



**SAFETYDATASHEET**  
**LEAD ACID BATTERY WET,**  
**FILLED WITH ACID**

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** Lead Acid Battery Wet, Filled With Acid  
**OTHER PRODUCT NAMES:** Electric Storage Battery, UN2794

**MANUFACTURER:** East Penn Manufacturing Company  
**ADDRESS:** Deka Road  
 Lyon Station, PA 19536 USA

**EMERGENCY TELEPHONE NUMBERS:** US/CN: CHEMTREC 1-800-424-9300 Outside  
 US/CN: CHEMTREC 1-703-527-3887




**NON-EMERGENCY HEALTH/SAFETY INFORMATION:** 610-682-6361

**CHEMICAL FAMILY:** This product is a wet lead acid storage battery. May also include gel/absorbed electrolyte lead acid battery types.

**PRODUCT USE:** Industrial/Commercial electrical storage batteries.

**SECTION 2: HAZARDS IDENTIFICATION**

GHS Classification:

Health	Environmental	Physical
Acute Toxicity – Category 4 Skin Corrosion – Category 1A Eye Damage – Category 1 Reproductive – Category 1A Carcinogenicity (lead)– Category 1B Carcinogenicity (arsenic)– Category 1A Carcinogenicity(acid mist)–Category1A Specific Target Organ Toxicity (repeated exposure) –Category 2  GHS Label:	Aquatic Chronic – 1 Aquatic Acute – 1 	Explosive Chemical, Division 1.3 

**Signal Word: DANGER !**



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<u>Hazard Statements</u>	<u>Precautionary Statements</u>
<p><b><u>Health</u></b>            Harmful if swallowed, inhaled, or in contact with skin.            Causes severe skin burns and eye damage.            Causes serious eye damage.            May damage fertility or the unborn child if ingested or inhaled.            May cause cancer if ingested or inhaled.            Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure if ingested or inhaled.            May cause harm to breast-fed children.</p> <p><b><u>Environmental</u></b>            Very toxic to aquatic life with long lasting effects.</p> <p><b><u>Physical</u></b>            May form explosive air/gas mixture during charging.            Extremely flammable gas (hydrogen).            Explosive; fire, blast or projection hazard.            Obtain special instructions before use.            Do not handle until all safety precautions have been read and understood.</p>	<p><b><u>Prevention</u></b>            Wash thoroughly after handling.            Do not eat, drink or smoke when using this product.            Wear protective gloves/protective clothing, eye protection/face protection.            Avoid breathing dust/fume/gas/mist/vapors/spray.            Use only outdoors or in a well-ventilated area.            Causes skin irritation, serious eye damage.            Contact with internal components may cause irritation or severe burns.            Avoid contact with internal acid.            Irritating to eyes, respiratory system, and skin.            Avoid contact during pregnancy/while nursing.</p> <p><b><u>Response</u></b>            IF SWALLOWED OR CONSUMED: rinse mouth, Do NOT induce vomiting.            Call a poison center/doctor if you feel unwell.            IF ON CLOTHING OR SKIN (or hair): Remove/Take off immediately all contaminated clothing and wash it before reuse.            Rinse skin with water/shower.            IF INHALED: Remove person to fresh air and keep comfortable for breathing.            Immediately call a POISON CENTER or doctor/physician.            IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.            If exposed/concerned, or if you feel unwell seek medical attention/advice.</p> <p><b><u>Storage and Disposal</u></b>            Store locked up, in a well-ventilated area. In accordance with local and national regulation.            Avoid release to the environment.            Collect spillage.            Dispose of contents/container in accordance with local/regional/national/international regulations.            Keep away from heat/sparks/open flames/hot surfaces.            No smoking.            Use only outdoors or in well ventilated area Keep out of reach of children.</p>

**EMERGENCY OVERVIEW:** May form explosive air/gas mixture during charging. Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin. Prolonged inhalation or ingestion may result in serious damage to health. Pregnant women exposed to internal components may experience reproductive/developmental effects.

**Additional Information**  
 No health effects are expected related to normal use of this product as sold.

<b>SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS</b>			
<b><u>INGREDIENTS (Chemical/Common Names):</u></b>	<b><u>CAS No.:</u></b>	<b><u>% by Wt:</u></b>	<b><u>EC No.:</u></b>
Lead and Lead Compounds, inorganic	7439-92-1	43-70 (average: 65)	231-100-4
Electrolyte (Sulfuric acid and water)	7664-93-9	20-44 (average: 25)	231-639-5
Antimony	7440-36-0	0-4 (average: <1)	231-146-5





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Polypropylene

9003-07-0 5-10 (average: 8) NA NA  
– Not applicable/ND – Not determined

### Additional Information

These ingredients reflect components of the finished product related to performance of the product as distributed into commerce. Inorganic lead, lead compounds and electrolyte (sulfuric acid) are the primary components. Other metals (ie. Sn, Cu, As) may be present at concentrations below the applicable reporting threshold.

### SECTION 4: FIRST AID MEASURES

- EYE CONTACT:** Sulfuric Acid and Lead: Flush eyes immediately with large amounts of water for at least 15 minutes while lifting lids. Seek immediate medical attention if eyes have been exposed directly to acid.
- SKIN CONTACT:** Sulfuric Acid: Flush affected area(s) with large amounts of water using deluge emergency shower, if available, shower for at least 15 minutes. Remove contaminated clothing, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes.  
Lead: Wash immediately with soap and water.
- INGESTION:** Sulfuric Acid: Give large amounts of water. Do **NOT** induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death; consult physician.
- INHALATION:** Sulfuric Acid: Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.  
Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

### SECTION 5: FIRE-FIGHTING MEASURES

**FLASH POINT:** Not Applicable.

**FLAMMABLE LIMITS:** LEL= 4.1% (Hydrogen Gas in air); UEL=74.2%

**EXTINGUISHING MEDIA:** CO<sub>2</sub>; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire.

**FIRE-FIGHTING PROCEDURES:** Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

**HAZARDOUS COMBUSTION PRODUCTS:** Highly flammable hydrogen gas is generated during charging and operation of batteries. If ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Carefully follow manufacturer's instructions for installation and service. Keep away all sources of gas ignition and do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery.

### Additional Information

Fire-fighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

Stop flow of material, contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of un-neutralized acid to sewer. Acid must be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

### Additional Information

Lead acid batteries are recyclable. Contact your East Penn representative for recycling information.

### SECTION 7: HANDLING AND STORAGE

**Handling:** Unless involved in recycling operations, do not breach the casing or empty the contents of the battery. Handle carefully and avoid tipping, which may allow electrolyte leakage. There may be increasing risk of electric shock from strings of connected batteries. Keep containers tightly closed when not in use. If battery case is broken, avoid contact with internal components. Keep



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vent caps on and cover terminals to prevent short circuits. Place cardboard between layers of stacked automotive batteries to avoid damage and short circuits. Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water. Use banding or stretch wrap to secure items for shipping.

**Storage:** Store batteries under roof in cool, dry, well-ventilated areas separated from incompatible materials and from activities that may create flames, spark or heat. Store on smooth, impervious surfaces provided with measures for liquid containment in the event of electrolyte spills. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short-circuit.

**Charging:** There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Limits (mg/m<sup>3</sup>)**

Ingredients	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead, inorganic	0.05	0.05	0.05	0.05	0.05	0.15 (b)
Antimony	0.5	0.5	0.5	0.5	0.5	0.5 (b,d)
Tin	2	2	2			
Copper	1	1	1	1	1 (a)	0.1 (e)
Arsenic	0.01	0.01	0.01			
Sulfuric Acid	1	0.2	1	1	0.2	0.05 (c)
Polypropylene	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.

(a) As dusts/mists (b) As inhalable aerosol (c) Thoracic fraction (d) Based on OEL's of Austria, Belgium, Denmark, France, Netherlands, Switzerland, & U.K. (e) Based on OEL of Netherlands

**ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:**

Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant. Handle batteries cautiously, do not tip to avoid spills. Make certain vent caps are on securely. If battery case is damaged, avoid bodily contact with internal components. Wear protective clothing, eye and face protection, when filling, charging, or handling batteries. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Charge batteries in areas with adequate ventilation. General dilution ventilation is acceptable.

**RESPIRATORY PROTECTION (NIOSH/MSHA approved):**

None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

**EYE PROTECTION:**

If battery case is damaged, use chemical goggles or face shield.

**SKIN PROTECTION:**

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

**OTHER PROTECTION:** In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply. Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries. **Wash Hands after handling.**





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### Additional Information

x Batteries are housed in polypropylene cases which are regulated as total dust or respirable dust only when they are ground up during recycling. The OSHA PEL for dust is 15 mg/m<sup>3</sup> as total dust or 5 mg/m<sup>3</sup> as respirable dust. x May be required to meet Domestic Requirements for a Specific Destination(s).

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	
ODOR:	Industrial/commercial lead acid battery Odorless
ODOR THRESHOLD:	Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.
PHYSICAL STATE:	Sulfuric Acid: Liquid; Lead: solid
pH:	~1 to 2
BOILING POINT:	203-240° F (as sulfuric acid)
MELTING POINT:	NA
FREEZING POINT:	NA
VAPOR PRESSURE:	10 mmHg
VAPOR DENSITY (AIR = 1):	> 1
SPECIFIC GRAVITY (H <sub>2</sub> O = 1):	1.215-1.350
EVAPORATION RATE (n-BuAc=1):	< 1
SOLUBILITY IN WATER:	100% (as sulfuric acid)
FLASH POINT:	Below room temperature (as hydrogen gas)
AUTO-IGNITION TEMPERATURE:	NA
LOWER EXPLOSIVE LIMIT (LEL):	4% (as hydrogen gas)
UPPER EXPLOSIVE LIMIT (UEL):	74% (as hydrogen gas)
PARTITION COEFFICIENT:	NA
VISCOSITY (poise @ 25° C):	Not Available
DECOMPOSITION TEMPERATURE:	Not Available

### SECTION 10: STABILITY AND REACTIVITY

STABILITY:	This product is stable under normal conditions at ambient temperature.
INCOMPATIBILITY (MATERIAL TO AVOID):	<u>Electrolyte:</u> Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas. <u>Lead compounds:</u> Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents. <u>Arsenic compounds:</u> strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-arsine
HAZARDOUS DECOMPOSITION BYPRODUCTS:	<u>Electrolyte:</u> Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide. <u>Lead compounds:</u> Temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.
HAZARDOUS POLYMERIZATION: CONDITIONS TO AVOID:	Will not occur Prolonged overcharge at high current; sources of ignition.

### SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (Test Results Basis and Comments):  
Inhalation LD<sub>50</sub>:



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Electrolyte: LC<sub>50</sub> rat 375 mg/m<sup>3</sup>; LC<sub>50</sub>: guinea pig: 510 mg/m<sup>3</sup>

Elemental Lead: Acute Toxicity Point Estimate =4500 ppm V (based on lead bullion) Elemental

Arsenic: No data

Oral LD<sub>50</sub>:

Electrolyte: rat 2140 mg/kg

Elemental Lead: Acute Toxicity Estimate (ATE) = 500mg/kg body weight (based on lead bullion)

Elemental Arsenic: LD<sub>50</sub> mouse: 145 mg/kg

Elemental Antimony: LD<sub>50</sub> rat: 100 mg/kg

**Routes of Entry:** Sulfuric Acid: Harmful by all routes of entry. Lead Compounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume. The presence of nascent hydrogen may generate highly toxic arsine gas.

**Inhalation:** Sulfuric Acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.  
Lead Compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

**Ingestion:** Sulfuric Acid: May cause severe irritation of mouth, throat, esophagus and stomach. Lead Compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

**Skin Contact:** Sulfuric Acid: Severe irritation, burns and ulceration. Lead Compounds: Not absorbed through the skin. Arsenic Compounds: Contact may cause dermatitis and skin hyperpigmentation.

**Eye Contact:** Sulfuric Acid: Severe irritation, burns, cornea damage, and blindness. Lead Compounds: May cause eye irritation.

**Effects of Overexposure Acute:** Sulfuric Acid: Severe skin irritation, damage to cornea, upper respiratory irritation. Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

**Effects of Overexposure – Chronic:** Sulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat & bronchial tubes. Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

**Carcinogenicity:** Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category I carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist. Lead Compounds: Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present. Arsenic: Listed by National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.

**Medical Conditions Generally Aggravated by Exposure:** Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

#### **Additional Health Data:**

All heavy metals, including the hazardous ingredients in this product, are taken into the body primarily by inhalation and ingestion. Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8. Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the work site. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment.





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The 19<sup>th</sup> Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction. Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

**SECTION 12: ECOLOGICAL INFORMATION**

**Environmental Fate:** Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead.

**Environmental Toxicity:**

**Sulfuric acid:** 24-hr LC<sub>50</sub>, fresh water fish (*Brachydanio rerio*): 82 mg/l  
 96-hr LOEC, fresh water fish (*Cyprinus carpio*): 22 mg/l (lowest observable effect concentration)  
**Lead :** 48-hr LC<sub>50</sub> (modeled for aquatic invertebrates): <1mg/L, based on lead bullion  
**Arsenic:** 24-hr LC<sub>50</sub>, freshwater fish (*Carrassius auratus*)>5000g/L

**Additional Information x** No known effects on  
 stratospheric ozone depletion. x Volatile organic  
 compounds: 0% (by Volume) x Water  
 Endangering Class (WGK): NA

**SECTION 13: DISPOSAL CONSIDERATIONS (UNITED STATES)**

**WASTE DISPOSAL**

**METHOD:** representative for more information related to lead acid battery recycling. **Spent batteries:** Send to secondary lead smelter for recycling. Contact your East Penn Mfg. Spent lead acid batteries are not regulated as hazardous waste when the requirements of 40 CFR Section 266.80 are met. If applicable; EPA hazardous waste number D002 (corrosivity) and D008 (lead). **Electrolyte:** Place neutralized slurry into sealed acid resistant containers and dispose of as hazardous waste, as applicable. Large water diluted spills, after neutralization and testing, should be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA. Follow local, State/Provincial, and Federal/National regulations applicable to as-used, end-of-life characteristics to be determined by end-user.

**SECTION 14: TRANSPORT INFORMATION**

DOT rules specified in 49 CFR 173.159 Batteries, wet, regulate the transport of wet spillable batteries. 49 CFR 173.159 (e) specifies that when transported by highway or rail, electric storage batteries containing electrolyte or corrosive battery fluid are not subject to any other requirements of this subchapter, if all of the following are met:

- (1) No other hazardous materials may be transported in the same vehicle;
- (2) The batteries must be loaded or braced so as to prevent damage and short circuits in transit;
- (3) Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batteries; and
- (4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.

If any of these requirements are not met, the batteries must be shipped as fully regulated Class 8 Corrosive hazardous materials.

**GROUND – US-DOT/CAN-TDG/EU-ADR/APEC-ADR:**

Proper Shipping Name	Batteries, Wet, Filled with Acid	ID Number	UN2794
Hazard Class	8	Labels	Corrosive
Packing Group	NA		
<b>AIRCRAFT – ICAO-IATA:</b>			
Proper Shipping Name	Batteries, Wet, Filled with Acid	ID Number	UN2794
Hazard Class	8	Labels	Corrosive
Packing Group	NA		

Reference IATA packing instructions 870 **VESSEL**

**– IMO-IMDG:**

Proper Shipping Name	Batteries, Wet, Filled with Acid	ID Number	UN2794
Hazard Class	8		







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See 40 CFR Part 370 for more details.

Additional Information

This product may be subject to Restriction of Hazardous Substances (RoHS) regulations in Europe and China, or may be regulated under additional regulations and laws not identified above, such as for uses other than described or asdesigned/as-intended by the manufacturer, or for distribution into specific domestic destinations.

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**SECTION 16: OTHER INFORMATION**

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**OTHER INFORMATION:**

NFPA Hazard Rating for Sulfuric acid:  
Flammability (Red) = 0  
Health (Blue) = 3  
Reactivity (Yellow) = 2  
Sulfuric acid is water-reactive if concentrated.

Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).  
Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

**SDS PREPARATION INFORMATION:**

DATE OF ISSUE: 13 May 2015

**DISCLAIMER:**

This Safety Data Sheet is based upon information and sources available at the time of preparation or revision date. Information in the SDS was obtained from sources which we believe are reliable, but are beyond our direct supervision or control. We make no Warranty of Merchantability, Fitness for any particular purpose or any other Warranty, Expressed or Implied, with respect to such information and we assume no liability resulting from its use. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the obligation of each user of this product to determine the suitability of this product and comply with the requirements of all applicable laws regarding use and disposal of this product. For additional information concerning East Penn Manufacturing Co. products or questions concerning the content of this SDS please contact your East Penn representative.