MATERIAL SAFETY DATA SHEET

Product Name: Sealed Lead Acid Batteries
Manufacturer: Uni-Vision, Discover-Energy & its Dealers and Representatives
Date: January , 2005

1. HAZARDOUS COMPONENTS

Components	% Weight	TLV	LD50 Oral	LC50 Inhalation	LC50 Contact
Lead (Pb,Pbo_PbSO_)	about 70%	N/A	(500)mg/kg	N/A	N/A
Sulfuric Acid	about 20%	1mg/m^2	(2.140)mg/kg	N/A	N/A
Fiber Glass Separatc	about 2%	N/A	N/A	N/A	N/A
ABS (Case & Cover	about 8%	N/A	N/A	N/A	N/A

2. PHYSICAL DATA

Components	Density	Melting Point	Solubility (H_0)	Odor	Appearance
Lead	11.34	327.4°C (Boiling)	None	None	Siler-Grey Metal
Lead Sulfate	6.2	1070°C (Boiling)	40mg/l (15°C)	None	White Powder
Lead Dioxide	9.4	290°C (Boiling)	None	None	Brown Powder
Sulfuric Acid	about 1.3	about 114°C (Boiling)	100%	Acidic	Clear Colorless Liquid
Fiber Glass Separator	N/A	N/A	Slight	Toxic	White Fibrous Glass
ABS (Case & Cover)	N/A	N/A	None	None	Solid

3. FLAMMABILITY DATA

Components	Flash Point	Explosive Limits	Comments
Lead	None	None	
Sulfuric Acid	None	None	
Hydrogen	-	4%-74.2%	Sealed batteries can emit hydrogen only if overcharged (float voltage>2.3vpc 25°C)
Fiber Glass Separator	N/A	N/A	Toxic vapor may be released. In case of fire; wear self-contained breathing apparatus
ABS	None	N/A	Temperature over 200°C may release gases

4. FIRST AID: Sulfuric Acid Precautions

Inhalation	Move to ventilated area. Obtain medical attention
Eyes	Wash the eyes with copious quantities of running water for 15 minutes. Obtain medical attention
Skin	Flush area with large amounts of running water. Remove contaminated clothing and obtain medical attention
Ingestion	Wash out mouth with running water. Do not induce vomiting. Call Physician.

5. REACTIVITY DATA

Component	Sulfuric Acid
Stability	Stable at all temperatures
Polymerization	Will not polymerize
Incompatibility	Reactive metals, strong bases, most organic compounds
Decomposition products	Sulfuric dioxide, trioxide, hydrogen sulfide, hydrogen
Conditions to avoid	Keep away from flames during and immediately after charging. Combustion or overcharging may create or liberate toxic and hazardous gases and liquid including hydrogen, sulfuric acid mist, sulfur dioxide, sulfur trioxide and sulfuric acid Avoid mixing acid with other chemicals

6. SPILL OR LEAK PROCEDURES

Step to take in case of leak or spill	Wear protective clothing, Ventilate enclosed areas. Dike to contain contaminated material and liquids. Limit site access to emergency responses. Neutralize with sodium bicarbonate, soda ash, lime, and other neutralizing agents.
Waste disposal method	Return whole scrap batteries to distributor, manufacturer or lead smelter for recycling. For neutralized spills, place residue into containers with absorbent material, sand or earth for disposal. Contact local and/or state environmental officials for proper disposal requirements.

7. PROTECTION

Exposure site	Protection	Comments
Skin	Rubber Gloves, Apron	Protective equipment must be worn if the battery is cracked or damaged. A respirator should be worn during certain operations if the TLV is exceeded.
Respiratory	Respirator	
Eyes	Safety Goggles, Face shield	

8. ELECTRICAL SAFETY

Due to battery's low internal resistance and high power density, high level of short circuit current could be developed across the battery terminals. Do not rest tools or cables on the battery. Use the insulated tools only. Follow all installation instructions and diagram when installing or maintaining battery systems.

9. HEALTH HAZARD DATA

Lead	The toxic effects of lead are accumulated and slow to appear. It affects the kidneys, reproductive and central nerves system. The Symptoms of Lead overexposure are vomiting, headaches, stomach pain. Exposure to lead from a battery most often occurs during lead reclaim operations through the breathing or ingestion of lead dust or fumes. THIS DATA MUST BE PASSED TO ANY SCRAP DEALER OR SMELTER WHEN A BATTERY IS RESOLD.
Sulfuric Acid	Sulfuric Acid is a strong corrosive; contact with acid can cause severe burns on the skin and eyes. Acid can be released if the battery case is damaged.