



## MATERIAL SAFETY DATA SHEET

IDENTITY: (As used on label and list)

**MONOLITE battery, wet, non-spillable, (Valve-regulated lead acid battery)**

## Section I - Manufacturer's Information

Manufacturing Name	FIAMM Energy, LLC.	Emergency Telephone Number	(800) 424-9300 (CHEMTREC)
Address	One FIAMM Way	Telephone Number For Information	(706) 437-3220
	Waynesboro, GA. 308830	Date revised	January 2010

## Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	(OSHA PEL)	ACGIH TLV	Other Limit Recommended	%
Sulfuric Acid; H <sub>2</sub> SO <sub>4</sub> ; battery fluid acid; electrolyte	1.0 mg/m <sup>3</sup>			10
Lead, Lead Oxide, Lead alloy	0.15 mg/m <sup>3</sup>			71

## Section III - Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H <sub>2</sub> O = 1)	N/A
Vapor Pressure (mm Hg)	N/A	Melting Point	N/A
Vapor Density (Air = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water	N/A		
Appearance and color	Each battery cell is rectangular plastic container enclosing lead electrodes and sulfuric acid electrolyte.		

## Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	N/A	Flammable Limits	N/A	LEL	UEL
Extinguishing Media	Water, dry chemical. Do not use carbon dioxide (CO <sub>2</sub> ) extinguishers directly on plastic containers due to the possibility of thermal shock causing cracking and electrolyte leaking.				
Special Fire Fighting Procedures	Full protective clothing; NIOSH/MSHA-approved positive pressure self-contained breathing apparatus. Neutralize runoff with lime, soda ash, etc, to prevent corrosion of metals and formation of Hydrogen gas.				
Unusual Fire and Explosion Hazards	Sulfuric acid can react with oxidizing or reducing materials. When heated, it emits highly toxic fumes. Lead can react with oxidizing materials. When heated it emits highly toxic fumes.				

## Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	
Incompatibility (Materials to Avoid)	Sulfuric acid reacts vigorously with alkaline solutions, metals, metal powders, strong oxidizers, reducers and combustibles.		
Hazardous Decomposition or BY-products	Toxic fumes may be released if incinerated. Flammable Hydrogen gas produced during battery charging.		
Hazardous -	May Occur		Conditions to Avoid
Polymerization	Will not Occur	X	

## Section VI – Health Hazard Data

Route(s) of Entry	Inhalation? Yes	Skin? Yes	Ingestion? Yes
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### Health Hazards (Acute and Chronic)

Sulfuric acid – burns tissue contacted, including eye and corneal ulceration			
Lead – Short-term exposure due to inhalation of dust may cause seizure. Chronic exposure can lead to damage to blood-forming, nervous, urinary or reproductive systems.			
Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
	NO	NO	NO

Signs and Symptoms of Exposure: See Above

Medical Conditions General Aggravated by Exposure Individuals with pre-existing disease of the lungs may have increased susceptibility to the toxicity of excessive exposures.
Emergency and First Aid Procedures If sulfuric acid electrolyte is spilled, immediately flush skin of eyes for at least 15 minutes while removing contaminated clothing and shoes. Contact a physician. If swallowed, do not induce vomiting; drink large quantities of water or milk; contact a physician.

## Section VII – Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled Not usually applicable. However, in case sulfuric acid electrolyte is spilled, comply with federal, state and local regulations on reporting releases, containing spills and remediation. Contain spill to smallest possible area and absorb as appropriate.
Waste Disposal Method Comply with federal, state and local regulations. If approved, neutralize with soda ash or lime and transfer to waste treatment system.
Precautions to be Taken in Handling and Storing Avoid rough handling. Do not store above 140 degrees F. Always have water safety showers and eyewash fountains available.
Other Precautions No smoking regulations must be enforced due to Hydrogen generation during battery charging.

## Section VIII – Control Measures

Respiratory Protection (Specific Type) If incinerated, NIOSH/MSHA-approved positive pressure self-contained breathing apparatus.		
Ventilation	Local Exhaust Yes – discharge out of work area	Special
	Mechanical (General)	Other
Protective Gloves Rubber acid-proof gauntlet gloves.	Eye Protection Chemical splash goggles; full-length face shield.	
Other Protective Equipment Rubber or plastic apron and boots; long sleeve wool, acrylic or polyester clothing acid proof suit and hood.		
Work/Hygienic Practices Always use extreme care; wash thoroughly after handling.		

## Section IX – Transportation

Battery shipments from FIAMM Energy LLC, Waynesboro location, will be properly labeled in accordance with applicable DOT regulations. Because the batteries are classified as "Nonspillable" and meet the three conditions per sec. 173.159 (d) they do not have an assigned UN number nor do they require additional DOT hazard labeling.
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