Product: Thermal Battery

Applicable Product Numbers: CAP-12XXX series
EAP-12XXX series
SAP-12XXX series

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ARTICLE INFORMATION SHEET (AIS)

This Article Information Sheet (AIS) is provided as a courtesy in response to a customer request. A Safety Data Sheet (SDS) has not been prepared for these product(s) because they are articles. This AIS provides relevant battery information to consumers, OEMs and other users requesting a GHS-compliant SDS. Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria is not designed or intended to be used to classify the physical, health and environmental hazards of an article.

SECTION 1: COMPANY INFORMATION

Manufacturer:

EaglePicher Technologies, LLC
PO Box 47
Joplin, MO 64802
417-623-8000
www.eaglepicher.com

Emergency Telephone Number: Chemtrec 1-800-424-9300

SECTION 2: ARTICLE INFORMATION

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

* The following list of chemicals may be found in EaglePicher Technologies thermal batteries. The specific battery number will determine the exact ingredients and percentages.

Description	Thermal battery
Recommended Use	Portable power supply
Article Construction	
Electrodes and Electrolyte*	Lithium chloride, Lithium aluminum alloy, lithium silicon alloy, lithium oxide, lithium fluoride, lithium bromide, iron powder, magnesium oxide, nickel disulfide, potassium chloride, potassium bromide, potassium perchlorate, iron disulfide
Can	Stainless steel or titanium

Some EaglePicher Technologies thermal batteries may also contain a primer, squib or igniter device, i.e., part number EP-250-1, within the hermetically sealed battery. These are also classified as articles under OSHA's Hazard Communication standard, 29 CFR 1200 and are exempt from the requirements for an SDS. For reference, the following chemicals may be found

in primers, squibs and igniters in these thermal batteries. *The specific battery number will determine the exact ingredients and percentages.

Chemical Name*
Lead mononitroresorcinol
Boron
Calcium chromate
Barium nitrate
Potassium perchlorate
Zirconium
Ferric oxide
Infusorial earth
Lead styphenate tetracene

SECTION 3: HEALTH AND SAFETY

Normal conditions of Use	Exposure to contents inside the sealed battery will not occur unless the battery leaks, is exposed to high temperatures, or is mechanically abused.
First Aid – Eye Contact	Not a probable route of exposures. If exposed to internal components of the battery, flush with running water for at least 15 minutes and then seek medical attention.
First Aid – Skin Contact	Not a probable route of exposures. If exposed to internal components of the battery, flush with running water for at least 15 minutes and then seek medical attention. If thermal burn occurs from touching hot case of battery, rinse skin with plenty of cool water for at least 15 minutes. Seek medical attention.
First Aid – Inhalation	Not a probable route of exposures. Contents of leaking battery may be irritating to respiratory passages. Move to fresh air and seek medical attention if irritation persists.
First Aid – Ingestion	Not a probable route of exposure.
Precautionary Statements	Battery can leak or explode if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Do not pierce or burn, even after use. Store in a well ventilated place. Keep cool. Store in original container.

SECTION 4: FIRE HAZARDS AND FIREFIGHTING MEASURES

Fire Hazard	Batteries may rupture or leak if involved in a fire.
Extinguishing Media	**DO NOT UNDER ANY CIRCUMSTANCES, ATTEMPT TO PUT OUT ANY THERMAL BATTERY FIRE WITH WATER**

	OR CO_2 BASED FIRE EXTINGUISHING EQUIPMENT. Due to the lithium-alloy content of thermal batteries, water will only aggravate the shorting condition and would feed the fire. If necessary, **smother the fire** with an anhydrous (dry) salt such as KCI (potassium chloride) or NaCl (sodium chloride). DO NOT USE: WATER, SAND, CO_2, HALON, DRY POWDER OR SODA ASH EXTINGUISHERS.
Unusual Fire and Explosion Hazards	Physical signs of an impending rupture include a sudden dramatic drop in battery output voltage, and the development of a red (glowing) spot on the battery container surface. Should either or both of these conditions occur, immediate evacuation of all personnel from the battery area is prudent.

SECTION 5: HANDLING AND STORAGE

Handling	In general, thermal batteries are designed to safely withstand a wide variety of handling conditions including, but not limited to, bench handling shock, transportation vibration, salt air and humidity exposure, high altitude exposure, high-g ejection shocks, and cold temperature storage. Thermal batteries should not be allowed to contact bare skin either during or immediately after activation. Following performance requirements, the battery should be allowed to cool down in ambient conditions for four to six hours or until the outer case has reached room temperature. Personnel handling the battery immediately after activation should wear protective clothing as required by OSHA for handling high temperature substances. At a minimum, high temperature rated insulated gloves, a full-face shield, and protective coveralls are recommended. If the battery is designed to be activated by an electrical pulse then the possibility exists for the battery to be activated by any stray electrical pulse, such as static electricity. To prevent accidental activation, some thermal batteries are shipped with the squib contacts shorted together with copper wire. If such a wire is not present during storage, a single strand copper of 20 gauge or larger should be connected between the squib contacts to prevent accidental activation. When the battery is installed in the next assembly or system, the squib shorting wire should be removed. **Note that when the shorting wire is removed, the battery will be subject to ignition by stray electrical signals or static electricity and great care should be used to prevent such signals from contacting the squib terminals.**
Storage	In general, thermal batteries can be stored indefinitely at ambient temperatures of up to 165° F without affecting battery performance or causing hazards to personnel. Elevated temperatures above 165° F can result in shortened battery life and possible damage. **OTHER-** Follow manufacturer recommendations regarding maximum recommended current and operating temperature range. Apart from the uses mentioned in section 1 no other specific uses are stipulated.

Spills of Large Quantities of loose batteries	The battery is hermetically sealed and will not leak unless the case is punctured or otherwise damaged. If the battery is punctured or damaged, the battery may react violently. Leave the immediate area of a ruptured or venting battery. Do not attempt cleanup until the battery has cooled sufficiently. Do not enter an enclosed area where a battery has vented without first using mechanical ventilation to clear the space before entry. Wear appropriate protective gloves and dispose of the battery in accordance with federal, state and local regulations. NEUTRALIZING AGENTS: Potassium or Sodium Chloride for fire situations

SECTION 6: DISPOSAL CONSIDERATIONS

Collection and Proper Disposal	Dispose in accordance with the applicable regulations in country and state. Disposal should be performed by licensed professional disposal firms knowledgeable in Federal, State or Local requirements for hazardous waste treatment and disposal.

SECTION 7: TRANSPORTATION INFORMATION

Regulatory Status	EaglePicher Technologies, LLC thermal batteries are not regulated for transportation based on Department of Transportation Guidance and Criteria for Classification of Thermal Batteries dated 8/8/1995.

SECTION 8: REGULATORY DEFINITIONS AND REQUIREMENTS - ARTICLES

USA OSHA 29 CFR 1910.1200(b)(6)(v)
USA TSCA 40 CFR 704.3; 710.2(3)(c); and 19 CFR 12.1209(a)
EU REACH Title 1 - Chapter 2 - Article 3(3)
GHS Section 1.3.2.1

Globally Harmonized System (GHS)	GHS SDS requirements and classification criteria do not apply to articles or products (such as batteries) that have a fixed shape, which are not intended to release a chemical. The article exemption is found in Section 1.3.2.1.1 of the GHS and reads: ***The GHS applies to pure substances and their dilute solutions and to mixtures. "Articles" as defined by the Hazard Communication Standard (29 CFR 1900.1200) of the OSHA of the USA, or by similar definition, are outside the scope of the system."***
Joint Article Management Promotion Consortium JAMP	An international standard that came into effect in March 2012 concerning declaration for electrical and electronic products. IEC 6274 replaces the defunct Joint Industry Guide – Material Declaration for Electro-technical Products (JIG-101-Ed 4.1 (May 21, 2012)

IEC 62474 Ed. 1.0 B:2012 Material Declaration for Products of and for the Electro-technical Industry	An international standard that came into effect in March 2012 concerning declaration for electrical and electronic products. IEC 6274 replaces the defunct Joint Industry Guide – Material Declaration for Electro-technical Products (JIG-101-Ed 4.1 (May 21, 2012)
IEC 62474 Database – Publically available online (http://std.iec.ch/iec62474). Maintained by TC11: Environmental Standardization for electrical and electronic products and systems.	The general principle for a substance to be included in the database as a declarable substance is: 1) existing national laws or regulations in an IEC member country that are relevant to Electro-technical products and that prohibit or restrict substances, or that have a labeling, communication, reporting or notification requirement, and 2) applying IEC 62474 criteria results in identification of declarable substance.
ANSI Z 400.1/Z19.1 (2010)	2.1 Scope: Applies to preparation of SDS for hazardous chemicals used under occupational conditions. Does not address how the standard may be applied to articles. It presents basic information on how to develop and write a SDS. Additional information is provided to help comply with state and federal environmental and safety laws and regulations. Elements of the standard may be acceptable for International use.

DISCLAIMER: This AIS is intended to provide a brief summary of our knowledge and guidance regarding the use of this article. The information contained here has been compiled from sources considered by EaglePicher Technologies, LLC to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations. This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. EaglePicher Technologies, LLC assumes no responsibility for injury to the recipient or third persons or for any damage to any property resulting from misuse of the product.