

U. S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration
MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME Voltmaster Co. Inc.	EMERGENCY TELEPHONE NO. 800-535-5053
ADDRESS (Number Street, City, State, and Zip Code) P.O. Box 288, Corydon, Iowa 50060	
CHEMICAL NAME AND SYNONYMS Lead-sulfuric acid battery	TRADE NAME AND SYNONYMS battery, electric storage
CHEMICAL FAMILY Not applicable	FORMULA Not applicable

SECTION II -- HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS Not applicable			BASE METAL lead CAS#7439-92-1	43-70	.05mg/M ³
CATALYST Not applicable			ALLOYS antimony CAS#7440-36-0	0-4	.5mg/M ³
VEHICLE Not applicable			METALLIC COATINGS		
SOLVENTS Not applicable			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS sulfuric acid CAS#7664-93-9	20-44	1mg/M ³
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUID, SOLIDS, OR GASES				%	TLV (Units)

SECTION III -- PHYSICAL DATA (Sulfuric Acid)

BOILING POINT (°F.)	approx. 235°	SPECIFIC GRAVITY (H ₂ O=1)	1.220-1.325
VAPOR PRESSURE (mmHg.)	13	PERCENT, VOLATILE BY VOLUME (%)	Not applicable
VAPOR DENSITY (AIR=1)	Not applicable	EVAPORATION RATE (H ₂ O=1)	less than 1
SOLUBILITY IN WATER	100%		
APPEARANCE AND ODOR	clear liquid with very pungent odor.		

SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	non-flammable	FLAMMABLE LIMITS *hydrogen gas	Lel 4%	Uel 74%
EXTINGUISHING MEDIA class ABC extinguisher, CO ₂ and/or Halon				
SPECIAL FIRE FIGHTING PROCEDURES Cool exterior of battery if exposed to fire to prevent rupture. The acid mist and vapors in a fire are corrosive. Wear special respiratory protection (SCBA) and clothing.				
UNUSUAL FIRE AND EXPLOSION HAZARDS *hydrogen gas, which may explode if ignited, is produced by this battery, especially when charging. Use adequate ventilation, avoid open flames, sparks or other sources of ignition.				

SECTION V -- HEALTH HAZARD DATA (sulfuric acid)	
THRESHOLD LIMIT VALUE	1mg/M ³
EFFECTS OF OVEREXPOSURE	Acid can cause irritation of eyes, nose and throat. Breathing of mist produces respiratory difficulty. Contact with eyes and skin causes irritation and skin burns.
EMERGENCY AND FIRST AID PROCEDURES	1) Flush contacted area with large amounts of water for at least 15 min. Remove contaminated clothing and obtain medical attention; 2) If swallowed, give large volumes of water; DO NOT induce vomiting, DO obtain medical treatment; 3) Eyewash and shower stations should be made available.

SECTION VI -- REACTIVITY DATA (battery case & contents)			
STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	cases decompose at 160°-410°C (322°-770°F)
INCOMPATIBILITY (Materials to avoid)	strong oxidizing agents such as hot nitric acid, etc.		
HAZARDOUS DECOMPOSITION PRODUCTS	combustion can produce sulfur dioxide (SO ₂), carbon monoxide (CO), and sulfuric acid fume.		
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	Not Applicable

SECTION VII -- SPILL OR LEAK PROCEDURES (sulfuric acid)	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
Contain and dilute spill cautiously with 5 or 6 volumes of water and neutralize gradually with sodium bicarbonate, soda ash or lime. When exposure level is not known, wear NIOSH approved positive pressure self-contained respirator.	
WASTE DISPOSAL METHOD	Place in acid-resistant containers. Disposal must be made in accordance with applicable governmental regulations.

SECTION VIII -- SPECIAL PROTECTION INFORMATION		
RESPIRATORY PROTECTION (Specify type) acid gas respirator required when TLV is exceeded or employee witnesses respiratory irritation. (See Section V, Health Hazard Data.)		
VENTILATION When charging in enclosed area.	LOCAL EXHAUST Preferred.	SPECIAL
	MECHANICAL (General) acceptable at 1 to 4 air changes/hour	OTHER
PROTECTIVE GLOVES acid-resistant (i.e. rubber)	EYE PROTECTION	chemical safety goggles or face shield
OTHER PROTECTIVE EQUIPMENT acid-resistant aprons, boots and protective clothing		

SECTION IX -- SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	Store away from reactive material as defined in Section VI, Reactivity Data.
OTHER PRECAUTIONS	Sodium bicarbonate, soda ash, sand or lime should be kept in same general area for emergency use. See Section IV and generation of hydrogen gas. If battery case is broken, avoid direct contact with internal liquid or components.