Material Safety Data Sheet (MSDS)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: AGFAPHOTO LITHIUM MANGANESE DIOXIDE COIN CELLS

Identity: Lithium Coin Cells

Description: Consumer Product

Representative Product Image/ Packaging

Size/Designation	Voltage	IEC Designation	Lithium Content per Cell (g)
1220	3	CR1220	0.011
1616	3	CR1616	0.02
1620	3	CR1620	0.025
1632	3	CR1632	0.04
2016	3	CR2016	0.03
2025	3	CR2025	0.05
2032	3	CR2032	0.07
2430	3	CR2430	0.09
2450	3	CR2450	0.18

SECTION 2: HAZARDS IDENTIFICATION

These products are classified as Articles under REACH and are not subject to the requirements for Information in the Supply Chain (Safety Data Sheets and Labels). While batteries may release hazardous substances if damaged, this is not an intended release as defined under REACH. Batteries are not classified as hazardous under the CLP.

The following information is provided to assist in the safe use of our products.

CAUTION: Battery can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Keep in original package until ready to use. Do not carry batteries loose in your pocket or purse. Keep batteries away from children. If swallowed, consult a physician at once. Under certain misuse conditions and by abusively opening the battery, exposed lithium can react with water or moisture in the air causing potential thermal burns or fire.

SECTION 3: COMPOSITION/INFORMATION INGREDIENTS

	CAS Number	EINECS Number	Amount
Manganese Dioxide	1313-13-9	215-202-6	15-75 %
Propylene Carbonate	108-32-7	203-572-1	2-15 %
Lithium	7439-93-2	231-102-5	1-10 %
Graphite, synthetic	7440-44-0	231-153-3	1-10 %
1,2-Dimethoxyethane*	110-71-4	203-794-9	1-10 %
Lithium Perchlorate	7791-03-9	232-237-2	<1.5 %

*SVHC Substance per Candidate List Updated July 15, 2014

SECTION 4: FIRST AID MEASURES

General Advice: The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

Eye Contact: If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical advice.

Skin Contact: If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical advice.

Inhaled: If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical advice.

Swallowed: If battery is swallowed seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. If mouth area irritation or burning has occurred, rinse the mouth and surrounding area with tepid water for at least 15 minutes. Do not give ipecac.

Note to Physician: Published reports recommend removal from the esophagus be done endoscopically (under direct visualization). Batteries 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 larger batteries. Confirmation by stool inspection is preferable under most circumstances. Potential leakage of less than 50 milligrams of dimethoxyethane and propylene carbonate. Dimethoxyethane rapidly evaporates. Do not give ipecac.

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

Extinguishing Media: Use any extinguishing media that is appropriate for the surrounding fire.
Special Fire Fighting Procedures: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (batteries may explode in heat of fire).
Hazardous Combustion Products: Thermal degradation may produce hazardous fumes of lithium and manganese; oxides of carbon and other toxic by-products.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Irritating vapors and flammable may be released from leaking or ruptured batteries. Eliminate all ignition sources. Evacuate the area and allow the vapors to dissipate. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal. Remove spilled liquid with absorbent and contain for disposal.

SECTION 7: HANDLING AND STORAGE

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolyze or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment

instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in a pocket or bag.

Storage: Store batteries in a dry place at normal room temperature.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: No exposure to the battery components should occur during normal use.
Ventilation: No special ventilation is needed for normal use.
Respiratory Protection: None required for normal use.
Skin Protection: None required for normal use. Use butyl rubber gloves when handling leaking batteries.
Eye Protection: None required for normal use. Wear safety goggles when handling leaking batteries.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Coin cells. **Water Solubility:** Insoluble **Flash Point**: 29°F (-2°C) (1,2-Dimethoxyethane)

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable.

Incompatibility/Conditions to Avoid: Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.

Hazardous Decomposition Products: Thermal decomposition may produce hazardous fumes of lithium and manganese; oxides of carbon and other toxic by-products.

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Potential Health Effects: The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

Eye Contact: Contact with battery contents may cause irritation.

Skin Contact: Contact with battery contents may cause irritation.

Inhalation: Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

Ingestion: Seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas, may occur following exposure to a leaking battery.

SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL INFORMATION

Disposal should be in accordance with national and local regulations. Do not incinerate for disposal except for in a

controlled incinerator.

The manganese dioxide lithium coin cell batteries are labeled in compliance with the EU Battery Directive 2006/66.

SECTION 14: TRANSPORT INFORMATION

Persons who prepare or offer lithium batteries for transport are required by regulation to be trained and certified. The information provided below is for informational purposes only.

Primary Lithium Metal Batteries
UN3090 Primary lithium batteries – PI 968 **UN3091** Primary lithium batteries with or in equipment-PI 969 & 970
UN 38.3: GBT certifies that all of its lithium batteries meet the requirements of the UN Manual of Tests and Criteria, Part III subsection 38.3. If you assemble these batteries into larger battery packs, it is recommended that you perform the UN Tests to ensure the requirements are met prior to shipment.
US DOT: Special Provision 29, 188, 189, 190, A54, A55, A100, A101, A103, A104
Air Transport (IATA/ICAO): Packing Instruction 968-970
Marine/Water Transport (IMDG): Special Provision 188, 230, 310, 957
ADR: Special Provisions: 188, 230, 310, 957

DOT -

Except for personal use, the shipment of lithium batteries aboard passenger aircraft is not allowed. Airline passengers may have non-rechargeable lithium batteries for their equipment and a reasonable amount of spare non-rechargeable lithium batteries for their equipment in their carry-on luggage – **NOT** in their checked baggage. For more information, air travelers should consult the China Department of Transportation (DOT) Safety Travel web site.

Shipping packages containing non-rechargeable lithium batteries must be labeled, regardless of size or number of batteries, with the following statement: "PRIMARY LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT."

Effective January 1, 2013, new ICAO/IATA regulations for air shipments require a reduced package size quantity and the use of new labels. For more information visit the IATA website:
http://www.iata.org/whatwedo/cargo/dgr/Pages/lithium-batteries.aspx
The transportation of lithium metal batteries is regulated as UN3090 by ICAO, IATA, IMO and US DOT. The lithium manganese dioxide batteries cells and batteries are not subject to the other provisions of the Dangerous Goods regulations as long as they are packaged and marked in accordance with the ICAO regulations.

SECTION 15: REGULATORY INFORMATION

EU BATTERY DIRECTIVE: These batteries comply with the Directive substance limits and labeling requirements.

EU REACH REGISTRATION: These products are manufactured articles and not subject to REACH registration requirements.

EU REACH SVHC: These products contains 1,2-dimethoxyethane (ethylene glycol dimethyl ether) which is listed on the Candidate List of Substances of Very High Concern.

EU Labeling: Labeling is not required because batteries are classified as articles under the both REACH and the Dangerous Preparations Directive and as such are exempt from the requirement for labeling.

SECTION 16: OTHER INFORMATION

Hazard Rating: Health: 0 Fire: 0 Reactivity: 0

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Data supplied is for use only in connection with occupational safety and health.

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