg/m³ (synthetic-total dust) 5 mg/m³ (synthetic-respirable fraction)
USA - IDLH - Occupational Exposure Limits	
US IDLH (mg/m³)	1250 mg/m³
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA) (mg/m³)	2.5 mg/m³ (natural-respirable dust)
Zinc chloride (7646-85-7)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m³)	1 mg/m³ (fume)
ACGIH STEL (mg/m³)	2 mg/m³ (fume)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) (mg/m³)	1 mg/m³ (fume)
USA - IDLH - Occupational Exposure Limits	
US IDLH (mg/m³)	50 mg/m³ (fume)
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA) (mg/m³)	1 mg/m³ (fume)
NIOSH REL (STEL) (mg/m³)	2 mg/m³ (fume)
Ethene, homopolymer (9002-88-4)	
No additional information available	
Cellulose (9004-34-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m³)	10 mg/m³
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA) (mg/m³)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
Ammonium chloride (12125-02-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m³)	10 mg/m³ (fume)
ACGIH STEL (mg/m³)	20 mg/m³ (fume)

USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA) (mg/m³)	10 mg/m³ (fume)
NIOSH REL (STEL) (mg/m³)	20 mg/m³ (fume)

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the w orkstation.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Under normal condition of use and handling no special protection is required for sealed battery. In the event of battery case breakage, should be w ear appropriate safety gloves

Eye protection:

Under normal condition of use and handling no special protection is required for sealed battery. Use appropriate safety glasses w henthere is the risk of splash

Skin and body protection:

Under normal condition of use and handling no special protection is required for sealed battery. It is recommended to w ear appropriate protective clothing w hen the battery case is broken.

Respiratory protection:

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: No information available
Odour	: Odorless
Odour threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Insoluble
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Zinc (7440-66-6)	
LD50 oral rat	630 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.41 mg/m³

Manganese oxide (MnO2) (1313-13-9)	
LD50 oral rat	9000 mg/kg

Iron (7439-89-6)	
LD50 oral rat	30 g/kg

Water (7732-18-5)	
LD50 oral rat	> 90 ml/kg

Zinc chloride (7646-85-7)	
LD50 oral rat	1100 mg/kg
LC50 inhalation rat (mg/l)	≤ 1975 mg/m³ (Exposure time: 10 min)

Ethene, homopolymer (9002-88-4)	
LD50 oral rat	> 2000 mg/kg

Cellulose (9004-34-6)	
LD50 oral rat	> 5 g/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5800 mg/m³ (Exposure time: 4 h)

Ammonium chloride (12125-02-9)	
LD50 oral rat	1650 mg/kg

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Ethene, homopolymer (9002-88-4)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Zinc (7440-66-6)	
NOAEL (oral, rat, 90 days)	13.3 mg/kg bodyweight/day

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Zinc (7440-66-6)	
LC50 fish 1	2.16 – 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	0.139 – 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	0.211 – 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-static])

Ammonium chloride (12125-02-9)	
LC50 fish 1	209 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

12.2. Persistence and degradability

Zinc (7440-66-6)	
Persistence and degradability	No information available.

Ethene, homopolymer (9002-88-4)	
Persistence and degradability	No information available.

12.3. Bioaccumulative potential

Zinc (7440-66-6)	
Bioaccumulative potential	No information available.

Manganese oxide (MnO2) (1313-13-9)	
BCF fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water (Log Pow)	< 0 (at 20 °C)

Zinc chloride (7646-85-7)	
BCF fish 1	16000

Ethene, homopolymer (9002-88-4)	
Bioaccumulative potential	Bioaccumulation unlikely.

12.4. Mobility in soil

Zinc (7440-66-6)	
Ecology - soil	No information available.

Ethene, homopolymer (9002-88-4)	
Ecology - soil	No information available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Zinc (7440-66-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	454 kg no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

Manganese oxide (MnO2) (1313-13-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Iron (7439-89-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Graphite (7782-42-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Zinc chloride (7646-85-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	1000 lb

Ethene, homopolymer (9002-88-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

Cellulose (9004-34-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

Ammonium chloride (12125-02-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	5000 lb

15.2. International regulations

CANADA

Zinc (7440-66-6)
Listed on the Canadian DSL (Domestic Substances List)

Manganese oxide (MnO2) (1313-13-9)
Listed on the Canadian DSL (Domestic Substances List)

Iron (7439-89-6)
Listed on the Canadian DSL (Domestic Substances List)

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)

Graphite (7782-42-5)
Listed on the Canadian DSL (Domestic Substances List)

Zinc chloride (7646-85-7)
Listed on the Canadian DSL (Domestic Substances List)

Ethene, homopolymer (9002-88-4)
Listed on the Canadian DSL (Domestic Substances List)

Cellulose (9004-34-6)
Listed on the Canadian DSL (Domestic Substances List)

Ammonium chloride (12125-02-9)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Zinc (7440-66-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Manganese oxide (MnO2) (1313-13-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Iron (7439-89-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Water (7732-18-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Graphite (7782-42-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Zinc chloride (7646-85-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Cellulose (9004-34-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Ammonium chloride (12125-02-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Zinc (7440-66-6)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Manganese oxide (MnO2) (1313-13-9)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Iron (7439-89-6)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Water (7732-18-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Graphite (7782-42-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Zinc chloride (7646-85-7)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Poisonous and Deleterious Substances Control Law
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Ethene, homopolymer (9002-88-4)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Cellulose (9004-34-6)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Ammonium chloride (12125-02-9)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

No additional information available

SECTION 16: Other information

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations (According to HCS-2012 APPENDIX D TO §1910.1200)

Issue date : 03/30/2020

Revision date : 01/30/2023

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

TDG	Transport of Dangerous Goods
ADR	: European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMDG	: International Maritime Dangerous Goods
IATA	: International Air Transport Association
ADN	: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway
RID	: Regulations Concerning the International Carriage of Dangerous Godds by Rail
PBT	: Persistent, Bioaccumulative and Toxic
vPvB	: Very Persistent and Very Bioaccumulative
DNEL	: Derived No Effect Level
PNEC	: Predicted No Effect Concentration
LC50	: Lethal Concentration 50
LD50	: Lethal Dose 50
EC50	: Effective Concentration 50
TWA	: Time Weighted Average
STEL	: Short Term Exposure Limit

Key literature references and sources for data

ECHA: http://echa.europa.eu/

IFA GESTIS: http://gestis-en.itrust.de/nxt/gateway.dll?f=templates$fn=default.htm$vid=gestiseng:sdbeng

HSDB: http://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

ICSC: http://www.ilo.org/dyn/icsc/showcard.home

eChemPortal: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

NITE-CHRIP: http://www.nite.go.jp/en/chem/chrip/chrip_search/srhInput

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Safety Data Sheet
29 CFR 1910.1200

Effective Date ： 01/01-2025

Trade Name ： Zinc Chloride Dry Battery (No Lead Added)

1 Identification

- **Product identifier**
- **Trade name : Zinc Chloride Dry Battery (No Lead Added)**
- **Item No.:**
  SUM1/EXTRA、SUM1/SUPER、SUM2/EXTRA、SUM2/SUPER、SUM3/EXTRA、SUM3/SUPER、SUM4/EXTRA、SUM4/SUPER、SUM5/EXTRA、SUM9V/EXTRA、SUM9V/SUPER
- **Recommended use of the chemical and restrictions on use :**
- **Application of the substance / the preparation :** Electronic products
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier :**
  CHUNG PAK BATTERY WORKS LIMITED
  CHUNG PAK (GUANG DONG) BATTERY INDUSTRIAL CO., LTD
- **Full address :**
  UNIT B, 2/F., WAH SHUN INDUSTRIAL BUILDING, No.4 CHO YUEN STREET, YAU TONG BAY, KOWLOON, HONGKONG
  GANCUN SECTION FOCHEN ROAD CHEN CUN COUNTY SHUNDE DISTRICT FOSHAN CITY GUANGDONG PROVINCE CHINA
  Phone number :
  852-27171338
  Fax : 852 2772 7727
- **Email :** vinnic@chungpak.com
- **Other US contact point :** No available
- **Further information obtainable from :**
  CHUNG PAK BATTERY WORKS LIMITED
  CHUNG PAK (GUANG DONG) BATTERY INDUSTRIAL CO., LTD
- **Emergency telephone number :**
  USA Poison Center Tel: +1 800 222 1222
  +86-757-23312338 Bobo
- **Remark :**
  *This sample is likely to be classified as article and is out of scope of a SDS as set out in 29 CFR Part 1910.1200. This SDS is generated for client's reference only.

2 Hazard(s) identification

- **Classification of the substance or mixture**
  Classification according to OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS05 Corrosion

Skin Corr.	1A	H314	Causes severe skin burns and eye damage.
Eye Dam.	1	H318	Causes serious eye damage.

GHS07

Acute Tox.	4	H302	Harmful if swallowed.
Acute Tox.	4	H332	Harmful if inhaled.

- **Information concerning particular hazards for human and environment :**
  The product has to be labeled due to the calculation procedure of OSHA Hazard Communication Standard (29 CFR 1910.1200).
- **Classification system :**
  The classification is according to the latest edition of OSHA Hazard Communication Standard (29 CFR 1910.1200), and extended by company and literature data.

(Contd. on page 2)

Safety Data Sheet
29 CFR 1910.1200

Effective Date ： 01/01-2025

Trade Name ： Zinc Chloride Dry Battery (No Lead Added)

(Contd. on page 1)

- **Label elements**
- **Labeling according to OSHA Hazard Communication Standard (29 CFR 1910.1200)**
- **Hazard pictograms**

GHS05 GHS07

- **Signal word :** Danger
- **Hazard-determining components of labeling :**
manganese dioxide
- **Hazard statements**

H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.

- **Precautionary statements**

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe dusts or mists.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a poison center/doctor.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

- **Hazards not otherwise classified (HNOC)** No further relevant information available.

3 Composition / information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
Mixture of the substances listed below with nonhazardous additions.
For the wording of listed risk phrases refer to section 16.

- **Composition:**

1313-13-9	manganese dioxide Acute Tox.4, H302; Acute Tox. 4, H332	22.8-25.7%
7439-89-6	iron	17.4-23.8%
7440-66-6	zinc	16.8-19.3%
7732-18-5	water	14.1-16.2%
1333-86-4	carbon black	11.1-15.5%
7646-85-7	zinc chloride	5.3-5.8%
12125-02-9	ammonium chloride	0.02-0.25%
9004-34-6	Cellulose	0.6-0.74%
9002-88-4	PE	0.97-1.26%
9003-07-0	PP	0.14-0.17%
9002-86-2	PVC	0.77-1.28%

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• **Remark：**
zinc (CAS: 7440-66-6)
Note: Zn

manganese dioxide (CAS: 1313-13-9)
Note: MnO_2

carbon black (CAS: 1333-86-4)
Note: C

iron (CAS: 7439-89-6)
Note: Fe

zinc chloride (CAS: 7646-85-7)
Note: $ZnCl_2$

ammonium chloride (CAS: 12125-02-9)
Note: NH_4Cl_2

water (CAS: 7732-18-5)
Note: H_2O

Cellulose (CAS: 9004-34-6)
Note: Paper

Polyethylene (CAS: 9002-88-4)
Note: PE

Polypropylene(CAS: 9003-07-0)
Note: PP

Polyvinyl chloride (CAS: 9002-86-2)
Note: PVC

4 First-aid measures

• **Description of first aid measures**
• **General description:**
Immediately remove any clothing soiled by the product。
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
• **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
• **After skin contact:** Immediately wash with water and soap and rinse thoroughly. Then consult a doctor.
• **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
• **After swallowing:**
Do not induce vomiting; immediately call for medical help.
Drink copious amounts of water and provide fresh air. Immediately call a 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.

5 Fire-fighting measures

• **Suitable extinguishing agents:**
CO_2、extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
• **Special hazards arising from the substance or mixture:** No further relevant information available.

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- **Special protective equipment and precautions for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
  Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.

7 Handling and storage

- **Precautions for safe handling:**
  Thorough dedusting.
  Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage：**
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure controls / personal protection

- **Components with limit values that require monitoring at the workplace:**

1313-13-9 manganese dioxide (22.8-25.7%)	
PEL (USA)	Ceiling limit value: 5mg/m^3 as Mn
REL (USA)	Short-term value: 3mg/m^3 Long-term value: 1mg/m^3 as Mn
TLV (USA)	Long-term value: 0.02*0.1* mg/m^3 as Mn； * respirable **inhalable fraction
9004-34-6 Cellulose (0.6-0.74%)	
PEL (USA)	Long-term value: 15* 5** mg/m^3 *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m^3 *total dust **respirable fraction
TLV(USA)	Long-term value: 10mg/m^3

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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Based on the composition shown in Section 3, the following measures are suggested for occupational safety measure.**
- **Appropriate engineering controls:**
Wash clothing and shoes before reuse.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
See Section 7 for information about design of technical facilities.

- **Personal protective equipment:**
- **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands ：**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material:**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· General Information	
· Appearance:	
Form:	Cylindrical
Color:	Black，Red
· Odor:	Odorless
· Odour threshold:	Not available
· pH-value:	Not available
· Change in condition	
Melting point/ Melting range:	Not available
Freezing point：	Not available
Boiling point/ Boiling range:	Not available
· Flash point:	Not available

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· Flammability (solid, gaseous):	Not available
· Auto-Ignition temperature:	Not available
· Decomposition temperature:	Not available
· Explosion limits：	
Lower:	Not available
Upper:	Not available
· Vapor pressure:	Not available
· Density:	Not available
· Relative density:	Not available
· Vapour density:	Not available
· Evaporation rate:	Not available
· Solubility in/ Miscibility with	
Water:	Not available
· Partition coefficient (n-octanol/water)	Not available
· Viscosity:	
Dynamic:	Not available
Kinematic:	Not available
· Other information	Voltage 1.5V

10 Stability and reacivity

· **Reactivity:** Data not available
· **Chemical stability:** Stable under normal operating and storage conditions.
· **Possibility of hazardous reactions:** No dangerous reactions known.
· **Conditions to avoid:** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
7439-89-6 iron		
Oral	LD50	30000 mg/kg (rat)
9004-34-6 Cellulose		
Oral	LD50	＞5000 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** Strong caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive

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Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

• **Carcinogenic categories**

• **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

• **NTP (National Toxicology Program)**
None of the ingredients is listed.

• **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

• **Toxicity**
• **Aquatic toxicity:** No further relevant information available.
• **Persistence and degradability:** No further relevant information available.
• **Bioaccumulative potential:** No further relevant information available.
• **Mobility in soil:** No further relevant information available.
• **Other adverse effects:** No further relevant information available.

13 Disposal considerations

• **Waste treatment methods**
• **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
• **Uncleaned packagings:**
• **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

• Zinc Chloride Dry Battery (No Lead Added) is exempt from dangerous goods. It is considered non-dangerous goods by the international Civil Aviation Organization (ICAO), the International Air Transport Association (IATA), International Martine Dangerous Goods regulations (IMDG), the 《Recommendations on the Transport of Dangerous Goods Model Regulations》 and also is not classified as dangerous goods under the 66th Edition of the IATA Dangerous Good Regulation 2025 Special Provision A123.
Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.
Transport Fashion: By air, by sea, by road.

15 Regulatory information

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

• **Section 335 (extremely hazardous substances):**
None of the ingredients is listed.

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. Section 313 (specific toxic chemical listings):	
1313-13-9	manganese dioxide

. TSCA (Toxic Substances Control Act):	
1313-13-9	manganese dioxide
7439-89-6	iron
7732-18-5	water
9004-34-6	Cellulose

. Proposition 65

. Chemical known to cause cancer:
None of the ingredients is listed.

. Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

. Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

. Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

. Cancerogenity categories

. EPA (Environmental Protection Agency)		
1313-13-9	manganese dioxide	D
7440-66-6	zinc	II

. TLV (Threshold Limit Value established by ACGIH)
None of the ingredients is listed.

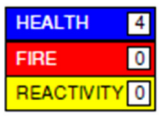
. NIOSH-Ca (National Institution for Occupational Safety & Health)
None of the ingredients is listed.

16 Other information

NFPA ratings (scale 0-4)

Health = 3
Fire = 0
Reactivity = 0

. HMIS ratings (scale 0-4)



Health = 4
Fire = 0
Reactivity = 0

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- **Relevant phrases**
  H302 Harmful if swallowed.
  H314 Causes severe skin burns and eye damage.
  H332 Harmful if inhaled.
- **********
  The contents and format of this SDS are in accordance with 29 CFR 1910.1200 (g)

  DISCLAIMER OF LIABILITY
  The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in anyway connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

  Remark:
  *This sample is likely to be classified as article and is out of scope of a SDS as set out in 29 CFR Part 1910.1200. This SDS is generated for client's reference only.
- **Date of preparation/last revision** 2025.01.01/-
- **Abbreviations and acronyms:**
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Acute Tox. 4: Acute toxicity，Hazard Category 4
  Skin Corr. 1A: Skin corrosion/irritation，Hazard Category 1A
  Eye Dam . 1: Serious eye damage/eye irritation，Hazard Category 1
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