U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME: Bulldog Battery Corporation	EMERGENCY TELEPHONE NO.: (219) 563-0551
ADDRESS (Number, Street, City, and ZIP Code): 387 S. Wabash Wabash, IN 46992	
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#7439921, 43 to	70	0.5mg/M
CATALYST Not applicable			ALLOYS antimony CAS#7440360, 0 to	4	.5mg/M³
VEHICLE Not applicable			METALLIC COATINGS		
SOLVENTS Not applicable			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS Sulfuric acid CAS#7664939 20 to	44	1mg/M³
OTHER					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III - PHYSICAL DATA (Sulfuric Acid)

BOILING POINT (°F.)	approx.	235°	SPECIFIC GRAVITY (H_2O=1)	1.285
VAPOR PRESSURE (mm Hg.)		13	PERCENT, VOLATILE BY VOLUME (%) Not applicable	
VAPOR DENSITY (AIR=1)	Not applicable		EVAPORATION RATE (H2O =1)	less than 1
SOLUBILITY IN WATER		1		
APPEARANCE AND ODOR clear, odorless, colorless				

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
non-flammable	*hydrogen gas	4%	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 AND HAZARD DATA

THRESHOLD LIMIT VALUE
1mg/M³

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 minutes. Remove contaminated clothing and obtain medical attention; 2) If swallowed, give large volumes of water; DO NOT induce vomiting, obtain medical treatment; 3) Eyewash and shower stations should be made available.

SECTION VI - REACTIVITY DATA (battery case)

STABILITY	UNSTABLE		CONDITIONS TO AVOID: cases decompose at 160-410°C (322°-770°F)
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)*
strong oxidizing agents such as hot nitric acid, etc.

HAZARDOUS DECOMPOSITION PRODUCTS
combustion can produce carbon dioxide (CO_2) and carbon monoxide (CO).

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID: Not applicable
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES (sulfuric acid)

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
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	LOCAL EXHAUST: Preferred.	SPECIAL
	MECHANICAL *(General)*: acceptable at 1 to 4 charges/hour	OTHER

PROTECTIVE GLOVES: acid-resistant (i.e. rubber)	EYE PROCTECTION: chemical safety goggles or face shield

OTHER PROTECTIVE EQUIPMENT
acid-resistant aprons, boots and protective clothing

SECTION XI - 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 components.