

Safety Data Sheet Carbon-Zinc Battery

SDS Revision Date:

12/29/2014



1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity Carbon-Zinc Battery
Alternate Names Carbon-Zinc Battery

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use See Technical Data Sheet.
Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name Thermco Products, Inc.
10 Millpond Drive,
Unit #10
Lafayette, NJ 07848

Emergency

Customer Service: Thermco Products, Inc. 973.300.9100

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Acute Tox. 4;H302	Harmful if swallowed.
Acute Tox. 4;H332	Harmful if inhaled.
Skin Corr. 1B;H314	Causes severe skin burns and eye damage.
Eye Dam. 1;H318	Causes serious eye damage.
STOT SE 3;H335	May cause respiratory irritation.
Aquatic Chronic 1;H410	Very toxic to aquatic life with long lasting effects.

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2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Danger

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H410 Very toxic to aquatic life with long lasting effects.

[Prevention]:

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER or doctor / physician.

P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

[Storage]:

P403+233 Store in a well ventilated place. Keep container tightly closed.

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P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Zinc chloride CAS Number: 0007646-85-7	25 - 50	Acute Tox. 4;H302 Skin Corr. 1B;H314 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	[1][2]
Zinc powder (stabilized) CAS Number: 0007440-66-6	25 - 50	Aquatic Acute 1;H400 Aquatic Chronic 1;H410	[1]
Manganese dioxide CAS Number: 0001313-13-9	10 - 25	Acute Tox. 4;H332 Acute Tox. 4;H302	[1]
Graphite CAS Number: 0007782-42-5	10 - 25	Not classified	[1][2]
Ammonium chloride CAS Number: 0012125-02-9	1.0 - 10	Acute Tox. 4;H302 Eye Irrit. 2;H319	[1][2]

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	If vapours or fumes from vented or leaked batteries are irritation, move to fresh air and get medical attention.
Eyes	Check for and remove any contact lens, flush eyes with plenty of water, holding eyelids open, for at least 20 minutes, get medical help.
Skin	Immediately move the metal fragments and chemical components flush skin with plenty of water at least 15 minutes, get medical, if necessary.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Overview	No specific symptom data available. See section 2 for further details.
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Inhalation	Harmful if inhaled.
Eyes	Causes serious eye damage.
Skin	Causes severe skin burns and eye damage.
Ingestion	Harmful if swallowed.

5. Fire-fighting measures

5.1. Extinguishing media

As appropriate for surrounding fire

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

Avoid breathing dust / fume / gas / mist / vapors / spray.

5.3. Advice for fire-fighters

None

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Not Available

7. Handling and storage

7.1. Precautions for safe handling

Handling and transfer the products with care, make sure the packing always in good condition. Damaged packing may cause batteries contact together, in this case batteries may short circuit or improperly connected, it cause batteries venting, leaking or exploding.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

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Incompatible materials: Incompatibility: Reactive with acids and alkalis.

Products of combustion: Zinc oxide, manganese oxide.

Store in closed containers in a cool, dry, well ventilated area. Keep away from incompatible materials.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0001313-13-9	Manganese dioxide	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0007440-66-6	Zinc powder (stabilized)	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0007646-85-7	Zinc chloride	OSHA	TWA 1 mg/m3
		ACGIH	TWA: 1 mg/m3 STEL: 2 mg/m3
		NIOSH	TWA 1 mg/m3 ST 2 mg/m3
		Supplier	No Established Limit
0007782-42-5	Graphite	OSHA	TWA 15 mg/m3 TWA 15 mppcf
		ACGIH	TWA: 2 mg/m3
		NIOSH	TWA 2.5 mg/m3 (resp)
		Supplier	No Established Limit
0012125-02-9	Ammonium chloride	OSHA	No Established Limit
		ACGIH	TWA: 10 mg/m3 STEL: 20 mg/m3
		NIOSH	TWA 10 mg/m3 ST 20 mg/m3
		Supplier	No Established Limit

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Carcinogen Data

CAS No.	Ingredient	Source	Value
0001313-13-9	Manganese dioxide	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007440-66-6	Zinc powder (stabilized)	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007646-85-7	Zinc chloride	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007782-42-5	Graphite	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0012125-02-9	Ammonium chloride	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory

Dust respirator

Eyes

Protective safety glasses recommended.

Skin

Wear overalls to keep skin contact to a minimum. Protective gloves recommended.

Engineering Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance

Solid

Odor

Odorless

Odor threshold

Not Measured

pH

Not Measured

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Melting point / freezing point	419 C
Initial boiling point and boiling range	NA
Flash Point	NA
Evaporation rate (Ether = 1)	NA
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: NA Upper Explosive Limit: NA
Vapor pressure (Pa)	NA
Vapor Density	NA
Specific Gravity	(water=1) not applicable
Solubility in Water	Insoluble
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	NA
Decomposition temperature	NA
Viscosity (cSt)	NA
VOC %	NA

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Incompatibility: Reactive with acids and alkalis.

Products of combustion: Zinc oxide, manganese oxide.

10.6. Hazardous decomposition products

No hazardous decomposition data available.

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11. Toxicological information

Acute toxicity

Note: Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Zinc chloride - (7646-85-7)	350.00, Rat - Category: 4	No data available	No data available	No data available	No data available
Zinc powder (stabilized) - (7440-66-6)	No data available	No data available	No data available	No data available	No data available
Manganese dioxide - (1313-13-9)	No data available	No data available	No data available	No data available	No data available
Graphite - (7782-42-5)	No data available	No data available	No data available	No data available	No data available
Ammonium chloride - (12125-02-9)	1,300.00, Mouse - Category: 4	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	4	Harmful if swallowed.
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	4	Harmful if inhaled.
Skin corrosion/irritation	1B	Causes severe skin burns and eye damage.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

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12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Very toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Zinc chloride - (7646-85-7)	0.095, Oncorhynchus mykiss	0.16, Daphnia magna	0.034 (72 hr), Chlorella vulgaris
Zinc powder (stabilized) - (7440-66-6)	0.182, Oncorhynchus tshawytscha	0.068, Daphnia magna	0.106 (72 hr), Pseudokirchneriella subcapitata
Manganese dioxide - (1313-13-9)	Not Available	Not Available	Not Available
Graphite - (7782-42-5)	Not Available	Not Available	Not Available
Ammonium chloride - (12125-02-9)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

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14. Transport information

Unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and International Maritime Dangerous Goods Regulations (IMDG). The only DOT requirement for shipping these batteries is special provision 130 which states: Batteries, not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (For example, by the effective insulation of exposed terminals). As of 1/1/2014 IATA in special provision A123 requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable DOT Label: ---	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards	IMDG Marine Pollutant: Yes (Zinc chloride)		
14.6. Special precautions for user	No further information		

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.
WHMIS Classification	D2B E
US EPA Tier II Hazards	Fire: No Sudden Release of Pressure: No Reactive: No Immediate (Acute): Yes Delayed (Chronic): No

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EPCRA 311/312 Chemicals and RQs (lbs):

Ammonium chloride (5,000.00)
Zinc powder (stabilized) (1,000.00)
Zinc chloride (1,000.00)

EPCRA 302 Extremely Hazardous :

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

Lead Compounds (as Pb)
Manganese dioxide
Mercury
Zinc powder (stabilized)
Zinc chloride

Proposition 65 - Carcinogens (>0.0%):

Lead Compounds (as Pb)

Proposition 65 - Developmental Toxins (>0.0%):

Lead Compounds (as Pb)

Proposition 65 - Female Repro Toxins (>0.0%):

Lead Compounds (as Pb)

Proposition 65 - Male Repro Toxins (>0.0%):

Lead Compounds (as Pb)

N.J. RTK Substances (>1%):

Ammonium chloride
Graphite
Zinc powder (stabilized)
Zinc chloride

Penn RTK Substances (>1%):

Ammonium chloride
Graphite
Zinc powder (stabilized)
Zinc chloride

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16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

Disclaimer: This information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

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