

SAFETY DATA SHEET

Product Name: Carbon Battery / Carbon Zinc Battery

Issue Date: 13/06/2024 Version: 2

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

PRODUCT NAME: Carbon Battery / Carbon Zinc Battery

APPLICATIONS: For: Digital Box Level and Angle Gauge (29098)

SUPPLIER: Draper Tools Ltd
Hursley Road
Chandlers Ford
Eastleigh
Hampshire
SO53 1YF
www.drapertools.com

Emergency telephone number: Draper Helpline +44 (0) 2380 494344
Opening hours 8:30-17:00 Monday – Friday.

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (including all amendments)

This article is not subject to the classification in accordance with this Regulation.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 (including all amendments)

This article is not subject to the labelling in accordance with this Regulation.

2.3. Other hazards

This product does not meet the criteria for PBT or vPvB.

Chemical contents are sealed in metal can. Therefore, risk of exposure never occurs unless battery is mechanically or electrically abused. May explode or leak, and cause burn injury, if recharged, disposed of in fire, inserted incorrectly or disassembled.

During the production of batteries, zinc and manganese oxide fumes cause metal fume fever, and zinc chloride fume causes acute pneumonitis. Contents of an open battery can cause respiratory irritation, skin irritation, severe eye irritation and/or chemical burns. Carbon black is possibly carcinogenic to humans.

SECTION 3: Composition/Information on Ingredients

3.2 Mixtures

Chemical name	CAS No.	EC No.	Index No.	Concentration (%)	Classification - Regulation (EC) No 1272/2008
Zinc	7440-66-6	231-175-3	030-001-01-9	30	Aquatic Acute 1; H400 Aquatic Chronic 1; H410
Manganese dioxide	1313-13-9	215-202-6	025-001-00-3	27	Acute Tox. 4; H302 Acute Tox. 4; H332
Carbon black	1333-86-4	215-609-9	-	12	Not classified
Zinc chloride	7646-85-7	231-592-0	030-003-00-2	5	Acute Tox. 4; H302 Skin Corr. 1B; H314 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410
Ammonium chloride	12125-02-9	235-186-4	017-014-00-8	1	Acute Tox. 4; H302 Eye Irrit. 2; H319
Non-hazardous ingredients (water, paper, plastic and other)	Mixture	Mixture	-	Balance	Not classified

Remarks

- ① This battery is considered an "article" under Regulation (EC) No 1907/2006. The chemicals are contained in a sealed metal can.
- ② For the full text of H-phrases, see Section 16.

SECTION 4: First Aid Measures

4.1. Description of first aid measures

Eye contact

If battery contents contact the eyes, immediately flush eyes with plenty of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Seek immediate medical assistance.

Skin contact

If battery contents contact the skin, remove any contaminated cloth immediately. Wash exposed skin with cold water and soap for 15 minutes. Seek immediate medical assistance.

Inhalation

Not applicable for products in purchased form. If dusts/vapors/mists are inhaled, immediately move to fresh air. Keep affected person warm and at rest. If irritation persists or breathing discomfort occurs, seek medical attention. Give oxygen if breathing is difficult. If not breathing, give artificial respiration.

Ingestion

Swallowing is not anticipated due to battery size. If battery contents are swallowed, do not induce vomiting. Rinse mouth and give large quantities of water or milk. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

No additional symptoms and effects are anticipated when used as intended.

When not used as intended, battery contents cause chemical burns, skin irritation, severe eye irritation. Overexposure to zinc and manganese oxide fumes may cause metal fume fever.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians: Treat symptomatically and supportively. For information on treatment, call the local Poison Control Centre.

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable extinguishing media: Water spray, CO₂, dry chemical, or foam. Use any means suitable for extinguishing surrounding fire.

Unsuitable extinguishing media: Not applicable.

5.2. Special hazards arising from the substance or mixture

Battery may explode or leak if recharged or in fire. Contact with combustible material may cause fire.

Short-circuit batteries may cause burns. Electrolyte solution is corrosive to all human tissues. Fire will produce toxic gases/fumes and black smoke.

5.3. Advice for firefighters

Firefighters should wear positive pressure self-contained breathing apparatus (SCBA) and full protective clothing. Approach fire from upwind side. Fight fire from a distance or protected area. Cool fire exposed containers with water spray to prevent battery rupture. Use caution when handling fire-exposed containers (containers may rocket or explode in heat of fire). If safe to do so, remove containers from path of fire.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep unnecessary people away. Isolate leakage areas and restrict access. Remove all ignition sources. Ensure adequate ventilation. Wear appropriate protective equipment to avoid eye and skin contact and inhalation of vapors or fumes.

6.2. Environmental precautions

Do not discharge to soils, streams, ponds, lakes or sewers.

6.3. Methods and material for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Do not walk through spilled material.

If intact batteries are scattered, pick up mechanically and place into a suitable container for reuse or disposal.

In the event of battery rupture or leakage, caustic electrolyte may be released. Carefully collect all released material in a suitable container for disposal. Flush with water and neutralize with dilute citric acid. DO NOT allow material to enter sewers, streams, or storm conduits. Notify safety personnel of large leakage.

6.4. Reference to other sections

See Sections 7, 8 and 13 for additional information.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

- Ensure good ventilation/exhaustion at the workplace. Minimize dust/vapor/mist generation and accumulation.
- Keep away from incompatibles. Avoid sparks, open flames or ignition sources.

- Use personal protective equipment as required. Avoid contact with eyes, skin and clothing. Do not inhale.
- Handle in accordance with good industrial hygiene and safety practices. Maintain good housekeeping practices.
- Take off contaminated clothing and wash it before reuse.
- Do not eat, drink or smoke in working areas. Wash hands thoroughly before breaks or after handling.
- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- Do not recharge batteries. Do not short circuit or install incorrectly.
- Do not open, disassemble, puncture or deform. Avoid mechanical or electrical abuse.
- Do not carry batteries loose in a pocket or bag. Unpacked batteries shall not lie about in bulk.
- Do not swallow batteries. Keep batteries away from children.
- Do not mix with used or other types of batteries together.
- Do not remove the battery label. Do not throw batteries into water or fire.
- Always follow the warning information on the batteries and in the manuals of devices.
- In case of battery change always replace all batteries by new ones of identical type and brand.

7.2. Conditions for safe storage, including any incompatibilities

- Store in a cool, dry and ventilated place at room temperature.
- Do not refrigerate batteries - this will not make them last longer. Avoid large temperature changes.
- If possible, store the batteries in original packaging (short circuit protection). Protect from physical damage.
- For storage of large amounts, a fire alarm is recommended in the storehouse.
- Protect from moisture and sunlight. Keep away from heat and ignition sources. - No smoking.
- Keep away from combustible materials and incompatible materials.
- Keep out of reach of children.

7.3. Specific end use(s)

This product can be used in most household products.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Occupational exposure limit values

The following occupational exposure limits are provided for informational purposes. Exposure limits may differ from country to country. Refer to specific country regulations for additional exposure limit information.

Zinc

Germany MAK: TWA 2 mg/m³(inhalable fraction); TWA 0.1 mg/m³(respirable fraction)

Manganese dioxide (as Mn)

UK: TWA 0.2 mg/m³(inhalable fraction); TWA 0.05 mg/m³(respirable fraction)

Carbon black

UK: TWA 3.5 mg/m³; STEL 7 mg/m³

Zinc chloride

Germany MAK: TWA 0.1mg/m³ (respirable fraction); TWA 2 mg/m³ (inhalable fraction)

Sweden: LLV 1 mg/m³ (respirable dust)

Zinc chloride, fume

China OEL: PC-TWA 1 mg/m³; PC-STEL 2 mg/m³

UK WEL: TWA 1 mg/m³; STEL 2 mg/m³

Sweden: LLV 1 mg/m³

ACGIH TLV: TWA 1 mg/m³; STEL 2 mg/m³

Ammonium chloride, fume

UK: TWA 10 mg/m³; STEL 20 mg/m³

Biological limit values

No data available.

8.2. Exposure controls

Appropriate engineering controls

Provide local exhaust ventilation or other engineering controls to keep airborne levels below the recommended exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment

(a) Eye/face protection

Wear safety glasses or face shield when processing. None required for normal use.

(b) Skin protection

Use chemical-resistant gloves & protective clothing when processing. None required for normal use.

(c) Respiratory protection

Use an approved respirator or equivalent when processing. None required for normal use.

(d) Thermal hazards

Not applicable.

Environmental exposure controls

Do not allow material to be released to the environment without the proper governmental permits.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

(a) Physical state:	Cylindrical metal shell
(b) Colour:	Colored
(c) Odour:	Odorless
(d) Melting point/freezing point:	Not applicable to an article
(e) Boiling point or initial boiling point and boiling range:	Not applicable to an article
(f) Flammability:	Nonflammable solid
(g) Lower and upper explosion limit:	Not applicable
(h) Flash point:	Not applicable to an article
(i) Auto-ignition temperature:	Not applicable to an article
(j) Decomposition temperature:	Not applicable to an article
(k) pH:	Not applicable to an article
(l) Viscosity (dynamic):	Not applicable to an article
(m) Solubility:	Completely soluble in water (electrolyte)
(n) Partition coefficient n-octanol/water (log value):	Not applicable to an article
(o) Vapour pressure:	Not applicable to an article
(p) Relative density:	2.0-3.0
(q) Relative vapour density:	Not applicable to an article
(r) Particle characteristics:	Not applicable

9.2. Other information

Product contains an oxidizer (MnO₂).

SECTION 10: Stability and Reactivity

10.1. Reactivity

Not reactive under normal conditions of use.

10.2. Chemical stability

Stable under normal storage and handling conditions.

10.3. Possibility of hazardous reactions

Improper handling or disposal of the battery may lead to explosion. When heated above 60°C the risk of leakage may occur. Hazardous polymerization will not occur.

10.4. Conditions to avoid

Abuse, short circuit, recharge, refrigeration, direct sunlight, high temperatures, heat, ignition sources, moisture, and incompatible materials.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidants.

10.6. Hazardous decomposition products

Carbon oxides, zinc oxide, hydrogen chloride, hazardous fumes of zinc and manganese.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

(a) Acute toxicity

Under normal conditions of use, carbon zinc batteries are non-toxic.

Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

Component	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Zinc	630 mg/kg(rat)	No data	No data
Manganese dioxide	> 3478 mg/kg (rat)	No data	No data
Zinc chloride	350mg/kg (rat) 1100mg/kg(rat)	> 2000 mg/kg(rat)	No data

(b) Skin corrosion/irritation

Intact batteries are not corrosive or irritant to skin. Contents of an open battery can cause skin irritation and/or chemical burns.

(c) Serious eye damage/irritation

Intact batteries are not irritant to eyes. Contents of an open battery can cause severe irritation and chemical burns.

(d) Respiratory or skin sensitisation

This product is not expected to be sensitizing.

Zinc chloride: Asthma reported in a solderer and a locksmith.

(e) Germ cell mutagenicity

Contains no component listed as a mutagen.

(f) Carcinogenicity

Carbon black is possibly carcinogenic to humans (IARC Group 2B).

(g) Reproductive toxicity

Contains manganese dioxide. Long term exposure to manganese compounds may reduce fertility in men.

Zinc Chloride: Germany MAK- Pregnancy Risk Group: C.

(h) STOT-single exposure

This product is not classified as a specific target organ toxicant, single exposure. Contents of an open battery can cause respiratory irritation.

(i) STOT-repeated exposure

This product is not classified as a specific target organ toxicant, repeated exposure.

(j) Aspiration hazard

This product is not an aspiration hazard.

SECTION 12: Ecological Information

12.1. Toxicity

Batteries are not expected to present an environmental hazard under normal use. However, batteries are dangerous for the environment in the event of improper handling or disposal, and individual components are very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Aquatic toxicity
Zinc	96 hr LC ₅₀ (Fish: Common carp): 0.45 mg/L 48 hr EC ₅₀ (Crustaceans: Daphnia): 0.139-0.908mg/L
Zinc chloride	96h LC ₅₀ (Cyprinus carpio): 0.4-2.2 mg/l 48h EC ₅₀ (Daphnia magna): 0.2 mg/l 72h NOEC (Pseudokirchneriella subcapitata): 0.024 mg/l

12.2. Persistence and degradability

Persistence is not applicable for articles. Partial components in this product are not easily biodegradable. The metal can will persist in the environment.

12.3. Bioaccumulative potential

Bioaccumulation is not applicable for articles.

12.4. Mobility in soil

This product is not mobile in soil. If broken or damaged, the electrolyte is readily absorbed into soil. The steel can will exhibit limited mobility and remain in the upper layer.

12.5. Results of PBT and vPvB assessment

This product contains no component considered to be PBT or vPvB.

12.6. Other adverse effects

Extremely hazardous to water. Prevent the contamination of surface water or groundwater. Avoid release to the environment.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

-
- Batteries can be safely disposed of with normal household waste. Do not accumulate large quantities used batteries for disposal as accumulation could cause batteries to shortcircuit.
 - Do not allow product to reach sewage system. Incineration should never be performed by battery users. Disposal of in accordance with applicable local laws.
 - In the European Union, manufacturing, handling and disposal of batteries is regulated on the basis of the Directive 2013/56/EU .
 - Customers find detailed information on disposal in their specific countries using the web site of the European Portable Batteries Association (http://www.epbaeurope.net/legislation_national.html).

SECTION 14: Transport Information

Carbon batteries are considered to be "dry cell" batteries and are unregulated for purposes of transportation by ADR, IMDG CODE 2022 Edition (inc. Amendment 41-22), ICAO or IATA (65th Edition 2024).

All the carbon batteries manufactured by Jiaxing Vestel Battery Co., Ltd. have been designed to be compliant with these transportation regulations and packed in inner packaging in such a way to prevent short circuits or the generation dangerous quantities of heat. In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "NOT RESTRICTED" and "SPECIAL PROVISION A123" to appear on the air waybill, when an air waybill is issued.

14.1. UN number or ID number: Not applicable

14.2. UN proper shipping name: Not applicable

14.3. Transport hazard class(es)

ADR/RID: Not regulated

IMDG: Not regulated

ICAO/IATA: Not regulated

14.4. Packing group: Not applicable

14.5. Environmental hazards: Marine pollutant/Environmentally hazardous: No

14.6. Special precautions for user: Prevent wetting by rain or snow. Keep away from heat and ignition sources.

14.7. Maritime transport in bulk according to IMO instruments : Not applicable

SECTION 15: Regulatory Information

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

◆ **Regulation (EC) No 1907/2006 (REACH)**

This product is regarded as an "article" and not subject to REACH registration requirements.

◆ **Battery Directive 2013/56/EU**

According to this directive, the batteries have to be marked with the crossed-out wheeled bin. These batteries do not contain heavy metals as defined in Directive 2013/56/EU and Directive 2006/66/EC.

◆ **Regulation (EU) No 649/2012 concerning the export and import of dangerous chemicals, Annex I**

None of the components in this product are listed.

◆ **Commission Regulation (EC) No 465/2008 about certain substances that may be PBT and are listed in EINECS**

None of the components in this product are listed.

◆ **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer, Annex I & II**

None of the components in this product are listed.

◆ **EINECS inventory status**

All components are listed on or exempt from the EINECS inventory.

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other Information

(a) Date of preparation

Creation date: July 10, 2020

Revision date: January 2, 2024

Changes: Updates on transport and regulatory information

(b) Abbreviations and acronyms

PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and Very Bioaccumulative
ACGIH	American Conference of Governmental Industrial Hygienists
IARC	International Agency for Research on Cancer
STOT	Specific Target Organ Toxicity
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulations concerning the International Transport of Dangerous Goods by Rail
IMDG	International Maritime Code for Dangerous Goods
IMO	International Maritime Organization
ICAO	International Civil Aviation Organization
IATA	International Air Transport Association
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
EINECS	European Inventory of Existing Commercial Chemical Substances

(c) Key literature references and sources for data

[1] International Chemical Safety Cards (ICSC) 1064 - ZINC CHLORIDE

[2] Registry of Toxic Effects of Chemical Substances (RTECS) No.: ZH1400000

(d) Full text of H-statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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*** End of Report ***