

# Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: May 12, 2021

## 1 Identification

- **Product identifier**
- **Trade name:** CR2032 Coin Cell
- **Product code:** 40069, 20492
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Lithium-based battery product.
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
ITW Global Tire Repair, Inc.  
125 Venture Drive, Suite 210, San Luis Obispo, CA 93401  
Tel (805) 489-0490
- **Emergency telephone number:**  
ChemTel  
1-800-255-3924 (North America)  
+1 (813)248-0585 (International)

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Acute Tox. 4 H302 Harmful if swallowed.  
Acute Tox. 4 H332 Harmful if inhaled.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Dam. 1 H318 Causes serious eye damage.  
Repr. 1B H360 May damage fertility or the unborn child.  
STOT RE 2 H373 May cause damage to the central nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Additional information:**  
Note: Leaking cells pose health hazards: see Sections 4 and 11. Intentional abuse of cells or batteries increases the risk of harm or damage to the product, to the user, and to surrounding materials and personnel. Do not attempt to open sealed cells or batteries. Do not intentionally short-circuit cells or batteries. Do not expose these products to temperatures exceeding the maximum manufacturers rating. Do not dispose of cells/batteries in landfills. Please follow all manufacturer guidelines in the use, storage, and disposal of these products. Consult manufacturer in cases of questions involving specific product usage.

- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS05 GHS07 GHS08

- **Signal word:** Danger
- **Hazard statements:**

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- H302+H332 Harmful if swallowed or if inhaled.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H360 May damage fertility or the unborn child.
- H373 May cause damage to the central nervous system through prolonged or repeated exposure.  
Route of exposure: Inhalation.

**Precautionary statements:**

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection.
- P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 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.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards** There are no other hazards not otherwise classified that have been identified.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Components:**

7439-89-6	Iron	40-60%
1313-13-9	Manganese dioxide  STOT RE 2, H373  Acute Tox. 4, H302; Acute Tox. 4, H332	10-60%
7791-03-9	Lithium perchlorate  Ox. Sol. 1, H271  Acute Tox. 3, H301  Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	1-5%
7439-93-2	Lithium  Water-react. 1, H260  Skin Corr. 1B, H314	1-5%
108-32-7	Propylene carbonate  Eye Irrit. 2A, H319	1-5%
7782-42-5	Graphite	1-5%
110-71-4	1,2-dimethoxyethane  Flam. Liq. 2, H225  Repr. 1B, H360  Acute Tox. 4, H332	<3.0%

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**Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.  
For the wording of the listed Hazard Statements, refer to section 16.

## 4 First-aid measures

**Description of first aid measures****General information:**

Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons out into the fresh air.

**After inhalation:**

Unlikely route of exposure.

Seek immediate medical advice.

In case of irregular breathing or respiratory arrest provide artificial respiration.

If experiencing respiratory symptoms: Call a doctor.

**After skin contact:**

Immediately remove any clothing soiled by the product.

Immediately wash with water and soap and rinse thoroughly.

Seek medical treatment in case of complaints.

If skin irritation continues, consult a doctor.

**After eye contact:**

Protect unharmed eye.

Remove contact lenses if worn, if possible.

Rinse opened eye for 15 to 20 minutes under running water. Then consult a doctor.

**After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

**Most important symptoms and effects, both acute and delayed:**

Headache

Nausea

Gastric or intestinal disorders

Vomiting.

Diarrhea.

Breathing difficulty

Coughing

Irritant to skin and mucous membranes.

Strong irritant with the danger of severe eye injury.

**Danger:**

Danger of disturbed cardiac rhythm.

May damage fertility or the unborn child.

Causes serious eye damage.

Harmful if swallowed.

May cause damage to the central nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.

**Indication of any immediate medical attention and special treatment needed:**

Note to Physician: Published reports recommend removal from the esophagus be done endoscopically

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(under direct visualization). Cells beyond the esophagus need not be retrieved unless there are signs of injury to the GI tract or a large diameter battery fails to pass the pylorus. If asymptomatic, follow-up x-rays are necessary only to confirm the passage of cells. Confirmation by stool inspection is preferable under most circumstances. Various corrosive, harmful or toxic substances are possible in certain cases. These substances may include lithium and/or fluoride salts; specific antidotes may be required in cases of ingestion for lithium salts and in cases of oral/dermal/inhalation contact with fluorides. If fluoride contact is suspected, calcium salts may be of value in treatment. Do not give ipecac.

Monitor circulation, possible shock treatment.

Medical supervision for at least 48 hours.

If necessary oxygen respiration treatment.

If medical advice is needed, have product container or label at hand.

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## 5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

Graphite powder.

Copper powder.

Water in flooding quantities.

Fire-extinguishing powder

Sand

ABC powder

- **For safety reasons unsuitable extinguishing agents:** None.

- **Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

- **Additional information:** Cool endangered receptacles with water in flooding quantities.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

If containers are leaking, use respiratory protective device against the effects of fumes/dust/aerosol.

Ensure adequate ventilation.

Wear protective equipment. Keep unprotected persons away.

- **Environmental precautions** Avoid release to the environment.

- **Methods and material for containment and cleaning up**

Absorb liquid components with liquid-binding material.

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## 7 Handling and storage

- **Handling**
- **Precautions for safe handling:**  
Keep away from open flames or temperatures exceeding manufacturer ratings. DO NOT ATTEMPT TO OPEN SEALED CELLS OR BATTERIES – BATTERY CONTENTS MAY PRESENT SERIOUS SAFETY AND HEALTH HAZARDS. SHORT-CIRCUITING THE TERMINALS OF A DEVICE MAY RESULT IN DAMAGE TO DEVICE AND ANY NEARBY OBJECTS OR PERSONNEL.
- **Information about protection against explosions and fires:**  
Protect from heat.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**  
Store in a dry, well-ventilated place.  
Do not use or store near open flame.  
Avoid extreme temperatures; battery may rupture and release contents.  
Do not store and transport with incompatible materials.  
Store individual batteries or cells only in approved packaging in order to avoid inadvertent short circuits, as this may result in damage to device, nearby objects, personnel, or all of the above.
- **Information about storage in one common storage facility:**  
Store away from foodstuffs.  
Store away from water.
- **Specific end use(s)** No relevant information available.

## 8 Exposure controls/personal protection

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

### 7439-89-6 Iron

EV (Canada)	Long-term value: 1* 5** mg/m <sup>3</sup> as iron;*salts, water-soluble;**welding fume
LMPE (Mexico)	Long-term value: 1 mg/m <sup>3</sup>

### 1313-13-9 Manganese dioxide

PEL (USA)	Ceiling limit value: 5 mg/m <sup>3</sup> as Mn
REL (USA)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup> as Mn
TLV (USA)	Long-term value: 0.02* 0.1** mg/m <sup>3</sup> as Mn; *respirable **inhalable fraction
EL (Canada)	Long-term value: 0.2; 0.02* mg/m <sup>3</sup> as Mn; R, *respirable
LMPE (Mexico)	Long-term value: 0.2 mg/m <sup>3</sup> como Mn

### 7782-42-5 Graphite

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PEL (USA)	Long-term value: 15 mppcf* mg/m <sup>3</sup> *impinger samples counted by light field techn.
REL (USA)	Long-term value: 2.5* mg/m <sup>3</sup> *respirable dust
TLV (USA)	Long-term value: 2* mg/m <sup>3</sup> all forms except graphite fibers;*resp. fraction
EL (Canada)	Long-term value: 2 mg/m <sup>3</sup> respirable
EV (Canada)	Long-term value: 2 mg/m <sup>3</sup> respirable
LMPE (Mexico)	Long-term value: 2* mg/m <sup>3</sup> *fracción respirable
<b>110-71-4 1,2-dimethoxyethane</b>	
EV (Canada)	Long-term value: 18 mg/m <sup>3</sup> , 5 ppm Skin

- **Exposure controls**
- **General protective and hygienic measures:**  
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.
- **Engineering controls:** No relevant information available.
- **Breathing equipment:**  
Not required under normal conditions of use.  
For spills, respiratory protection may be advisable.
- **Protection of hands:**  
Not required under normal conditions of use.  
Wear protective gloves to handle contents of damaged or leaking units.  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- **Material of gloves**  
Butyl rubber, BR  
Nitrile rubber, NBR  
Natural rubber, NR  
Neoprene gloves  
Fluorocarbon rubber (Viton)
- **Eye protection:**  
Not required for normal handling. Wear protective eyewear while handling damaged or leaking product.
- **Body protection:**  
Protective work clothing  
Protection may be required for spills.
- **Limitation and supervision of exposure into the environment**  
Avoid release to the environment.
- **Risk management measures** No relevant information available.

## 9 Physical and chemical properties

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· **Information on basic physical and chemical properties**

· **Appearance:**

**Form:** Solid  
    **Color:** According to product specification

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Not determined.

· **Explosion limits**

**Lower:** Not determined.

**Upper:** Not determined.

· **Oxidizing properties:** Non-oxidizing.

· **Vapor pressure:** Not applicable.

· **Density:**

**Relative density:** Not determined.

**Vapor density:** Not applicable.

**Evaporation rate:** Not applicable.

· **Solubility in / Miscibility with**

**Water:** Insoluble.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity**

**Dynamic:** Not applicable.

**Kinematic:** Not applicable.

· **Other information** No relevant information available.

## 10 Stability and reactivity

· **Reactivity:** No relevant information available.

· **Chemical stability:**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

Stable at ambient temperature.

To avoid thermal decomposition, do not overheat.

· **Possibility of hazardous reactions**

Hazardous reactions generally occur with contents of leaking batteries only.

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Toxic fumes may be released if heated above the decomposition point.  
 Reacts with strong acids and oxidizing agents.  
 Reacts with strong alkali.  
 Contact with water releases flammable gases.

· **Conditions to avoid**

Excessive heat.  
 Avoid acids.  
 Store away from oxidizing agents.  
 Moisture.

· **Incompatible materials**

Oxidizers, strong bases, strong acids  
 Water

· **Hazardous decomposition products**

Under fire conditions only:  
 Carbon monoxide and carbon dioxide  
 Toxic metal oxide smoke

## 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**  
 Harmful if swallowed.  
 Harmful if inhaled.

· **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

Oral	LD50	807-1342 mg/kg
Dermal	LD50	>66667 mg/kg (rabbit)
Inhalative	LC50/4h	3.55-8.57 mg/l

**110-71-4 1,2-dimethoxyethane**

Oral	LD50	5370 mg/kg (rat)
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· **Primary irritant effect:**

· **On the skin:**

None from normal handling. Symptoms only seen in exposure to leaking articles.  
 Irritant to skin and mucous membranes.

· **On the eye:**

None from normal handling. Symptoms only seen in exposure to leaking articles.  
 Causes serious eye damage.  
 Strong irritant with the danger of severe eye injury.

· **Sensitization:** Based on available data, the classification criteria are not met.

· **IARC (International Agency for Research on Cancer):**

9002-84-0	Polytetrafluoroethylene	3
7439-92-1	lead (mass metal form)	2B
7440-43-9	cadmium (non-pyrophoric)	1

· **NTP (National Toxicology Program):**

7439-92-1	lead (mass metal form)	R
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7440-43-9 cadmium (non-pyrophoric)

K

· **OSHA-Ca (Occupational Safety & Health Administration):**

7440-43-9 cadmium (non-pyrophoric)

· **Probable route(s) of exposure:**

Information references exposures to battery contents, and not exposures to whole units. Exposures to whole units are unlikely to produce health hazards.

Ingestion.

Inhalation.

Eye contact.

Skin contact.

· **Acute effects (acute toxicity, irritation and corrosivity):**

Harmful if swallowed or if inhaled.

Causes serious eye damage.

Irritating to skin.

· **Repeated dose toxicity:** Possible risk of irreversible effects.

· **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

· **Carcinogenicity:** Based on available data, the classification criteria are not met.

· **Reproductive toxicity:**

None from normal handling. Symptoms only seen in exposure to leaking articles.

May damage fertility or the unborn child.

· **STOT-single exposure:** Based on available data, the classification criteria are not met.

· **STOT-repeated exposure:**

May cause damage to the central nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.

· **Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12 Ecological information

· **Toxicity**

· **Aquatic toxicity** No relevant information available.

· **Persistence and degradability** No relevant information available.

· **Bioaccumulative potential:** No relevant information available.

· **Mobility in soil:** No relevant information available.

· **Additional ecological information**

· **General notes:**

Avoid transfer into the environment.

The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary.

· **Other adverse effects** No relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Contact waste processors for recycling information.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and

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disposal for hazardous and nonhazardous wastes.

- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

· **UN-Number**  
 · DOT, ADR/RID/ADN, IMDG, IATA UN3090

· **UN proper shipping name**  
 · DOT Lithium metal batteries  
 · ADR/RID/ADN, IMDG, IATA LITHIUM METAL BATTERIES

· **Transport hazard class(es)**  
 · DOT, IMDG, IATA



· **Class** 9  
 · **Label** 9A

· **ADR/RID/ADN**



· **Class** 9 (M4)  
 · **Label** 9A

· **Packing group**  
 · DOT, ADR/RID/ADN, IMDG, IATA III

· **Environmental hazards** Not applicable.

· **Special precautions for user** Warning: Miscellaneous dangerous substances and articles  
 · **Hazard identification number (Kemler code):** -  
 · **EMS Number:** F-A,S-I

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:** This battery has passed the test requirements according to the UN Manual of Tests and Criteria Part III, Subsection 38.3  
 Lithium content: ≤1g

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Lithium Battery Mark

· DOT	See 173.185 for exceptions.
· ADR/RID/ADN	See Special Provision 188 for exceptions.
· IMDG	See Special Provision 188 for exceptions.
· IATA	Lithium ion batteries contained in equipment: Packing Instruction 970 Section II Lithium Ion batteries packed with equipment: Packing Instruction 969 Section II

## 15 Regulatory information

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

- United States (USA)
- SARA

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

1313-13-9	Manganese dioxide
110-71-4	1,2-dimethoxyethane

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed or exempt.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

7439-92-1	lead (mass metal form)
7440-43-9	cadmium (non-pyrophoric)

· **Chemicals known to cause developmental toxicity for females:**

7439-92-1	lead (mass metal form)
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· **Chemicals known to cause developmental toxicity for males:**

7439-92-1	lead (mass metal form)
7440-43-9	cadmium (non-pyrophoric)

· **Chemicals known to cause developmental toxicity:**

7439-92-1	lead (mass metal form)
7440-43-9	cadmium (non-pyrophoric)
7439-97-6	mercury

· **EPA (Environmental Protection Agency):**

1313-13-9	Manganese dioxide
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7791-03-9	Lithium perchlorate	NL
· <b>IARC (International Agency for Research on Cancer):</b>		
9003-07-0	Polypropylene	3
9002-84-0	Polytetrafluoroethylene	3
7439-92-1	lead (mass metal form)	2B
7440-43-9	cadmium (non-pyrophoric)	1
7439-97-6	mercury	3
· <b>Canadian Domestic Substances List (DSL):</b>		
All ingredients listed on DSL or NDSL.		

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- OSHA: Occupational Safety & Health Administration
- Flam. Liq. 2: Flammable liquids – Category 2
- Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1
- Ox. Sol. 1: Oxidizing solids – Category 1
- Acute Tox. 3: Acute toxicity – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1B: Skin corrosion/irritation – Category 1B
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Dam. 1: Serious eye damage/eye irritation – Category 1
- Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
- Repr. 1B: Reproductive toxicity – Category 1B
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **Sources**

- Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))
- Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))
- Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))
- Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
- Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.
- Safety Data Sheets, Individual Manufacturers