

SAFETY DATA SHEET

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NGHS / English



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1. IDENTIFICATION

Product identifier

Product Name CR1216 CR1220 CR1225 CR1616

Other means of identification

Product Code(s) 1416209

Recommended use of the chemical and restrictions on use

Recommended Use Lithium Primary/Metal Batteries

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Identification ChangZhou Anyida Power Technology Co., Ltd

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2. HAZARDS IDENTIFICATION

Classification

| | |
|---|-------------|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Inhalation (Vapors) | Category 4 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |



| | |
|-----------------------|-------------|
| Reproductive toxicity | Category 1B |
|-----------------------|-------------|

This is a battery. In case of rupture: the above hazards exist.

Appearance No information available

Physical state Solid

Odor No information available

GHS Label elements, including precautionary statements

Danger

Hazard statements

Harmful if swallowed

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

May damage fertility or the unborn child



Precautionary Statements - Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

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

Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Harmful to aquatic life with long lasting effects.

Unknown acute toxicity 93.6 % of the mixture consists of ingredient(s) of unknown toxicity
 6.6 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 93.6 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 61.6 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable.

Mixture

| Chemical name | CAS-No | Percent | Hazardous Material Information Review Act registry number (HMIRA registry #) | Date HMIRA filed and date exemption granted (if applicable) |
|--------------------------------|-----------|---------|--|---|
| Iron | 7439-89-6 | 52 | - | - |
| Manganese dioxide | 1313-13-9 | 30 | - | - |
| Graphite | 7782-42-5 | 4.6 | - | - |
| Propylene carbonate | 108-32-7 | 3 | - | - |
| Lithium | 7439-93-2 | 2 | - | - |
| Ethylene glycol dimethyl ether | 110-71-4 | 2 | - | - |
| 1,3-Dioxolane | 646-06-0 | 1.3 | - | - |

4. FIRST AID MEASURES

First aid measures

General advice

First aid is upon rupture of sealed battery. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. If breathing has stopped, give artificial respiration. Get medical attention immediately. If symptoms persist, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin contact

Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Self-protection of the first aider

Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms

Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | CAUTION: Use of water spray when fighting fire may be inefficient. |
| Specific hazards arising from the chemical | No information available. |
| Hazardous Combustion Products | Carbon oxides. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

| | |
|-----------------------------|---|
| Personal precautions | Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Avoid generation of dust. Do not breathe dust. |
| Other Information | Refer to protective measures listed in Sections 7 and 8. |

Methods and material for containment and cleaning up

| | |
|--------------------------------|---|
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. |

7. HANDLING AND STORAGE

Precautions for safe handling

| | |
|--------------------------------|---|
| Advice on safe handling | In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid generation of dust. Ensure adequate ventilation. |
|--------------------------------|---|

Conditions for safe storage, including any incompatibilities

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH IDLH | |
|--|--|---|---|----------------------------|
| Manganese dioxide 1313-13-9 | TWA: 0.02 mg/m ³ Mn respirable particulate matter TWA: 0.1 mg/m ³ Mn inhalable particulate matter | (vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ Mn | IDLH: 500 mg/m ³ Mn TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn | |
| Graphite 7782-42-5 | TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers | TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural | IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust | |
| 1,3-Dioxolane 646-06-0 | TWA: 20 ppm | | | |
| Chemical name | Alberta | British Columbia | Ontario TWAEV | Quebec |
| Manganese dioxide 1313-13-9 | TWA: 0.2 mg/m ³ | TWA: 0.2 mg/m ³ | TWA: 0.02 mg/m ³ TWA: 0.1 mg/m ³ | TWA: 0.2 mg/m ³ |
| Graphite 7782-42-5 | TWA: 2 mg/m ³ | TWA: 2 mg/m ³ | TWA: 2 mg/m ³ | TWA: 2 mg/m ³ |
| Ethylene glycol dimethyl ether 110-71-4 | | | TWA: 5 ppm TWA: 18 mg/m ³ Skin | |
| 1,3-Dioxolane 646-06-0 | TWA: 20 ppm TWA: 61 mg/m ³ | TWA: 20 ppm | TWA: 20 ppm | |

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection If splashes are likely to occur, wear safety glasses with side-shields.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or



smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

| | |
|-----------------------|--------------------------|
| Physical state | Solid |
| Appearance | No information available |
| Odor | No information available |
| Color | No information available |
| Odor Threshold | No information available |

| <u>Property</u> | <u>Values</u> | <u>Remarks</u> | <u>Method</u> |
|---|--------------------|----------------|---------------|
| pH | No data available | None known | |
| Melting / freezing point | No data available | None known | |
| Boiling point / boiling range | No data available | None known | |
| Flash Point | No data available | None known | |
| Evaporation Rate | No data available | None known | |
| Flammability (solid, gas) | No data available | None known | |
| Flammability Limit in Air | | None known | |
| Upper flammability limit | No data available | | |
| Lower flammability limit | No data available | | |
| Vapor pressure | No data available | None known | |
| Vapor density | No data available | None known | |
| Relative density | No data available | None known | |
| Water Solubility | Insoluble in water | | |
| Solubility(ies) | No data available | None known | |
| Partition coefficient: n-octanol/water | No data available | None known | |
| Autoignition temperature | No data available | None known | |
| Decomposition temperature | No data available | None known | |
| Kinematic viscosity | No data available | None known | |
| Dynamic viscosity | No data available | None known | |

Other Information

| | |
|-----------------------------------|--------------------------|
| Explosive properties | No information available |
| Oxidizing properties | No information available |
| Softening Point | No information available |
| Molecular Weight | No information available |
| VOC Content (%) | No information available |
| Liquid Density | No information available |
| Bulk Density | No information available |
| Particle Size | No information available |
| Particle Size Distribution | No information available |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Reactivity | No information available. |
| Chemical stability | Stable under normal conditions. |
| Possibility of Hazardous Reactions | None under normal processing. |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Conditions to avoid | Excessive heat. |
| Incompatible materials | Strong acids. Strong bases. Strong oxidizing agents. |

Hazardous Decomposition Products Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

| | |
|----------------------------|--|
| Product Information | Product does not present an acute toxicity hazard based on known or supplied information In case of rupture: |
| Inhalation | Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Harmful by inhalation. (based on components). |
| Eye contact | Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). Irritating to eyes. |
| Skin contact | Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). |
| Ingestion | Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed. (based on components). |

Information on toxicological effects

Symptoms Redness. May cause redness and tearing of the eyes. Coughing and/ or wheezing.

Numerical measures of toxicity

Acute Toxicity

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

| | |
|--------------------------------------|-----------------|
| ATEmix (oral) | 862.00 mg/kg |
| ATEmix (dermal) | 41,622.45 mg/kg |
| ATEmix (inhalation-gas) | 5,217.00 mg/L |
| ATEmix (inhalation-dust/mist) | 1.80 mg/L |
| ATEmix (inhalation-vapor) | 12.75 mg/L |

Unknown acute toxicity 93.6 % of the mixture consists of ingredient(s) of unknown toxicity
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 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 61.6 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|--------------------------------|--|---|---------------------------------------|
| Iron | = 984 mg/kg (Rat) | - | - |
| Manganese dioxide | = 9000 mg/kg (Rat) | - | - |
| Propylene carbonate | = 29000 mg/kg (Rat) | > 20 mL/kg (Rabbit) | - |
| Ethylene glycol dimethyl ether | = 775 mg/kg (Rat) > 4000 mg/kg (Rat) | - | - |
| 1,3-Dioxolane | = 3 g/kg (Rat) | = 15 g/kg (Rat) = 8480 µL/kg (Rabbit) | = 20650 mg/m ³ (Rat) 4 h |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|--|---|
| Skin corrosion/irritation | Classification based on data available for ingredients. Irritating to skin. |
| Serious eye damage/eye irritation | Classification based on data available for ingredients. Irritating to eyes. |
| Respiratory or skin sensitization | No information available. |
| Germ cell mutagenicity | No information available. |
| Carcinogenicity | No information available. |
| Reproductive toxicity | Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. |
| STOT - single exposure | No information available. |
| STOT - repeated exposure | No information available. |
| Aspiration hazard | No information available. |

12. ECOLOGICAL INFORMATION

Ecotoxicity Harmful to aquatic life with long lasting effects.

| Chemical name | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---------------------|--|--|----------------------------|----------------------------|
| Iron | - | 96h LC50: = 13.6 mg/L (Morone saxatilis) | - | - |
| Propylene carbonate | 72h EC50: > 500 mg/L (Desmodesmus subspicatus) | 96h LC50: > 1000 mg/L (Cyprinus carpio) 96h LC50: = 5300 mg/L (Leuciscus idus) | EC50 > 10000 mg/L 17 h | 48h EC50: > 500 mg/L |

Persistence and Degradability No information available.

Bioaccumulation

| Chemical name | Log Pow |
|---------------------|---------|
| Manganese dioxide | <0 |
| Propylene carbonate | 0.48 |
| 1,3-Dioxolane | -0.37 |

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical name | California Hazardous Waste |
|----------------------|------------------------------------|
| Lithium 7439-93-2 | Corrosive Ignitable Reactive |

14. TRANSPORT INFORMATION

Note: The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

| | |
|--|--------------------------|
| DOT | NOT REGULATED |
| Proper Shipping Name | NON-REGULATED |
| Emergency Response Guide Number | 138 |
| TDG | Not regulated |
| MEX | Not regulated |
| ICAO | Not regulated |
| IATA | Not regulated |
| Proper Shipping Name | NON REGULATED |
| Hazard Class | N/A |
| IMDG/IMO | Not regulated |
| Proper Shipping Name | NON-REGULATED PER SP 188 |
| Hazard Class | N/A |
| EmS-No. | F-A, S-I |
| RID | Not regulated |
| ADR | Not regulated |
| ADN | Not regulated |

15. REGULATORY INFORMATION

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

International Regulations

Ozone-depleting substances (ODS) Not applicable



Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

International Inventories

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

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical name | CAS-No | Percent | SARA 313 - Threshold Values % |
|---|-----------|---------|-------------------------------|
| Manganese dioxide - 1313-13-9 | 1313-13-9 | 30 | 1.0 |
| Ethylene glycol dimethyl ether - 110-71-4 | 110-71-4 | 2 | 1.0 |

Acute Health Hazard No
Chronic Health Hazard No
Fire Hazard No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

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



| Chemical name | New Jersey | Massachusetts | Pennsylvania | Rhode Island | Illinois |
|--|------------|---------------|--------------|--------------|----------|
| Manganese dioxide 1313-13-9 | X | | X | X | X |
| Graphite 7782-42-5 | X | X | X | | |
| Lithium 7439-93-2 | X | X | X | | |
| Ethylene glycol dimethyl ether 110-71-4 | X | X | X | X | X |
| 1,3-Dioxolane 646-06-0 | X | X | X | | |

16. OTHER INFORMATION

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

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet