



**MATERIAL SAFETY DATA SHEET**

Form # MSDS 853025  
 Revised: 07/05/09  
 Supersedes: 07/31/07  
 ECO #: 1000751

<b>I. PRODUCT IDENTIFICATION</b>					
<b>Chemical Trade Name (as used on label):</b> Industrial Nickel Cadmium Storage Battery w/ Pocket Plate (VARTA T, TP and TSP range)			<b>Chemical Family/Classification:</b> N/A		
<b>Manufacturer's Name/Address:</b> EnerSys P.O. Box 14145 2366 Bernville Road Reading, PA 19612-4145			<b>Telephone:</b> For information and emergencies, contact EnerSys' Environmental, Health & Safety Dept. at 610-208-1996 <b>24-Hour Emergency Response Contact:</b> CHEMTREC DOMESTIC: 800-424-9300 CHEMTREC INT'L: 703-527-3877		
<b>II. HAZARDOUS INGREDIENTS/IDENTIFY INFORMATION</b>					
Components	CAS Number	Approximate % by Wt. Or Vol.	Air Exposure Limits (ug/m <sup>3</sup> )		
			OSHA	ACGIH	NIOSH
Nickel (As Nickel and Nickel hydroxide)	7440-02-0 1205-44-87	9-10	1.0	0.1	0.015
Cadmium (As Cadmium And Cadmium Hydroxide)	7440-43-9 21041-95-2	8-10	0.005	0.01	N/A
Iron (Fe)	7439-89-6	20-25	10.0	5.0	5.0
Stainless Steel (Fe, Ni, Cr)	N/A	7-15	N/A	N/A	N/A
Cobalt (as Cobalt hydroxide)	7440-48-4	0	0.1	0.02	0.05
Potassium hydroxide Solution (KOH)	1310-58-3	30-40	N/A	N/A	2.0
Lithium Hydroxide Solution (LiOH)	1310-66-3	<1	N/A	N/A	N/A
<b>III. PHYSICAL DATA</b>					
<b>Electrolyte:</b>					
<b>Boiling Point:</b>	N/A	<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	1.2 kg/l		
<b>Melting Point:</b>	N/A	<b>Vapor Pressure (mm Hg):</b>			
<b>Solubility in Water:</b>	100%	<b>Vapor Density (AIR = 1):</b>			
<b>Evaporation Rate: (Butyl Acetate = 1)</b> (Butyl acetate = 1)		<b>% Volatile by Weight:</b>			
<b>Appearance and Odor:</b>	Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.				
<b>IV. FIRE AND EXPLOSION HAZARD DATA</b>					
<b>Flash Point:</b> N/A	<b>Flammable Limits:</b> LEL = N/A		UEL =N/A		
<b>Extinguishing Media:</b> Dry chemical, CO <sub>2</sub> , water spray, or alcohol-resistant foam.					
<b>Special Fire Fighting Procedures:</b>					
Use full body protective clothing and full face piece. Self-contained breather apparatus in a positive pressure mode. Molted and overheated Cd and Ni produce fume, vapor or dust. Under these conditions, Ni or Cd is suspected carcinogen. KOH is highly caustic. Contact with eye and skin must be avoided. No heating or smoking during handling or inspection. Do not cause sparks.					
<b>V. REACTIVITY DATA</b>					
<b>Stability:</b> Stable					
<b>Conditions To Avoid:</b> Avoid shorting batteries such as contacting across terminals with any metal object. Avoid continuous temperatures over 190 degrees F.					
<b>Incompatibility: (Materials to avoid)</b> Do not fill cells with Lead Acid Battery electrolyte (Sulfuric Acid).					
<b>Hazardous Decomposition Products:</b> Nickel compounds, Cadmium compounds, and caustic liquid.					
<b>VI. HEALTH HAZARD DATA</b>					
<b>Inhalation:</b> Fumes irritate nose and throat but fumes generated only if batteries are on charge (not a transportation condition).					
<b>Ingestion:</b> Severe irritation of internal tissues. Contact physician immediately.					
<b>Skin Contact:</b> Sever irritation and inflammation. Flush with water. Obtain medical attention.					
<b>Skin Absorption:</b> Severe irritation and inflammation. Flush with water. Obtain medical attention.					
<b>Eve Contact:</b> Severe irritation. Possible corneal damage. Flush with water for 15 minutes.					



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EMERGENCY AND FIRST AID PROCEDURES:

Inhalation:

Not applicable to batteries in transit but if on charge in confined, poorly ventilated area and fumes irritating, remove person to fresh air.

Ingestion:

Get medical help. Give patient copious amounts of water. Do not induce vomiting.

Skin:

Remove contaminated clothing and flush skin with water for 15 minutes. Do not attempted to neutralize with alkaline.

Eyes:

Hold eyelids open an flush with clean water for 15 minutes. Get medical help promptly.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Spill or Leak Procedures:

Clean up personnel should wear safety goggles, rubber gloves, rubber boots and rubber apron. Use weak acids, ex: boric acid, acetic acid.

Waste Disposal Methods:

Consult waste disposal business for proper disposition. Do not empty in common sewer systems.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE (Cont.)

Handling and Storage:

Rubber boots and rubber aprons, chemical goggles or full-face shield should be worn while handling. Cells/Batteries to be stored in standard battery room conditions.

VIII. CONTROL MEASURES

Personal Protective Equipment:

Rubber gloves, safety goggles, alkaline resistant protective clothing.

IX. OTHER REGULATORY INFORMATION

IATA:

The international transportation of wet and moist charged (moist active) batteries is regulated by the International Air Transport Association (IATA). These regulations also classify these types of batteries as a hazardous material. The batteries must be packed according to IATA Packing Instruction 800.

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with alkali
Hazardous Class: 8
UN Identification: UN2795
Packing Group: III
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

IX. OTHER REGULATORY INFORMATION (Cont.)

IMDG:

The international transportation of wet and moist charged (moist active) batteries is regulated by the International Maritime Dangerous Goods code (IMDG). These regulations also classify these types of batteries as hazardous material. The batteries must be packed according to IMDG code pages 8120 and 8121.

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with alkali
Hazardous Class: 8
UN Identification: UN2795
Packing Group: III
Label/Placard Required: Corrosive

RCRA:

Spent nickel-cadmium batteries are regulated as universal waste by the EPA when recycled, however state and international regulations may vary.

CERCLA (Superfund) and EPCRA:

(a) EPCRA Section 312 Tier 2 reporting is required for batteries if potassium hydroxide, nickel and/or cadmium is present in quantities of 10,000 lbs. or more.

(b) Supplier Notification: This product contains toxic chemicals, which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements.

If you are a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

Table with 3 columns: Toxic Chemical, CAS Number, Approximate % by Wt. Rows include Nickel, Cadmium, and Cobalt.

If you distribute this product to other manufacturers in SIC Codes 20 through 39, this information must be provided with the first shipment of each calendar year.

The Section 313 supplier notification requirement does not apply to batteries, which are "consumer products".

(c) TSCA:

Ingredients in EnerSys' batteries are listed in the TSCA Registry as follows:

Table with 3 columns: Components, CAS Number, TSCA Status. Rows include Nickel, Cadmium, Iron, Potassium Hydroxide, Cadmium Hydroxide, and Cobalt.



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**CAA:** EnerSys supports preventative actions concerning ozone depletion in the atmosphere due to emissions of CFC's and other ozone depleting chemicals (ODC's), defined by the USEPA as Class I substances. Pursuant to Section 611 of the Clean Air Act Amendments (CAAA) of 1990, finalized on January 19, 1993, EnerSys established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.