



# ACR ELECTRONICS, INC.

## Material Safety Data Sheet

MSDS 49

Revision J

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### Product and Company Identification

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Hours of Operation: 9am to 5pm Mon. through Fri.

EMERGENCY 24-HOUR TELEPHONE NUMBERS: CHEM-TEL, INC, Inside U.S. (800) 255-3924, Outside U.S. (813) 248-0585 and FAX (813) 248-0582 see [www.chemtelinc.com](http://www.chemtelinc.com) for more information about Chem-Tel, Inc.

**Primary Batteries** SHIPPING NAME **LITHIUM BATTERIES**  
 1083 Lithium Iron Disulfide Dated AA Battery

### Transportation

Batteries are "excepted" from Dangerous Goods Classification based on US/DOT CFR 49 Section 173.185, Section 172.102 Special Provision 188 and IATA Special Provision A45. The listed batteries were tested and meets requirements for shipping per The UN Manual of Tests and Criteria, Part III, Subsection 38.3, UN T1-T8 Tests ST/SG/AC.10/11.

Reference 49 CFR parts 171, 172, 173 and 175 and IATA Dangerous Goods Regulations 49<sup>th</sup> Edition.

### Passenger Aircraft Ban (for Lithium Batteries only)

All primary lithium batteries are banned as cargo on passenger aircraft. The outside of each package must be labeled with the following statement: **"PRIMARY LITHIUM BATTERIES- FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT"**.

### Composition / Hazardous Ingredients

#### TWO AA LITHIUM IRON DISULFIDE BATTERIES

INGREDIENT	PEL (OSHA)	TLV (ACGIH)		% wt per cell	Total % wt per product
Carbon Black	3.5 mg/m <sup>3</sup> TWA	3.5 mg/m <sup>3</sup> TWA	1333-86-4	0-4	
1,2-Dimethoxyethane	None established	None established	110-71-4	5-8	
1,3-Dioxolane	None established	None established	646-06-0	2-5	
Graphite	15 mg/m <sup>3</sup> TWA (total dust) 5 mg/m <sup>3</sup> TWA (respirable fraction)	2 mg/m <sup>3</sup> TWA (respirable fraction)	7782-42-5	0-4	
Iron Disulfide	None established	None established	1309-36-0	24-27	
Lithium or Lithium Alloy	N/A	N/A	7439-93-2	6-7 (1 GRAM)	2 GRAMS
Lithium Iodide	None established	None established	10377-51-2	0-3	

### Physical and Chemical Properties

N/A

### Fire and Explosion Data

Extinguishing Media: Use water or CO2 on burning lithium batteries. Use a class D fire extinguishing agent only on a raw lithium fire.

Special Fire-Fighting Procedures: Use self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Batteries may vent when subjected to excessive heat-exposing battery contents. Hazardous combustion products are Carbon Monoxide and Carbon Dioxide and Lithium Oxide fumes.

### Reactivity Data

Stability: Batteries are stable.

Conditions to Avoid: Battery contains hermetically sealed cells and is non-reactive provided the battery integrity is maintained and the cell seal remains intact.

Conditions to Avoid: Heating, mechanical abuse and electrical abuse (such as recharging, voltage reversal and short-circuiting) may result in venting.

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### Health Hazard Data

Routes of Entry: Inhalation - Yes Skin - Yes

Health Hazards (Acute and Chronic): These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. Contact of electrolyte and extruded lithium with skin and eyes should be avoided.

Carcinogenicity: No NTP: None IARC Monograph: None OSHA Regulated: None

Signs / Symptoms of Exposure: A shorted Lithium battery can cause thermal and chemical burns upon contact with the skin.

Medical Conditions Generally Aggravated by Exposure: An acute exposure will not generally aggravate any medical condition.

Emergency and First Aid Procedures: In case of skin contact with contents of battery, flush immediately with water. For eye contact, flush with copious amounts of water for 15 minutes. Do not inhale leaked material. If irritation persists, get medical help.

### Precautions for Safe Handling and Use

Handling Precautions: AVOID MECHANICAL OR ELECTRICAL ABUSE.

If Battery Material is released: Remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Batteries will not release hazardous gases under normal operating conditions.

Batteries are capable of long term storage at temperatures as high as 160°F (71°C). Storage at lower temperatures will not affect the product. Temperatures above 160°F (71°C) and storage at elevated temperatures should be avoided.

Waste Disposal Method: Follow applicable Federal, state, and local regulations for disposal/recycling of products with Lithium Batteries.

### Disposal

Lithium batteries are best disposed of as a non-hazardous waste when fully or mostly discharged. The Federal Environmental Protection Agency (EPA) (governed by the Resource Conservation and Recovery Act (RCRA)) do not list or exempt Lithium as a hazardous waste. However, if waste lithium batteries are still fully charged or only partially discharged, they can be considered a reactive hazardous waste because of significant amounts of unreacted lithium in the battery. The batteries must be neutralized through an approved secondary treatment facility prior to disposal as a hazardous waste (as required by the U.S. Land Ban Restrictions for the hazardous and Solid Waste Amendments of 1984.) Secondary treatment centers receive these batteries as manifested hazardous waste under code "D003 - reactive." Use a professional disposal firm for disposal of mass quantities of undischarged lithium batteries.

DO NOT INCINERATE or subject battery cells to temperatures in excess of 212°F. Such treatment can cause cell rupture.

### Exposure Controls / Personal Protection

Ventilation: in case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries.

Respiratory Protection is not necessary under conditions of normal use.

Personal Protection is recommended for venting batteries: Respiratory Protection, Protective Gloves, Protective Clothing and safety glasses with side shields.

### Document Information

Prepared By: ROBERT STOLPE, FOR ACR ELECTRONICS, INC.

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