MSDS for Crompton Ice Battery

NEW BATTERIES
NO MERCURY

COSHH INFORMATION

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ZINC/CARBON & AIR DEPOLARISED CELLS (BATTERIES)

The cell in its normal state is a manufactured article and as such constitutes no definable chemical hazard to health. Only upon abuse so the materials contained within provide a potential hazard to health.

Cells are constructed in various ways but in general consist of a zinc metal anode and a depolariser containing active chemicals. The method of construction varies for different cell types but in general the base chemical composition is similar for all types. No one cell contains all of the materials listed. The following could potentially be hazardous upon release:

Zinc metal
Manganese dioxide
Ammonium chloride
Zinc chloride
Ammonia solution

Other materials contained within the cell are either inert or have a very low hazard associated with their use in the manufactured article.

The hazard date sheets pertaining to the chemicals listed are detailed below.

(1 Data sheet for zinc metal)
(2 Data sheet for manganese dioxide)
(3 Data sheet for zinc chloride)
(4 Data sheet for ammonium chloride)
(5 Date sheet for ammonia solution)

Zinc/Carbon & air depolarised cells (batteries) (Cont'd)

The following material may be included in the manufacture of the cells and batteries. These are considered to be either harmless or of low hazard. In many cases however, caution should be exercised as the materials may be intimately mixed with other more toxic materials listed previously.

Paraffin wax
Graphite
Carbon acetylene black
Starch
Waxed tissue paper
Graphite impregnated polyisobutylene
Non-ionic detergent
Rosin wax
Hydroxymethyl cellulose
Ethyl hydroxymethyl cellulose
Zinc oxide
Activated carbon
Polyacrylamide
Carbon rod
Brass cap
Chipboard
Tinned copper wire
Tin/lead solder
PVC
Polystyrene

Where large quantities of these batteries are involved in a fire toxic fumes may be evolved.

ZINC

HAZARD CLASS NR UN No. CAS No.7440-66-6

PHYSICAL DATA

Description : Silver grey metal

M Pt(deg C) 419 B Pt(deg C) 907 Specific Gravity n/a

Solubility in water: Immiscible or insoluble

Vapour pressure : n/a mmHg at Deg.C
Vapour density : n/a (air=1)

FIRE AND EXPLOSION HAZARD: Not applicable

Flash point (degC) : n/a
Explosive limits (%): lower n/a, upper
Auto-ignition temperature (dec C): n/a

Firefighting measures: Not applicable

HEALTH HAZARD Harmful as fume. May cause physical damage to eyes.

Toxicity data: no data

Carcinogenicity: No evidence of carcinogenic properties.
Mutagenicity/Teratogenicity: No evidence of mutagenic or teratogenic effects.
Exposure limits not assigned (Long-term, 8 hour TWA)

FIRST AID

Eyes Irrigate thoroughly with water. If discomfort persists OBTAIN MEDICAL ATTENTION.

Lungs Remove from exposure.

Skin Wash off thoroughly with soap and water.

Mouth Wash out mouth thoroughly with water. In severe cases OBTAIN MEDICAL ATTENTION.

DOC REF: ZINC-COSHH DISC

Zinc (cont'd)

REACTIVE HAZARDS

Stability: Stable

Reaction with water : None

Other known hazards

Reacts with acids libertaing hydrogen.

Avoid contact with: Water (no) Acids (yes) Bases (yes)
Oxidisers (no) Combustibles (no)

SPILLAGE DISPOSAL

Precautions: Wear appropriate protective clothing.

Carefully sweep up and dispose of in accordance with local regulations.

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

If material has entered surface drains it may be necessary to inform local authorities, including fire services if flammable.

PROTECTIVE MEASURES as appropriate to quantity handled.

Respirator	: Not applicable
Ventilation	: Not applicable
Gloves	: Rubber or plastic
Eye Protection	: Goggles or face shield
Other measures	: Plastic apron, sleeves, boots - if handling large quantities

MANGANESE DIOXIDE

HAZARD CLASS 5.1 UN No.1483 CAS No.1313-13-9

PHYSICAL DATA

Description : Dark brown powder and granules.

M Pt(deg C) 535d B Pt(deg C) n/a Specific Gravity n/a

Solubility in water: Immiscible or insoluble

Vapour pressure : n/a mmHg at Deg.C
Vapour density : n/a (air=1)

FIRE AND EXPLOSION HAZARD: Not applicable

Flash point (degC) : n/a
Explosive limits (%): lower n/a, upper
Auto-ignition temperature (dec C): n/a

Firefighting measures: Not applicable

HEALTH HAZARD Harmful by ingestion and if inhaled as dust. Irritating to eyes. May irritate skin.

Toxicity data: no data

Carcinogenicity: No evidence of carcinogenic properties
Mutagenicity/Teratogenicity: No evidence or mutagenic or teratogenic effects
Exposure limits OES,mg/m3 5 Mn (Long-term, 8 hour TWA)

FIRST AID

Eyes Irrigate thoroughly with water for at least 10 minutes. If discomfort persists OBTAIN MEDICAL ATTENTION.

Lungs Remove from exposure, rest and keep warm. In severe cases OBTAIN MEDICAL ATTENTION.

Skin Drench the skin thoroughly with water. Remove contaminated clothing and wash before re-use. In severe cases OBTAIN MEDICAL ATTENTION.

Mouth Wash out mouth thoroughly with water and give plenty of water to drink. OBTAIN MEDICAL ATTENTION.

DOC REF: MD-COSHH DISC

Manganese dioxide (cont'd)

REACTIVE HAZARDS

Stability: Stable

Reaction with water : None

Other known hazards

Can react vigorously or explosively with oxidising agents, aluminium, potassium azide and hydrogen sulphide.

Avoid contact with: Water (no) Acids (no) Bases (no)
Oxidisers (yes) Combustibles (yes)

SPILLAGE DISPOSAL

Precautions: Wear appropriate protective clothing

Mix with sand, transfer carefully to container and arrange removal by disposal company. Wash site of spillage thoroughly with detergent and water.

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

If material has entered surface drains it may be necessary to inform local authorities, including fire services if flammable.

PROTECTIVE MEASURES as appropriate to quantity handled.

Respirator : Dust respirator
Ventilation : Extraction hood
Gloves : Rubber or plastic
Eye Protection : Goggles or face shield
Other measures : Plastic apron, sleeves, boots-if handling large quantities

ZINC CHLORIDE

HAZARD CLASS 8 UN No.2331 CAS No.7646-85-7

PHYSICAL DATA

Description : White or grey white deliquescent granules, sticks or crystals, acidic odour.

M Pt(deg C) 262 B Pt(deg C) 732 Specific Gravity n/a

Solubility in water: Very soluble

Vapour pressure : n/a mmHg at Deg.C
Vapour density : n/a (air=1)

FIRE AND EXPLOSION HAZARD: May evolve toxic fumes in fire

Flash point (degC) : n/a
Explosive limits (%): lower n/a, upper
Auto-ignition temperature (dec C): n/a

Firefighting measures: Not applicable

HEALTH HAZARD Causes burns to skin and eyes. Irritating to respiratory system. If ingested causes severe internal irritation and damage.

Toxicity data: LD50 350 mg/kg oral, rat

Carcinogenicity: Has been found to cause cancer in laboratory animals
Mutagenicity/Teratogenicity: Evidence of reproductive effects
Exposure limits OES,mg/m3 1 fume (Long-term, 8 hour TWA)

FIRST AID

Eyes Irrigate thoroughly with water for at least 10 minutes. OBTAIN MEDICAL ATTENTION.

Lungs Remove from exposure, rest and keep warm. In severe cases, or if exposure has been great, OBTAIN MEDICAL ATTENTION.

Skin Drench the skin thoroughly with water. Remove contaminated clothing and wash before re-use. Unless contact has been slight OBTAIN MEDICAL ATTENTION.

Mouth Wash out mouth thoroughly with water and give plenty of water to drink. OBTAIN MEDICAL ATTENTION.

DOC REF: ZC-COSHH DISC

Zinc chloride (cont'd)

REACTIVE HAZARDS

Stability: Stable if kept dry.

Reaction with water : Forms zinc oxychloride in dilute solutions.

Other known hazards

No data

Avoid contact with: Water (no) Acids (no) Bases (no)
Oxidisers (no) Combustibles (no)

SPILLAGE DISPOSAL

Precautions: Wear appropriate protective clothing

If local regulations permit, mop up with plenty of water and run to waste, diluting greatly with running water. Otherwise transfer to container and arrange removal by disposal company. Wash site of spillage thoroughly with detergent and water.

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

If material has entered surface drains it may be necessary to inform local authorities, including fire services if flammable.

PROTECTIVE MEASURES as appropriate to quantity handled.

Respirator	: Dust respirator
Ventilation	: Extraction hood
Gloves	: Rubber or plastic
Eye Protection	: Goggles or face shield
Other measures	: Plastic apron, sleeves, boots-if handling large quantities

AMMONIUM CHLORIDE

HAZARD CLASS NR UN No. CAS No.12125-02-9

PHYSICAL DATA

Description : Colourless crystals or white granular powder

M Pt(deg C) sub B Pt(deg C) n/a Specific Gravity n/a

Solubility in water: Soluble

Vapour pressure : 1 mmHg at 160 Deg.C
Vapour density : n/a (air=1)

FIRE AND EXPLOSION HAZARD: May evolve toxic fumes in fire

Flash point (degC) : n/a
Explosive limits (%): lower n/a, upper
Auto-ignition temperature (dec C): n/a

Firefighting measures: Not applicable

HEALTH HAZARD Harmful by inhalation. If ingested in large amounts can cause nausea, vomiting and acidosis. Irritating to eyes.

Toxicity data: LD50 1650 mg/kg oral, rat

Carcinogenicity: No evidence of carcinogenic properties
Mutagenicity/Teratogenicity: No evidence of mutagenic or teratogenic effects
Exposure limits OES,mg/m3 10 fume (Long-term, 8 hour TWA)

FIRST AID

Eyes Irrigate thoroughly with water for at least 10 minutes. If discomfort persists OBTAIN MEDICAL ATTENTION.

Lungs Remove from exposure, rest and keep warm. In severe cases OBTAIN MEDICAL ATTENTION.

Skin Wash off skin thoroughly with water. Remove contaminated clothing and wash before re-use. In severe cases, OBTAIN MEDICAL ATTENTION.

Mouth Wash out mouth thoroughly with water and give plenty of water to drink. OBTAIN MEDICAL ATTENTION.

DOC REF: AC-COSHH DISC

Ammonium chloride (cont'd)

REACTIVE HAZARDS

Stability: Stable if kept dry.

Reaction with water : None

Other known hazards

Reacts violently with interhalogen compounds.

Avoid contact with: Water (no) Acids (no) Bases (no)
Oxidisers (no) Combustibles (no)

SPILLAGE DISPOSAL

Precautions: Wear appropriate protective clothing

If local regulations permit, mop up with plenty of water and run to waste, diluting greatly with running water. Otherwise transfer to container and arrange removal by disposal company. Wash site of spillage thoroughly with detergent and water.

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

If material has entered surface drains it may be necessary to inform local authorities, including fire services if flammable.

PROTECTIVE MEASURES as appropriate to quantity handled.

Respirator : Dust mask
Ventilation : Extraction hood
Gloves : Rubber or plastic
Eye Protection : Goggles or face shield
Other measures : Plastic apron, sleeves, boots-if handling large quantities

Ammonia solution 25% (cont'd)

REACTIVE HAZARDS

Stability: Stable

Reaction with water : None

Other known hazards

Reacts violently with and boron halides and mercury. Reacts violently or produces explosive materials with halogens and their compounds. Can react violently with oxygen and oxidising agents.

Avoid contact with: Water (no) Acids (yes) Bases (no)
Oxidisers (yes) Combustibles (no)

SPILLAGE DISPOSAL

Precautions: Wear appropriate protective clothing
Inform others to keep at a safe distance

If local regulations permit, mop up with plenty of water and run to waste, diluting greatly with running water. Otherwise transfer to container and arrange removal by disposal company. Wash site of spillage thoroughly with detergent and water.

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

If material has entered surface drains it may be necessary to inform local authorities, including fire services if flammable.

PROTECTIVE MEASURES as appropriate to quantity handled.

Respirator : Self-contained breathing apparatus
Ventilation : Fume-cupboard
Gloves : Rubber or plastic
Eye Protection : Goggles or face shield
Other measures : Plastic apron, sleeves, boots-if handling large quantities

DOC REF: AS-COSHH DISC

AMMONIA SOLUTION 25%

HAZARD CLASS 8 UN No.2672 CAS No.1336-21-6

PHYSICAL DATA

Description : Colourless liquid, pungent characteristic odour

M Pt(deg C) n/a B Pt(deg C) n/a Specific Gravity 0.91

Solubility in water: Miscible in all proportions

Vapour pressure : 330 mmHg at 0 Deg.C
Vapour density : 0.6 (air=1)

FIRE AND EXPLOSION HAZARD: Not applicable

Flash point (degC) : n/a
Explosive limits (%): lower n/a, upper
Auto-ignition temperature (dec C): n/a

Firefighting measures: Not applicable

HEALTH HAZARD Causes severe burns. Vapour extremely irritating to eyes and respiratory system. If swallowed causes severe internal damage.

Toxicity data: LD50 350 mg/kg oral, rat LC50 1.4 mg/l inh rat

Carcinogenicity: No evidence of carcinogenic properties
Mutagenicity/Teratogenicity: No evidence of mutagenic or teratogenic effects
Exposure limits OES,mg/m3 18(Long-term, 8 hour TWA)

FIRST AID

Eyes Irrigate thoroughly with water for at least 10 minutes. OBTAIN MEDICAL ATTENTION.

Lungs Remove from exposure, rest and keep warm. In severe cases, or if exposure has been great, OBTAIN MEDICAL ATTENTION.

Skin Drench the skin thoroughly with water. Remove contaminated clothing and wash before re-use. Unless contact has been slight OBTAIN MEDICAL ATTENTION.

Mouth Wash out mouth thoroughly with water and give plenty of water to drink. OBTAIN MEDICAL ATTENTION.

DOC REF: AS-COSHH DISC