

Product Identity: PowerPlus Valve Regulated Lead-Calcium Battery

Battery Type: Standard range, High Rate range, AINO MICRO range, Modular range, front access T & FT range

Date: 08/May/2001

SECTION I: COMPOSITION / INFORMATION ON INGREDIENTS

NOTE: PowerPlus Valve Regulated Lead Acid batteries are sealed, recombinant design. Under normal use and handling the user has no contact with the internal components of the battery or the chemical hazards. Under normal use and handling these batteries do not emit regulated or hazardous substances.

HAZARDOUS COMPONENT	CAS NUMBER	OSHA PEL	AGGIH TLV	% BY WEIGHT
Lead, Lead compounds	7439-92-1	0.05mg/m ³	0.05mg/ m ³	66-76%
Electrolyte: Sulfuric Acid	7664-93-9	1.0mg/m ³	1.0mg/ m ³	19-24%
Case Material: ABS	9003-07-0	N/A	N/A	3-6%
Separator	N/A	N/A	N/A	2-3%
Copper	7440-50-8	1.0mg/m ³	1.0mg/ m ³	< 1%
Tin	7440-31-5	2.0mg/m ³	2.0mg/m ³	< 0.2%
Calcium	7440-43-9	0.05mg/m ³	0.05mg/m ³	0.2-0.3%
Antimony	7440-36-0	0.5mg/m ³	0.5mg/m ³	0.2-0.4%

SECTION II: PHYSICAL DATA

Materials (at normal temperatures): Electrolyte	Appearance and Odor: Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.
Boiling Point (at 760 MM Hg): 203°F	Melting Point: N/A
Specific Gravity (H ₂ O=1): 1.230-1.350	Vapor Pressure (mm Hg at 20°C): 10
Vapor Density (Air=1): Greater than 1	Solubility in Water: 100%
% Volatiles by Weight: N/A	Evaporation Rate (Butyl Acetate=1): Less than 1

SECTION III: Health Hazard Information

Routes of Entry:

Sulfuric Acid: Under normal conditions of use, sulfuric acid vapors and mist are not generated. Sulfuric acid vapors and mist may be generated when product is overheated, oxidized, or otherwise processed or damaged.

Lead Compounds: Under normal conditions of use, lead dust, vapors, and fumes are not generated. Hazardous exposure may occur when product is overheated, oxidized, or otherwise processed or damaged to create dust, vapor or fumes.

Inhalation:

Sulfuric Acid vapors or mist may cause severe respiratory irritation. Lead dust or fumes may cause irritation of upper respiratory tract or lungs.

Skin Contact:

Sulfuric Acid may cause severe irritation, burns and ulceration. Lead Compounds are not readily absorbed through the skin.

Skin Absorption:

Sulfuric Acid is not readily absorbed through the skin. Lead Compounds are not readily absorbed through the skin.

Eye Contact:

Sulfuric Acid vapors or mist can cause severe irritation, burns, cornea damage and possible blindness. Lead Compounds may cause eye irritation.

Ingestion:

Sulfuric Acid may cause severe irritation of mouth, throat, esophagus and stomach. Lead Compounds may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. Acute ingesting should be treated by physician.

California Proposition 65 Warning- Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

SECTION IV: FIRST AID MEASURES**EMERGENCY AND FIRST AID PROCEDURES:****SKIN / EYES**

- Flush with water for 15 minutes
- Remove contaminated clothing
- If irritation continues, seek medical attention.

INGESTION

- Do not induce vomiting
- Drink large quantities of milk or water
- Give CPR if breathing has stopped
- Seek medical attention immediately

SECTION V: FIREFIGHTING MEASURES**FIRE AND EXPLOSIVE PROPERTIES:**

Flash Point: N/A Flammable Limits: LEL: N/A UEL: N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS: Hydrogen gas may be present when used in a battery. Hydrogen gas and acid mist is generated upon overcharge or in fire. Ventilate area.

EXTINGUISHING MEDIA: Dry Chemical, Halon, or Carbon Dioxide

SPECIAL FIREFIGHTING PROCEDURES: Ventilate the area well. SCBA and acid protective clothing are recommended.

SECTION VI: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF BATTERY IS BROKEN: Neutralize any spilled electrolyte or exposed battery parts with soda ash or sodium bicarbonate until fizzing stops. PH should be neutral at 6-8. Collect residue and place in a suitable container. Residue may be hazardous waste. When neutralized, the spill is non-hazardous. Keep untrained individuals away from the spilled material. Place the broken battery in a heavy gauge plastic bag or other non-metallic container. Provide adequate ventilation, hydrogen gas may be given off during neutralization.

SECTION VII: HANDLING AND STORAGE

Store in a cool, dry area away from combustibles. Do not store in sealed, unventilated areas. Avoid overheating and overcharging. Do not use organic solvents or other than recommended chemical cleaners on the batteries.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: General room ventilation is sufficient during normal use and handling. Do not install these batteries in a sealed, unventilated area.

PERSONAL PROTECTIVE EQUIPMENT (WHEN HANDLING BATTERY ACID):

Eye Protection - chemical goggles or safety glasses with side shields and a full-face shield.

Protective Gloves - rubber or neoprene

Respiratory Protection - NIOSH approved acid mist respirator, if OSHA PEL is exceeded or respiratory irritation occurs.

Other Protective Equipment - acid resistant apron or clothes.

WORK PRACTICES: Do not wear metallic jewelry when working with batteries. Use non-conductive tools only. Discharge static electricity prior to working on a battery. Maintain an eyewash, fire extinguisher and emergency communication device in the work area.

SECTION IX: STABILITY AND REACTIVITY

STABILITY: This battery and contents are stable.

CONDITIONS TO AVOID: Overheating, overcharging which result in acid mist Hydrogen generation.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong alkaline materials, conductive metals, organic solvents, sparks or open flame.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Hydrogen gas may be generated in an overcharged condition, in fire or at very high temperatures. In fire may emit CO, CO₂ and Sulfur Oxides.

HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

SECTION X: TOXICOLOGICAL INFORMATION

LD50: Administration Route: Oral Dose: 2140mg/kg

LDLo: Administration Route: Unreported Dose: 135mg/kg

LC50: Administration Route: Inhalation Dose: 510mg/m³

CARCINOGENICITY: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a category 1 carcinogen (inhalation), a substance that is carcinogenic to humans. "The National Toxicology Program (NTP) has designated strong inorganic sulfuric acid mists as a known human carcinogen." This classification does not apply to the liquid forms of sulfuric acid contained within the battery. Inorganic acid mist (sulfuric acid mist) is generated in very nominal levels at the end of charging. 2-3 room air changes is sufficient for control of this emission. However, misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist at higher levels.

POWER-PLUS **Providing reliable power solutions**

visit our website for more product information

www.powerplusbatteries.com