

Material Safety Data Sheet
 May be used to comply with
 OSHA's Hazard Communication Standard,
 29 CFR 1910.1200. Standard must be
 consulted for specific requirements.

U.S. Department of Labor
 Occupational Safety and Health Administration
 (Non-Mandatory Form)
 Form Approved
 OMB No. 1218-0072



IDENTITY (As Used on Label and List)
 → **KEEPER II/Lithium/Thionyl Chloride Battery**

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name Eagle-Picher Industries, Inc.	Emergency Telephone Number 417-776-2256
Address (Number, Street, City, State, and ZIP Code) P. O. Box 130	Telephone Number for Information 417-776-2256
Bethel Road	Date Prepared 1 October 1992
Seneca, MO 64865	Signature of Preparer (optional)

Section II -- Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Lithium metal Cas #7439-93-2			N/A-reactive alkali metal	
Thionyl chloride (SOCl ₂) Cas #007719-09-7	1/0 ppm	5/0 ppm		

Section III -- Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H₂O = 1)	N/A
Vapor Pressure (mm Hg.)	N/A	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water	N/A		
Appearance and Odor	N/A		

Section IV -- Fire and Explosion Hazard Data

Flash Point (Method Used) N/A	Flammable Limits	LEL	UEL
Extinguishing Media Do not use water. Use dry chemical, soda ash, sand.			
Special Fire Fighting Procedures Use self contained breathing apparatus and full protective equipment.			
Unusual Fire and Explosion Hazards Do not recharge, disassemble, heat above 125°C (257°F). Incinerate or expose contents to water. Vent, rupture or explosion may result and cause severe burns.			

Section V -- Reactivity Data

Stability	Unstable	Conditions to Avoid Vent, rupture or explosion will release - thionyl chloride. (SOCl ₂)
	Stable	

Incompatibility (Materials to Avoid)
SOCl₂ water, humid air, alkalies, and temperature above 140°C (284°F)

Hazardous Decomposition or Byproducts
SOCl₂ In presence of water or humid air hydrochloric acid & sulfur oxide.

Hazardous Polymerization	May Occur	Conditions to Avoid
	Will Not Occur	

Section VI -- Health Hazard Data

Route(s) of Entry: Eyes	Inhalation? Yes	Skin? Yes	Ingestion? Yes
----------------------------	--------------------	--------------	-------------------

Health Hazards (Acute and Chronic)
SOCl₂ - will burn and irritate eyes & skin. Upper respiratory irritant. Continuous inhalation of fumes may cause lung damage.

Carcinogenicity: N/A	NTP?	IARC Monographs?	OSHA Regulated?
-------------------------	------	------------------	-----------------

Signs and Symptoms of Exposure
SOCl₂ - eye and skin irritation, pungent odor and respiratory irritation.

Medical Conditions Generally Aggravated by Exposure
N/A

Emergency and First Aid Procedures
If fire (SOCl₂) is present, evacuate area and provide ventilation, wash exposed areas with soda ash or sodium bicarbonate solution. Seek medical attention.

Section VII -- Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
Avoid contact if vent rupture or explosion has occurred. Otherwise protect from heat, short circuit of terminals, an accumulation of shorted batteries, which may cause dangerous elevated temperatures.

Waste Disposal Method
Dispose of waste according to federal EPA, state and local regulations.

Precautions to Be Taken in Handling and Storing
Do not short circuit, heat above 125°C (257°F), recharge, disassemble, incinerate or expose to water.

Other Precautions

Section VIII -- Control Measures

Respiratory Protection (Specify Type)
Self-contained breathing apparatus

Ventilation	Local Exhaust	Special
	Mechanical (General)	Other

Protective Gloves Neoprene **Eye Protection** RECOMMENDED

Other Protective Clothing or Equipment N/A

Work/Hygiene Practices N/A