



INFORMATION ONLY - Please read Section X

SECTION I - Product and Manufacturer Identity	
Product Identity: Aerospace and Defense Applications - Sealed Lead Batteries	Revision Date: July 5, 2009 Supersedes: February 6, 2007 Document #: MSDS 853026 Revised on ECO: 1000751
Aerospace and defense batteries manufactured using factory modified versions of Cyclon [®] , Genesis [®] , SBS, Hawker [®] , Armasafe Plus [®] or Large TPPL.	
Manufacturer's Name and Address: EnerSys Energy Products Inc. (formerly Hawker Energy Products Inc.) 617 North Ridgeway Drive Warrensburg, MO 64093-9301	Emergency Telephone Number: (660) 429-2165 Customer Service Telephone Number: 800-964-2837

SECTION II - Ingredients			
Hazardous Components	CAS #	OSHA PEL-TWA	% (By weight)
Lead	7439-92-1	50µg/m ³	45 - 60 %
Lead Dioxide	1309-60-0	50µg/m ³	15 - 25 %
Sulfuric Acid Electrolyte	7664-93-9	1.0 mg/m ³	15 - 20 %
Non-Hazardous Materials	N/A	N/A	5 - 10 %

SECTION III - Physical/Chemical Characteristics	
Boiling Point - N/A	Specific Gravity (H ₂ O=1) - NA
Vapor Pressure (mm Hg.) - N/A	Melting Point - N/A
Solubility in Water - N/A	Appearance & Color - N/A

SECTION IV - Fire & Explosion Hazard Data			
Flash Point (Method Used): N/A	Flammable Limits: N/A	LEL: N/A	UEL: N/A
Extinguishing Media: Multipurpose Dry chemical, CO ₂ or water spray.			
Special Fire Fighting Procedures: Cool Battery exterior to prevent rupture. Acid mists and vapors in a fire are toxic and corrosive.			
Unusual Fire and Explosion Hazards: Hydrogen gas may be produced and may explode if ignited. Remove all sources of ignition.			

SECTION V- Reactivity Data and Shipping/Handling Electrical Safety
Conditions to Avoid: Avoid shorting, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Avoid over-charging. Use only approved charging methods. Do not charge in gas tight containers.
Requirements for Safe Shipping and Handling of Cyclon [®] Cells: Warning – Electrical Fire Hazard – Protect Against Shorting <ul style="list-style-type: none"> • Terminals can short and cause a fire if not insulated during shipping. • Cyclon[®] product must be labeled "NONSPILLABLE" during shipping. Follow all federal shipping regulations. See section IX of this sheet and CFR 49 Parts 171 through 180, available anytime online at www.gpoaccess.gov.
Requirements for Shipping Cyclon [®] Product as Single Cells <ul style="list-style-type: none"> • Protective caps or other durable inert material must be used to insulate each terminal of each cell unless cells are shipping in the original packaging from EnerSys, in full box quantities. • Protective caps are available for all cell sizes by contacting EnerSys Customer Service at 1-800-964-2837.
Requirements for Shipping Cyclon [®] Product Assembled Into Multicell Batteries <ul style="list-style-type: none"> • Assembled batteries must have short circuit protection during shipping. • Exposed terminals, connectors, or lead wires must be insulated with a durable inert material to prevent exposure during shipping.

SECTION VI - Health Hazard Data	
Routes of Entry: N/A	Health Hazards (Acute & Chronic): N/A
Emergency & First Aid Procedures:	Battery contains acid electrolyte which is absorbed in the separator material. If battery case is punctured, completely flush any released material from skin or eyes with water.

SECTION VI - Health Hazard Data (Continued)

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. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.
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SECTION VII - Precautions for Safe Handling & Use

Steps to be taken in case material is released or spilled:	Avoid contact with acid materials. Use soda ash or lime to neutralize. Flush with water.
Waste Disposal Method:	Dispose of in accordance with Federal, State, & Local Regulations. Do not incinerate. Batteries should be shipped to a reclamation facility for recovery of the metal and plastic components as the proper method of waste management. Contact distributor for appropriate product return procedures.

SECTION VIII - Control Measures - Not Applicable

SECTION IX – Transportation, Shipping and Handling

EnerSys Energy Products Inc. batteries are starved electrolyte batteries which means the electrolyte is absorbed in the separator material. The batteries are also sealed. As of September 30, 1995, EnerSys Energy Products Inc. batteries were classified as "nonspillable batteries", and as such are not subject to the full requirements of 49 CFR § 173.159. The previous exempt classification, "Dry Batteries, Not Restricted" was discontinued effective September 30, 1995. "Nonspillable" batteries are excepted from the regulation's comprehensive packaging requirements if the following conditions are satisfied: (1) The battery is protected against short circuits and is securely packaged. (2) For batteries manufactured after September 30, 1995, the battery and outer packaging must be plainly and durably marked "NONSPILLABLE" or "NONSPILLABLE BATTERY". (3) The battery is capable of withstanding vibration and pressure differential tests specified in 49 CFR § 173.159(d). (4) At a temperature of 55 °C (131°F), the battery must not contain any unabsorbed free-flowing liquids, and is designed so that electrolyte will not flow from a ruptured or cracked case.

EnerSys Energy Products Inc. batteries have been tested by WYLE Scientific Services & Systems Laboratories Group and determined to be in compliance with the vibration tests, pressure differential tests, and the ruptured or cracked case tests contained in 49 CFR § 173.159(d), and therefore as of September 30, 1995, excepted from the DOT requirements set forth in 49 CFR § 173.159, other than paragraph (d).

Battery shipments from EnerSys Energy Products Inc. Warrensburg location, will be properly labeled in accordance with applicable DOT regulations.

Packaging changes performed at other locations may require additional labeling, since in addition to the battery itself containing the required marking, the outer packaging of the battery must also contain the required marking: "NONSPILLABLE" OR "NONSPILLABLE BATTERY". Because the batteries are classified as "Nonspillable" and meet the four conditions above, [from § 173.159(d)] they do not have an assigned UN number nor do they require additional DOT hazard labeling.

The regulation change effective September, 1995, was to clarify and distinguish to shippers and transporters, all batteries that have been tested and determined to be in compliance with the DOT Hazardous Material Regulations, the International Civil Aeronautics Organization (ICAO), and the International Air Transport Association (IATA) Packing Instruction 806 and Special Provision A67, and therefore excepted from all other requirements of the regulations and classified as a "nonspillable battery".

Per 42 USC Section 14322 (US Code Title 42 – The Public Health and Welfare), packaging must be marked with the following: "Contains Sealed Lead Battery" and "Battery Must Be Recycled".

SECTION X - Additional Information

The EnerSys Energy Products Inc. sealed lead acid battery is determined to be an "article" according to the OSHA Hazard Communication Standard and is thereby excluded from any requirements of the standard. The Material Safety Data Sheet is therefore supplied for informational purposes only.

The information and recommendations contained herein have been compiled from sources believed to be reliable and represent current opinion on the subject. No warranty, guarantee, or representation is made by EnerSys Energy Products Inc., as to the absolute correctness or sufficiency of any representation contained herein and EnerSys Energy Products Inc. assumes no responsibility in connection therewith, nor can it be assumed that all acceptable safety measures are contained herein, or that additional measures may not be required under particular or exceptional conditions or circumstances.

N/A or Not Applicable - Not applicable for finished product used in normal conditions.

Informational MSDS