

**MATERIAL SAFETY DATA SHEET**

MSDS No.  
**L 84**  
Date Issued  
**Sept. 29, 1986**  
Date Revised  
**Sept. 15, 1992**

**I. Product Identification**

Chemical Trade Name (Identify used on label) <b>Absorbed Electrolyte Battery/Dynasty</b>		Chemical Family/Classification <b>Electric Storage Battery</b>	
Synonyms/Common Name <b>Lead Acid Battery</b>		Shipping Regulations <b>See Section IX</b>	
Company Name <b>Johnson Controls, Battery Group Inc.</b>		Address <b>P.O. Box 591 Milwaukee, WI 53201</b>	
Division or Department <b>Specialty Battery Division</b>		CONTACT	
Questions Concerning MSDS <b>Industrial Hygiene &amp; Safety Department</b>		TELEPHONE NUMBER <b>Day: (414) 228-3138</b>	
Transportation Emergencies <b>CHEMTREC</b>		<b>24 Hours: (800) 424-9300</b>	

**II. Hazardous Ingredients**

**NOTE: The contents of this product are toxic chemicals that are subject to the reporting requirements of section 302 and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR 355 and 372).**

Material	% by Wt.	CAS Number	Exposure Limits		
			OSHA	ACGIH	Other
Specific Chemical Identity <b>Lead</b>	34	7439-92-1	50 µg/m³	150 µg/m³	NIOSH 100 µg/m³
Common Name <b>Grid</b>					
Specific Chemical Identity <b>Lead Dioxide</b>	31	1309-60-0	50 µg/m³	150 µg/m³	NIOSH 100 µg/m³
Common Name <b>Lead Oxide</b>					
Specific Chemical Identity <b>Lead Sulfate</b>	31	7446-14-2	50 µg/m³	150 µg/m³	NIOSH 100 µg/m³
Common Name <b>Anglisisite</b>					
Specific Chemical Identity <b>Sulfuric Acid (40%)</b>	34	7664-93-9	1 mg/m³	1 mg/m³	NIOSH 1 mg/m³
Common Name <b>Battery Electrolyte (Acid)</b>					
Specific Chemical Identity					
Common Name					

**III. Physical Data**

Materials (at normal temperatures) <input checked="" type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas		Appearance and Odor <b>Battery electrolyte (acid) is a clear to cloudy liquid absorbed by internal battery components. Acid saturated lead oxide is a dark reddish-brown to gray solid with slight acidic odor.</b>	
Boiling Point (at 760 mm Hg) <b>Lead 1755°C</b>	Melting Point <b>327.4°C</b>	Vapor Pressure ( ) (mm Hg at 20°C) ( ) (PSIG) <b>Battery Electrolyte (Acid) 11.7</b>	
Specific Gravity (H <sub>2</sub> O = 1) <b>Battery Electrolyte (Acid) 1.3</b>		Solubility in H <sub>2</sub> O <b>Battery Electrolyte (Acid) is 100% soluble in water. Lead - Lead Dioxide are not soluble.</b>	
Vapor Density (AIR = 1) <b>Battery Electrolyte (Acid) 3.4</b>		Evaporation Rate (Butyl Acetate = 1) <b>Not Determined</b>	
% Volatiles by Weight			

**7. Health Hazard Information**

**NOTE: Under normal conditions of battery use, internal components will not present a health hazard. The following information is provided for battery electrolyte (acid) and lead for exposure that may occur during battery production or container breakage or under extreme heat conditions such as a fire.**

**ROUTES AND METHODS OF ENTRY**

Inhalation

**Acid mist generated during battery formation may cause respiratory irritation.**

Skin Contact

**Battery electrolyte (acid) may cause irritative contact dermatitis.**

Skin Absorption

**Skin absorption is not a significant route of entry.**

Eye Contact

**Battery electrolyte (acid) will irritate the eyes upon contact.**

Ingestion

**Hands contaminated by contact with internal components of a battery can cause ingestion of lead/lead compounds. Hands should be washed prior to eating, drinking, or smoking.**

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

Acute Effects

**Acute effects of overexposure to lead are GI (gastrointestinal) upset which may be loss of appetite, diarrhea and/or constipation with cramping, difficulty in sleeping, and fatigue. Exposure and/or contact with battery electrolyte (acid) may lead to acute irritation of the skin, corneal damage of the eyes if not washed immediately, and irritation of the mucous membranes of the eyes and upper respiratory system including lungs.**

Chronic Effects

**Lead and its compounds may cause chronic anemia, damage to the kidneys and nervous system. Lead may also cause reproductive system damage and can affect developing fetuses in pregnant women. Battery electrolyte (acid) may lead to scarring of the cornea and chronic bronchitis as well as erosion of tooth enamel in mouth breathers in repeated exposures.**

**POTENTIAL TO CAUSE CANCER**

**The International Agency for Research on Cancer (IARC) has classified strong inorganic acid mist containing sulfuric acid as carcinogenic in humans (category 1 carcinogen). This classification is for inorganic acid mist only and does not apply to sulfuric acid or sulfuric acid solutions. The IARC study showed no definitive causal relationship between sulfuric acid mist and respiratory tract cancer in humans. IARC test data has shown insufficient evidence that lead can or will not cause cancer in humans.**

**EMERGENCY AND FIRST AID PROCEDURES**

Inhalation

**Remove from exposure and consult a physician if any of the acute effects listed above develop.**

Skin

**Wash thoroughly with soap and water. If electrolyte comes into contact with clothing, remove and discard.**

Eyes

**IMMEDIATELY rinse with cool running water for at least 15 minutes. Seek medical attention after rinsing.**

Ingestion

**Lead/lead compounds: Consult a physician.  
Electrolyte: Do not induce vomiting. Refer to a physician immediately.**

**MEDICAL CONDITIONS WHICH CAN BE AGGRAVATED BY EXPOSURE**

**Inorganic lead and its compounds can aggravate chronic forms of kidney, liver, and neurologic diseases. Contact of battery electrolyte (acid) with the skin may aggravate skin diseases such as eczema and contact dermatitis.**

### VIII. Safe Handling Precautions

#### Hygiene Practices

Following contact with internal battery components, wash hands thoroughly before eating, drinking, or smoking.

#### Protective Measures to be taken During Non-routine Tasks including Equipment Maintenance

Wear safety glasses. Do not permit flames or sparks in the vicinity of battery(s). If acid comes in contact with clothing, discard clothing.

### SPILL OR LEAK PROCEDURES

#### Protective Measures to be taken if Material is Released or Spilled

Remove combustible materials and all sources of ignition. Cover spill with soda ash (sodium carbonate) or quicklime (calcium oxide). Mix well. Make certain mixture is neutral then collect residue and place in a drum or other suitable container. Dispose of as hazardous waste.

Wear acid-resistant boots, chemical faceshield, chemical splash goggles, and acid resistant gloves. **DO NOT RELEASE UNNEUTRALIZED ACID!**

#### Waste Disposal Method

Battery electrolyte (acid): Neutralize as above for a spill, collect residue, and place in a drum or suitable container. Dispose of as hazardous waste.

**DO NOT FLUSH LEAD CONTAMINATED ACID TO SEWER.**

Batteries: Send to lead smelter for reclamation following applicable Federal, state, and local regulations.

### OTHER HANDLING AND STORAGE PRECAUTIONS

None Required.

### IX. Department of Transportation and International Shipping Regulations

DOT - Battery-dry, not subject to regulations

IATA - Not restricted for air transport - complies with IATA/ICAO Special Provision A67

IMO - Not classified as of 1992

### V. Fire and Explosion Data

Flash Point (test method)	Autoignition Temperature	Flammable Limits in Air, % by Vol. (hydrogen)	
Hydrogen - 259°C	Hydrogen 580°C	Lower 4.1	Upper 74.2
Extinguishing Media <b>Dry chemical, foam, or CO<sub>2</sub>.</b>			
Special Fire Fighting Procedures <b>Use positive pressure, self-contained breathing apparatus.</b>			
Unusual Fire and Explosion Hazard <b>Hydrogen and oxygen gases are produced in the cells during normal battery operation (hydrogen is flammable and oxygen supports combustion). These gases enter the air through the vent caps. To avoid the chance of a fire or explosion, keep sparks and other sources of ignition away from the battery.</b>			

### VI. Reactivity Data

Stability	Conditions to avoid
<input type="checkbox"/> Unstable <input checked="" type="checkbox"/> Stable	<b>Sparks and other sources of ignition.</b>
Incompatibility (materials to avoid) <b>Lead/lead compounds: Potassium, carbides, sulfides, peroxides, phosphorus, sulfur. Battery electrolyte (acid): Combustible materials, strong reducing agents, most metals, carbides, organic materials, chlorates, nitrates, picrates, and fulminates.</b>	
Hazardous Decomposition Products <b>Lead/lead compounds: Oxides of lead and sulfur Battery electrolyte (acid): Hydrogen, sulfur dioxide, sulfur trioxide</b>	
Hazardous Polymerization	Conditions to avoid
<input type="checkbox"/> May Occur <input checked="" type="checkbox"/> Will Not Occur	<b>High temperature. Battery electrolyte (acid) will react with water to produce heat. Can react with oxidizing or reducing agents.</b>

### VII. Control Measures

Engineering Controls	
<b>Store lead/acid batteries with adequate ventilation. Room ventilation is required for batteries utilized for standby power generation. Never re-charge batteries in an unventilated, enclosed space.</b>	
Work Practices	
<b>Do not remove vent caps. Follow shipping and handling instructions which are applicable to the battery type. To avoid damage to terminals and seals, do not double-stack industrial batteries.</b>	
<b>PERSONAL PROTECTIVE EQUIPMENT</b>	
Respiratory Protection	
<b>None required under normal use conditions. During battery formation, acid mist can be produced which may cause respiratory irritation. If irritation occurs, wear respirator that is suitable for protection against acid mist.</b>	
Eyes and Face	
<b>Chemical splash goggles are preferred. Also acceptable are "visor-gogs" or a chemical face shield worn over safety glasses.</b>	
Hands, Arms, Body	
<b>Vinyl coated, PVC, gauntlet type gloves with rough finish are preferred.</b>	
Other: Special Clothing and Equipment	
<b>Safety shoes are recommended when handling batteries. All footwear must meet requirements of ANSI Z41.1 - Rev. 1972.</b>	

**PURCHASE ORDER**

**SYRACUSE CITY SCHOOL DISTRICT**

BUDGET NUMBER  
A 16000 501 01 000000

SYRACUSE CITY SCHOOL DISTRICT  
DEPARTMENT OF BUSINESS  
725 HARRISON STREET  
SYRACUSE, NEW YORK 13210

DELIVER TO:  
CENTRAL OFFICE  
725 HARRISON ST.  
SYRACUSE, NY

APPROVED BY: *[Signature]*  
COMMISSIONER OF PURCHASE

(000)000-0000 FAX#(000)000-0000  
ATTN: -

TECHNOLOGY

TO: SCHAEFER, J & M, INC.  
5 COLLAMER CIRCLE  
E.SYRACUSE, NY 13057 1179

MARK ALL BILLS OF LADING, PACKAGES,  
INVOICES, CORRESPONDENCE, ETC. WITH  
THIS PURCHASE ORDER NUMBER.

ORDER NUMBER K 37272	BID E
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QUOTE #

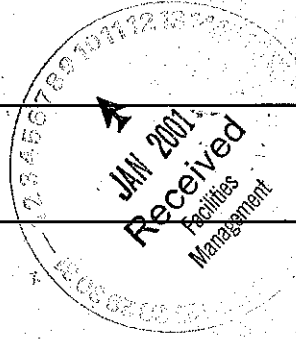
ATTN:

F.O.B.	REQ. NUMBER 2037224	DATE 12/15/00	DELIVER BY:	VENDOR 46970	ORDINANCE NO. 024300	CONTRACT NUMBER		
UNIT PRICE	DESCRIPTION					GROSS AMOUNT	DISCOUNT	IF APPLICABLE

#FR12-140 BATTERY FOR UPS, DYNASTY

MATERIAL SAFETY DATA SHEET MUST BE PROVIDED WITH THE SHIPMENT BEFORE PAYMENT, (IF APPLICABLE)  
2000-2001 SCHOOL YEAR

*Picked up by a summer for you Jan 12/28/00*



*R Polons*

REQUISITIONER'S COPY