MATERIAL SAFETY DATA SHEET
VALVE REGULATED LEAD ACID BATTERIES

BATTERY MANUFACTURER'S MSDS
DISTRIBUTED BY: HUBBELL LIGHTING, INC.
North America 24-Hour Emergency Telephone: 1-800-255-3924
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DATE: September 8, 2008

PRODUCT NAME:	Valve Regulated Lead Acid Battery
HAZARDOUS COMPONENTS:	Lead, Sulfuric Acid

HAZARDOUS COMPONENTS

COMPONENT	CAS #	OSHA PEL	ACGIH TLV	% BY WEIGHT
* Sulfuric Acid/Battery Electrolyte 1.300 sg 40 wt %	7664-93-9	1 mg/m3	1 mg/m3 STEL	22
* Lead Grid	7439-92-1	50 ug/m3	150 ug/m3	50
* Lead Oxide/Dioxide	1309-60-0	50 ug/m3	150 ug/m3	21
* Lead Sulfate/Anglesite	7446-14-2	50 ug/m3	150 ug/m3	<1
Section 313 (40 CFR 372) Listed Toxic Chemicals are Preceded by a asterisk (*)				

PHYSICAL DATA

COMPONENT	VAPOR DENSITY	VAPOR PRESSURE	SPECIFIC GRAVITY	MELTING POINT (BOILING)	SOLUBILITY IN WATER	ODOR	APPEARANCE
Acid	(Air=1) 3.4	13.8 mm Hg @ 25°C	1.300 ± 0.030	N/A (110°C to 112 °C)	N/A	Slightly Acidic	Clear to Cloudy Dark Brown

FLAMMABILITY DATA

COMPONENT	FLASHPOINT	AUTOIGNITION POINT	FLAMMABLE LIMITS IN AIR (% BY VOLUME)	UNUSUAL FIRE & EXPLOSION HAZARDS	EXTINGUISHING MEDIA	SPECIAL FIREFIGHTER PROCEDURES
Hydrogen	-259°C	580°C	Lower Explosion Limit: 4.1 Upper Explosion Limit: 74.2	Hydrogen and Oxygen gases are produced in cells during normal battery operation. Ventilate area.	Dry Chemical, Foam or CO_2	Use positive pressure, self-contained breathing apparatus.

HEALTH HAZARD DATA

COMPONENT	ROUTES OF ENTRY	ACUTE HEALTH HAZARDS	CHRONIC HEALTH HAZARDS
Sulfuric Acid	Inhalation, skin, ingestion.	Exposure may cause irritation of the skin, corneal damage of the eyes, irritation of mucous membranes and upper respiratory system, including the lungs.	Exposure may cause scarring of skin and mucous membranes, bronchitis, contact dermatitis, and erosion of tooth enamel.
Lead	Inhalation and ingestion. Ingestion of lead occurs by hand-to-mouth contamination.	Exposure may cause gastrointestinal upset, loss of appetite, diarrhea, constipation, fatigue, joint pain, and difficulty sleeping.	Exposure may cause anemia, damage to kidneys, and damage to reproductive and central nervous systems.

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, and during charging, strong inorganic acid mist containing sulfuric acid are evolved, a chemical known to the State of California to cause cancer. Wash hands after handling.

HEALTH HAZARD DATA *(cont.)*

COMPONENT	HMIS HAZARD LABEL RATING (Hazardous Material Information System)	NFPA HAZARD LABEL RATING (National Fire Protection Agency)	RATING CODES
Sulfuric Acid	3 0 2 X X=acid	2 0 1 X X=acid	0= Insignificant, 1= Slight, 2= Moderate, 3= High, 4= Extreme
HMIS and NFPA Hazard labels are used to identify the battery(s) dilute 1.300sg sulfuric acid. The first number represents the Health hazard, second number represents Fire hazard, and the third number represents the Reactivity hazard. The fourth space identifies the hazardous material, which is acid and/or typical recommended personal protective equipment, i.e., safety glasses, rubber or neoprene gloves, etc.			
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REACTIVITY DATA

COMPONENT	Sulfuric Acid
STABILITY	This battery and contents are stable.
POLYMERIZATION	Hazardous polymerization will not occur.
INCOMPATIBILITY (MATERIALS TO AVOID)	Strong alkaline materials, conductive metals, organic solvents, sparks or open flames.
HAZARDOUS BY-PRODUCT	Hydrogen gas may be generated in an overcharged condition, in fire or at very high temperatures. In fire, may emit CO, CO_2 and Sulfur Oxides.
CONDITIONS TO AVOID	Overheating, overcharging which results in acid mist/Hydrogen generation.

SPILL OR LEAK PROCEDURES

STEPS TO TAKE IN CASE OF LEAK OR SPILL	If battery is broken, neutralize the acid with soda ash or sodium bicarbonate (baking soda) until fizzing stops, pH should be at neutral 6-8. Provide adequate ventilation. Heat, carbon dioxide and hydrogen gas may be given off during neutralization. Collect residue in a suitable container. Place the broken battery in a heavy-duty plastic bag or non-metallic container. Properly recycle all battery residue and parts.
WASTE DISPOSAL METHOD	Send to lead smelter for reclamation following applicable Federal, State, and Local regulations. Product can be recycled along with automotive (SLI) lead-acid batteries.

TRANSPORTATION AND INTERNATIONAL REGULATIONS

IDENTIFICATION	When transported by air, surface, or by vessel, all Dual-Lite batteries are identified as **"Battery, Electric Storage, Wet, Nonspillable, Not Regulated"**.
BILL OF LADING IDENTIFICATION	The battery(ies) must be identified as above on Bill of Lading and properly packaged with their terminals protected from short circuit. NA or UN numbers do not apply. Warning label and preprinted cartons identify each battery as NONSPILLABLE. Batteries shipped without Dual-Lite cartons (bulk packed) need to be identified as NONSPILLABLE or NONSPILLABLE BATTERY on the outer packaging.
AIR	Dual-Lite batteries meet the conditions in IATA/ICAO Special Provision A67.
SURFACE	Dual-Lite batteries meet the conditions for DOT Haz Mat Regulations CFR-Title 49 parts 171-189.
VESSEL	Dual-Lite batteries meet the conditions of IMDG exception 238.

HANDLING AND STORAGE

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 anything other than manufacturers recommended cleaners on the batteries.

PROTECTION

ENGINEERING CONTROLS	General room ventilation is sufficient during normal use and handling. Do not install these batteries in a sealed, unventilated area.
SKIN PROTECTION	Rubber or neoprene protective gloves.
EYE PROTECTION	Chemical goggles, safety glasses with side shields and/or a full-face shield.
RESPIRATORY PROTECTION	NIOSH-approved acid mist/organic vapor respirator, if OSHA PEL is exceeded.
OTHER PROTECTIVE EQUIPMENT	Acid-resistant apron or clothes.
WORK PRACTICES	Use standard lead-acid battery 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 eyewash, fire extinguisher and emergency communications device in the work area.

ECOLOGICAL INFORMATION

Lead and its compounds can pose a threat if released into the environment.

TOXICOLOGICAL INFORMATION — SULFURIC ACID

The Dual-Lite VLRA batteries are a sealed, recombinant design that require no water replacement throughout their service life; thus no contact is made with the battery's internal components or chemical hazards. Under normal use and handling, these batteries do not emit regulated or hazardous substances.

	Administration Route	**Dose**	**Test Animal**
LD 50	Oral	2140 mg/kg	Rat
LDLo	Unreported	135 mg/kg	Man
LC50	Inhalation	510 mg/m3	Rat

Carcinogenicity: The International Agency on Cancer (IARCC) has classified "strong inorganic acid mists containing sulfuric acid" as a category 1 carcinogen (inhalation), a substance that is carcinogenic to humans. This classification does not apply to the liquid forms of sulfuric acid contained within the battery. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist at high levels.

FIRST AID PROCEDURES — SULFURIC ACID

SKIN/EYES	• Flush the affected areas with water for 15 minutes. • Remove contaminated clothing • If irritation continues, seek medical attention
INGESTION/INHALATION	• Do not induce vomiting • Drink 8 oz. of water or milk • If difficulty breathing occurs, remove to fresh air, give CPR if necessary • Seek medical attention immediately

REGULATORY INFORMATION

See 29 CFR 1910.268(b)(2)

OTHER INFORMATION

The information herein is given in good faith, but no warranty, expressed or implied, is made.