

Exposure Guidelines:

The OELs listed above are only applicable if the internal components of the battery cell are released. Follow standard monitoring procedures.

Engineering Controls (Ventilation):

Store sealed lead acid batteries at ambient temperature. Never recharge batteries in an unventilated, enclosed space. Do not subject product to open flame or fire. Avoid conditions that could cause arcing between terminals.

Respiratory Protection (NIOSH/MSHA approved):

NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT.

When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

Skin Protection:

NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT.

If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots.

Eye Protection:

NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT.

If necessary to handle damage product where exposure to the organic electrolyte is a possibility, chemical splash goggles and a face shield are recommended.

Other Protection:

Safety footwear meeting the requirements of ANSI Z 41.1 is recommended when it is necessary to handle the finished product.

General Hygiene Considerations:

When using, do not eat, drink, or smoke. Wash hands after handling. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	Manufactured article; no apparent odor.	
Odor Threshold	Not applicable.	
pH	Not applicable	
Melting Point	Lead - 621.32 °F (327.4 °C) Not applicable unless individual components exposed.	
Boiling Point	Battery Electrolyte (Acid) - 230 - 233.6 °F (110 - 112 °C) Lead - 3191 °F (1755 °C)	
Flash Point	Not applicable.	
Evaporation Rate (Butyl Acetate = 1)	Not applicable.	
Vapor Pressure (mm Hg @ 20 ° C)	Battery Electrolyte (Acid) 11.7	
Flammability		
Upper/lower flammability or explosive limits	Hydrogen	Flammability Limit Lower- 4.1 %
		Flammability Limit Upper – 74.2 %
Vapor Pressure	10.95 mm Hg (Sulfuric Acid)	
Vapor Density	Not applicable.	
Relative Density	1.21 - 1.3 Battery Electrolyte (Acid)	
Solubility	Lead and Lead dioxide are not soluble.	
	100 % Battery Electrolyte (Acid).	
% Volatile by Weight	Not applicable unless individual components exposed.	
Partition coefficient (n-octanol/water)	Not applicable	
Auto-ignition temperature	Not applicable	
Decomposition temperature	Not applicable	