

# 2023 Off Site Plan: City of Merrill – Wastewater

Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

# **Table of Contents**

I.	Facility Information			
II.	Facility Emergency Contacts			
III.	Extremely Hazardous Substances (EHS)			
IV.	Primary Emergency Responders			
V.	Support Available at Facility			
VI.	General information and Assumptions (Disclaimer)7			
VII.	Hazard Analysis Summary7			
VIII	Population Protection			
IX.	Distribution List			
X.	Supporting Documentation			
Atta	chment A, Record of Change and Review			
Atta	chment B, Facility Layout and Site Information			
Atta	chment C, Transportation Routes Map16			
Atta	Attachment D, Safety Date Sheet for Chlorine			
Atta	chment E, Vulnerability Zone Map for Chlorine			

# I. Facility Information

## A. City of Merrill--Wastewater

- 1. Address: 1004 East 1<sup>st</sup> Street, Merrill, WI 54452
- 2. Phone: (715) 536-6561
- 3. Facility ID # (Assigned by WEM): 60969

# **II.Facility Emergency Contacts**

# A. Tier II Contact:

- 1. Name: Gabe Steinagel
- 2. Position: Utility Manager
- 3. Office Phone: (715) 536-6561
- 4. Emergency Phone: (715) 218-1849
- 5. Email: Gabriel.steinagel@ci.merrill.wi.us

# **B.** Tier II Emergency Coordinator:

- 1. Name: Josh Klug
- 2. Position: Merrill Fire Department—Chief
- 3. Emergency Phone: (715) 536-6561
- 4. Emergency Phone: (715) 218-0815
- 5. Email: josh.klug@ci.merrill.wi.us

# III. Extremely Hazardous Substances (EHS)

# A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)
7782-50-5	Chlorine	1,350	1,350	> 10 miles

# **IV.** Primary Emergency Responders

## A. Lincoln County Sheriff's Office

1. Phone: 911 or (715) 563-6272

# B. Lincoln County Sheriff's Office Emergency Communications Center

1. Phone: 911 or (715) 563-6272

## C. Lincoln County Emergency Management

1. Phone: (715) 218-0128

# **D.** Merrill Fire Department

1. Phone: 911 or (715) 536-2233

## E. Merrill Police Department

1. Phone: 911 or (715) 536-8311

# V. Support Available at Facility

# A. Chemical Emergency Monitoring Equipment:

1. OSHA-required air monitoring equipment.

# **B.** Personal Protective Equipment:

1. None

## C. Other Equipment or Supplies:

1. City of Merrill employs a full-time fire service which is capable of handling minor hazardous materials incidents.

### **D.** Outside Resources Available:

- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

The Tomahawk Fire Department is capable of handling minor hazardous materials incidents; however, if the incident exceeds the ability/capability of Tomahawk Fire Department LCSO Communications Center will request the appropriate agency. Lincoln County contracts with two (2) external hazmat response teams dependent on level of release, for Level B response Oneida County Sheriff Office Hazardous Materials Response Team; whereas, for Level A response Wausau Wisconsin Hazardous Response Team.

For Level A incidents, the response of Wausau Wisconsin Hazardous Response Team must be requested through the Wisconsin Emergency Management (WEM) State Emergency Operations Center (SEOC). Contact the WEM SEOC Duty Officer at (800) 943-0003 for response.

- 2. Chemtrec: (800) 424-9300
  - a) Unknown response time
- 3. National Response Center: (800) 424-8802
  - *a)* Unknown response time
- 4. REI—Spill & Response Recovery: (800) 734-7745
  - a) Unknown response time

# VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

# VII. Hazard Analysis Summary

The City of Merrill—Wastewater is a treatment plant for the residents for the city. The treatment plant is located on the south-east side of the city near the banks of the Wisconsin River. The treatment plant is manned from 7:00 AM to 3:30 PM every day of the year. In regards to electrical malfunction and flooding there are alarms wired to an auto-dialer which goes directly to Merrill Police Department for 24-hour protection.

# A. Greatest Potential for Release

1. The greatest potential for release is a 1,350 lb cylinder of chlorine at the facility.

# **B.** Vulnerability Zones (by chemical)

Chlorine: CAS #7782-50-5					
Amount Released:	1,350 lbs.				
Concentration:	100%				
Physical State:	Gas				
Diked Area:	No				
Level of Concern (LOC):	$0.073 \text{ gm/m}^3$				
LOC Type:	Greenbook LO	OC			
Worst Case Scenario		<b>Re-Evaluation Scenario</b>	Re-Evaluation Scenario		
Duration:	10 minute	s <b>Duration</b>	10 minutes		
Wind Speed:	3.4 mph	Wind Speed:	11.9 mph		
Ground Roughness:	Rural	Ground Roughness:	Urban		
Atmospheric Stability Clas	s: F	Atmospheric Stability Class:	D		
Risk:	Low	Risk:	Low		
Consequences:	Low	Consequences:	Low		
Overall Risk:	Low	Overall Risk:	Low		
Threat Zone Radius:	> 10 miles	s Threat Zone Radius:	0.4 miles		

# C. Estimation of Population Affected

- 1. Chlorine
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance has the potential of 9,337 of the general population and twenty (20) special facilities.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance has the potential of 9,337 of the general population and one (1) special facilities affected.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

## **D.** Critical Infrastructure

- 1. City of Merrill-Wastewater
  - a) 1004 East 1<sup>st</sup> Street, Merrill, WI 54452
  - b) (715) 536-6561

## E. Hospital

- 1. Aspirus Merrill Hospital
  - a) 601 South Center Avenue, Merrill, WI 54452
  - b) (715) 536-5511

## F. Nursing Homes/Assisted Living Facilities

- 1. Pine Crest Nursing Home
  - a) 2100 East 6<sup>th</sup> Street, Merrill, WI 54452
  - b) (715) 536-0355
- 2. Bell Tower Residence Assisted Living
  - a) 1500 O Day Street, Merrill, WI 54452
  - b) (715) 841-9895
- 3. Woodland Court Elder Services, LLC.
  - a) 1102 South Center Avenue, Merrill, WI 54452
  - b) (715) 536-3399
- 4. Kindhearted Home Care, LLC.
  - a) 120 South Mill Street, Merrill, WI 54452
  - b) (715) 218-3772
- 5. Merrill Senior Center
  - a) 303 North Sales Street, Merrill, WI 54452
  - b) (715) 536-4226

- 6. Our Way, Inc.
  - a) 1207 West Taylor Street #700B, Merrill, WI 54452
  - b) (715) 722-0980

# G. Schools

- 1. Merrill High School
  - a) 1201 North Sales Street, Merrill, WI 54452
  - b) (715) 536-4594
- 2. Prairie River Middle School
  - a) 106 North Polk Street, Merrill, WI 54452
  - b) (715) 536-9593
- 3. Washington Elementary School
  - a) 1900 East 6<sup>th</sup> Street, Merrill, WI 54452
  - b) (715) 536-2373
- 4. Kate Goodrich Elementary School
  - a) 505 West 10<sup>th</sup> Street, Merrill, WI 54452
  - b) (715) 536-5233
- 5. Trinity Merrill Lutheran School
  - a) 611 West Main Street, Merrill 54452
  - b) (715) 536-7501
- 6. Merrill Adult Diploma Academy
  - a) 1004 East Street, Merrill, WI 54452
  - b) (715) 536+1431

# H. Child Care/Day Care

- 1. Merrill Child Care
  - a) 503 South Center Avenue, Merrill, WI 54452
  - b) (715) 539-2477
- 2. Trinity Lutheran Child Care
  - a) 201 Strange Street, Merrill, WI 54452
  - b) (715) 722-0523
- 3. Crystal's Country Daycare
  - a) W5398 Taylor Street, Merrill, WI 54452
- 4. Parkside Pre-School Center
  - a) 207 East 1<sup>st</sup> Street, Merrill, WI 54452
  - b) (715) 536-7716
- 5. Tender Hearts, Precious Moments
  - a) 1209 Jackson Street, Merrill, WI 54452
  - b) (715) 409-9849
- 6. Merrill Head Start
  - a) 1107 North Sales Street
  - b) (715) 539-8361

- 7. Believe & Achieve Learning & Recreational Center
  - a) 101 East 1<sup>st</sup> Street, Merrill, WI 54452
  - b) (715) 539-3444

# **VIII. Population Protection**

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

# IX. Special Considerations

# A. None

# X. Distribution List

- City of Merrill—Wastewater
- Merrill Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Marathon County Emergency Management

# **XI.** Supporting Documentation

## A. Attachments

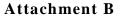
- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Chlorine
- 5. Attachment E, Vulnerability Zone Map for Chlorine

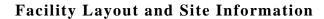
# Attachment A

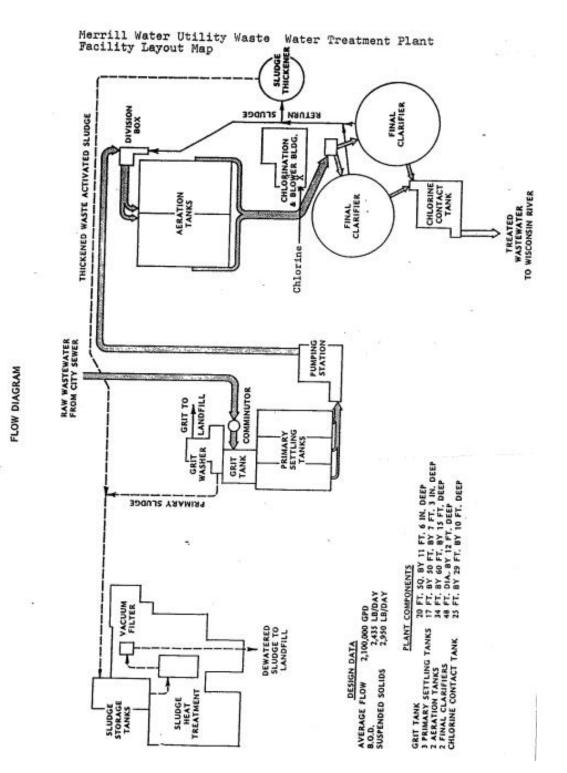
# **Record of Change and Review**

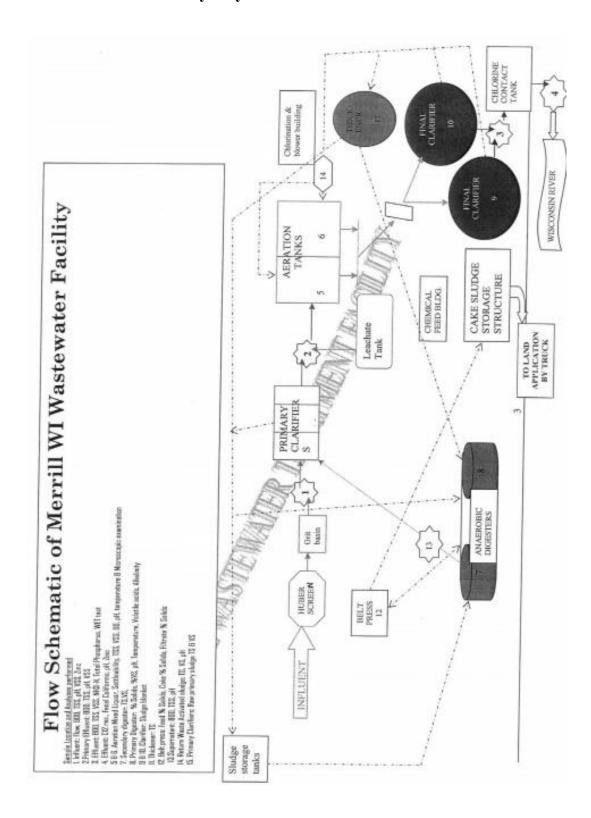
Date	Contributor	Description of Change	Page Number(s)
12-5-2023	T. Verhasselt and G. Steinagel	Authored plan and reviewed with City of Merrill for accuracy.	Pgs. 1-23

Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.









Attachment B cont. Facility Layout and Site Information

2023 Off Site Plan City of Merrill—Wastewater

# Attachment C

# **Transportation Route Map**



### Attachment D

### Safety Data Sheet for Chlorine

### MATERIAL SAFETY DATA SHEET

CHLORINE Product ID: CL000000 Revised: 12-22-2009 Replaces: 12-22-2009

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Synonyms: CAS Number: Chemical Family: Formula:

Liquid Chlorine 7782-50-5 Halogen Cl2

CHLORINE

Hydrite Chemical Co. 300 N. Patrick Blvd. Brookfield, WI 53008-0948 (262) 792-1450 EMERGENCY RESPONSE NUMBERS: 24 Hour Emergency #: (414) 277-1311 CHEMTREC Emergency #: (800) 424-9300

#### 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGERI CORROSIVE. TOXIC. Causes severe burns to eyes, skin, and respiratory tract. Liquified, nonflammable gas under pressure. Harmful or fatal if swallowed. Harmful or fatal if inhaled. May be harmful if absorbed through the skin. STRONG OXIDIZER! May ignite organic materials and react with other materials.

 Physical State:
 Liquid. Gas.

 Color:
 Amber. Greenish-yellow.

 Odor:
 Pungent irritating odor.

#### POTENTIAL HEALTH EFFECTS

Routes of Exposure: Absorption. Eyes. Ingestion. Inhalation. Skin.

Target Organs: Eyes. Respiratory System. Skin.

Eye Contact: CORROSIVE-Causes severe irritation and burns. Causes: permanent eye damage. blurred vision. blindness. May cause: frostbite. Contact with compressed liquid or escaping gas can cause frostbite injury.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Causes: permanent skin damage. Contact may cause: dermatitis (inflammation of the skin). frostbite. Contact with compressed liquid or escaping gas can cause frostbite injury.

Skin Absorption: May be harmful if absorbed through skin.

Inhalation: May be corrosive to the respiratory tract. Severe irritation and burns may result. Poison. May be fatal if inhaled. May irritate or burn: nose, throat, respiratory tract. May cause; central nervous system depression, permanent damage, pulmonary edema, circulatory failure, unconsciousness, death. Effects may be delayed.

Ingestion: This product is a gas at room temperature. Swallowing this material is unlikely. May cause damage to the: gastrointestinal tract. liver. kidneys. central nervous system. May cause: gastrointestinal irritation. nausea. vomiting. diarrhea.

Medical Conditions Aggravated by Exposure to Product: Respiratory system disorders. Asthma. Skin disorders. Bronchitis. Emphysema. Cardiovascular disorders.

Other: Repeated exposures can result in loss of ability to detect the odor of chlorine. Long term exposures may cause damage to teeth and inflammation or ulceration of the nasal passages. Long term overexposure may produce upper airway changes leading to an increased prevalence of colds, shortness of breath, and reactive airway dysfunction syndrome.

#### Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Potential Environmental Effects: See Section 12.

### Safety Data Sheet for Chlorine

CHLORINE Product ID: CL000000		
3. COMPOSITION/INFORMATION ON INGREDIENTS		
Component Chlorine	CAS Number 7782-50-5	<u>% by Wt.</u> 99.5 - 100 %

#### 4. FIRST-AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Washing eyes within several seconds is essential to achieve maximum effectiveness.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Wash with soap and water. Do not attempt to remove frozen clothing from frostbitten areas.

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY. Keep warm and quiet.

Ingestion: If swallowed, call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Have person sip a glass of water if able to swallow.

#### Note to Physicians:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Probable mucosal damage may contraindicate the use of gastric lavage. Delayed pulmonary edema may occur 48-72 hours after exposure in individuals with alveolar injury. Treatments with steroids and bicarbonate have been reported.

#### 5. FIRE FIGHTING MEASURES

Extinguishing Media: Use agent suitable for surrounding fire. DO NOT USE: Direct water stream.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-Approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers, but avoid getting water into containers. Stop flow of gas before extinguishing fire. Move containers from fire area if possible without hazard. Do not apply water to leaking containers. Use water spray to keep fire-exposed containers cool and to protect persons effecting shut-off. Fire fighters should wear a one piece, total-encapsulating suit of Butyl coated nylon or equivalent. Run-off from fire control may cause pollution.

Fire and Explosion Hazards: STRONG OXIDIZER. Capable of supporting combustion of certain substances. Reacts explosively, or forms explosive compounds, with many chemicals such as acetylene, turpentine, ether, ammonia gas, hydrogen, and finely divided metals. May ignite organic and other easily oxidizable materials. This product may react with certain metals to produce flammable Hydrogen Gas.

Hazardous Combustion Products: Toxic vapors.

#### 6. ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: CORROSIVE MATERIAL, STRONG OXIDIZER. Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Keep upwind of leak or spill. Do not touch or walk through spilled material. Shut off source of leak if safe to do so. Do not apply water directly to a leak. Reacts with water to form corrosive, acidic solution (hydrochloric acid). Clean-up personnel must be equipped with self-contained breathing apparatus and butyl rubber protective clothing. Prevent entry into basements, low areas, or confined areas. If a container is leaking, try to position it so that the gas rather than the liquid leaks. Apply emergency kit device if possible. For other than minor leaks, immediately implement predetermined emergency plan. Report spills to appropriate government authorities. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

#### 7. HANDLING AND STORAGE

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### Safety Data Sheet for Chlorine

#### CHLORINE Product ID: CL000000

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. CORROSIVE MATERIAL. Personnel near or handling Chlorine, should AT ALL TIMES carry a NIOSH/MSHA-approved chemical cartridge type escape respirator and be trained in its use. Follow safety procedures for containers of compressed gases.

Storage: CORROSIVE MATERIAL. STRONG OXIDIZER. Store in a cool, well ventilated area away from all sources of ignition and out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Store below 131 Deg. F. Do not attempt to handle, store or use Chlorine without complete review of the Chlorine Institute's Chlorine Manual (Call: 202-775-2790). Chlorine piping and equipment must be thoroughly cleaned of organics and moisture before use. Liquid Chlorine lines must have suitable expansion chambers between block valves due to the high coefficient of expansion. Always handle Chlorine with full regard to its pressure characteristics. KEEP AWAY FROM HEAT AND MOISTURE. NEVER place a leaking container in water nor spray a leaking container with water. Correct leaks immediately. Protect container from weather and physical damage. Liquid levels should be less than 85% of tank or cylinder capacity. Water contamination should be avoided.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines: Component Chlorine	Limits 1 ppm Ceiling; 3 mg/m3 Ceiling
ACGIH Exposure Guidelines: Component Chlorine	Limits 0.5 ppm TWA; 1 ppm STEL

Note:

\* IDLH = 10 ppm. Odor threshold approximately 0.3 ppm - highly variable especially with individuals routinely exposed.

Engineering Controls: General room ventilation and local exhaust are required. Process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly. NOTE: Chlorine is heavier than air and tends to collect at ground or floor level. Provide ventilation for low-lying areas.

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Butyl rubber. Neoprene. Chemical-resistant.

**Respiratory Protection:** Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH approved full facepiece chlorine type respirator. NIOSH-Approved full-facepiece positive-pressure, air-supplied respirator. NIOSH-Approved self-contained breathing apparatus with full facepiece is required for vapor concentrations above 10 ppm and for leaks and/or emergencies. Wear respirator while operating valves and connecting and disconnecting lines. Personnel handling or near Chlorine should at all times carry a NIOSH/MSHA-approved, chemical cartridge type, escape respiratory and be trained in its use. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber boots. Rubber apron. Protective clothing. Fully encapsulated suit for areas of high concentrations.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

### Safety Data Sheet for Chlorine

CHLORINE Product ID: CL000000 Physical State: Liquid. Gas. Color: Amber. Greenish-yellow. Odor: Pungent irritating odor. Boiling Point (deg. F): ~ -29 Freezing Point (deg. F): ~ -150 Melting Point (deg. F): N.D. Vapor Pressure (mm Hg): 4788 @ 20 C Vapor Density (air=1): ~ 2.5 @ 0 C Solubility in Water: Slight pH: N.A. Specific Gravity: ~ 1.467 @ 0 C % Volatile (wt%): 100% Evaporation Rate (nBuAc = 1): N.D. VOC (wt%): 0 VOC (lbs/gal): 0 Viscosity: N.D. Flash Point: N.A. Flash Point Method: N.A. Lower Explosion Limit: N.A. Upper Explosion Limit: N.A. Autoignition Temperature: N.A. Fire Point: N.D.

#### 10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames. Avoid temperatures above 125 Deg. F. Avoid all forms of contamination.

Incompatible Materials: Alkalies. Reducing agents. Organic materials. Ammonia. Metal hydrides. Carbides. Phosphides. Sulfides. Readily-oxidized materials. Acetylene. Turpentine. Combustible materials. Metallic powders. Sulfur, Aluminum, Elemental metals. Nitrides. Amines. Oxides. Unstable and reactive compounds. Dry chlorine is highly reactive with titanium and tin. Reacts with most metals at high temperatures. Reacts with water to produce hydrochloric and hydrochlorous acids, which are corrosive to most metals. Combines with carbon monoxide and sulfur dioxide forming phosgene and sulfuryl chloride. Moist chlorine is highly corrosive to most metals. Chlorine reaction to some organic compounds can be explosive.

Hazardous Decomposition Products: Chlorine gas is poisonous.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions.

11. TOXICOLOGICAL INFORMATION							
Component         Oral LD50         Dermal LD50         Inhalation LC50           No components found or no data available for product.         Inhalation LC50         In							
Other Information							
Inhalation LC50: Rat: 0.86 mg/L/1H; Rat: 293 ppm/1H (Chlorine)							

Acute toxicity: This material is corrosive to the skin, eyes, and respiratory tract. Breathing this material is harmful and can cause death. Harmful effects include burns and permanent damage to airways, including nose, throat, and lungs. The extent of injury following chlorine exposure depends on concentration and duration of exposure as well as water content of the tissue involved. Estimated effects are as follows: 0.2-0.4 ppm: Odor detection (some tolerance develops); 1-3 ppm: Mild mucous membrane irritation (can be tolerated ~ 1 hour); 5-15 ppm: Moderate irritation of upper respiratory tract; 30 ppm: Immediate chest pain, vomiting, dyspnea, cough; 40-60 ppm: Toxic pneumonitis and pulmonary edema; 430 ppm: Lethal over 30 minutes; 1000 ppm: Fatal within a few minutes.

Its action in the respiratory tract is due to its strong oxidizing capability; it forms both hypochlorous acid and

### Safety Data Sheet for Chlorine

# CHLORINE

#### Product ID: CL000000

hypochloric acid on contact with moist mucous membranes. Symptoms of pulmonary congestion and edema may develop after a latency period of several hours following severe acute exposure of chlorine.

Chronic toxicity: Long term overexposure may produce upper airway changes leading to an increased prevalence of colds, shortness of breath, and reactive airway dysfunction syndrome.

Additional data: Odor does not provide an adequate warning of exposure. In workers exposed to chlorine for a 2 to 5 year period, all had some degree of olfactory impairment. Sensory initiation tolerance developed in rats when they were pretreated with 1 ppm chlorine.

Mutagenic data: This material has tested positive in one or more in vitro mutagenicity studies.

#### 12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Highly toxic to fish and aquatic organisms. LC50 Fathead minnow: 0.07 to 0.15 (96 hour) LC50 Bluegill: 0.44 mg/l (96 hour) LC50 Daphnia: 30 to 150 ug/L (48 hour)

Chemical Fate Information: Chlorine is a strong oxidizer and will react rapidly with oxidizable inorganic compounds. Chlorine will also oxidize organic compounds, but at a slower rate than inorganic compounds. The presence of light accelerates the dissipation of chlorine in water.

Biodegration: This material is an element and not subject to biodegradation.

Persistence: The atmospheric half-life and lifetime of this material due to photolysis is estimated at 10 and 14 minutes, respectively. The half-life of free residual material in fresh water has been estimated at 1.3 to 5 hours. Bioconcentration: This material is not expected to bioconcentrate in organisms.

Additional Ecological Information: This material has exhibited toxicity to terrestrial organisms.

#### 13. DISPOSAL CONSIDERATIONS

#### Hazardous Waste Number: D003; D001

**Disposal Method:** Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Absorb in alkaline solution such as Caustic Soda, Soda Ash or Hydrated Lime. Care must be taken during neutralization process due to high heat generation. Place neutralized material in a closed container. For guidance in disposal of material, contact your regional office of the Environmental Protection Agency (EPA). Do not Discard to water or sewer. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

#### 14. TRANSPORTATION INFORMATION

#### DOT (Department of Transportation):

Identification Number: Proper Shipping Name: Hazard Class: Backing Crown:	UN1017 Chlorine 2.3 (5.1, 8)
Packing Group:	N.A.
Additional Description:	Poison-Inhalation Hazard, Hazard Zone B.
Marine Pollutant:	Chlorine.
Label Required:	POISON GAS; OXIDIZER; CORROSIVE
Reportable Quantity (RQ):	10# (Chlorine).

#### 15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

#### SARA Title III Section 311/312 Category Hazards:

Immediate (Acute)	Delayed (Chronic)	Fire Hazard	Pressure Release	Reactive
Yes	No	Yes	Yes	Yes

### Safety Data Sheet for Chlorine

#### CHLORINE Product ID: CL000000 CERCLA SARA SARA U.S. WI Prop **Regulated Components:** CAS HAP HAP Component Number RQ EHS <u>313</u> <u>65</u> 7782-50-5 Yes No Yes Yes Yes Yes Chlorine

\*Prop 65 - May Contain the Following Trace Components

This product may contain detectable levels of (a) chemical(s) subject to California's Proposition 65.

NSF/ANSI Standard 60 Maximum Use Level: 30 mg/L.

#### 16. ADDITIONAL INFORMATION

Hazard Rating System Health: 3

Flammability: 0 Reactivity: 0 \* = Chronic Health Hazard

#### NFPA Rating System Health: 4 Flammability: 0

Reactivity: 0 Special Hazard: OX

MSDS Abbreviations N.A. = Not Applicable N.D. = Not Determined HAP = Hazardous Air Pollutant VOC = Volatile Organic Compound C = Ceiling Limit N.E./Not Estab. = Not Established

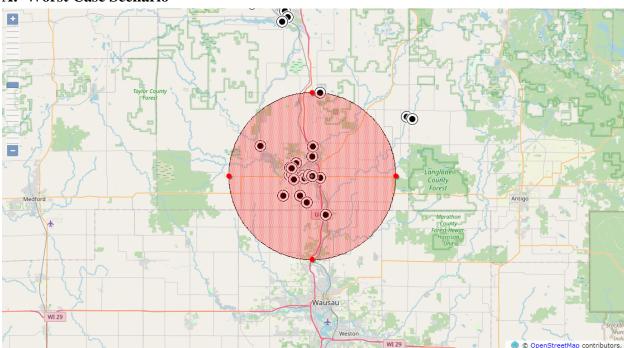
MSDS Prepared by: NAO

Reason for Revision: New format. Changes made throughout the MSDS.

The data in this Material Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

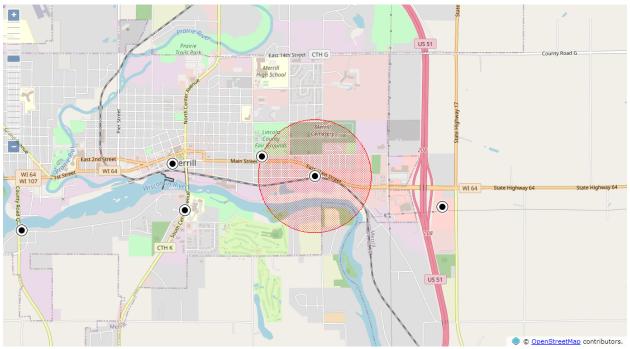
# Attachment E

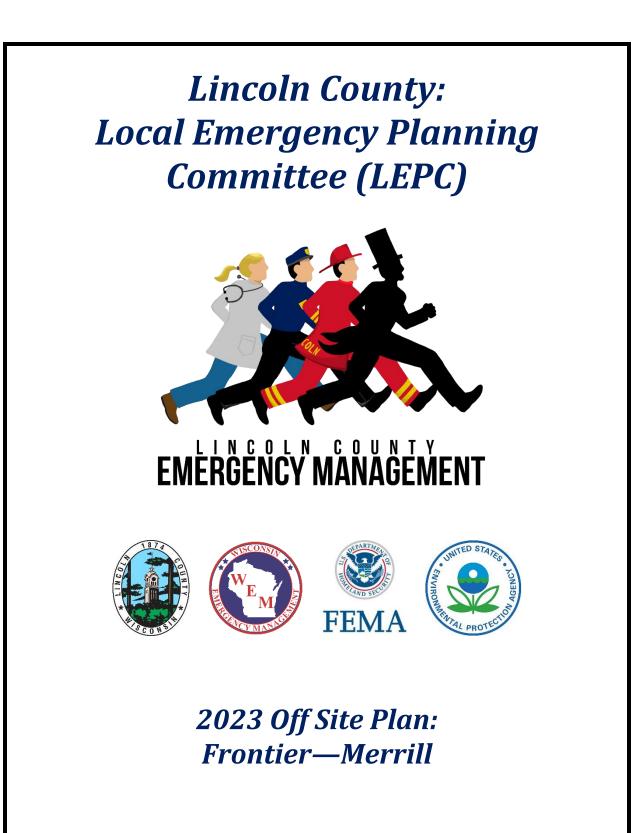
# Vulnerability Zone Maps for Chlorine



A. Worst Case Scenario

# **B.** Re-evaluation Scenario





Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

# **Table of Contents**

I.	Facility Information	4
II.	Facility Emergency Contacts	4
III.	Extremely Hazardous Substances (EHS)	5
IV.	Primary Emergency Responders	5
V.	Support Available at Facility	6
VI.	General information and Assumptions (Disclaimer)	7
VII.	Hazard Analysis Summary	7
VIII	Population Protection	9
IX.	Special Considerations	9
X.	Distribution List	.10
XI.	Supporting Documentation	.10
Atta	chment A, Record of Change and Review	.11
Atta	chment B, Facility Layout and Site Information	.12
Atta	chment C, Transportation Route Map	.14
Atta	chment D, Safety Data Sheet for Sulfuric Acid	.15
Atta	chment E, Vulnerability Zone Map for Sulfuric Acid	22

# I. Facility Information

# A. Frontier—Merrill

- 1. Address: 1000 East Main Street, Merrill, WI 54452
- 2. Phone: (945) 261-5087
- 3. Facility ID # (Assigned by WEM): 34879

# **II.Facility Emergency Contacts**

# A. Tier II Contact:

- 1. Name: Randy Robertson
- 2. Position: EH&S Manager, Frontier
- 3. Office Phone: (945) 261-5087
- 4. Emergency Phone: (800) 590-6605
- 5. Email: randy.robertson@ftr.com

# **B.** Tier II Emergency Coordinator:

- 1. Name: Jeffrey Witt
- 2. Position: Facility Supervisor
- 3. Emergency Phone: (608) 837-1129
- 4. Emergency Phone: (800) 590-6605
- 5. Email: Jeffrey.witt@ftr.com

# III. Extremely Hazardous Substances (EHS)

# A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)
7664-93-9	Sulfuric Acid	24,078	1,526	< 0.1 miles

# **IV.** Primary Emergency Responders

## A. Lincoln County Sheriff's Office

1. Phone: 911 or (715) 563-6272

# **B.** Lincoln County Emergency Communications Center

1. Phone: 911 or (715) 563-6272

## C. Lincoln County Emergency Management

1. Phone: (715) 218-0128

## **D.** Merrill Fire Department

1. Phone: 911 or (715) 536-2233

## E. Merrill Police Department

1. Phone: 911 or (715) 536-8311

# V. Support Available at Facility

## A. Chemical Emergency Monitoring Equipment:

1. None

# **B.** Personal Protective Equipment:

1. None

## **C.** Other Equipment or Supplies:

1. None

## D. Outside Resources Available:

- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

The Tomahawk Fire Department is capable of handling minor hazardous materials incidents; however, if the incident exceeds the ability/capability of Tomahawk Fire Department LCSO Communications Center will request the appropriate agency. Lincoln County contracts with two (2) external hazmat response teams dependent on level of release, for Level B response Oneida County Sheriff Office Hazardous Materials Response Team; whereas, for Level A response Wausau Wisconsin Hazardous Response Team.

For Level A incidents, the response of Wausau Wisconsin Hazardous Response Team must be requested through the Wisconsin Emergency Management (WEM) State Emergency Operations Center (SEOC). Contact the WEM SEOC Duty Officer at (800) 943-0003 for response.

- 2. Chemtrec: (800) 424-9300
  - a) Unknown response time
- 3. National Response Center: (800) 424-8802
  - a) Unknown response time
- 4. REI—Spill & Response Recovery: (800) 734-7745
  - a) Unknown response time

# VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

# VII. Hazard Analysis Summary

Frontier (Merrill) provides a communication service to the public. The facility has one (1) employee who works on-site in a part-time capacity. Extremely hazardous substances are present on-site every day of the year. This facility does not remove products on a seasonal basis.

# A. Greatest Potential for Release

1. Sulfuric acid (contained within forty-eight [48] batteries) are located within the basement of the facility. The floor where the EHS is located has no drains. Therefore, the potential for a spill would be contained to an impervious surface.

# **B.** Vulnerability Zones (by chemical)

Sulfuric Acid (Lead Battery Acid): CAS #7664-93-9					
Amount Released:	1,526	1,526 lbs.			
Concentration:	100%	)			
Physical State:	Liqui	d (Ambient)			
Diked Area:	No				
Level of Concern (LOC):	0.008	3 gm/m <sup>3</sup>			
LOC Type:	Greenbook LOC				
Worst Case Scenario			<b>Re-Evaluation Scenario</b>		
Duration:	10	0 minutes	Duration	10 minutes	
Wind Speed:	3.	.4 mph	Wind Speed:	11.9 mph	
Ground Roughness:	R	ural	Ground Roughness:	Urban	
Atmospheric Stability Clas	<b>s:</b> F		Atmospheric Stability Class:	D	
Risk:		OW	Risk:	Low	
Consequences:		OW	Consequences:	Low	
Overall Risk:		OW	Overall Risk:	Low	
Threat Zone Radius:	<	0.1 miles	Threat Zone Radius:	< 0.1 miles	

# C. Estimation of Population Affected

- 1. Sulfuric Acid
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be one (1) employee and no other persons or special facilities.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be one (1) employee and no other persons or special facilities.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

# **D.** Critical Infrastructure

1. None

# E. Hospital

1. None

# F. Nursing Homes/Assisted Living Facilities

1. None

# G. Schools

1. None

# H. Child Care/Day Care

1. None

# **VIII.** Population Protection

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

# IX. Special Considerations

A. None

# X. Distribution List

- Frontier—Merrill
- Merrill Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Marathon County Emergency Management

# **XI.** Supporting Documentation

## A. Attachments

- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Sulfuric Acid
- 5. Attachment F, Vulnerability Zone Map for Sulfuric Acid

# Attachment A

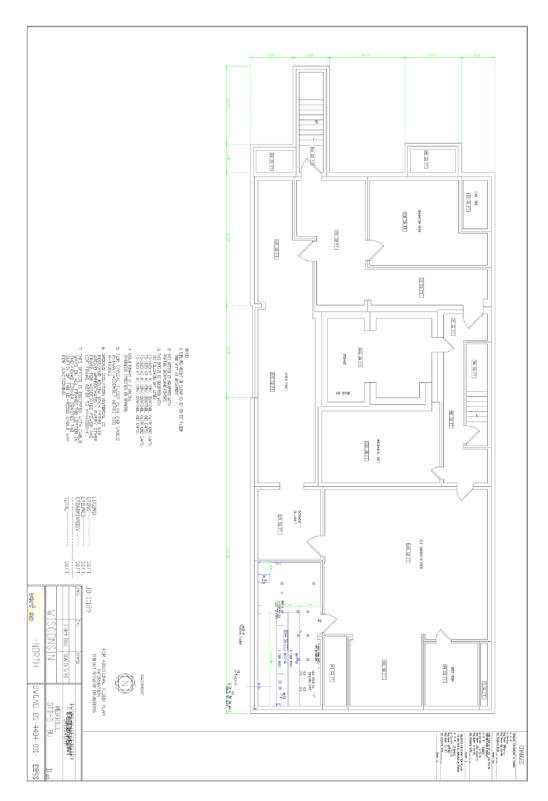
# **Record of Change/ Review /Signature**

Date	Contributor	Description of Change	Page Number(s)
12-5-2023	T. Verhasselt and R. Robertson	Authored plan and reviewed with Frontier (Merrill) for accuracy.	Pgs. 1 -22

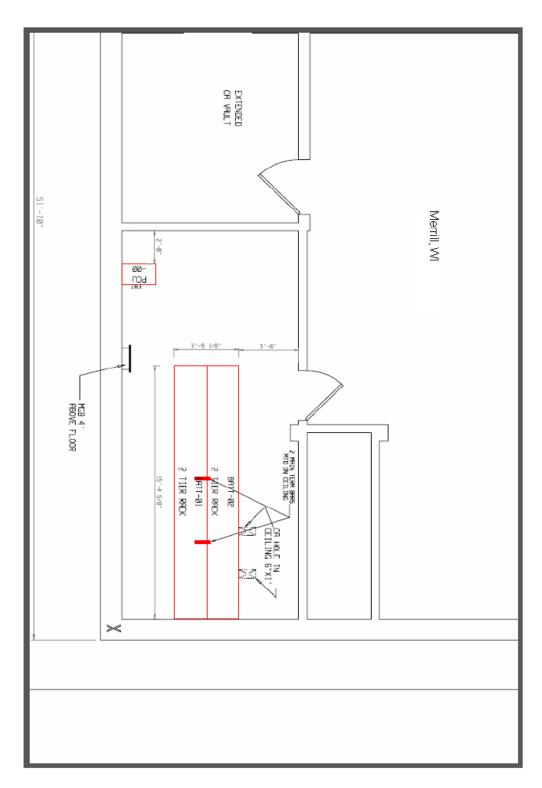
Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.

# Attachment B



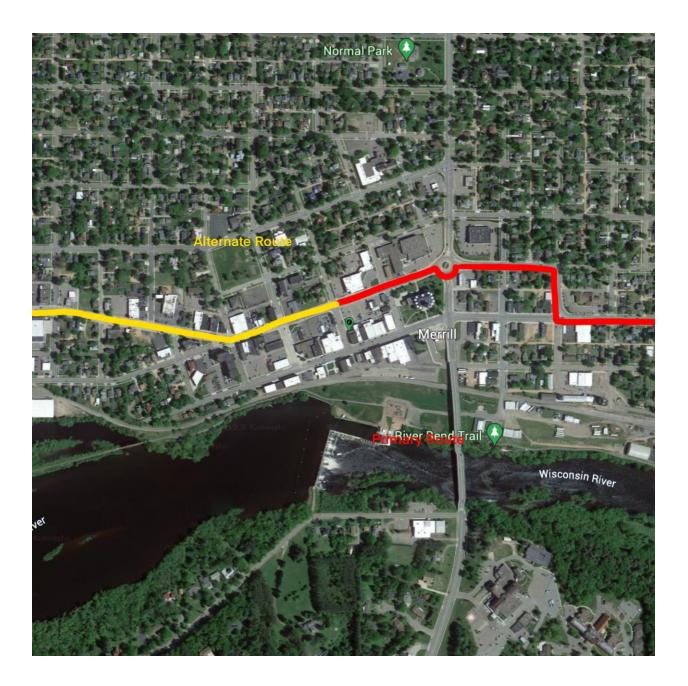


# **Facility Layout and Site Information**



## Attachment C

## **Transportation Route Map**



## Attachment D

EnerSys:	SAFETY DATA S	HEET		Form #: SDS 853020 Revised: AB Supersedes: AA
Power/Full Solutions				ECO #: 1001828
I. PRODUCT IDENTIFICATION				
Chemical Trade Name (as used on label):		Chemical Family/Cl		
Lead-Acid Battery, Wet		Electric Storage Batte	ary	
Synonyms: Industrial Dations: Tractice Dations: Stationers: Dati		Telephone		
Industrial Battery, Traction Battery, Stationary Batt Deep Cycle Battery	ny,	Telephone: For information and e	mergencies, contact En	orSus'
Manufacturer's Name/Address:			h & Safety Dept. at 610	
EnerSys		, , , , , , , , , , , , , , , , , , , ,		
P.O. Box 14145		24-Hour Emergency	Response Contact:	
2366 Bernville Road		CHEMTREC DOME	STIC: 800-424-9300	CHEMTREC INTL: 703-527-3877
Reading, PA 19612-4145				
II GHS HAZARDS IDENTFICATION				
HEALTH		ENVIRONMENTAL		PHYSICAL
Acute Toxicity		Aquatic Chronic 1		Explosive Chemical, Division 1.3
(Oral/Dermal/Inhalation) Categor		Aquatic Acute 1		
Skin Corrosion/Irritation Categor				
Eye Damage Categor Reproductive Categor				
Carcinogenicity (lead compounds) Category				
Carcinogenicity (asenic) Category				
Carcinogenicity (acid mist) Category				
Specific Target Organ Catego				
Toxicity (repeated exposure)				
GHS LABEL:				
HEALTH		ENVIRONMENTAL		PHYSICAL
Hazard Statements DANGER! Causes severe skin burns and serious eye damage. May damage fertility or the unborn child if ingested inhaled.	or Wear protective glo Avoid breathing du	fter handling. r smoke when using this p wes/protective clothing, o st/fume/gas/mist/vapors/	eye protection/face prot spray.	ection.
May cause cancer if ingested or inhaled.		or in a well-ventilated are		
Causes damage to central nervous system, blood and				ms. Avoid contact with internal acid.
kidneys through prolonged or repeated exposure.		espiratory system, and ski	n.	
May form explosive air/gas mixture during charging		ructions before use.		
Extremely flammable gas (hydrogen).		all safety precautions ha		stood
Explosive, fire, blast, or projection hazard.		ng pregnancy/while nursi	-	
May cause harm to breast-fed children		at./sparks/open flames/ho	ot surfaces. No smoking	Į.
Harmful if swallowed, inhaled, or contact with skin				
Causes skin irritation, serious eye damage.				
III. COMPOSITION/INFORMATION ON ING	REDIENTS		1	
Commente	CAS No.	American M. Lu		
Components	CAS Number	Approximate % by Wt.		
Inorganic Lead Compound:			1	
Lead	7439-92-1	60-70		
* Antimony	7440-36-0	2		
* Arsenic	7440-38-2	0.2		
* Calcium	7440-70-2	0.04		
* Tin	7440-31-5	0.2		
Electrolyte (Sulfuric Acid (H2SO4/H2O))	7664-93-9	10-30	4	
Case Material:		5-10		
Polypropylene	9003-07-0			
Polystyrene	9003-53-6			
Styrene Acrylonitrile	9003-54-7			
Acrylonitrile Butadiene Styrene Styrene Butadiene	9003-56-9 9003-55-8			
Polyvinylchloride	9003-33-8			
Polycarbonate, Hard Rubber, Polyethy				

E	<b>rSys</b> . sa				Form #: SDS 853020
Ene	ISVS. SA	FETY DATA SH	EET		Revised: AB
					Supersedes: AA
	Powers/Full Bolutions				ECO #: 1001828
Other:	Silicon Disside (Cal batteries enhà	7631-86-9	1-5		
	Silicon Dioxide (Gel batteries only)	/031-80-9	1-5		
	Sheet Molding Compound (Glass reinforced polyester)				
<b>└──</b>	(chass remoteed polyester) Inorganic lead and electrolyte (sulfuric acid) are the p	rimary components of a	very battery manufacty	and by EnerSys	
	Other ingredients may be present dependent upon bat				
IV. FIRST	AID MEASURES				
Inhalation	<u>.</u>				
	Sulfuric Acid: Remove to fresh air immediately. If b		e oxygen. Consult a ph	ysician.	
	Lead: Remove from exposure, gargle, wash nose and	lips; consult physician.			
Ingestion:					
	Sulfuric Acid: Give large quantities of water; do not	induce vomiting or aspir	ration into the lungs m	ay occur and can cause permanent injury or	death;
	consult a physician. Lead: Consult physician immediately.				
Skin:	Leau. Consult physician inineurately.				
OKIII:	Sulfuric Acid: Flush with large amounts of water for	at least 15 minutes; rem	ove contaminated clot	hing completely, including shoes.	
	If symptoms persist, seek medical attention. Wash con				
	Lead: Wash immediately with soap and water.	2			
Eyes:					
	Sulfuric Acid and Lead: Flush immediately with large		least 15 minutes while	e lifting lids.	
	Seek immediate medical attention if eyes have been e	xposed directly to acid.			
	FIGHTING MEASURES				
Flash Poin			LEL = 4.1% (Hydroger		- f
	ing Media: CO2; foam; dry chemical. Do not use carb	on dioxide directly on c	clis. Avoid breatning v	apors. Use appropriate media for surroundin	g nre.
Special Fil	re Fighting Procedures: If batteries are on charge, shut off power. Use positiv	or pressure self-contain	ed breathing apparatus	Water applied to electrolyte generates	
	heat and causes it to spatter. Wear acid-resistant clot	• •		. Water applied to electrolyte generates	
	But note that strings of series connected batteries may			arging equipment is shut down.	
Unusual F	ire and Explosion Hazards:				
	Highly flammable hydrogen gas is generated during c	harging and operation o	f batteries. To avoid ri	isk of fire or explosion, keep sparks or other	
	sources of ignition away from batteries. Do not allow	metallic materials to si	multaneously contact n	egative and positive terminals of cells and	
	batteries. Follow manufacturer's instructions for insta	llation and service.			
	DENTAL RELEASE MEASURES				
Spill or Le	ak Procedures:		in the Design		
	Stop flow of material, contain/absorb small spills with				
	neutralize spilled electrolyte with soda ash, sodium bi allow discharge of unneutralized acid to sewer. Acid 1				
	Consult state environmental agency and/or federal EP	-	ordance with local, sta	e, and redenii requirements.	
VIL HAN	DLING AND STORAGE				
Handling:					
Unless invo	olved in recycling operations, do not breach the casing o	r empty the contents of	the battery. Handle car	efully and avoid tipping,	
which may	allow electrolyte leakage. There may be increasing risk	of electric shock from s	trings of connected bat	teries.	
Keep conta	iners tightly closed when not in use. If battery case is b	roken, avoid contact wit	th internal components	L	
	caps on and cover terminals to prevent short circuits. Pl				
Keep away	from combustible materials, organic chemicals, reducin	g substances, metals, st	rong oxidizers and wat	er. Use banding or stretch wrap to secure it	ems for
shipping.					
Storage:				C THE DAY IN A 14	
	ries in cool, dry, well-ventilated areas with impervious s				
	ed under roof for protection against adverse weather con	-	-	-	
	th adequate water supply and spill control. Avoid dama terminals on a battery and create a dangerous short-circu		away from fire, sparks	and near. Keep away from metallic objects o	ouid
Charging:	· · · · ·	#1-			
	ossible risk of electric shock from charging equipment	and from strings of serie	is connected batteries	whether or not being charged. Shut-off now	er to
	henever not in use and before detachment of any circuit				
	pace should be ventilated. Keep battery vent caps in pos				
	and eye protection when near batteries being charged.				
_					

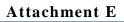
EnerSys.	SA		Form #: SDS 853020 Revised: AB Supersedes: AA ECO #: 1001828			
/III. EXPOSURE CONTROLS/I /xposure Limits (mg/m3) Note: N	PERSONAL PROTECTION					
Apactive Linity (ingrita) Note: N	F.= Not Established				1	
NGREDIENTS	OSHA PEL	ACGIH	US NIOSH	Ouebec PEV	Ontario OEL	EU OEL
Chemical/Common Names)						
ead and Lead Compounds						
norganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)
ntimony	0.5	0.5	0.5	0.5	0.5	0.5 (b,e)
rsenic	0.01	0.01	0.002	0.2	0.01	N.E
alcium	N.E	N.E	N.E	N.E	N.E	N.E
in	2	2	2	2	2	N.E
lectrolyte (Sulfuric Acid)	1 N.E	0.2 N.E	1 N.E	1 N.E	0.2 N.E	0.05 (c)
olypropylene						N.E
olystyrene tyrene Acrylonitrile	N.E N.E	N.E N.E	N.E N.E	N.E N.E	N.E N.E	N.E N.E
crylonitrile Butadiene	N.E	N.E.	N.E.	PLE	18.E	N.E
tyrene	N.E	N.E	N.E	N.E	N.E	N.E
tyrene Butadiene	N.E	N.E	N.E	N.E	N.E	N.E
olyvinylchloride	N.E	N.E	N.E	N.E	1	N.E
olycarbonate, Hard						
ubber, Polyethylene	N.E.	N.E	N.E	N.E	N.E	N.E
ilicon Dioxide						
Gel Batteries Only)	N.E	N.E	N.E	N.E	N.E	N.E
Jlass reinforced polyester) OTES: 0 As inhalable nerosol 1 Thoracic fraction 1 Based on OEL;s Of Austria, Belg ngincering Controls (Ventilation Store and handle in we	1): ell-ventilated area. If mechanica			N.E	NE	N.E
Handle batteries cautio clothing, eye and face p positive and negative to	protection when filling, chargin terminals of the batteries. Charg	g or handling batterie	ecurely. Avoid contact v s. Do not allow metallic	with internal component materials to simultane	ously contact both the	
Handle batteries cautio clothing, eye and face p positive and negative to cspiratory Protection (NIOSH/M	protection when filling, charging terminals of the batteries. Charge MSHA approved):	g or handling batterie e the batteries in area	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilation	with internal component materials to simultanes on. General dilution ve	ously contact both the entilation is acceptable	
Handle batteries cautio clothing, eye and face p positive and negative to copiratory Protection (NIOSH/M	protection when filling, chargin terminals of the batteries. Charg	g or handling batterie e the batteries in area	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilation	with internal component materials to simultanes on. General dilution ve	ously contact both the entilation is acceptable	
Handle batteries cautio clothing, eye and face p positive and negative tr espiratory Protection (NIOSH/M None required under n respiratory protection.	protection when filling, charging terminals of the batteries. Charge MSHA approved):	g or handling batterie e the batteries in area	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilation	with internal component materials to simultanes on. General dilution ve	ously contact both the entilation is acceptable	
Handle batteries cautio clothing, eye and face p positive and negative tr cspiratory Protection (NOSH/M None required under no respiratory protection. kin Protection: If battery case is damag	protection when filling, charging terminals of the batteries. Charge MSHA approved):	g or handling batterie e the batteries in area ntrations of sulfuric a	ecurely. Avoid contact w s. Do not allow metallic s with adequate ventilati cid mist are known to ex-	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO	ously contact both the entilation is acceptable SH or MSHA-approve	
Handle batteries cautio clothing, eye and face p positive and negative t respiratory Protection (NOSH/M None required under nu- respiratory protection. kin Protection: If battery case is damag ye Protection:	protection when filling, chargin, terminals of the batteries. Charg <u>MSHA approved</u> ): formal conditions. When concer- ged, use rubber or plastic acid-r	g or handling batterie e the batteries in area atrations of sulfuric a esistant gloves with e	ecurely. Avoid contact w s. Do not allow metallic s with adequate ventilati cid mist are known to ex-	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO	ously contact both the entilation is acceptable SH or MSHA-approve	
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Handle batteries cautio clothing, eye and face p positive and negative tr espiratory Protection (NOSH/M None required under no respiratory protection. Kin Protection: If battery case is damag ye Protection: If battery case is damag ther Protection: In areas where sulfuric	protection when filling, chargin, terminals of the batteries. Charg <u>MSHA approved</u> ): formal conditions. When concer- ged, use rubber or plastic acid-r aged, use chemical goggles or fac acid is handled in concentration	g or handling batterie e the batteries in area atrations of sulfuric a esistant gloves with e ce shield. ns greater than 1%, et	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilati cid mist are known to ex lbow-length gauntlet, aci mergency eyewash statio	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ms and showers should	ously contact both the nntilation is acceptable (SH or MSHA-approve hing and boots.	
Handle batteries cautio clothing, eye and face p positive and negative t respiratory Protection (NOSH/M None required under nu- respiratory protection. kin Protection: If battery case is damag ye Protection: If battery case is damag ther Protection: In areas where sulfuric with unlimited water su	protection when filling, chargin terminals of the batteries. Charge <u>MSHA approved):</u> gornal conditions. When concer- ged, use rubber or plastic acid-r ged, use chemical goggles or fast acid is handled in concentratio upply. Acid-resistant apron. Un	g or handling batterie e the batteries in area attrations of sulfuric a esistant gloves with e ce shield. ns greater than 1%, et oder severe exposure of	ecurely. Avoid contact w s. Do not allow metallic s with adequate ventilati cid mist are known to ex- lbow-length gauntlet, aci mergency eyewash statio emergency conditions, w	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ms and showers should	ously contact both the initilation is acceptable SH or MSHA-approve hing and boots.	
Handle batteries cautio clothing, eye and face p positive and negative to espiratory Protection (NIOSH/M None required under n respiratory protection. kin Protection: If battery case is damag ve Protection: In fattery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recommend	protection when filling, chargin, terminals of the batteries. Charge <u>MSHA approved</u> : usernal conditions. When concer- ged, use rubber or plastic acid-ru- ged, use chemical goggles or fas- cacid is handled in concentration upply. Acid-resistant apron. Un- ded when adding water or elect	g or handling batterie e the batteries in area attrations of sulfuric a esistant gloves with e ce shield. ns greater than 1%, et oder severe exposure of	ecurely. Avoid contact w s. Do not allow metallic s with adequate ventilati cid mist are known to ex- lbow-length gauntlet, aci mergency eyewash statio emergency conditions, w	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ms and showers should	ously contact both the initilation is acceptable SH or MSHA-approve hing and boots.	
Handle batteries cautio clothing, eye and face p positive and negative tr espiratory Protection (NIOSH/M None required under no respiratory protection. If battery case is damag re Protection: If battery case is damag ther Protection: In areas where sulfuric with unlimited water sulfuric with unlimited recorms Face shield recormment C. PHVSICAL AND CHEMICAL	protection when filling, chargin, terminals of the batteries. Charge <u>MSHA approved</u> : normal conditions. When concer- ged, use rubber or plastic acid-r ged, use chemical goggles or fac eacid is handled in concentratio upply. Acid-resistant apron. Un ded when adding water or electh L PROPERTIES	g or handling batterie e the batteries in area attrations of sulfuric a esistant gloves with e ce shield. ns greater than 1%, et oder severe exposure of	ecurely. Avoid contact w s. Do not allow metallic s with adequate ventilati cid mist are known to ex- lbow-length gauntlet, aci mergency eyewash statio emergency conditions, w	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ms and showers should	ously contact both the initilation is acceptable SH or MSHA-approve hing and boots.	
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Handle batteries cautio clothing, eye and face p positive and negative tr cespiratory Protection (NJOSH/M None required under no respiratory protection. Kin Protection: If battery case is damag ye Protection: In areas where sulfaric with unlimited water ss Face shield recommend X. PHYSICAL AND CHEMICAL	protection when filling, chargin, terminals of the batteries. Charge <u>MSHA approved</u> : normal conditions. When concer- ged, use rubber or plastic acid-r ged, use chemical goggles or fac eacid is handled in concentratio upply. Acid-resistant apron. Un ded when adding water or electh L PROPERTIES	g or handling batterie e the batteries in area attrations of sulfuric a esistant gloves with e ce shield. ns greater than 1%, et sder severe exposure o objet to batteries, was	ecurely. Avoid contact w s. Do not allow metallic s with adequate ventilati cid mist are known to ex- lbow-length gauntlet, aci mergency eyewash statio emergency conditions, w sh hands after handling. Specific Gravity (H2	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ons and showers should rear acid-resistant cloth <b>O</b> = 1):	ously contact both the nntilation is acceptable SH or MSHA-approve hing and boots.	
Handle batteries cautio clothing, eye and face p positive and negative to tespiratory Protection (NOSH/M None required under nu- respiratory protection. Kin Protection: If battery case is damag ye Protection: If battery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recomment X. PHYSICAL AND CHEMICAL roperties Listed Below are for EI Boiling Point:	protection when filling, chargin, terminals of the batteries. Charge <u>MSHA approved</u> : normal conditions. When concer- ged, use rubber or plastic acid-r ged, use chemical goggles or fac eacid is handled in concentratio upply. Acid-resistant apron. Un ded when adding water or electh L PROPERTIES	g or handling batterie e the batteries in area attrations of sulfuric a esistant gloves with e ce shield. ns greater than 1%, et oder severe exposure o colyte to batteries, was 203 - 240° F	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilati cid mist are known to ex- lbow-length gauntlet, aci mergency eyewash statio emergency conditions, w sh hands after handling.	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ons and showers should ear acid-resistant cloth O = 1): (Hg):	ously contact both the intilation is acceptable SH or MSHA-approve hing and boots. I be provided, ing and boots.	
Handle batteries cautio clothing, eye and face p positive and negative to cespiratory Protection (NIOSH/M None required under n respiratory protection. Kin Protection: If battery case is damag ve Protection: If battery case is damag ther Protection: In areas where sulfuric with unlimited water si Face shield recommens X. PHYSICAL AND CHEMICAL reperties Listed Below are for EI Boiling Point: Melting Point:	protection when filling, chargin, terminals of the batteries. Charg <u>MSHA approved</u> ): ormal conditions. When concer- ged, use rubber or plastic acid-r ged, use chemical goggles or fac- e acid is handled in concentration upply. Acid-resistant apron. Un ded when adding water or electr L PROPERTIES lectrolyte:	g or handling batterie e the batteries in area ntrations of sulfuric a esistant gloves with e esistant gloves with e te shield. ns greater than 1%, et older severe exposure olyte to batteries, was 203 - 240° F N/A	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilati cid mist are known to ex- libow-length gauntlet, aci mergency eyewash statio emergency conditions, w sh hands after handling. Specific Gravity (H2 Vapor Pressure (mm Vapor Density (AIR	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ens and showers should ear acid-resistant cloth O = 1): . Hg): = 1):	susly contact both the initilation is acceptable SH or MSHA-approve hing and boots. I be provided, ing and boots.	
Handle batteries cautio clothing, eye and face p positive and negative tr espiratory Protection (NIOSH/M None required under no respiratory protection. If battery case is damag ve Protection: If battery case is damag ther Protection: In areas where sulfuric with unlimited water sulfuric with unlimited reatorn sis Face shield recomment C.PHVSICAL AND CHEMICAI roperties Listed Below are for El Boiling Point: Solubility in Water;	protection when filling, chargin, terminals of the batteries. Charge <u>MSHA approved</u> ): formal conditions. When concer- ged, use rubber or plastic acid-r aged, use rubber or plastic acid-r aged, use chemical goggles or fac : acid is handled in concentratio upply. Acid-resistant apron. Un ded when adding water or electr L PROPERTIES lectrolyte: Butyl Acetate = 1)	g or handling batterie e the batteries in area attrations of sulfuric a esistant gloves with e ce shield. ns greater than 1%, et der severe exposure o olyte to batteries, was 203 - 240° F N/A 100% Less than 1	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilati cid mist are known to ex- libow-length gauntlet, aci mergency cyewash statio emergency conditions, w sh hands after handling. Specific Gravity (H2 Vapor Pensure (mm Vapor Density (AIR % Volatile by Weigh	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ens and showers should ear acid-resistant cloth O = 1): . Hg): = 1):	sually contact both the initilation is acceptable SH or MSHA-approve hing and boots. I be provided, ing and boots. 1.215 to 1.350 10 Greater than 1 N/A	sd
Handle batteries cautio clothing, eye and face p positive and negative tr cspiratory Protection (NOSH/M None required under no respiratory protection. If battery case is damag ye Protection: If battery case is damag ther Protection: In areas where sulfuric with unlimited water sis Face shield recommend coshield recommend X. PHVSICAL AND CHEMICAI roperties Listed Below are for El Boiling Point: Netting Point: Solubility in Water;	protection when filling, chargin, terminals of the batteries. Charge <u>MSHA approved</u> ): (SILA approved): (appled): (SILA approved): (appled): (SILA approved): (appled): (SILA appled): (appled): (SILA appled): (appled): (SILA appled): (appled): (SILA appled): (appled): (SILA appled): (SILA appled): (SILA appled): (SILA appled): (SILA ap	g or handling batterie e the batteries in area atrations of sulfurie a esistant gloves with e esistant gloves with e eshield. ns greater than 1%, et der severe exposure ( volyte to batteries, war 203 - 240° F N/A 100%	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilati cid mist are known to ex- libow-length gauntlet, aci mergency eyewash statio emergency conditions, w sh hands after handling. Specific Gravity (H2 Vapor Pressure (mm Vapor Density (AIR	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO id-resistant apron, clot ens and showers should ear acid-resistant cloth O = 1): Hg: = 1): tt:	sually contact both the initilation is acceptable SH or MSHA-approve hing and boots. I be provided, ing and boots. 1.215 to 1.350 10 Greater than 1 N/A	

Ene	SAFETY DATA SHEET	Form #: SDS 853020 Revised: AB Supersedes: AA ECO #: 1001828
X. STABI	LITY AND REACTIVITY	ECO #: 1001828
Stability:		
This produ	ict is stable under normal conditions at ambient temperature.	
Conditions	s To Avoid: Prolonged overcharge; sources of ignition	
Incompati	bility: (Materials to avoid)	
	Sulfuric Acid: 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. Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen	
	and reducing agents. Arsenic compounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-arsine.	
United	Arsenic compounds, strong oxidizers, oronnine azide. NOTE: nydrogen gas can react with morganic arsenic to form the mgnity toxic gas-arsine.	
Hazardous	EDECOMPOSITION PRODUCTS: Sulfuric Acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.	
	Lead Compounds: High temperatures 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.	
Hazardow	Polymerization:	
	Will not occur	
XI. TOXI	COLOGICAL INFORMATION	
Routes of 1		
	Sulfaric 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, vapo	r
	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.	
	Summer Veter, share severe initiation of mount, unoat, esophiagus and somach. Lead Compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to system	i.
	toxicity and must be treated by a physician.	iic.
Skin Conta		
Contra Contra	Sulfuric Acid: Severe irritation, burns and ulceration.	
	Lead Compounds: Not absorbed through the skin.	
	Arsenic Compounds: Contact may cause dermatitis and skin hyper pigmentation.	
Eye Conta	ct:	
	Sulfuric Acid: Severe irritation , burns, cornea damage, and blindness.	
	Lead Components: 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 and 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 abnor	
	conduction velocities in persons with blood lead levels of 50mcg/100 ml or higher. Heavy lead exposure may result in central nervous system da	mage,
0	encephalopathy and damage to the blood-forming (hematopoietic) tissues.	
Carcinoge	nerry: Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a	
	Summer verse. The international Agency for research of Cancel (Arec) has classification does not apply to liquid forms of sulfaric 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 th	10 C
	actu solutions contained winnin a oanery. Inorganic actu mist (summe actu mist) is not generated under normal use of this product. Mistise of u product, such as overcharging, may result in the generation of sulfuric acid mist.	n.
	<u>Induct</u> , such as overchanging, may result in the generation of suitable acid mast. <u>Lead Compounds</u> : Lead is listed as a Group 2A carcinogen, likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 1910.	1200
	Appendix F, this is approximately equivalent to GHS Category 1B. <u>Proof of carcinogenicity in humans is lacking at present</u> .	
	Appendix P, dus is approximately equivalent to Gris Category 18. <u>Proof or arcinogenetry in number is facking at present</u> . <u>Arsenic</u> : Arsenic is listed by IARC as a Group 1 - carcinogenic to humans. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, thi	s is
	<u>Atsente</u> : Atsente la fisiele by DKC as a Oroup 1 - carentogenie lo numaris. Per die guidance found in OSPA 25 CPR 1510.1200 Appendix P, un approximately equivalent to GHS Category 1A.	
Medical C		
Medical C	onditions 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	ie .

EnerSys. SAFETY DATA SHEET	Form #: SDS 853020 Revised: AB
Prover / Trid Statistions	Supersedes: AA
Acute Toxicity: Inhalation LD50:	ECO #: 1001828
Electrolyte: LC50 rat: 375 mg/m3; LC50: guinea pig: 510 mg/m3 Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion) Elemental Arsenic: No data	
Oral LD50: Electrolyte: rat: 2140 mg/kg Elemental Lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion) Elemental Arsenic: LD50 mouse: 145 mg/kg Elemental Antimony: LD50 rat: 100 mg/kg	
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 t worksite. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence on tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated area never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated children and their environment.	of food, as and
The 19th 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.	
XII. ECOLOGICAL INFORMATION Environmental Fate:	
Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments 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.	; is slow.
Environmental Toxicity: Aquatic Toxicity: <u>Sulfuric acid:</u> 24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L 96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L <u>Lead:</u> 48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion <u>Arsenic:</u> 24 hr LC50, freshwater fish (Carrassisus auratus) >5000 g/L.	
Additional Information: • No known effects on stratospheric ozone depletion. • Volatile organic compounds: 0% (by Volume)	
Water Endangering Class (WGK): NA	
XIII. DISPOSAL CONSIDERATIONS (UNITED STATES)	
Spent batteries: Send to secondary lead smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of 40 CEP Service 266 80 are not. This should be arranged in another with more und least state and federal annihilation. Consult state and intermental	
40 CFR Section 266.80 are met. This should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.	
Electrolyte: Place neutralized slurry into sealed containers and handle as applicable with state and federal regulations. 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.	
Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user. XIV. TRANSPORT INFORMATION	
U.S. DOT: The transportation of wet and moist charged (moist active) batteries within the continental United States is regulated by the U.S. DOT through the Code of Federal Regulations, Title 49 (49CFR). These regulations classify these types of batteries as a hazardous material. Refer to 49 CFR, 173.159 for more details pertaining to the transportation of wet and moist batteries.	
The shipping information is as follows:         Proper Shipping Name: Batteries, wet, filled with acid         Packing Group: N/A           Hazardous Class:         8         Label/Placard Required: Corrosive           UN Identification:         UN2794         Label/Placard Required: Corrosive	
Contact your EnerSys representative for additional information regarding the classification of batteries.	
<ul> <li>49 CFR 173.159(c) specifies that when transported by highway or rail, electric storage batteries containing electrolyte or corrosive battery fluid are not subjec any other requirements of this subchapter, if all of the following are met: <ol> <li>No other hazardous materials may be transported in the same vehicle;</li> <li>The batteries must be loaded or braced so as to prevent damage and short circuits in transit;</li> <li>Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batterie</li> </ol> </li> </ul>	
(4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries. If any of the above-referenced requirements are not met, the batteries must be shipped as fully-regulated Class 8 Corrosive hazardous materials.	

EnerSys.		FETY DATA SHEE	т	Form #: SDS 853020 Revised: AB Supersedes: AA ECO #: 1001828
(IATA). T	tional transportation of wet and moist char		is regulated by the International Air Transport Ass aterial. The batteries must be packed according to	
The shippin	ng information is as follows: Proper Shipping Name: Batteries, Hazardous Class: 8 UN Identification: UN2794	wet, filled with acid	Packing Group: N/A Label/Placard Required: Corro	sive
	ar EnerSys representative for additional inf	formation regarding the clas	sification of batteries.	
Goods code IMDG code	(IMDG). These regulations also classify pages 8120 and 8121. IMDG Code Pack in information is as follows: Proper Shipping Name: Batteries, v	these types of batteries as h ing Instruction P801.	is regulated by the International Maritime Dangers azardous material. The batteries must be packed a Packing Group: N/A Label/Diraced Pacavieth Course	ccording to
	Hazardous Class: 8 UN Identification: UN2794		Label/Placard Required: Corro	sive
Contact vo	ar EnerSys representative for additional inf	ormation regarding the clas	sification of batteries.	
V. REGULATORY E		contained regarding the case	onitalitori di duntarta.	
NITED STATES:				
PA SARA Title III:				
	remely Hazardous Substances (EHS):			
	-		Threshold Planning Quantity (TPQ) of 1,000 lbs.	
EPCRA Se	ction 302 notification is required if 1000 lb	s or more of sulfuric acid i	s present at one site (40 CFR 370.10). For more inf	ormation consult
40 CFR Par	t 355. The quantity of sulfuric acid will va	ry by battery type. Contact	your EnerSys representative for additional information	tion.
ection 304 CERCLA H	azardous Substances:			
	Quantity (RQ) for spilled 100% sulfuric ac	id under CERCLA (Superf	ind) and	
		to Know Act) is 1,000 lbs.	State and local reportable quantities for spilled sulf	uric acid may vary.
ection 311/312 Hazard				
EPCRA Se	ction 312 Tier Two reporting is required fo	r non-automotive batteries	if sulfuric acid is present in quantities of 500 lbs or	more and/or if lead is
present in c	uantities of 10,000 lbs or more. For more i	information consult 40 CFF	370.10 and 40 CFR 370.40	
ection 313 EPCRA Tox	tic Substances:			
		is many out in the outlinks of a	covered facility, a person is not required to conside	- the constitute of the
	-		reshold has been met under § 372.25, § 372.27, or	
determining	g the amount of release to be reported unde	r § 372.30. This exemption	applies whether the person received the article fro	m another person
or the perso	n produced the article. However, this exen	nption applies only to the q	uantity of the toxic chemical present in the article.	
upplier Notification:				
	e anne instantis de minde andrie anne ba	EDCD & C	entire 212 Terris Chemical Balance Inventory (Fra	D)
			ection 313 Toxic Chemical Release Inventory (For	
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:
	Toxic Chemical	CAS Number	Approximate % by Wt.	
	Lead	7439-92-1	60	
	Electrolyte			
	(Sulfuric Acid (H2SO4/H2O))	7664-93-9	10 - 30	
	* Antimony	7440-36-0	2	
	* Arsenic	7440-38-2	0.2	
	Tin	7440-31-5	0.2	
See 40 CR	G Part 370 for more details.			
If you distri of each cale		a SIC Codes 20 through 39,	this information must be provided with the first sh	ipment
The Section	1 313 supplier notification requirement doe	s not apply to batteries, wh	ich are "consumer products".	
The Section				
	ent in all battery types. Contact your Eners		-	

Power/Pull Statistions	FETY DATA SHEET	Form #: SDS 853020 Revised: AB Supersedes: AA ECO #: 1001828
TSCA: TSCA Section 8b – Inventory Status: All chemicals o	omprising this product are either exempt or listed on the TSCA Inventory.	
TSCA Section 12b (40 CFR Part 707.60(b)) No notic context of individual section 5, 6, or 7 actions.	e of export will be required for articles, except PCB articles, unless the Agency so requires	in the
TSCA Section 13 (40 CFR Part 707.20): No import of Chemical Import Requirements of the Toxic Substance	certification required (EPA 305-B-99-001, June 1999, Introduction to the ces Control Act, Section IV.A).	
	handling requirements when managed in compliance with 40 CFR section 266.80 or 40 CI e; EPA hazardous waste number D002 (corrosivity) and D008 (lead).	R part 273.
chemicals (ODC's), defined by the USEPA as Class I	one depletion in the atmosphere due to emissions of CFC's and other ozone depleting substances. Pursuant to Section 611 of the Clean Air Act Amendments (CAAA) bished a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.	
	ories contain lead and lead compounds, chemicals known to the State of California to cause other chemicals known to the State of California to cause cancer. Wash hands after handl	
INTERNATIONAL REGULATIONS: Distribution into Quebec to follow Canadian Controll Distribution into the EU to follow applicable Directiv		
XVI. OTHER INFORMATION		
Revision: AB (04-25-17) NFPA Hazard Rating for Sulfuric Acid: Flammability (Red) = 0 Health (Blue) = 3	Reactivity (Yellow) = 2 Sulfuric acid is water-reactive if concentrated.	
	mply with the requirements of 29 CFR 1910.1200. To the extent allowed by law any third party, including users of this product, including, but not limited to, cor Data Sheet.	



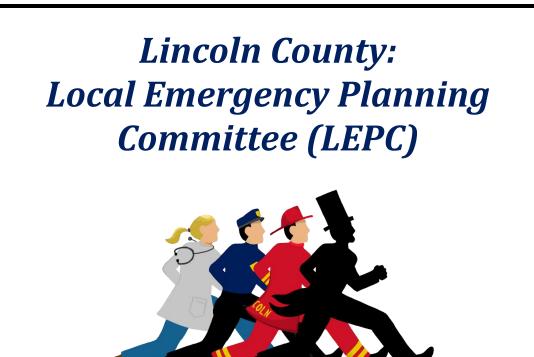
## Vulnerability Zone Maps for Sulfuric Acid



## A. Worst Case Scenario

## **B.** Re-evaluation Scenario





# EMERGENCY MANAGEMENT



## 2023 Off Site Plan: Frontier—Tomahawk

Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

## **Table of Contents**

I.	Facility Information	4
II.	Facility Emergency Contacts	4
III.	Extremely Hazardous Substances (EHS)	5
IV.	Primary Emergency Responders	5
V.	Support Available at Facility	6
VI.	General information and Assumptions (Disclaimer)	7
VII.	Hazard Analysis Summary	7
VIII	Population Protection	9
IX.	Special Considerations	9
X.	Distribution List	10
XI.	Supporting Documentation	10
Atta	chment A, Record of Change and Review	11
Atta	chment B, Facility Layout and Site Information	12
Atta	chment C, Transportation Route Map	13
Atta	chment D, Safety Data Sheet for Sulfuric Acid	14
Atta	chment E, Vulnerability Zone Map for Sulfuric Acid	21

## I. Facility Information

#### A. Frontier (Tomahawk)

- 1. Address: 312 West Wisconsin Avenue, Tomahawk, WI 54487
- 2. Phone: (972) 424-1680
- 3. Facility ID # (Assigned by WEM): 5268

## **II.Facility Emergency Contacts**

#### A. Tier II Contact:

- 1. Name: Randy Robertson
- 2. Position: EHS Manager, Frontier
- 3. Office Phone: (972) 424-1680
- 4. Emergency Phone: (972) 261-5087
- 5. Email: Randy.Robertson@ftr.com

#### **B.** Tier II Emergency Coordinator:

- 1. Name: Jeffery Witt
- 2. Position: Facility Supervisor
- 3. Emergency Phone: (608) 837-1129
- 4. Emergency Phone: (800) 590-6605
- 5. Email: Jeffrey.witt@ftr.com

## III. Extremely Hazardous Substances (EHS)

#### A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum DailyChemical NameQuantity (lbs.)		Vulnerability Zone (miles)	
7664-93-9	Sulfuric Acid	1,554	1,554	< 0.1 miles	

## **IV.** Primary Emergency Responders

#### A. Lincoln County Sheriff's Office

1. Phone: 911 or (715) 563-6272

#### **B.** Lincoln County Emergency Communications Center

1. Phone: 911 or (715) 563-6272

#### C. Lincoln County Emergency Management

1. Phone: (715) 218-0128

#### **D.** Tomahawk Fire Department

1. Phone: 911 or (715) 453-8180

#### E. Tomahawk Police Department

1. Phone: 911 or (715) 453-2121

## V. Support Available at Facility

#### A. Chemical Emergency Monitoring Equipment:

1. None

#### **B.** Personal Protective Equipment:

1. None

#### C. Other Equipment or Supplies:

1. None

#### D. Outside Resources Available:

- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

The Tomahawk Fire Department is capable of handling minor hazardous materials incidents; however, if the incident exceeds the ability/capability of Tomahawk Fire Department LCSO Communications Center will request the appropriate agency. Lincoln County contracts with two (2) external hazmat response teams dependent on level of release, for Level B response Oneida County Sheriff Office Hazardous Materials Response Team; whereas, for Level A response Wausau Wisconsin Hazardous Response Team.

For Level A incidents, the response of Wausau Wisconsin Hazardous Response Team must be requested through the Wisconsin Emergency Management (WEM) State Emergency Operations Center (SEOC). Contact the WEM SEOC Duty Officer at (800) 943-0003 for response.

- 2. Chemtrec: (800) 424-9300
  - a) Unknown response time
- 3. National Response Center: (800) 424-8802
  - a) Unknown response time
- 4. REI—Spill & Response Recovery: (800) 734-7745
  - a) Unknown response time

## VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

## VII. Hazard Analysis Summary

Frontier (Tomahawk) provides a communication service to the public. The facility has one (1) employee who works on-site in a part-time capacity. Extremely hazardous substances are present on-site every day of the year. This facility does not remove products on a seasonal basis.

#### A. Greatest Potential for Release

- 1. The greatest potential for release would be an accident involving sulfuric acid, which is the only EHS on site, when being handled.
- 2. It is unlikely that a large sulfuric acid release would occur and it is unlikely that a release would have off site consequences. Spills would normally be contained inside the building except perhaps in a fire situation.

#### **B.** Vulnerability Zones (by chemical)

Sulfuric Acid: CAS #7664-93	<b>-</b> 9					
Amount Released:	1,5	1,544 lbs.				
Concentration:	10	0%				
Physical State:	Lie	quid (Ambient)				
Diked Area:	No	)				
Level of Concern (LOC):	0.008 gm/m <sup>3</sup>					
LOC Type:	Greenbook LOC					
Worst Case Scenario			Re-Evaluation Scenario			
Duration:		10 minutes	Duration	10 minutes		
Wind Speed:		3.4 mph	Wind Speed:	11.9 mph		
Ground Roughness:		Rural	Ground Roughness:	Urban		
Atmospheric Stability Clas	s:	F	Atmospheric Stability Class:	D		
Risk:		Low	Risk:	Low		
Consequences: Lo		Low	Consequences:	Low		
Overall Risk: Low			Overall Risk:	Low		
Threat Zone Radius:		< 0.1 miles	Threat Zone Radius:	< 0.1 miles		

#### C. Estimation of Population Affected

- 1. Sulfuric Acid
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be one (1) employee and no other persons or special facilities.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be one (1) employee and no other persons or special facilities.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

#### **D.** Critical Infrastructure

1. None

#### E. Hospital

1. None

#### F. Nursing Homes/Assisted Living Facilities

1. None

#### G. Schools

1. None

#### H. Child Care/Day Care

1. None

## VIII. Population Protection

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

## IX. Special Considerations

#### A. None

## X. Distribution List

- Frontier—Tomahawk
- Tomahawk Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Oneida County Emergency Management

## XI. Supporting Documentation

#### A. Attachments

- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Sulfuric Acid
- 5. Attachment F, Vulnerability Zone Map for Sulfuric Acid

#### Attachment A

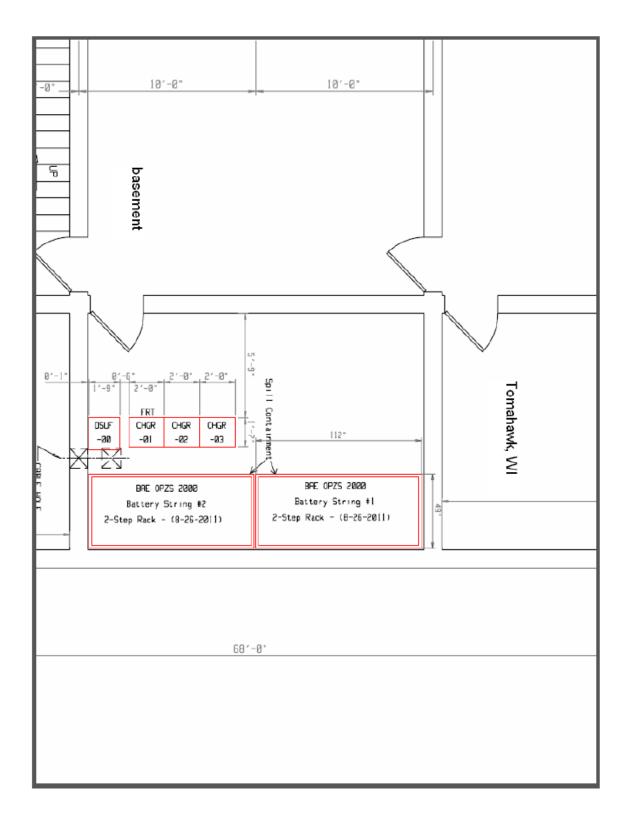
#### **Record of Change/ Review /Signature**

Date	Contributor	Description of Change	Page Number(s)
12-5-2023	T. Verhasselt, R. Robertson, and J. Witt	Authored plan and reviewed with Frontier (Tomahawk) for accuracy. Tier II contact was changed to R. Robertson.	Pgs. 1-21

Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.

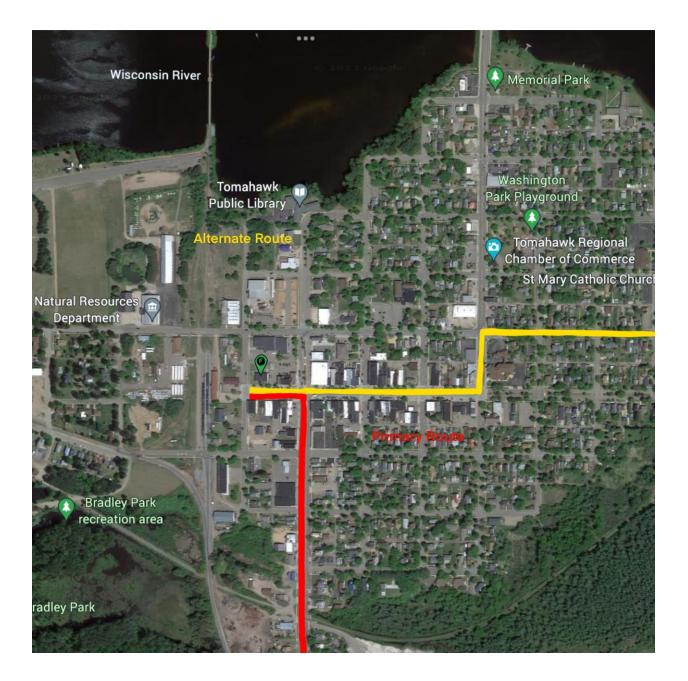
#### Attachment B





#### Attachment C

#### **Transportation Route Map**



## Attachment D

EnerSys:	SAFI	ETY DATA SHI	EET		Form #: SDS 8530 Revised: AB Supersedes: AA
Power/Tod Solutions					ECO #: 1001828
Chemical Trade Name (as used on label);			Chemical Family/Cla	assification:	
Lead-Acid Battery, Wet			Electric Storage Batte		
Synonyms:					
Industrial Battery, Traction Battery, Stationary	Battery,		Telephone:		
Deep Cycle Battery				mergencies, contact En	
Manufacturer's Name/Address:			Environmental, Health	h & Safety Dept. at 610	-208-1996
EnerSys			AL II	P	
P.O. Box 14145 2366 Bernville Road			24-Hour Emergency		CHEMTREC INT'L: 703-527-3877
Reading, PA 19612-4145			CHEMIKEC DOME:	511C. 800-424-9300	CHEMITREC INTL. 705-527-5677
II GHS HAZARDS IDENTFICATION					
HEALTH			ENVIRONMENTAL		PHYSICAL
Acute Toxicity	i		Aquatic Chronic 1		Explosive Chemical, Division 1.3
(Oral/Dermal/Inhalation) Ca	ategory 4		Aquatic Acute 1		
Skin Corrosion/Irritation Ca	tegory 1A				
	ategory 1				
	tegory 1A				
	egory 1B				
	tegory 1A				
	tegory 1A				
	ategory 2				
Toxicity (repeated exposure)					
GHS LABEL: HEALTH			ENVIRONMENTAL		PHYSICAL
Hazard Statements DANGER! Causes severe skin burns and serious eye dama May damage fertility or the unborn child if ing inhaled. May cause cancer if ingested or inhaled. Causes damage to central nervous system, blok kidneys through prolonged or repeated exposu May form explosive air/gas mixture during chi Extremely flammable gas (hydrogen). Explosive, fire, blast, or projection hazard. May cause harm to breast-fed children Harmful if swallowed, inhaled, or contact with Causes skin irritation, serious eye damage.	y gested or W A U od and C re. Ir arging. G A K K	Vear protective glove twoid breathing dust/ Jse only outdoors or i Contact with internal critating to eyes, respi Obtain special instruct No not handle until all twoid contact during J	handling, noke when using this p s/protective clothing, e fume/gas/mist/vapors/s in a well-ventilated are components may cause components may cause and skii tions before use. I safety precautions hav pregnancy/while nursia	ye protection/face prot spray. a. : irritation or severe but n. we been read and under	ns. Avoid contact with internal acid. stood
III. COMPOSITION/INFORMATION ON	INGREDIENTS				
Components	I	CAS Number	Approximate % by		
Inorganic Lead Compound:			Wt.		
Lead		7439-92-1	60-70		
* Antimony		7440-36-0	2		
* Arsenic		7440-38-2	0.2		
* Calcium		7440-70-2	0.04		
* Tin		7440-31-5	0.2		
Electrolyte (Sulfuric Acid (H2SO4/H2O))		7664-93-9	10-30		
Case Material:			5-10		
Polypropylene		9003-07-0			
Polystyrene		9003-53-6			
Styrene Acrylonitrile		9003-54-7			
Acrylonitrile Butadiene Styrene Styrene Butadiene		9003-56-9 9003-55-8			
Polyvinylchloride		9002-86-2			
Polycarbonate, Hard Rubber, Pol	yethylene	9002-88-4			

E	•				Form #: SDS 853020	
Ene	erSys. sa	FETY DATA SH	FFT		Revised: AB	
	5A 5A	FETT DATA SH			Supersedes: AA	
	Power/Full Solutions				ECO #: 1001828	
Other:						
	Silicon Dioxide (Gel batteries only)	7631-86-9	1-5			
	Sheet Molding Compound					
	(Glass reinforced polyester)		1.0. 6.1			
	Inorganic lead and electrolyte (sulfuric acid) are the pr Other ingredients may be present dependent upon batt					
IV FIDS	T AID MEASURES	ery type. Contact you	enersys representative	e for additional information.		
Inhalation						
	Sulfuric Acid: Remove to fresh air immediately. If be	reathing is difficult, giv	e oxygen. Consult a ph	ysician.		
	Lead: Remove from exposure, gargle, wash nose and	lips; consult physician.				
Ingestion:						
	Sulfuric Acid: Give large quantities of water; do not i	nduce vomiting or aspi	ration into the lungs m	ay occur and can cause permanent injury or	death;	
	consult a physician.					
	Lead: Consult physician immediately.					
Skin:	Sulfuric Acid: Flush with large amounts of water for a	at least 15 minutes: ren	ove contaminated clot	hing completely including shoes		
	If symptoms persist, seek medical attention. Wash cor					
	Lead: Wash immediately with soap and water.	naminaneu cioaning oci	ore rease. Esiscard com			
Eyes:						
	Sulfuric Acid and Lead: Flush immediately with large	amounts of water for a	a least 15 minutes while	e lifting lids.		
	Seek immediate medical attention if eyes have been en	xposed directly to acid.				
	FIGHTING MEASURES					
Flash Poir			LEL = 4.1% (Hydroger			
-	ing Media: CO2; foam; dry chemical. Do not use carbo	on dioxide directly on c	ells. Avoid breathing v	apors. Use appropriate media for surroundin	g fire.	
Special Fi	re Fighting Procedures:	10		Water and list and standard and standard		
	If batteries are on charge, shut off power. Use positiv	• •		. Water applied to electrolyte generates		
	<ul> <li>heat and causes it to spatter. Wear acid-resistant cloth But note that strings of series connected batteries may</li> </ul>			maing aquinment is shut down		
Unwenal F	ire and Explosion Hazards:	star pose risk of elecu	ie snock even when en	a ging equipment is shut down.		
Citusual r	Highly flammable hydrogen gas is generated during cl	harging and operation o	f batteries. To avoid ri	isk of fire or explosion, keep sparks or other		
	sources of ignition away from batteries. Do not allow					
	batteries. Follow manufacturer's instructions for insta			· ·		
VI. ACCI	DENTAL RELEASE MEASURES					
Spill or Le	ak Procedures:					
	Stop flow of material, contain/absorb small spills with				t	
	neutralize spilled electrolyte with soda ash, sodium bi					
	allow discharge of unneutralized acid to sewer. Acid r	-	ordance with local, sta	te, and federal requirements.		
VII HAN	Consult state environmental agency and/or federal EP.	Α.				
VII. HAN Handling:	DLING AND STORAGE					
	olved in recycling operations, do not breach the casing o	rempty the contents of	the battery. Handle car	efully and avoid tinning.		
	allow electrolyte leakage. There may be increasing risk					
	iners tightly closed when not in use. If battery case is be					
	caps on and cover terminals to prevent short circuits. Pla				ircuits.	
Keep away	from combustible materials, organic chemicals, reducin	g substances, metals, st	trong oxidizers and wat	er. Use banding or stretch wrap to secure it	ems for	
shipping.						
Storage:						
	ries in cool, dry, well-ventilated areas with impervious st					
	red under roof for protection against adverse weather cor	-	-	-		
	th adequate water supply and spill control. Avoid damag		away from fire, sparks	and heat. Keep away from metallic objects o	ould	
	bring the terminals on a battery and create a dangerous short-circuit.					
Charging: There is a		and from strings of and	as compacted betterior	whathar or not baing charmed Chut off	ar to	
	possible risk of electric shock from charging equipment a banavar not in use and bafere detachment of any circuit	-			A 10	
	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.					
	and eye protection when near batteries being charged.	and a realist anothing	and a rose creation of t	and sparse marky.		
stand met						

EnerSys.	SAFETY DATA SHEET					Form #: SDS 853020 Revised: AB Supersedes: AA ECO #: 1001828	
/III. EXPOSURE CONTROLS/P /xposure Limits (mg/m3) Note: N	ERSONAL PROTECTION						
Aposite Limits (mg/m3) Note: N	E.= Not Established						
NGREDIENTS	OSHA PEL	ACGIH	US NIOSH	Ouebec PEV	Ontario OEL	EU OEL	
Chemical/Common Names)				4			
ead and Lead Compounds							
norganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)	
ntimony	0.5	0.5	0.5	0.5	0.5	0.5 (b,e)	
rsenic	0.01	0.01	0.002	0.2	0.01	N.E	
alcium	N.E	N.E	N.E	N.E	N.E	N.E	
ín	2	2	2	2	2	N.E	
lectrolyte (Sulfuric Acid)	1	0.2	1	1	0.2	0.05 (c)	
olypropylene	N.E	N.E	N.E	N.E	N.E	N.E	
olystyrene	N.E	N.E	N.E	N.E	N.E	N.E	
yrene Acrylonitrile	N.E	N.E	N.E	N.E	N.E	N.E	
crylonitrile Butadiene tyrene	NE	NE	NE	NE	NE	NE	
tyrene Butadiene	N.E	N.E N.E	N.E N.E	N.E N.E	N.E	N.E.	
olyvinylchloride	N.E	N.E N.E	N.E N.E	N.E N.E	1	N.E.	
olycarbonate, Hard	17.E	19.15	19.10	19445		19.45	
ubber, Polyethylene	N.E	N.E	N.E	N.E	N.E	N.E	
ilicon Dioxide	N.E	ivin.	18.45	18.45	N.E.	19.15	
Gel Batteries Only)	N.E	N.E	N.E	N.E	NE	N.E	
heet Molding Compound Glass reinforced polyester)	N.E	NE	N.E	N.E	N.E	N.E	
Handle batteries cautio clothing, eye and face p positive and negative to espiratory Protection (NIOSH/M None required under ne respiratory protection. kin Protection: If battery case is damag ye Protection: If battery case is damag	I-ventilated area. If mechanica usly to avoid spills. Make cert protection when filling, chargin erminals of the batteries. Charg	ain vent caps are on s g or handling batterio e the batteries in area ntrations of sulfuric a esistant gloves with o	ecurely. Avoid contact v s. Do not allow metallic s with adequate ventilati cid mist are known to ex-	with internal componer materials to simultane on. General dilution vo ceed the PEL, use NIO	ously contact both the entilation is acceptable. SH or MSHA-approved		
with unlimited water su		nder severe exposure	emergency conditions, w		•		
Boiling Point:	construction of the second s	203 - 240° F	Specific Gravity (H2	0 = 1):	1.215 to 1.350		
Melting Point:		N/A	Vapor Pressure (mm		10		
Solubility in Water:		100%	Vapor Density (AIR		Greater than 1		
Evaporation Rate: (B	utyl Acetate = 1)	Less than 1	% Volatile by Weigh		N/A		
	pH		Flash Point:		Below room temperatur	e (as hydrogen gas)	
LEL (Lower Explosive	e Limit)	4.1% (Hydrogen)	UEL (Upper Explosi	ve Limit)	74.2% (Hydrogen)	e (an infanogen gan)	

<b>Ener</b> Sys	SAFETY DATA SHEET	Form #: SDS 853020 Revised: AB Supersedes: AA
Powee/Full St	abuhans	ECO #: 1001828
X. STABILITY AND		
Stability: Stable X_	Unstable	
	under normal conditions at ambient temperature. Prolonged overcharge; sources of ignition	
Incompatibility: (Mat		
	cid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents,	
metals, sul	fur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable	
hydrogen (		
	pounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen	
and reduci		
	mpounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-arsine.	
Hazardous Decomposi Sulfuric A	tion Products: cid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.	
	pounds: High temperatures likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent	
	nay generate highly toxic arsine gas.	
Hazardous Polymeriza		
Will not o		
XI. TOXICOLOGICA	LINFORMATION	
Routes of Entry:	ride Hannefel has all most as a function	
	cid: Harmful by all routes of entry. nounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor	
	products. Paradous exposure can occur only when product is neared, oxidized or otherwise processed or damaged to create dust, vapor he presence of nascent hydrogen may generate highly toxic arsine gas.	
Inhalation:	te presence of nascent nyurogen may generate nightly toxic arstne gas.	
	cid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.	
Lead Com	pounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.	
Ingestion:		
	cid: May cause severe irritation of mouth, throat, esophagus and stomach.	
	pounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to system	iic
	d must be treated by a physician.	
Skin Contact: Sulfuric A	cid: Severe irritation, burns and ulceration.	
	nounds: Not absorbed through the skin.	
	impounds: Contact may cause dermatitis and skin hyper pigmentation.	
Eye Contact:	,	
Sulfuric A	cid: Severe irritation , burns, cornea damage, and blindness.	
Lead Com	ponents: May cause eye irritation.	
Effects of Overexposu		
	cid: Severe skin irritation, damage to cornea, upper respiratory irritation.	
	pounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep	
Effects of Overexposu	es and irritability.	
	cid: Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.	
	pounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and	
	epeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnor	mal
	velocities in persons with blood lead levels of 50mcg/100 ml or higher. Heavy lead exposure may result in central nervous system da	
encephalo	bathy and damage to the blood-forming (hematopoietic) tissues.	
Carcinogenicity:		
	cid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a	
	reinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric	
	ons contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the	ie .
	ich as overcharging, may result in the generation of sulfuric acid mist. pounds: Lead is listed as a Group 2A carcinogen, likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 1910.1	1200
	F, this is approximately equivalent to GHS Category 1B. <u>Proof of carcinogenicity in humans is lacking at present.</u>	1400
	r, this is approximately equivalent to GFIS Category 18. Proof of category in numaric is facting at present. Arsenic is listed by IARC as a Group 1 - carcinogenic to humans. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, thi	s is
	tely equivalent to GHS Category 1A.	
	enerally Aggravated by Exposure:	
	ure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravat	ie
	ich as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.	

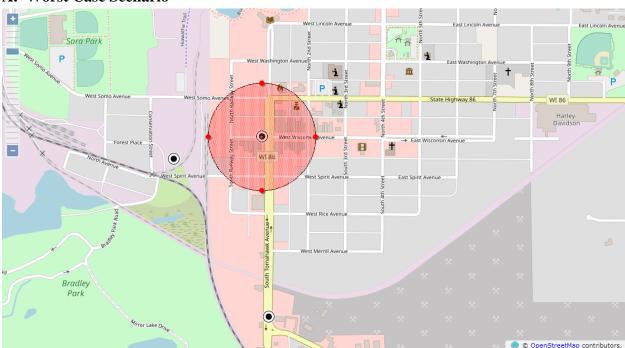
Ene	SAFETY DATA SHEET		SDS 853020 AB s: AA 1001828
Acute Toxic		ECO #:	1001828
Inhalation L			
	LC50 rat: 375 mg/m3; LC50: guinea pig: 510 mg/m3		
	ead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)		
	rsenic: No data		
Oral LD50:			
Electrolyte:	rat: 2140 mg/kg		
Elemental L	ead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)		
	rsenie: LD50 mouse: 145 mg/kg		
Elemental A	ntimony: LD50 rat: 100 mg/kg		
Additional	Health Data:		
Additional			
	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	ha	
	worksite. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of		
	tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated area		
	never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated it		
	children and their environment.		
	The 19th 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.		
	OGICAL INFORMATION		
Environme			
	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.		
Environme	nos sudies include read compounds and not elemental read. ntal Toxicity: Aquatic Toxicity:		
Latin Online	Sulfuric acid: 24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L		
	96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L		
	Lead: 48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion		
	Arsenic: 24 hr LC50, freshwater fish (Carrassisus auratus) >5000 g/L.		
Additional	Information:		
	· No known effects on stratospheric ozone depletion.		
	· Volatile organic compounds: 0% (by Volume)		
	· Water Endangering Class (WGK): NA		
	DSAL CONSIDERATIONS (UNITED STATES)		
	ries: Send to secondary lead smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of		
	tion 266.80 are met. This should be managed in accordance with approved local, state and federal requirements. Consult state environmental or federal EPA.		
Electrolyte:			
	lized slurry into sealed containers and handle as applicable with state and federal regulations. Large water-diluted spills, after		
	in and testing, should be managed in accordance with approved local, state and federal requirements. Consult state environmental		
	or federal EPA.		
Following lo	cal, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.		
	SPORT INFORMATION		
U.S. DOT:			
	The transportation of wet and moist charged (moist active) batteries within the continental United States is regulated by the U.S. DOT		
	through the Code of Federal Regulations, Title 49 (49CFR). These regulations classify these types of batteries as a hazardous material.		
	Refer to 49 CFR, 173.159 for more details pertaining to the transportation of wet and moist batteries.		
	The shipping information is as follows:		
	Proper Shipping Name: Batteries, wet, filled with acid Packing Group: N/A		
	Hazardous Class: 8 Label/Placard Required: Corrosive		
	UN Identification: UN2794 Contrast was Experience and different information provides the abovi fraction of hettorice		
	Contact your EnerSys representative for additional information regarding the classification of batteries.		
49 CEP 173	.159(e) specifies that when transported by highway or rail, electric storage batteries containing electrolyte or corrosive battery fluid are not subject	tto	
	1.5 yes specifies that when transported by ingrivity or rail, electric storage batteries containing electrosyse or corrosive battery initia are not subject quirements of this subchapter, if all of the following are met:		
- ay cance to	(1) No other hazardous materials may be transported in the same vehicle;		
	<ol> <li>The batteries must be loaded or braced so as to prevent damage and short circuits in transit;</li> </ol>		
	(3) Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batterial	es; and	
	(4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.		
If any of the	above-referenced requirements are not met, the batteries must be shipped as fully-regulated Class 8 Corrosive hazardous materials.		

<b>Ener</b> Sys	SA SA	FETY DATA SHEE	г	Form #: SDS 853020 Revised: AB Supersedes: AA ECO #: 1001828			
The interr (IATA).	erous Goods Regulations DGR: 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 870.						
The shipp	ing information is as follows: Proper Shipping Name: Batteries, Hazardous Class: 8 UN Identification: UN2794	wet, filled with acid	Packing Group: N/A Label/Placard Required: Corros	ive			
	our EnerSys representative for additional in	formation regarding the clas	sification of batteries.				
Goods co IMDG co	-	these types of batteries as h ing Instruction P801.	is regulated by the International Maritime Dangero azardous material. The batteries must be packed ac Packing Group: N/A Label/Decard Required: Correct	cording to			
	Hazardous Class: 8 UN Identification: UN2794		Label/Placard Required: Corros	ive			
Contact w	our EnerSys representative for additional in	formation regarding the class	sification of batteries				
V. REGULATORY		contactor regarding are can	sintenton of particles.				
NITED STATES:							
PA SARA Title III:							
	tremely Hazardous Substances (EHS):						
	-		Threshold Planning Quantity (TPQ) of 1,000 lbs.				
EPCRA S	ection 302 notification is required if 1000 ll	ss or more of sulfuric acid i	present at one site (40 CFR 370.10). For more info	rmation consult			
40 CFR P	art 355. The quantity of sulfuric acid will va	ry by battery type. Contact	your EnerSys representative for additional informati	ion.			
ection 304 CERCLA	Hazardous Substances:						
Reportabl	e Quantity (RQ) for spilled 100% sulfuric a	id under CERCLA (Superf	und) and				
			State and local reportable quantities for spilled sulfu	ric acid may yary			
ection 311/312 Hazan		to know skely is 1,000 lbs.	sale and isea reportable quarkines for spined suite	in action may range			
		and the second se	Conference of the second in successful as a \$600 lbs as	man and/an ifile d is			
			if sulfuric acid is present in quantities of 500 lbs or	more and/or if lead is			
	quantities of 10,000 lbs or more. For more	information consult 40 CFF	370.10 and 40 CFR 370.40				
ection 313 EPCRA To	xic Substances:						
40 CFR se	ection 372.38 (b) states: If a toxic chemical	is present in an article at a	covered facility, a person is not required to consider	the quantity of the			
			reshold has been met under § 372.25, § 372.27, or §				
	-		applies whether the person received the article from				
				n another person			
or the per-	son produced the article. However, this exer	nption applies only to the q	antity of the toxic chemical present in the article.				
upplier Notification:							
This prod	uct contains toxic chemicals, which may be	reportable under EPCRA S	ection 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 th	ne required reports:			
	Toxic Chemical	CAS Number	Approximate % by Wt.				
	Lead	7439-92-1	60				
	Electrolyte	/439-92-1	00				
		7664-93-9	10 - 30				
	(Sulfuric Acid (H2SO4/H2O))						
	* Antimony	7440-36-0	2				
	* Arsenic	7440-38-2	0.2				
	Tin	7440-31-5	0.2				
See 40 CF	RG Part 370 for more details.		10-m				
	u distribute this product to other manufacturers in SIC Codes 20 through 39, this information must be provided with the first shipment ach calendar year.						
The Section	The Section 313 supplier notification requirement does not apply to batteries, which are "consumer products".						
	* Not present in all battery types. Contact your EnerSys representative for additional information.						

Power/Full Solutions	ETY DATA SHEET	Form #: SDS 853020 Revised: AB Supersedes: AA ECO #: 1001828		
TSCA: TSCA Section 8b – Inventory Status: All chemicals com	prising this product are either exempt or listed on the TSCA Inventory.			
TSCA Section 12b (40 CFR Part 707.60(b)) No notice of context of individual section 5, 6, or 7 actions.	of export will be required for articles, except PCB articles, unless the Agency so requires	s in the		
TSCA Section 13 (40 CFR Part 707.20): No import cert Chemical Import Requirements of the Toxic Substances	tification required (EPA 305-B-99-001, June 1999, Introduction to the Control Act, Section IV.A).			
	ndling requirements when managed in compliance with 40 CFR section 266.80 or 40 CI EPA hazardous waste number D002 (corrosivity) and D008 (lead).	FR part 273.		
chemicals (ODC's), defined by the USEPA as Class I sub	e depletion in the atmosphere due to emissions of CFC's and other ozone depleting bstances. Pursuant to Section 611of the Clean Air Act Amendments (CAAA) thed a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.			
	es contain lead and lead compounds, chemicals known to the State of California to caus her chemicals known to the State of California to cause cancer. Wash hands after handl			
INTERNATIONAL REGULATIONS: Distribution into Quebec to follow Canadian Controlled Distribution into the EU to follow applicable Directives	u			
XVI. OTHER INFORMATION				
Revision: AB (04-25-17) NFPA Hazard Rating for Sulfuric Acid: Flammability (Red) = 0 Health (Bluc) = 3	Reactivity (Yellow) = 2 Sulfuric acid is water-reactive if concentrated.			
DISCLAIMER This Safety Data Sheet is created by the manufacturer to comply with the requirements of 29 CFR 1910.1200. To the extent allowed by law, the manufacturer hereby expressly disclaims any liability to any third party, including users of this product, including, but not limited to, consequential or other damages, arising out of the use of, or reliance on, this Safety Data Sheet.				

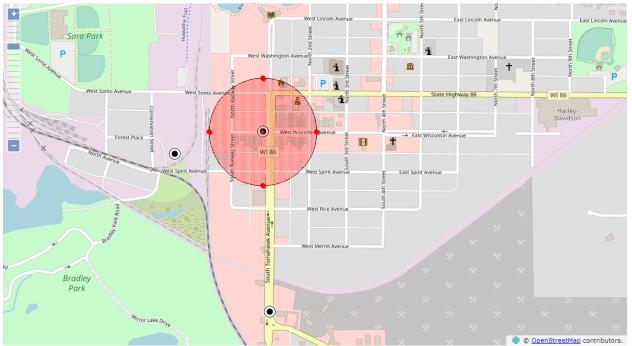


## Vulnerability Zone Maps for Sulfuric Acid



## A. Worst Case Scenario

## **B.** Re-evaluation Scenario



Lincoln County: Local Emergency Planning Committee (LEPC)



# EMERGENCY MANAGEMENT



## 2023 Off Site Plan: Interflex Group

Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

## **Table of Contents**

I.	Facility Information
II.	Facility Emergency Contacts
III.	Extremely Hazardous Substances (EHS)
IV.	Primary Emergency Responders
V.	Support Available at Facility
VI.	General information and Assumptions (Disclaimer)7
VII.	Hazard Analysis Summary7
VIII	Population Protection
IX.	Distribution List
X.	Supporting Documentation
Atta	chment A, Record of Change and Review11
Atta	chment B, Facility Layout and Site Information
Atta	chment C, Transportation Route Map13
Atta	chment D, Safety Data Sheet for Sulfuric Acid14
Atta	chment E, Vulnerability Zone Map for Sulfuric Acid21

## I. Facility Information

#### A. Interflex Group

- 1. Address: 1401 West Taylor Street, Merrill, WI 54452
- 2. Phone: (715) 536-5400
- 3. Facility ID # (Assigned by WEM): 197616

## **II.Facility Emergency Contacts**

#### A. Tier II Contact:

- 1. Name: Beverly Kershner
- 2. Position: Environment Specialist
- 3. Office Phone: (484) 553-6676
- 4. Emergency Phone: (484) 553-6676
- 5. Email: bkershner@complianceplace.com

#### **B.** Tier II Emergency Coordinator:

- 1. Name: Jim Loos
- 2. Position: Plant Manager
- 3. Office Phone: (715) 536-5400
- 4. Emergency Phone: (715) 921-9874
- 5. Email: jloos@interflexgroup.com

#### **C. Tier II Emergency Contact:**

- 1. Name: Scottie Nicholson
- 2. Position: Ink Room Technician
- 3. Office Phone: (715) 536-5400
- 4. Emergency Phone: (715) 218-4714
- 5. Email: snicholson<u>@interflexgroup.com</u>

#### **D.** Tier II Emergency Contact

- 1. Name: Andy Moses
- 2. Position: Operations Manager
- 3. Office Phone: (715) 536-5400
- 4. Emergency Phone: (715) 216-7945
- 5. Email: amoses@interflexgroup.com

## III. Extremely Hazardous Substances (EHS)

#### A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)	
7664-93-9	Sulfuric Acid	5,879	5,879	< 0.1 miles	

## **IV.** Primary Emergency Responders

#### A. Lincoln County Sheriff's Office

1. Phone: 911 or (715) 563-6272

#### **B.** Lincoln County Emergency Communications Center

1. Phone: 911 or (715) 563-6272

#### C. Lincoln County Emergency Management

1. Phone: (715) 218-0128

#### **D.** Merrill Fire Department

1. Phone: 911 or (715) 536-2233

#### E. Merrill Police Department

1. Phone: 911 or (715) 536-8311

## V. Support Available at Facility

#### A. Chemical Emergency Monitoring Equipment:

1. None

#### **B.** Personal Protective Equipment:

1. None

#### **C.** Other Equipment or Supplies:

1. None

#### D. Outside Resources Available:

- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

The Tomahawk Fire Department is capable of handling minor hazardous materials incidents; however, if the incident exceeds the ability/capability of Tomahawk Fire Department LCSO Communications Center will request the appropriate agency. Lincoln County contracts with two (2) external hazmat response teams dependent on level of release, for Level B response Oneida County Sheriff Office Hazardous Materials Response Team; whereas, for Level A response Wausau Wisconsin Hazardous Response Team.

For Level A incidents, the response of Wausau Wisconsin Hazardous Response Team must be requested through the Wisconsin Emergency Management (WEM) State Emergency Operations Center (SEOC). Contact the WEM SEOC Duty Officer at (800) 943-0003 for response.

- 2. Chemtrec: (800) 424-9300
  - a) Unknown response time
- 3. National Response Center: (800) 424-8802
  - a) Unknown response time
- 4. REI—Spill & Response Recovery: (800) 734-7745
  - a) Unknown response time

# VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

# VII. Hazard Analysis Summary

For over 40 years Interflex has been an innovator in flexible packaging solutions with flexible, responsive service as key to their value proposition. Their team supports a range of recognized brands in specialty packaged goods segments in the US, UK, and Europe.

## A. Greatest Potential for Release

1. Sulfuric acid is the only extremely hazardous chemical present at the facility and therefore presents the greatest potential for release. However, the sulfuric acid is a component of and contained in electric forklift and pallet jack batteries.

#### **B.** Vulnerability Zones (by chemical)

Sulfuric Acid: CAS #7664-93-9						
Amount Released:	5,8	5,879 lbs.				
Concentration:	10	0%				
Physical State:	Lic	quid (Ambient)				
Diked Area:	No	)				
Level of Concern (LOC):	0.0	$008 \text{ gm/m}^3$				
LOC Type:	Gr	eenbook LOC				
Worst Case Scenario			Re-Evaluation Scenario			
Duration:		10 minutes	Duration	10 minutes		
Wind Speed:		3.4 mph	Wind Speed:	11.9 mph		
Ground Roughness:		Rural	Ground Roughness:	Urban		
Atmospheric Stability Clas	s:	F	Atmospheric Stability Class:	D		
Risk:		Low	Risk:	Low		
Consequences:		Low	Consequences:	Low		
Overall Risk:		Low	Overall Risk:	Low		
Threat Zone Radius:		< 0.1 miles	Threat Zone Radius:	< 0.1 miles		

## C. Estimation of Population Affected

- 1. Sulfuric Acid
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be isolated to any of the eighty-four (84) full-time employees and no other persons or special facilities.
  - b) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be isolated to any of the eighty-four (84) full-time employees and no other persons or special facilities.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

#### **D.** Critical Infrastructure

1. None

## E. Hospital

1. None

#### F. Nursing Homes/Assisted Living Facilities

1. None

## G. Schools

1. None

## H. Child Care/Day Care

1. None

# VIII. Population Protection

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

# IX. Special Considerations

#### A. None

# X. Distribution List

- Interflex Group
- Merrill Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Oneida County Emergency Management

# XI. Supporting Documentation

#### A. Attachments

- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Sulfuric Acid
- 5. Attachment E, Vulnerability Zone Map for Sulfuric Acid

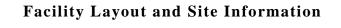
## Attachment A

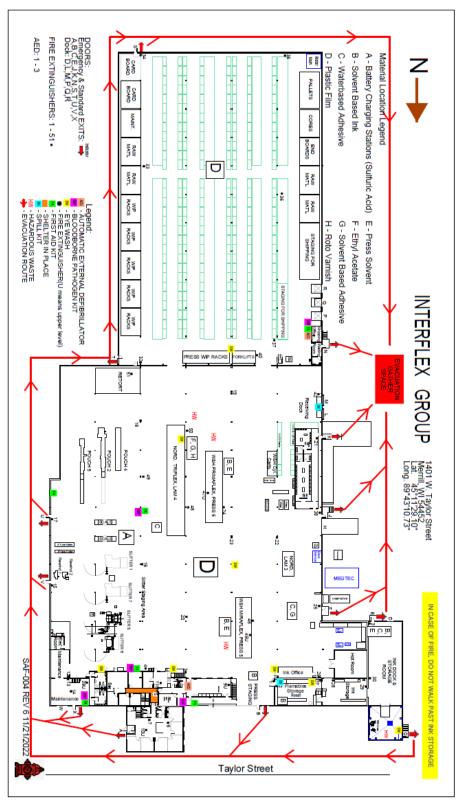
## Record of Change/ Review /Signature

Date	Contributor	Description of Change	Page Number(s)
12-5-2023	T. Verhasselt and B. Kershner	Authored plan and reviewed with Interflex Group for accuracy. Tier II contacts were updated, to include phone numbers. Greatest potential for release updated to reflect sulfuric acid being battery acid. Added updated facility layout and site information.	Pgs. 1-21

Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.

Attachment B





# Attachment C

## **Transportation Route Map**



# Attachment D

<b>CHAWKE</b>	R s	SAFETY DATA SH	EET		Revised: AA (06-16-16) Supersedes: 05/14/2015 ECO #: 1001735
I. PRODUCT IDENTIFICATION					
Chemical Trade Name (as used on I	label):		Chemical Family/Cla		
Lead-Acid Battery, Wet			Electric Storage Batter	ry	
iynonyms: ndustrial Battery, Traction Battery, S	Stationers Batters		Telephones		
Deep Cycle Battery		Telephone: For information and ex-	mergencies, contact Ha	uke's	
Manufacturer's Name/Address;				-	-238-5700 ATTN: Kevin P. Wileman
lawker Powersource			Lawnonnenan, rream	rac outry toept in 425	-230-5700 ATTA: Revin F. Wilcham
O. Box 808			24-Hour Emergency	Response Contact:	
404 Ooltewah Indsutrial Drive					CHEMTREC INTL: 703-527-3877
Joltewah, TN 37363					
I GHS HAZARDS IDENTFICATI	ION				
HEALT	Н		ENVIRONMENTAL		PHYSICAL
Acute Toxicity			Aquatic Chronic 1		Explosive Chemical, Division 1.3
Oral/Dermal/Inhalation)	Category 4		Aquatic Acute I		
kin Corrosion/Irritation	Category 1A				
iye Damage	Category 1				
Reproductive	Category 1A	1			
larcinogenicity (lead compoun	Category 1B	1			
Carcinogenicity (arsenic)	Category 1A	1			
Carcinogenicity (acid mist)	Category 1A	1			
Specific Target Organ Foxicity (repeated exposure)	Category 2				
GHS LABEL:					
HEALT	н		ENVIRONMENTAL		PHYSICAL
MANGER! lauses severe skin burns and serious					sction.
Hazard Statements DANGER! Causes severe skin burns and serious May damage fertility or the unborn ch nhaled.		Wash thoroughly after Do not eat, drink or si Wear protective glove	r handling. moke when using this p	ye protection/face prot	cetion.
DANGER! lauses severe skin burns and serious day damage fertility or the unborn ch nhaled.	hild if ingested or	Wash thoroughly afte Do not eat, drink or si Wear protective glove Avoid breathing dust	r handling. moke when using this p es/protective clothing, e	ye protection/face prot pray.	cetion.
ANGER! Sauses severe skin burns and serious Aay damage fertility or the unborn ch nhaled. Aay cause cancer if ingested or inhal	hild if ingested or ed.	Wash thoroughly afte Do not eat, drink or si Wear protective glove Avoid breathing dust Use only outdoors or	r handling. moke when using this p es/protective clothing, e /fume/gas/mist/vapors/s in a well-ventilated area	ye protection/face prot pray. 1.	ection. ns. Avoid contact with internal acid.
AANGER! Sauses severe skin burns and serious Aay damage fertility or the unborn ch nhaled. Aay cause cancer if ingested or inhal Sauses damage to central nervous sys	hild if ingested or ed. stem, blood and	Wash thoroughly afte Do not eat, drink or si Wear protective glove Avoid breathing dust. Use only outdoors or Contact with internal	r handling. moke when using this p es/protective clothing, e /fume/gas/mist/vapors/s in a well-ventilated area	ye protection/face prot pray. 1. irritation or severe but	
AANGER! Sauses severe skin burns and serious May damage fertility or the unborn ch nhaled. May cause cancer if ingested or inhal Sauses damage to central nervous sys idneys through prolonged or repeate	hild if ingested or ed. stem, blood and d exposure.	Wash thoroughly afte Do not eat, drink or si Wear protective glove Avoid breathing dust. Use only outdoors or Contact with internal	r handling. moke when using this p es/protective clothing, e /fume/gas/mist/vapors/s in a well-ventilated are: components may cause piratory system, and skin	ye protection/face prot pray. 1. irritation or severe but	
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ANGER! Suises severe skin hums and serious May damage fertility or the unborn ch nhaled. May cause cancer if ingested or inhal suises damage to central nervous sys idneys through prolonged or repeate May form explosive air/gas mixture d Extremely flammable gas (hydrogen).	ald if ingested or ed. stem, blood and d exposure. laring charging.	Wash thoroughly after Do not eat, drink or si Wear protective glove Avoid breathing dust Use only outdoors or Contact with internal Irritating to eyes, resp Obtain special instruc Do not handle until al	r handling. moke when using this p ss/protective clothing, e f/tume/gus/mist/vapors/s in a well-ventilated are: components may cause viratory system, and skin tions before use. Il safety precautions have	ye protection/face prot pray, a. irritation or severe bun n. we been read and under	ns. Avoid contact with internal acid.
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	HAWKER SA	FETY DATA SHI	EET		Form #: SDS 853020H Revised: AA (06-16-16) Supersedes: 05/14/2015 ECO #: 1001735
Other:					
	Silicon Dioxide (Gel batteries only)	7631-86-9	1-5		
	Sheet Molding Compound				
	(Glass reinforced polyester)				
	Inorganic lead and electrolyte (sulfuric acid) are the pr				
	Other ingredients may be present dependent upon batt	ery type. Contact your	Hawker representative	for additional information.	
	T AID MEASURES				
Inhalation	<u>Sulfuric Acid:</u> Remove to fresh air immediately. If br <u>Lead:</u> Remove from exposure, gargle, wash nose and i		e oxygen. Consult a phy	sician	
Ingestion:					
	Sulfuric Acid: Give large quantities of water; do not in	duce vomiting or aspir	ation into the lungs ma	y occur and can cause permanent injury	or death;
	consult a physician				
	Lead: Consult physician immediately.				
Skin:					
	Sulfuric Acid: Flush with large amounts of water for a				
	If symptoms persist, seek medical attention. Wash con	taminated clothing befo	re reuse. Discard conta	minated shoes	
	Lead: Wash immediately with soap and water.				
Eyes:					
	Sulfuric Acid and Lead: Flush immediately with large		least 15 minutes while	lifting lids	
	Seek immediate medical attention if eyes have been ex	posed directly to acid.			
V. FIRE I Flash Poin	FIGHTING MEASURES			(Gas) UEL = 74.2%	
	hing Media: CO2; foam; dry chemical. Do not use carbo	Flammable Limits:			ding fire
	ing Media: CO2; toan; dry chemical: Do not use carbo ire Fighting Procedures:	i dioxide directly of ce	its. Avoid breathing vi	pors. Use appropriate media for surroun	ung me.
Unusual F	If batteries are on charge, shut off power. Use positiv heat and causes it to spatter. Wear acid-resistant cloth But note that strings of series connected batteries may Fire and Explosion Hazards: Highly flammable hydrogen gas is generated during ch	ing, gloves, face and ey still pose risk of electri	e protection. c shock even when cha	rging equipment is shut down.	ter
	sources of ignition away from batteries. Do not allow				
	batteries. Follow manufacturer's instructions for instal				
VI. ACCI	IDENTAL RELEASE MEASURES				
Spill or Le	eak Procedures:				
	Stop flow of material, contain/absorb small spills with	dry sand, earth, and ver	miculite. Do not use c	ombustible materials. If possible, carefu	illy
	neutralize spilled electrolyte with soda ash, sodium bio	arbonate, lime, etc. We	ear acid-resistant clothi	ng, boots, gloves, and face shield. Do n	
	allow discharge of unneutralized acid to sewer. Acid n				DE
		just be managed in acco		e, and federal requirements.	06
	Consult state environmental agency and/or federal EP/			e, and federal requirements.	M
VII. HAN				e, and federal requirements.	ot
VII. HAN Handling:	Consult state environmental agency and/or federal EP/ NDLING AND STORAGE			e, and federal requirements.	SK
Handling:	Consult state environmental agency and/or federal EP/ NDLING AND STORAGE		ordance with local, stat		26
Handling: Unless inv	Consult state environmental agency and/or federal EP/ NDLING AND STORAGE	empty the contents of t	he battery. Handle care	fully and avoid tipping,	26
Handling: Unless inv which may	Consult state environmental agency and/or federal EP/ NDLING AND STORAGE volved in recycling operations, do not breach the casing or	empty the contents of t f electric shock from st	he battery. Handle care	fully and avoid tipping,	94
Handling; Unless inv which may Keep conta Keep vent	Consult state environmental agency and/or federal EP/ NDLING AND STORAGE rolved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk of almers tightly closed when not in use. If battery case is be caps on and cover terminals to prevent short circuits. Pla	empty the contents of t f electric shock from st oken, avoid contact wit ce cardboard between 1	he battery. Handle card rings of connected batt h internal components. ayers of stacked autom	fully and avoid tipping, eries. otive batteries to avoid damage and shor	t circuits.
Handling: Unless inv which may Keep conta Keep vent Keep away	Consult state environmental agency and/or federal EP/ NDLING AND STORAGE volved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk of ainers tightly closed when not in use. If battery case is br	empty the contents of t f electric shock from st oken, avoid contact wit ce cardboard between 1	he battery. Handle card rings of connected batt h internal components. ayers of stacked autom	fully and avoid tipping, eries. otive batteries to avoid damage and shor	t circuits.
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Handling: Unless inv which may Keep conta Keep vent Keep away shipping. Storage:	Consult state environmental agency and/or federal EP/ <b>SDLING AND STORAGE</b> volved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk of ainers tightly closed when not in use. If battery case is be caps on and cover terminals to prevent short circuits. Pla y from combustible materials, organic chemicals, reducing	empty the contents of ti f electric shock from st oken, avoid contact with ce cardboard between li substances, metals, str	ndance with local, stat	fully and avoid tipping, eries. otive batteries to avoid damage and shor r. Use banding or stretch wrap to secure	t circuits.
Handling: Unless inv which may Keep conta Keep vent Keep away shipping. Storage: Store batte	Consult state environmental agency and/or federal EP/ NDLING AND STORAGE volved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk of ainers tightly closed when not in use. If battery case is be caps on and cover terminals to prevent short circuits. Play y from combustible materials, organic chemicals, reducing eries in cool, dry, well-ventilated areas with impervious su	empty the contents of ti f electric shock from st sken, avoid contact with ce cardboard between l substances, metals, stu- rfaces and adequate co	ndance with local, stat he battery. Handle caro rings of connected bath h internal components. ayers of stacked autom ong oxidizers and wata stainment in the event	fully and avoid tipping, eries. otive batteries to avoid damage and shor rr. Use banding or stretch wrap to secure of spills. Batteries should	t circuits.
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Handling: Unless inv which may Keep conta Keep vent Keep away shipping. Storage: Store batte also be stor in areas wi	Consult state environmental agency and/or federal EP/ <b>DUING AND STORAGE</b> ovlved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk of ainers tightly closed when not in use. If battery case is be caps on and cover terminals to prevent short circuits. Play from combustible materials, organic chemicals, reducing eries in cool, dry, well-ventilated areas with impervious su red under roof for protection against adverse weather con th adequate water supply and spill control. Avoid damag terminals on a battery and create a dangerous short-circuit	empty the contents of f f electric shock from st oken, avoid contact wit ce cardboard between I substances, metals, str rfaces and adequate con flictors. Separate from e to containers. Keep a	infance with local, stat he battery. Handle care rings of connected batt h internal components, ayers of stacked autom ong oxidizers and wate ntainment in the event incompatible materials	efully and avoid tipping, eries. otive batteries to avoid damage and shor rr. Use banding or stretch wrap to secure of spills. Batteries should . Store and handle only	t circuits. e items for
Handling: Unless inv which may keep conta Keep vent Keep away shipping. Storage: Storage: Store batte also be stoo in areas wi bridge the Charging:	Consult state environmental agency and/or federal EP/ <b>DUING AND STORAGE</b> ovlved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk of ainers tightly closed when not in use. If battery case is be caps on and cover terminals to prevent short circuits. Play from combustible materials, organic chemicals, reducing eries in cool, dry, well-ventilated areas with impervious su red under roof for protection against adverse weather con th adequate water supply and spill control. Avoid damag terminals on a battery and create a dangerous short-circuit	empty the contents of t f electric shock from st oken, avoid contact with c cardboard between l substances, metals, str rfaces and adequate co ditions. Separate from t to containers. Keep a t.	indance with local, stat he battery. Handle caro rings of connected bath h internal components. ayers of stacked autom ong oxidizers and wato ntainment in the event incompatible materials way from fire, sparks a	efully and avoid tipping, eries. otive batteries to avoid damage and shor rr. Use banding or stretch wrap to secur of spills. Batteries should . Store and handle only nd heat. Keep away from metallic object	t circuits. e items for ts could
Handling: Unless inv which may keep conta Keep vent Keep away shipping. Store batte also be sto batte also be sto bridge the Charging: There is a	Consult state environmental agency and/or federal EP/ <b>DLING AND STORAGE</b> volved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk s ainers tightly closed when not in use. If battery case is br caps on and cover terminals to prevent short circuits. Play y from combustible materials, organic chemicals, reducing eries in cool, dry, well-ventilated areas with impervious su red under roof for protection against adverse weather con ifth adequate water supply and spill control. Avoid damag terminals on a battery and create a dangerous short-circuit	empty the contents of t f electric shock from st oken, woid contact with ce cardboard between 1 substances, metals, str rfaces and adequate co ditions. Separate from e to containers. Keep a L.	infance with local, stat he battery. Handle care rings of connected batt h internal components, agers of stacked autom ong oxidizers and wate ntainment in the event incompatible materials way from fire, sparks a s connected batteries, s	efully and avoid tipping, eries. otive batteries to avoid damage and shor rr. Use banding or stretch wrap to secure of spills. Batteries should . Store and handle only and heat. Keep away from metallic object whether or not being charged. Shut-off pr	t circuits. e items for ts could ower to
Handling: Unless inv which may keep conta keep vent keep vent keep away shipping. Storege: Store batte also be sto in areas wi bridge the Charging: There is a chargers w	Consult state environmental agency and/or federal EP/ <b>DLING AND STORAGE</b> volved in recycling operations, do not breach the casing or y allow electrolyte leakage. There may be increasing risk of ainers tightly closed when not in use. If battery case is be caps on and cover terminals to prevent short circuits. Pla y from combustible materials, organic chemicals, reducing eries in cool, dry, well-ventilated areas with impervious su red under roof for protection against adverse weather con ith adequate water supply and spill control. Avoid damag terminals on a battery and create a dangerous short-circuit possible risk of electric shock from charging equipment a	empty the contents of f f electric shock from st oken, avoid contact wit ce cardboard between I substances, metals, str rfaces and adequate co flictions. Separate from e to containers. Keep a t. and from strings of serie onnections. Batteries b	ndance with local, stat he battery. Handle care rings of connected batt internal components. ayers of stacked autom ong oxidizers and wato rtainment in the event incompatible materials way from fire, sparks a s connected batteries, eing charged will gene	efully and avoid tipping, eries. otive batteries to avoid damage and shor rr. Use banding or stretch wrap to secure of spills. Batteries should . Store and handle only nd heat. Keep away from metallic object whether or not being charged. Shut-off po rate and release flammable hydrogen gas	t circuits. e items for ts could ower to

## Safety Data Sheet for Sulfuric Acid

CHAWKEK 🕼	HAWKER
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#### SAFETY DATA SHEET

Form #: SUS 85.9020H Revised: AA (06-16-16) Supersedes: 05/14/2015 ECO #: 1001735

VIII. EXPOSURE CONTROL	VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION						
Exposure Limits (mg/m3) Not	e: N.E.= Not Established						
INGREDIENTS	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL	
(Chemical/Common Names)							
Lead and Lead Compounds							
(inorganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)	
Antimony	0.5	0.05	0.5	0.5	0.5	0.15 (b)	
Arsenic	0.01	0.01	0.002	0.2	0.01	N.E	
Calcium	N.E	N.E	N.E	N.E	N.E	N.E	
Tin	2	2	2	2	2	N.E	
Electrolyte (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	
Polystyrene	N.E	N.E	N.E	N.E	N.E	N.E	
Styrene Acrylonitrile	N.E	N.E	N.E	N.E	N.E.	N.E	
Acrylonitrile Butadiene							
Styrene	N.E	N.E	N.E	N.E	N.E	N.E	
Styrene Butadiene	N.E	N.E.	N.E	N.E	N.E.	N.E	
Polyvinylchloride	NE	N.E	N.E	N.E	1	N.E	
Polycarbonate, Hard Rubber, Polyethylene	NE	N.E	N.E	N.E	N.E	N.E	
	NE	N.E	N.E	N.E	N.E.	N.E	
Silicon Dioxide							
(Gel Batteries Only)	N.E	N.E	N.E	N.E	N.E	N.E	
Sheet Molding Compound							
(Glass reinforced polyester)	NE	NE	N.E	N.E	N.E	NE	
NOTES:							
(b) As inhalable aerosol							
(c) Thoracic fraction							
(c) Based on OEL;s Of Austria,	Belgium, Denmark, France, Netherla	ands, Switzerland, & U	J.K.				
Engineering Controls (Ventila							
Store and handle in	n well-ventilated area. If mechanical	ventilation is used, co	mponents must be acid	-resistant.			
Handle batteries ca	nationally to avoid spills. Make certa	in vent caps are on sec	urely. Avoid contact w	ith internal component	ts. Wear protective		
clothing, eye and f	ace protection when filling, charging	or handling batteries.	Do not allow metallic r	naterials to simultaneo	usly contact both the		
positive and negati	ve terminals of the batteries. Charge	the batteries in areas	with adequate ventilation	n. General dilution ve	ntilation is acceptable.		
Respiratory Protection (NIOS							
	er normal conditions. When concen	trations of sulfuric aci	f mist are known to exc	eed the PEL, use NIO	SH or MSHA-approved		
respiratory protecti							
Skin Protection:							
	amaged, use rubber or plastic acid-re	sistant eloues with all	ow-length gountlet ack	Aresistant annual cloth	ing and boots		
	analysis, use rubber or pushe acid-re	sussiant groves with ele	ow-sengen gaunder, act	a resistant apron, ciou	and tracks.		
Eye Protection: If homen care is de	unand use chamical excelor or for	e chield					
	amaged, use chemical goggles or fac	e snieki.					
Other Protection:							
	furic acid is handled in concentration	-			-		
	er supply. Acid-resistant apron. Un			car acid-resistant cloth	ing and boots.		
	mended when adding water or electro	olyte to batteries, wash	hands after handling.				
IX. PHYSICAL AND CHEMI	CAL PROPERTIES						
Properties Listed Below are fo	r Electrolyte:						
Boiling Point:		203 - 240° F	Specific Gravity (H2	O = 1):	1.215 to 1.350		
Melting Point:		N/A	Vapor Pressure (mm	Hg):	10		
Solubility in Wate		100%	Vapor Density (AIR		Greater than 1		
	: (Butyl Acetate = 1)	Less than 1	% Volatile by Weigh		N/A		
L'apor actour Raite				-			
	pH:	~1 to 2	Flash Point:		Below room temperature	e (as hydrogen gas)	
LEL (Lower Expl	osive Limit)	4.1% (Hydrogen)	UEL (Upper Explosi-	ve Limit)	74.2% (Hydrogen)		
		Manufactured article;	no apparent odor				
Appearance and (	UNDER!		iquid with a sharp, pene	stating aungent of or			
		and a subsyste is a cicili i	spine with a simp, pen	country, pungent odor.			

<b>©HAW</b>	KER SAFETY DATA SHEET	Form #: SDS 853020H Revised: AA (06-16-16) Supersedes: 05/14/2015 ECO #: 1001735
X. STABILITY AND RE	ACTIVITY	
itability: Stable X	Unstable	
This product is stable und	er normal conditions at ambient temperature	
Conditions To Avoid: Pro	longed overcharge; sources of ignition	
Incompatibility: (Materi		
	Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing age	
metals, sulfur	trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammab	ile .
hydrogen gas.		
	nds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydroge	n
and reducing	igents.	
	ounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-arsin	e.
Hazardous Decomposition		
	Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.	
	nds: High temperatures likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nasce	ant .
	generate highly toxic arsine gas.	
Hazardous Polymerizatio	<u>n:</u>	
Will not occu		
XI. TOXICOLOGICAL I	NFORMATION	
Routes of Entry:		
	Harmful by all routes of entry.	
	nds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, va	ipor
	resence of nascent hydrogen may generate highly toxic arsine gas.	
Inhalation:		
	Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.	
	nds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.	
Ingestion:		
	May cause severe irritation of mouth, throat, esophagus and stomach.	
Lead Compou	nds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to syst	temic
	ust be treated by a physician.	
Skin Contact:		
	Severe irritation, burns and ulceration.	
	nds: Not absorbed through the skin.	
	ounds: Contact may cause dermatitis and skin hyper pigmentation.	
Eye Contact:		
	Severe irritation , burns, cornea damage, and blindness.	
Lead Compon	ents: May cause eye irritation.	
Effects of Overexposure -		
Sulfuric Acid	Severe skin irritation, damage to cornea, upper respiratory irritation.	
Lead Compou	nds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep	
disturbances a	nd irritability.	
Effects of Overexposure -	Chronics	
Sulfuric Acid	Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.	
Lead Compou	nds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and	
females. Repe	ated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report ab	normal
	locities in persons with blood lead levels of 50mcg/100 ml or higher. Heavy lead exposure may result in central nervous system	
	y and damage to the blood-forming (hematopoietic) tissues.	
Carcinogenicity;		
	The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" a	sa
	togen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric	
	contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of	of the
	as overcharging, may result in the generation of sulfuric acid mist,	
	as overenarging, may result in the generation of sandric acti finst. nds: Lead is listed as a Group 2A carcinogen, likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 19.	10.1200
	his is approximately equivalent to GHS Category 1B. <u>Proof of carcinogenicity in humans is lacking at present.</u>	abile in
	nic is listed by IARC as a Group 1 - carcinogenic to humans. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F,	unis is
	equivalent to GHS Category 1A.	
	rally Aggravated by Exposure:	
	to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggra	ivate
	as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.	

	Form #: SDS 853020H
A SAFETY DATA SHEET	Revised: AA (06-16-16)
CHAWKER SAFETY DATA SHEET	Supersedes: 03/14/2013
	ECO #: 1001735
Acute Toxicity:	
Inhalation LD50:	
Electrolyte: LC50 rat: 375 mg/m3; LC50: guinea pig: 510 mg/m3	
Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)	
Elemental Arsenic: No data	
Oral LD50:	
Electrolyte: rat: 2140 mg/kg	
Elemental Lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)	
Elemental Arsenic: LD50 mouse: 145 mg/kg	
Elemental Antimony; LD50 rat: 100 mg/kg	
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	
worksite. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of	
tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated area	
never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated i children and their environment.	Irom
Construction and MICH CHVIPARINGER.	
The 19th 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.	
XII. 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: Aquatic Toxicity:	
Sulfuric acid: 24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L	
96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L Lead: 48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion	
Arsenic: 24 hr LC50, freshwater fish (Carrassisus auratus) >5000 g/L.	
Additional Information:	
No known effects on stratospheric ozone depletion.	
<ul> <li>Volatile organic compounds: 0% (by Volume)</li> </ul>	
Water Endangering Class (WGK): NA	
XIII. DISPOSAL CONSIDERATIONS (UNITED STATES)	
Spent batteries: Send to secondary lead smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of	
40 CFR Section 266.80 are met. This should be managed in accordance with approved local, state and federal requirements. Consult state environmental	
agency and/or federal EPA.	
Electrolyte: Place neutralized slurry into sealed containers and handle as applicable with state and federal regulations. Large water-diluted spills, after	
Fine traditations sharry into science commander in an appreciate with state and recertain regulations. Large water-annuals, mere neutralization and testing, should be managed in accordance with approved local, state and federal requirements. Consult state environmental	
agency and/or federal EPA.	
Following back, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.	
XIV. TRANSPORT INFORMATION	
U.S. DOT:	
The transportation of wet and moist charged (moist active) batteries within the continental United States is regulated by the U.S. DOT	
through the Code of Federal Regulations, Title 49 (49CFR). These regulations classify these types of batteries as a hazardous material.	
Refer to CFR 49, 173.159 for more details pertaining to the transportation of wet and moist batteries.	
The shipping information is as follows:	
Proper Shipping Name: Batteries, wet, filled with acid Packing Group: N/A	
Hazardous Class: 8 Label/Placard Required: Corrosive	
UN Identification: UN2794 Contract your Humber concentration for additional information manufilm the classification of batteries	
Contact your Hawker representative for additional information regarding the classification of 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 subjec	tto
49 CPR 175.159(e) specifies that when transported by ingroway or fail, electric storage butteries containing electrosyte or corrosive battery mad are not subject 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;	
(1) two outer managements may be transported in the same vertices, (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 batteri	es; and
(4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.	
If any of the above-referenced requirements are not met, the batteries must be shipped as fully-regulated Class 8 Corrosive hazardous materials.	

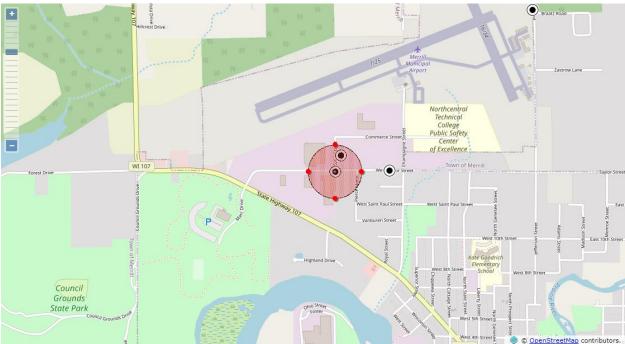
HAWKER	SAL	FETY DATA SHEET		Form #: SDS 853020H Revised: AA (06-16-16) Supersedes: 05/14/2015 ECO #: 1001735
TA Dangerous Goods Regulations DGR				
(IATA). These regulations also			regulated by the International Air Transport Asso rial. The batteries must be packed according to	ciation
IATA Packing Instruction 870.				
The shipping information is as 1				
	ing Name: Batteries, w	et, filled with acid	Packing Group: N/A	
Hazardous C			Label/Placard Required: Corros	ive
	ntion: UN2794			
Contact your Hawker representa-	tive for additional info	rmation regarding the classifi	cation of batteries.	
IDG:				
			regulated by the International Maritime Dangerou	
Goods code (IMDG). These rep IMDG code pages 8120 and 81			rdous material. The batteries must be packed acc	ording to
The shipping information is as 1		ng instruction P801		
	ing Name: Batteries, w	et. filled with acid	Packing Group: N/A	
Hazardous C		ret, milet with actu	Label/Placard Required: Corros	ive.
	tion: UN2794		Later and Augusta Control	
		mailes and the dealer	and an affective law	
Contact your Hawker representa K. REGULATORY INFORMATION	tive for additional info	rmation regarding the classifi	cation of ballenes.	
NITED STATES:				
A SARA Title III:				
ction 302 EPCRA Extremely Hazardous S	abstances (EHS):			
		ce" under EPCRA, with a Thr	eshold Planning Quantity (TPQ) of 1,000 lbs.	
			esent at one site (40 CFR 370.10). For more infor	mation consult
			r Hawker representative for additional information	
ction 304 CERCLA Hazardous Substances				
Reportable Quantity (RQ) for sp	silled 100% sulfuric aci	id under CERCLA (Superfund	f) and	
EPCRA (Emergency Planning a	nd Community Right to	o Know Act) is 1,000 lbs. Sta	te and local reportable quantities for spilled sulfur	ic acid may vary.
ction 311/312 Hazard Categorization:				
EPCRA Section 312 Tier Two r	eporting is required for	non-automotive batteries if s	ulfuric acid is present in quantities of 500 lbs or r	nore and/or if lead is
present in quantities of 10,000 l	bs or more. For more in	nformation consult 40 CFR 37	0.10 and 40 CFR 370.40.	
ction 313 EPCRA Toxic Substances:				
			ered facility, a person is not required to consider	
			hold has been met under § 372.25, § 372.27, or §	
			plies whether the person received the article from	another person
or the person produced the artic	le. However, this exem	ption applies only to the quan	tity of the toxic chemical present in the article.	
applier Notification:				
			on 313 Toxic Chemical Release Inventory (Form	
If you are a manufacturing facil	ity under SIC codes 20	through 39, the following into	ermation is provided to enable you to complete th	e required reports.
-	de Chambert	CAR Number		
18	xic Chemical	CAS Number	Approximate % by WL	
	Lead	7439-92-1	60	
	Electrolyte	7664-93-9	10 - 30	
	Acid (H2SO4/H2O))			
	Antimony	7440-36-0	2	
	* Arsenic	7440-38-2	0.2	
	Tin	7440-31-5	0.2	
See 40 CRG Part 370 for more	details.			
	other manufacturers in	SIC Codes 20 through 39, thi	s information must be provided with the first ship	ment
of each calendar year.				
The Section 313 supplier notific	ation requirement does	not apply to batteries, which	are "consumer products".	
Not present in all battery type			-	

	HAWKER SAFETY DAT	TA SHEET	Revised: // Supersedes:	0S 853020H AA (06-16-16) : 05/14/2015 1001735
TSCA:				
	TSCA Section 8b - Inventory Status: All chemicals comprising this	product are either exempt or listed on the TSCA Inventory.		
	TSCA Section 12b (40 CFR Part 707.60(b)) No notice of export will context of individual section 5, 6, or 7 actions.	l be required for articles, except PCB articles, unless the Agency so requires	in the	
	TSCA Section 13 (40 CFR Part 707.20): No import certification req	uired (EPA 305-B-99-001, June 1999, Introduction to the		
	Chemical Import Requirements of the Toxic Substances Control Act			
RCRA:				
	Spent Lead Acid Batteries are subject to streamlined handling requir	rements when managed in compliance with 40 CFR section 266.80 or 40 CI	R part 273.	
	Waste sulfuric acid is a characteristic hazardous waste; EPA hazardo	ous waste number D002 (corrosivity) and D008 (lead).		
CAA:				
	Hawker 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. Pu	arsuant to Section 611of the Clean Air Act Amendments (CAAA)		
	of 1990, finalized on January 19, 1993, Hawker established a policy	to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.		
STATE RE	GULATIONS (US):			
	Proposition 65:			
	Warning: Battery posts, terminals and related accessories contain lea	ad and lead compounds, chemicals known to the State of California to caus	2	
	cancer and reproductive harm. Batteries also contain other chemical	Is known to the State of California to cause cancer. Wash hands after handl	ing.	
INTERNA	TIONAL REGULATIONS:			
	Distribution into Quebec to follow Canadian Controlled Product Reg	gulations (CPR) 24(1) and 24(2).		
	Distribution into the EU to follow applicable Directives to the Use, I	Import/Export of the product as-sold.		
XVI. OTH	IER INFORMATION			
Revised:	AA (06-16-16)			
NFPA Haz	ard Rating for Sulfuric Acid:			
	Flammability (Red) = 0	Reactivity (Yellow) = 2		
	Health (Blue) = 3	Sulfuric acid is water-reactive if concentrated.		
DISCLAIM	IER			
	Data Sheet is created by the manufacturer to comply with the requiren	nents of 29 CFR 1910.1200. To the extent allowed by law,		
		ding users of this product, including, but not limited to, consequential or		
	ges, arising out of the use of, or reliance on, this Safety Data Sheet.			

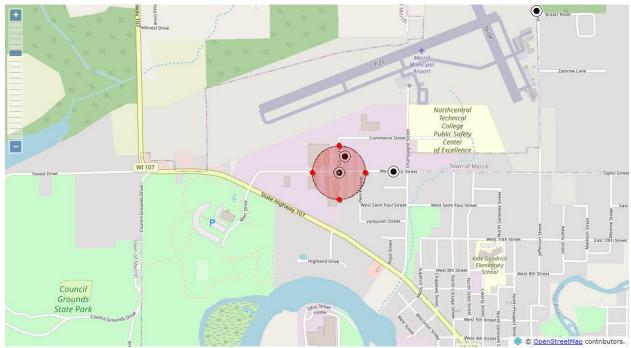
## Attachment E

# Vulnerability Zone Maps for Sulfuric Acid

# A. Worst Case Scenario



## **B.** Re-evaluation Scenario







# EMERGENCY MANAGEMENT



# 2023 Off Site Plan: Mitchell Metal Products

Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

# **Table of Contents**

I.	Facility Information
II.	Facility Emergency Contacts
III.	Extremely Hazardous Substances (EHS)
IV.	Primary Emergency Responders
V.	Support Available at Facility
VI.	General information and Assumptions (Disclaimer)7
VII.	Hazard Analysis Summary7
VIII	Population Protection
IX.	Distribution List
X.	Supporting Documentation
Atta	chment A, Record of Change and Review11
Atta	chment B, Facility Layout and Site Information
Atta	chment C, Transportation Routes Map13
Atta	chment D, Safety Data Sheet for Sulfuric Acid
Atta	chment E, Vulnerability Zone Map for Sulfuric Acid21

# I. Facility Information

#### A. Mitchell Metal Products

- 1. Address: 905 South State Street, PO Box 207, Merrill, WI 54452
- 2. Phone: (715) 536-7176
- 3. Facility ID # (Assigned by WEM): 201888

# **II.Facility Emergency Contacts**

## A. Tier II Contact:

- 1. Name: Matt Eder
- 2. Position: Chief Operating Officer
- 3. Office Phone: (715) 536-7176 ext. 241
- 4. Emergency Phone: (715) 297-5483
- 5. Email: meder@mitchellmetalproducts.com

#### **B.** Tier II Emergency Coordinator:

- 1. Name: James Kelly
- 2. Position: EHS Specialist
- 3. Emergency Phone(715) 536-7176 ext. 237
- 4. Emergency Phone: (520) 313-0373
- 5. Email: jkelly@mitchellmetalproducts.com

## **C. Tier II Emergency Contact**

- 1. Name: Jeff Schellhorn
- 2. Position: Director of Quality
- 3. Office Phone: (715) 536-7176 ext. 242
- 4. Emergency Phone: (715) 218-4749
- 5. Email: jschellhorn@mitchmetalproducts.com

# III. Extremely Hazardous Substances (EHS)

#### A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)
7664-93-9	Sulfuric Acid	2,078	2,078	< 0.1 miles

# **IV.** Primary Emergency Responders

#### A. Lincoln County Sheriff's Office

1. Phone: 911 or (715) 563-6272

#### **B.** Lincoln County Emergency Communications Center

1. Phone: 911 or (715) 563-6272

#### C. Lincoln County Emergency Management

1. Phone: (715) 218-0128

#### **D.** Merrill Fire Department

1. Phone: 911 or (715) 536-2233

#### E. Merrill Police Department

1. Phone: 911 or (715) 536-8311

# V. Support Available at Facility

#### A. Chemical Emergency Monitoring Equipment:

1. None

#### **B.** Personal Protective Equipment:

1. None

#### **C.** Other Equipment or Supplies:

1. None

#### D. Outside Resources Available:

- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

The Tomahawk Fire Department is capable of handling minor hazardous materials incidents; however, if the incident exceeds the ability/capability of Tomahawk Fire Department LCSO Communications Center will request the appropriate agency. Lincoln County contracts with two (2) external hazmat response teams dependent on level of release, for Level B response Oneida County Sheriff Office Hazardous Materials Response Team; whereas, for Level A response Wausau Wisconsin Hazardous Response Team.

For Level A incidents, the response of Wausau Wisconsin Hazardous Response Team must be requested through the Wisconsin Emergency Management (WEM) State Emergency Operations Center (SEOC). Contact the WEM SEOC Duty Officer at (800) 943-0003 for response.

- 2. Chemtrec: (800) 424-9300
  - a) Unknown response time
- 3. National Response Center: (800) 424-8802
  - a) Unknown response time
- 4. REI—Spill & Response Recovery: (800) 734-7745
  - a) Unknown response time

# VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

# VII. Hazard Analysis Summary

Mitchell Metal Products is a metal manufacturing facility. They manufacture a wide variety of metal parts from custom pieces to metal Christmas wreaths, utilizing several techniques such as stamping, forming, and plating. Operations include metal forming, robotic welding, resistance welding, and staining.

## A. Greatest Potential for Release

- 1. The greatest potential for release would be an accident involving sulfuric acid, which is the only EHS on-site, when being handled.
- 2. It is unlikely that a large sulfuric acid release would occur and it is unlikely that a release would have off-site consequences. Spills would normally be contained inside the building except perhaps in a fire situation.

#### **B.** Vulnerability Zones (by chemical)

Sulfuric Acid (Lead Battery Acid): CAS #7664-93-9					
Amount Released:	2,0	2,078 lbs.			
Concentration:	10	0%			
Physical State:	Lie	quid (Ambient)			
Diked Area:	No	)			
Level of Concern (LOC):	0.008 gm/m <sup>3</sup>				
LOC Type:	Greenbook LOC				
Worst Case ScenarioRe-Evaluation Scenario					
Duration:		10 minutes	Duration	10 minutes	
Wind Speed: 3.4 mph		3.4 mph	Wind Speed:	11.9 mph	
Ground Roughness: Rural		Rural	<b>Ground Roughness:</b>	Urban	
Atmospheric Stability Class: 1		F	Atmospheric Stability Class:	D	
Risk:		Low	Risk:	Low	
Consequences:		Low	Consequences:	Low	
Overall Risk:LowOverall Risk:Low			Low		
Threat Zone Radius:< 0.1 miles					

## C. Estimation of Population Affected

- 1. Sulfuric Acid
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be any of the eighty-four (84) employees and no other persons or special facilities.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance would potentially be any of the eighty-four (84) employees and no other persons or special facilities.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

#### **D.** Critical Infrastructure

1. None

#### E. Hospital

1. None

## F. Nursing Homes/Assisted Living Facilities

1. None

## G. Schools

1. None

## H. Child Care/Day Care

1. None

# **VIII.** Population Protection

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

# **IX.** Special Considerations

A. None

# X. Distribution List

- Mitchell Metal Products
- Merrill Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Marathon County Emergency Management

# XI. Supporting Documentation

#### A. Attachments

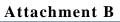
- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Sulfuric Acid
- 5. Attachment F, Vulnerability Zone Map for Sulfuric Acid

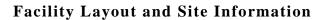
## Attachment A

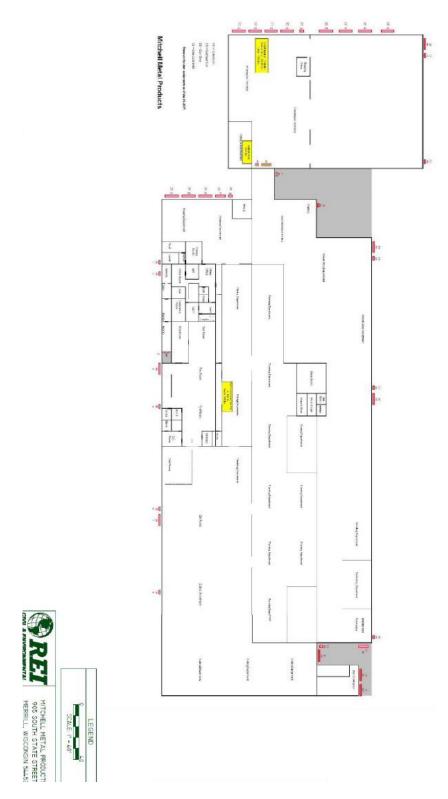
## **Record of Change/ Review /Signature**

Date	Contributor	Description of Change	Page Number(s)
12-5-2023	T. Verhasselt and J. Kelly	Authored plan and reviewed with Mitchell Metal Products for accuracy. Tier II Contact was changed to M. Eder.	Pgs. 1-21

Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.







# Attachment C

# **Transportation Route Map**



#### Attachment D

## Safety Data Sheet for Sulfuric Acid

#### SAFETY DATA SHEET

#### HYDRITE #1066 Product ID: wt1066 Revised: 06-12-2014 Replaces: 09-01-2011

#### 1. IDENTIFICATION

 Product Name:
 HYDRITE #1066

 Synonyms:
 Sulfuric Acid; Oil o

 CAS Number:
 MIXTURE

 Recommended Use:
 No data available.

 Restrictions on Use:
 No data available.

HYDRITE #1066 Sulfuric Acid; Oil of Vitriol; Hydrogen Sulfate MIXTURE No data available. No data available.

Hydrite Chemical Co. 300 N. Patrick Blvd. Brookfield, WI 53008-0948 (262) 792-1450 EMERGENCY RESPONSE NUMBERS: 24 Hour Emergency #: (414) 277-1311 CHEMTREC Emergency #: (800) 424-9300

#### 2. HAZARD(S) IDENTIFICATION



Signal Word:	Danger
GHS Classification:	Substance or mixture corrosive to metals Category 1 Skin Corrosion/Irritation Category 1A Serious Eye Damage/Eye Irritation Category 1 Carcinogenicity Category 1A Acute Toxicity - Inhalation Vapour Category 2 Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 2 Acute Toxicity - Inhalation Dust / Mist Category 3
Hazard Statements:	May be corrosive to metals. Causes severe skin burns and eye damage. Fatal if inhaled. Toxic if inhaled. May cause cancer. May cause damage to organs (teeth, respiratory system) through prolonged or repeated exposure (by inhalation).
Precautionary Statem	ents:
Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Do not breathe dust, fume, gas, mist, vapors or spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear gloves, eye and face protection and protective clothing. Wear respiratory protection.
Response:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse

#### Safety Data Sheet for Sulfuric Acid

HYDRITE #1066 Product ID: wt1066	
	skin with water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Specific treatment is urgent (see First Aid on SDS or on this label). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a secure manner. Store in corrosive resistant container with a resistant inner liner.
Disposal:	Dispose of in accordance with local, regional and international regulations.
Hazards Not Otherw	ise Classified: None known.
Percentage of Comp Dermal:	93.2 %

3. COMPOSITION/INFORMATION ON INGREDIENTS		
Component	CAS Number	<u>% by Wt.</u>
Sulfuric Acid	7664-93-9	93.19 %

#### 4. FIRST-AID MEASURES

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.

Skin Contact: If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Discard contaminated leather articles such as shoes and belt. Do not apply oils or ointments unless ordered by the physician.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If swallowed: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

#### Note to Physicians:

This product contains materials that may cause severe pneumonitis if aspirated. If ingestion has occurred less than 2 hours earlier, carry out careful gastric lavage; use endotracheal cuff if available, to prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Give artifical resuscitation and appropriate chemotherapy if respiration is depressed. Following exposure the patient should be kept under medical review for at least 48 hours as delayed pneumonitis may occur. DO NOT attempt to neutralize the acid with weak bases since the reaction will produce heat that may extend the corrosive injury.

#### Most Important Symptoms/Effects:

Eye Contact: CORROSIVE-Causes severe irritation and burns. May cause: blurred vision. redness. pain. conjunctivitis. ulcerations. tissue destruction. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Concentrated solutions may cause: severe burns. severe necrosis. permanent skin damage. Prolonged and repeated exposure to dilute solutions may cause irritation, redness, pain and drying and cracking of the skin.

#### Safety Data Sheet for Sulfuric Acid

#### HYDRITE #1066 Product ID: wt1066

Skin Absorption: No data available.

Inhalation: CORROSIVE-Causes severe irritation and burns. Vapors or mists may damage: mucous membranes. respiratory tract. Vapors or mists may cause: coughing. sore throat. shortness of breath. labored breathing. choking. bronchospasms. chemical pneumonitis. pulmonary edema. death. Effects may be delayed. Chronic exposure may cause: dental erosions. discoloration of teeth. bronchitis. bronchial emphysema.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. esophagus. stomach. gastrointestinal tract. May cause: pain. vomiting. diarrhea. bleeding. labored breathing. burns or perforation of the gastrointestinal tract leading to ulceration and secondary infection. death. Effects may be delayed. Aspiration into the lungs may cause chemical pneumonia and lung damage.

#### 5. FIRE-FIGHTING MEASURES

Extinguishing Media: Carbon dioxide. Dry chemical. Foam.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSHapproved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. Do not get water inside containers. Product generates heat upon addition of water, with possible spattering. Neutralize run-off with Lime, Soda Ash, etc., to prevent corrosion of metals and formation of Hydrogen gas. Run-off from fire control may cause pollution.

Fire and Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas. Will react with organic materials with evolution of heat and sulfur dioxide. Concentrated acid is a strong oxidizing agent. May cause ignition of combustible materials on contact with generation of sulfur dioxide fumes.

Hazardous Combustion Products: Sulfur oxides.

#### 6. ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Contain spill, place into drums for proper disposal. Flush remaining area with water and neutralize with Soda Ash or Lime and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

#### 7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools.

**Storage:** CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Do not freeze. Highly corrosive to most metals with evolution of hydrogen gas. Explosive/flammable concentrations of hydrogen gas may accumulate inside metal containers. Elevated temperatures will increase the corrosion rate of most metals. See Section 10 for incompatible materials.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines: Component Sulfuric Acid

Limits 1 mg/m3 TWA

ACGIH Exposure Guidelines:

#### Safety Data Sheet for Sulfuric Acid

HYDRITE #1066 Product ID: wt1066		
Component	Limits	
Sulfuric Acid	0.2 mg/m3 TWA (thoracic fraction)	

**Engineering Controls:** Local exhaust ventilation, process enclosures, or other engineering controls are required when handling or using this product to avoid overexposure. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Acid-proof. Chemical-resistant. Impervious.

**Respiratory Protection:** Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH-Approved air-purifying respirator with: Acid gas cartridge and Dust/mist filter. NIOSH-Approved positive pressure supplied air respirator. NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing. Full-rubber acid suit.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Food, beverages, and tobacco products should not be carried, stored or consumed where this material is in use.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid. Color: Clear. Colorless to amber. Odor: Acrid Odor Threshold: N.D. pH: < 2.00 (as is)</p> Freezing Point (deg. F): ~ -21 Melting Point (deg. F): N.A. Initial Boiling Point or Boiling Range: ~ 529 °F Flash Point: N.A. Flash Point Method: N.A. Evaporation Rate (nBuAc = 1): < 1 Flammability (solid, gas): N.D. Lower Explosion Limit: N.A. Upper Explosion Limit: N.A. Vapor Pressure (mm Hg): 0.0016 @102F Vapor Density (air=1): 3.4 (H2SO4) Specific Gravity or Relative Density: 1.835 @ 25C Solubility in Water: Complete Partition Coefficient (n-octanol/water): N.D. Autoignition Temperature: No Data Decomposition Temperature: N.D. Viscosity: N.D. % Volatile (wt%): N.D. VOC (wt%): 0 VOC (lbs/gal): 0 Fire Point: N.D.

#### 10. STABILITY AND REACTIVITY

Reactivity: No data available.

#### Safety Data Sheet for Sulfuric Acid

#### HYDRITE #1066 Product ID: wt1066

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. May react with certain metals to produce flammable hydrogen gas. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, carbides, etc.

Conditions to Avoid: Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames. Contact with organic materials may cause fire and explosions. Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product.

Incompatible Materials: Metals. Water. Alkalies. Strong oxidizing agents. Reducing agents. Carbonates. Cyanides. Sulfides. Carbides. Chlorates. Fulminates. Nitrates. Powdered metals. Organic materials. Combustible materials. Nitrogen compounds. Picrates. Bases. Halogens. Alkali metals. and many other reactive substances.

Hazardous Decomposition Products: Sulfur oxides. Sulfuric acid vapors. Hydrogen gas.

#### 11. TOXICOLOGICAL INFORMATION

Component Sulfuric Acid	Oral LD50 Rat: 2140 mg/kg	Dermal LD50 No Data	Inhalation LC50 2H Rat: 510.0 mg/m3	
Acute Toxicity Estima	te (ATE):			
Inhalation Vapor:	0.5473 mg/L			

Inhalation Dust/Mist: 0.5473 mg/L

Routes of Exposure: Eyes. Ingestion. Inhalation. Skin.

**Eye Contact:** CORROSIVE-Causes severe irritation and burns. May cause: blurred vision. redness. pain. conjunctivitis. ulcerations. tissue destruction. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Concentrated solutions may cause: severe burns. severe necrosis. permanent skin damage. Prolonged and repeated exposure to dilute solutions may cause irritation, redness, pain and drying and cracking of the skin.

#### Skin Absorption: No data available.

Inhalation: CORROSIVE-Causes severe irritation and burns. Vapors or mists may damage: mucous membranes. respiratory tract. Vapors or mists may cause: coughing. sore throat. shortness of breath. labored breathing. choking. bronchospasms. chemical pneumonitis. pulmonary edema. death. Effects may be delayed. Chronic exposure may cause: dental erosions. discoloration of teeth. bronchitis. bronchial emphysema.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. esophagus. stomach. gastrointestinal tract. May cause: pain. vomiting. diarrhea. bleeding. labored breathing. burns or perforation of the gastrointestinal tract leading to ulceration and secondary infection. death. Effects may be delayed. Aspiration into the lungs may cause chemical pneumonia and lung damage.

Medical Conditions Aggravated by Exposure to Product: Eye disorders. Skin disorders. Respiratory system disorders.

Other: Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death. The International Agency for Research on Cancer (IARC) has concluded that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to man, causing cancer of the larynx (the voice box). Although no direct link has been established between exposure to sulfuric acid itself, and cancer in man, exposure to any mist or aerosol during the use of this product should be avoided.

#### Cancer Information:

This product contains 0.1% or more of the following chemicals listed by NTP, IARC or OSHA as known or possible carcinogens:

Sulfuric acid mist

#### 12. ECOLOGICAL INFORMATION

#### Safety Data Sheet for Sulfuric Acid

#### HYDRITE #1066 Product ID: wt1066

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

#### 13. DISPOSAL CONSIDERATIONS

#### Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

#### 14. TRANSPORT INFORMATION

#### DOT (Department of Transportation):

Identification Number:	UN1830
Proper Shipping Name:	SULFURIC ACID
Hazard Class:	8
Packing Group:	I
Label Required:	CORROSIVE
Reportable Quantity (RQ):	1000# (Sulfuric Acid)

#### 15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards: Immediate (Acute) Delayed (Chronic) Fire Hazar Yes Yes No				Pressure Release Reactive No Yes				
Regulated Compone	ents:	<u>CAS</u>	CERCLA	SARA	<u>SARA</u>	U.S.	WL	Prop
Component		Number	RQ	EHS	<u>313</u>	HAP	HAP	65
Sulfuric Acid		7664-93-9	Yes	Yes	Yes*	No	Yes	Yes

Note: \* Sulfuric acid appears on the Section 313 List. However, the listing only applies to the aerosol forms of sulfuric acid.

#### 16. OTHER INFORMATION

Hazard Rating S	System
Health:	3*
Flammability:	0
Reactivity:	2
* = Chronic Heal	th Hazard

NFPA Rating System

Health: 3 Flammability: 0 Reactivity: 2 Special Hazard: W

MSDS Abbreviations N.A. = Not Applicable N.D. = Not Determined HAP = Hazardous Air Pollutant VOC = Volatile Organic Compound

## Safety Data Sheet for Sulfuric Acid

HYDRITE #1066 Product ID: wt1066

C = Ceiling Limit N.E./Not Estab. = Not Established

MSDS Prepared by: NAO

Reason for Revision: New format. Changes made throughout the SDS.

Revised: 06-12-2014 Replaces: 09-01-2011

The data in this Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

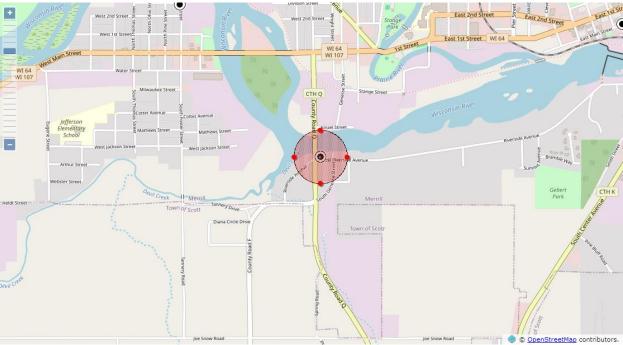




+ West 2nd Street East 2nd st 2nd St East 1st Street 1st Street WI 64 WI 107 WI 64 WI 107 CTH Q -۲ Arthur 1 Gebert Park CTH K eldt-Stre Town of Scotz © OpenStreetMap contributors

# A. Worst Case Scenario





Lincoln County: Local Emergency Planning Committee (LEPC)



# EMERGENCY MANAGEMENT



# 2023 Off Site Plan: Northern Wire LLC.

Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

# **Table of Contents**

I.	Facility Information
II.	Facility Emergency Contacts
III.	Extremely Hazardous Substances (EHS)
IV.	Primary Emergency Responders
V.	Support Available at Facility
VI.	General information and Assumptions (Disclaimer)7
VII.	Hazard Analysis Summary7
VIII	Population Protection
IX.	Distribution List
X.	Supporting Documentation
Atta	chment A, Record of Change and Review11
Atta	chment B, Facility Layout and Site Information
Atta	chment C, Tansportation Routes Map13
Atta	chment D, Safety Data Sheet for Sulfuric Acid14
Atta	chment E, Vulnerability Zone Map for Sulfuric Acid21

# I. Facility Information

#### A. Northern Wire LLC.

- 1. Address: 1100 West Taylor Street, Merrill, WI 54452
- 2. Phone: (715) 536-5329
- 3. Facility ID # (Assigned by WEM): 139083

# **II.Facility Emergency Contacts**

#### A. Tier II Contact:

- 1. Name: Cory Arndt
- 2. Position: EHS Consultant
- 3. Office Phone: (715) 551-9503
- 4. Emergency Phone: (715) 551-9503
- 5. Email: carndt@ehs-mgt.com

#### **B.** Tier II Emergency Coordinator:

- 1. Name: Jacob Bartz
- 2. Position: Production Supervisor
- 3. Office Phone: (715) 539-5348
- 4. Emergency Phone: (715) 351-0218
- 5. Email: jbartz@elginfasteners.com

#### **C. Tier II Emergency Contact:**

- 1. Name: Jim Kaplinski
- 2. Position: Manager
- 3. Office Phone: (715) 539-5342
- 4. Emergency Phone: (715) 539-5342
- 5. Email: jkaplinski@eglinfasteners.com

# III. Extremely Hazardous Substances (EHS)

#### A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)
7664-93-9	Sulfuric Acid	1,710	273	< 0.1 miles

# **IV.** Primary Emergency Responders

#### A. Lincoln County Sheriff's Office

1. Phone: 911 or (715) 563-6272

#### **B.** Lincoln County Emergency Communications Center

1. Phone: 911 or (715) 563-6272

#### C. Lincoln County Emergency Management

1. Phone: (715) 218-0128

#### **D.** Merrill Fire Department

1. Phone: 911 or (715) 536-2233

#### E. Merrill Police Department

1. Phone: 911 or (715) 536-8311

# V. Support Available at Facility

#### A. Chemical Emergency Monitoring Equipment:

1. None

#### **B.** Personal Protective Equipment:

1. None

#### **C.** Other Equipment or Supplies:

1. None

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- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

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# VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

# VII. Hazard Analysis Summary

#### A. Greatest Potential for Release

- 1. Sulfuric acid being the only extremely hazardous substance over TPQ and therefore poses the greatest potential for release.
- 2. It is unlikely that a large sulfuric acid release would occur and it is unlikely that a release would have off site consequences. Spills would be contained inside the building except perhaps in a fire situation.

# **B.** Vulnerability Zones (by chemical)

Sulfuric Acid: CAS #7664-93-9			
Amount Released:	273 lbs.		
Concentration:	100%		
Physical State:	Liquid (Ambient		
Diked Area:	No		
Level of Concern (LOC):	0.008 gm/m <sup>3</sup>		
LOC Type:	Greenbook LOC		
Worst Case Scenario		<b>Re-Evaluation Scenario</b>	
Duration:	10 minutes	Duration	10 minutes
Wind Speed:	3.4 mph	Wind Speed:	11.9 mph
Ground Roughness:	Rural	Ground Roughness:	Urban
Atmospheric Stability Clas	s: F	Atmospheric Stability Class:	D
Risk:	Low	Risk:	Low
Consequences:	Low	Consequences:	Low
Overall Risk:	Low	Overall Risk:	Low
Threat Zone Radius:	< 0.1 miles	Threat Zone Radius:	< 0.1 miles

#### C. Estimation of Population Affected

- 1. Sulfuric Acid
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance has the potential to affect any of the ninety-eight (98) full-time employees and no other populations or facilities would be affected.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance has the potential to affect any of the ninety-eight (98) full-time employees and no other populations or facilities would be affected.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that no shelter, isolation, or evacuation would have to take place in conjunction with this extremely hazardous chemical.

#### **D.** Critical Infrastructure

a) No special facilities or general populations affected

# **VIII.** Population Protection

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

# **IX.** Special Considerations

#### A. None

# X. Distribution List

- Northern Wire LLC.
- Tomahawk Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Marathon County Emergency Management

# **XI.** Supporting Documentation

#### A. Attachments

- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Sulfuric Acid
- 5. Attachment E, Vulnerability Zone Map for Sulfuric Acid

# Attachment A

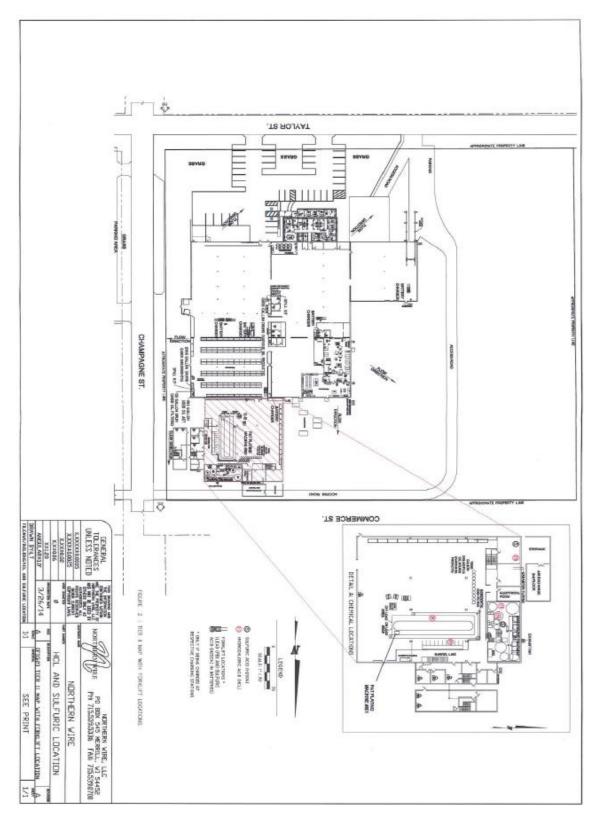
# **Record of Change/ Review /Signature**

Date	Contributor	Description of Change	Page Number(s)
12-5-2023	T. Verhasselt and C. Arndt	Authored plan and reviewed with Northern Wire LLC for accuracy. Maximum daily amount and largest container figures were updated.	Pgs. 1-21

Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.

# Attachment B

**Facility Layout and Site Information** 



# Attachment C

# **Transportation Route Map**



# Attachment D

EnerSys.	SAFETY DATA SHI	еет 🏾 🏀	HAWKE	Form #: SDS 85302 Revised: 05/14/15 Supersedes: NEW ECO #: 1001584
PRODUCT IDENTIFICATION				
Chemical Trade Name (as used on label): Aerospace and defense batteries manufactured using factor	n modified versions of			emical Family/Classification: led Lead Battery
Cyclon*, Genesis®, SBS, Hawker®, Armasafe Plus®, or I			ocu	ed Lead Ballely
Synonyms:				
Sealed Lead Acid Battery, VRLA Battery		Telephone:		
			ergencies, contact EnerSy	
Manufacturer's Name/Address:		Environmental, Health	& Safety Dept. at 660-429	-2165
EnerSys Energy Products Inc. (formerly Hawker Energy Pr 517 N. Ridgeview Drive	roducts Inc.)	24-Hour Emergency R	Contact:	
Warrensburg, MO 64093-9301				EMTREC INT'L: 703-527-3877
I GHS HAZRDS IDENTFICATION				
HEALTH		ENVIRONMENTAL		PHYSICAL
Acute Toxicity		Aquatic Chronic 1		Explosive Chemical, Division 1.3
Oral/Dermal/Inhalation) Category 4		Aquatic Acute 1		
Skin Corrosion/Irritation Category 1A Eye Damage Category 1				
Reproductive Category IA				
Carcinogenicity (lead compounds) Category 1B				
Carcinogenicity (acid mist) Category 1A				
Specific Target Organ Toxicity				
repeated exposure) Category 2				
GHS LABEL: HEALTH		ENVIRONMENTAL		PHYSICAL
heatin		ENVIRONMENTAL		THISCAL
Hazard Statements DANGER! Causes severe skin burns and eye damage.	Precautionary Staten Wash thoroughly after Do not eat, drink or sn		oduct.	
Causes serious eye damage.	Wear protective gloves	s/protective clothing, ey	e protection/face protectio	m.
May damage fertility or the unborn child if ingested or	Avoid breathing dust/f	iume/gas/mist/vapors/sp	ray.	
nhaled.		n a well-ventilated area.		
May cause cancer if ingested or inhaled.	Causes skin irritation,			
Causes damage to central nervous system, blood and			rritation or severe burns.	Avoid contact with internal acid.
cidneys through prolonged or repeated exposure.	Irritating to eyes, respi	ratory system, and skin.		
May form explosive air/gas mixture during charging.				
Extremely flammable gas (hydrogen).				
Explosive, fire, blast, or projection hazard. II. HAZARDOUS INGREDIENTS/IDENTIFY INFO	RMATION			
Components	CAS Number	Approximate % by		
		Weight		
norganic Lead Compound:	7420.02.1	15 50		
Lead Lead Dioxide	7439-92-1 1309-60-0	45 - 60		
Tin	7440-31-5	0.1 - 0.2		
Sulfuric Acid Electrolyte (Sulfuric Acid/Water)	7664-93-9	15 - 20		
Case Material:		5 - 10		
Polypropylene	9003-07-0			
Polystyrene Storme A endonitrile	9003-53-6 9003-54-7			
Styrene Acrylonitrile Acrylonitrile Butadiene Styrene	9003-54-7 9003-56-9			
Styrene Butadiene	9003-55-8			
Polyvinylchloride	9002-86-2			
Polycarbonate, Hard Rubber, Polyethylene	9002-88-4			
	25134-01-4			
Polyphenylene Oxide				
Polycarbonate/Polyester Alloy				
		1-2		

Ene	rsys.	SAFETY DATA SHEET	<b>CHAWKER</b>	Form #: SDS 853026 Revised: 05/14/15 Supersedes: NEW ECO #: 1001584
IV. FIRST	AID MEASURES			1001004
Inhalation:		ely. If breathing is difficult, give oxygen. Cons ose and lips; consult physician.	ult a physician	
Ingestion:	Sulfuric Acid: Give large quantities of water consult a physician. Lead: Consult physician immediately.	do not induce vomiting or aspiration into the le	ungs may occur and can cause permanent inju	ry or death;
Skin:		ater for at least 15 minutes; remove contaminat Vash contaminated clothing before reuse. Disca r.		
Eyes:	Sulfuric Acid and Lead: Flush immediately v Seek immediate medical attention if eyes hav	vith large amounts of water for at least 15 minut e been exposed directly to acid.	tes while lifting lids.	
V. FIRE F	IGHTING MEASURES			
Flash Point	z N/A	Flammable Limits: LEL = 4.1% (H	ydrogen Gas) UEL = 74.2% (	Hydrogen Gas)
	e Fighting Procedures:	al. Avoid breathing vapors. Use appropriate me e positive pressure, self-contained breathing ap		5
	×	ant clothing, gloves, face and eye protection. may still pose risk of electric shock even when	charging equipment is shut down.	
	sources of ignition away from batteries. Do r batteries. Follow manufacturer's instructions			
	AUTIONS FOR SAFE HANDLING AND U	SE		
Spill or Ler	neutralize spilled electrolyte with soda ash, so allow discharge of unneutralized acid to sewe	ills with dry sand, earth, and vermiculite. Do r dium bicarbonate, lime, etc. Wear acid-resista r. Acid must be managed in accordance with lo	nt clothing, boots, gloves, and face shield. Do	
VII HANI	Consult state environmental agency and/or fe DLING AND STORAGE	Jeral EPA.		
Handling: Unless invo There may b Keep contai Keep vent c Keep away shipping.	lved in recycling operations, do not breach the be increasing risk of electric shock from strings iners tightly closed when not in use. If battery aps on and cover terminals to prevent short cin		d automotive batteries to avoid damage and sl	
also be store in areas with could bridge	ed under roof for protection against adverse we	rvious surfaces and adequate containment in th ather conditions. Separate from incompatible n id damage to containers. Keep away from fire, ous short-circuit.	aterials. Store and handle only	ects which
chargers wh Charging sp	enever not in use and before detachment of any	ipment and from strings of series connected ba y circuit connections. Batteries being charged w us in position. Prohibit smoking and avoid creat arged.	ill generate and release flammable hydrogen g	

EnerSys.		SAFETY DATA SHE	et 🌔	HAWK	ER	Form #: SDS 853026 Revised: 05/14/15 Supersedes: NEW ECO #: 1001584
xposure Limits (mg/m3) Note	: N.E.= Not Established					
NGREDIENTS	OSHA PEL	ACGIH	US NIOSH	Ouebec PEV	Ontario OEL	EU OEL
Chemical/Common Names)						
ead and Lead Compounds						
norganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)
in in	2	2	2	2	2	N.E.
alfuric Acid Electrolyte	1	0.2	1	1	0.2	0.05 (c)
olypropylene	N.E	N.E	N.E	N.E	N.E	N.E
lystyrene	NE	NE	NE	NE	NE	N.E.
vrene Acrylonitrile	N.E	N.E	N.E	N.E.	N.E.	N.E.
crylonitrile Butadiene	N.E	N.E	N.E	N.E	N.E.	N.E
yrene	NE	NE	NE	NE	NE	N.E
yrene Butadiene	N.E	N.E	N.E N.E	N.E N.E	N.E.	N.E.
yrene Butadiene olyvinylchloride	N.E	N.E N.E	N.E.	N.E		N.E N.E
	N.E	N.E	N.E	N.E	1	N.E
lycarbonate, Hard						
abber, Polyethylene	N.E	N.E	N.E	N.E	N.E	N.E
olyphenylene Oxide	N.E	N.E	N.E	N.E	N.E	N.E
0 0						
olycarbonate/Polyester Alloy						
	N.E	N.E	N.E	N.E.	N.E	N.E
abber, Polyethylene bsorbent Glass Mat OTES: ) As inhalable aerosol ) Thoracic fraction	N.E N.E	N.E N.E	N.E N.E	N.E N.E	N.E N.E	N.E N.E
bber, Polyethylene sorbent Glass Mat <b>DTES:</b> A sinhalable aerosol Thoracic fraction <b>sgineering Controls (Ventilat</b> Store and handle in Handle batteries can clothing, eye and fa positive and negativ	N.E tion): well-ventilated area. If mecha utiously to avoid spills. Make o see protection when filling, char ve terminals of the batteries. Ch	N.E nical ventilation is used, con certain vent caps are on secu rging or handling batteries. E	N.E nponents must be aci rely. Avoid contact v Do not allow metallic	N.E d-resistant. with internal componen materials to simultaneo	N.E its. Wear protective ously contact both the	N.E
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E	0			Form #: SDS 853026
Ene	rSys.	SAFETY DATA SHEET	HAWKER	Revised: 05/14/15
		SAFETT DATA SHEET	<b>WAWKEN</b>	Supersedes: NEW
,	"ower/Full Solutions			ECO #: 1001584
	IVITY DATA			
Stability: S				
This produ	ct is stable under normal conditions at ambie	at temperature.		
Conditions	To Avoid: Prolonged overcharge; sources of ig	nition		
Incompatib	ility: (Materials to avoid)			
			<ol> <li>Also reacts violently with strong reducing agent</li> </ol>	
		d water. Contact with metals may produce toxic	c sulfur dioxide fumes and may release flammable	1
	hydrogen gas.	and have believe believe to antenious of		
	and reducing agents.	icids, bases, nandes, naiogenates, potassium nu	trate, permanganate, peroxides, nascent hydrogen	
Hazardons	Decomnosition Products:			
inazar uosas		de, sulfuric acid mist, sulfur dioxide, and hydro	gen sulfide.	
	Lead Compounds: High temperatures likely to	produce toxic metal fume, vapor, or dust; cont	act with strong acid or base or presence of nascen	t
	hydrogen may generate highly toxic arsine gas.			
Hazardous	Polymerization:			
NE TONICO	Will not occur			
XI. TOXIC Routes of E	OLOGICAL INFORMATION			
	Sulfuric Acid: Harmful by all routes of entry.			
	Lead Compounds: Hazardous exposure can oc	cur only when product is heated, oxidized or of	therwise processed or damaged to create dust, vap	or
	or fume. The presence of nascent hydrogen ma	y generate highly toxic arsine gas.		
Inhalation:				
		rs or mists may cause severe respiratory irritatio		
Ingestion:	Lead Compounds: innatation of lead dust of h	imes may cause irritation of upper respiratory to	ract and lungs.	
rugesuon.	Sulfuric Acid: May cause severe irritation of n	nouth, throat, esophagus and stomach.		
	Lead Compounds: Acute ingestion may cause	abdominal pain, nausea, vomiting, diarrhea and	d severe cramping. This may lead rapidly to syste	mic
	toxicity and must be treated by a physician.			
Skin Conta				
	Sulfuric Acid: Severe irritation, burns and ulco			
Eye Contac	Lead Compounds: Not absorbed through the s	un.		
Lyc Contac	Sulfuric Acid: Severe irritation , burns, cornea	damage, and blindness.		
	Lead Components: May cause eye irritation.	2.7		
Effects of C	Werexposure - Acute:			
	Sulfuric Acid: Severe skin irritation, damage t			
		de headache, fatigue, abdominal pain, loss of a	ppetite, muscle aches and weakness, sleep	
Effects of C	disturbances and irritability. Verexposure - Chronic:			
Linetis of C		el, inflammation of nose, throat and bronchial tu	ubes.	
	Lead Compounds: Anemia; neuropathy, partic	ularly of the motor nerves, with wrist drop; kid	ney damage; reproductive changes in males and	
	females. Repeated exposure to lead and lead co	in the workplace may result in nervo	us system toxicity. Some toxicologists report abno	smal
			d exposure may result in central nervous system o	lamage,
	encephalopathy and damage to the blood-formi	ng (hematopoietic) tissues.		
Carcinogen		esearch on Cancer (IARC) has classified "stron	g inorganic acid mist containing sulfuric acid" as	
			apply to liquid forms of sulfuric acid or sulfuric	
		-	ated under normal use of this product. Misuse of	the
	product, such as overcharging, may result in th			
			s. Per the guidance found in OSHA 29 CFR 1910	.1200
		o GHS Category 1B. Proof of carcinogenicity i	n humans is lacking at present.	
Medical Co	nditions Generally Aggravated by Exposure:			
			ns. Contact of sulfuric acid with skin may aggrav forms of kidney. lives and neurologic diseases	ate
	urseases such as eczenia and contact dermatitis	<ol> <li>Lead and its compounds can aggravate some</li> </ol>	torms of kidney, river and neurologic diseases.	

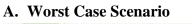
EnerSys.	SAFETY DATA SHEET	HAWKER	Form #: SDS 853026 Revised: 05/14/15 Supersedes: NEW ECO #: 1001584
Acute Toxicity:			ECO #. 1001384
inhalation LD50:			
	ng/m3; LC50: guinea pig: 510 mg/m3		
	city Point Estimate = 4500 ppmV (based on lead bullion)		
Oral LD50:			
Electrolyte: rat: 2140 mg/kg			
	ity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)		
	-,,,,,,,,,-,-,-,-,-,-,		
Additional Health Data:			
Most inhalatio Follow good p worksite. Keep tobacco and co never taken ho	Is, including the hazardous ingredients in this product, are taken into the h problems can be avoided by adequate precautions such as ventilation an ersonal hygiene to avoid inhalation and ingestion: wash hands, face, neck o contaminated clothing out of non-contaminated areas, or wear cover clot smetics to non-contaminated areas. Work clothes and work equipment us me or laundered with personal non-contaminated clothing. This product is eir environment.	d respiratory protection covered in Section 8. and arms thoroughly before eating, smoking or lea hing when in such areas. Restrict the use and press ed in contaminated areas must remain in designate	ence of food, ed areas and
	dment to EC Directive 67/548/EEC classified lead compounds, but not le : May cause harm to the unborn child, applies to lead compounds, especia		L.
XII. ECOLOGICAL INFO		ity southe torins.	
Environmental Fate:			
Lead is very po	ersistent in soil and sediments. No data on environmental degradation. Mo	bility of metallic lead between ecological compart	ments is slow.
	on of lead occurs in aquatic and terrestrial animals and plants but little bio		
	clude lead compounds and not elemental lead.	2	
Environmental Toxicity: A	quatic Toxicity:		
Sulfuric acid:	24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L		
	96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L		
Lead:	48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on le	ad bullion	
Additional Information:			
<ul> <li>No known eff</li> </ul>	fects on stratospheric ozone depletion.		
· Volatile orga	nic compounds: 0% (by Volume)		
	gering Class (WGK): NA		
XIII. DISPOSAL CONSIL	DERATIONS (UNITED STATES)		
	ondary lead smelter for recycling. Spent lead-acid batteries are not regulat	ed as hazardous waste when the requirements of	
40 CFR Section 266.80 are	met. This should be managed in accordance with approved local, state and	federal requirements. Consult state environment	al
agency and/or federal EPA.		-	
Electrolyte:			
Place neutralized slurry into	sealed containers and handle as applicable with state and federal regulation	ons. Large water-diluted spills, after	
	hould be managed in accordance with approved local, state and federal req		
agency and/or federal EPA.			

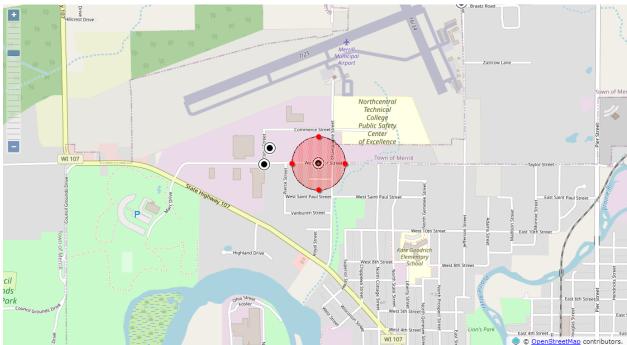
Ene	<b>rSys</b> . saft	ETY DATA SHEET	HAWKER	Form #: SDS 853026 Revised: 05/14/15 Supersedes: NEW
	Powers/Fuil Solutions			ECO #: 1001584
XIV. TRA	NSPORT INFORMATION			1001201
U.S. DOT:				
	Excepted from the hazardous materials regulations ( HM of the U.S. Department of Transportation's HMR. Batter	y and outer package must be man	-	
IATA Dan	Battery terminals must be protected against short circuits perous Goods Regulations DGR:	h.		
	Excepted from the dangerous goods regulations because	the batteries meet the requirement	ats of Packing Instruction 872 and Special Provisions	A67 of
	the International Air Transportation Association (IATA) Instructions. Battery Terminals must be protected again		d International Civil Aviation Organization (ICAO) 1	(echnical
	The words " NOT RESTRICTED", SPECIAL PROVISI	ON A67* must be provided when	the air waybill is issued.	
IMDG:				
	Excepted from the dangerous goods regulations for trans			1
Dension	International Maritime Dangerous Goods( IMDG CODE ato for Sofe Shinging and Handling of Curlon Colleg	). Battery terminals must be prot	ected against short circuits.	
Requirem	nts for Safe Shipping and Handling of Cyclon Cells: Warning – Electrical Fire Hazard – Protect against shorti	ng. Terminals can short and cau	se a fire if not insulated during chimping. Cyclon pro-	duct
	must be labeled "NONSPILLABLE" during shipping. Fo	-		
	through 180, available online at www.gpoaccess.gov.	and an interest subbund repairs	inits. See account of this sheet and effect of this i	
Requireme	nts for Shipping Cyclon Product as Single Cells:			
	Protective caps or other durable inert material must be us	ed to insulate each terminal of e	ach cell unless cells are shipping in the original packa	ging
	from EnerSys, in full box quantities. Protective caps are			
Requirem	nts for Shipping Cyclon Product Assembled Into Multi	cell Batteries:		
-	Assembled batteries must have short circuit protection d	uring shipping. Exposed termina	ls, connectors, or lead wires must be insulated with a	
	durable inert material to prevent exposure during shippin	ig.		
	LATORY INFORMATION			
UNITED S				
EPA SAR/				
Section 30.	EPCRA Extremely Hazardous Substances (EHS):	sure in FIRCH & with a Three ball	I Planning Oversity (TPO) -51,000 Pa	
	Sulfuric acid is a listed "Extremely Hazardous Substance			
	EPCRA Section 302 notification is required if 1000 lbs of 40 CFR Part 355. The quantity of sulfuric acid will vary			ansuit
Section 30	CERCLA Hazardous Substances;	by ballery type. Contact your Elk	risys representative for additional information.	
and the second second	Reportable Quantity (RQ) for spilled 100% sulfuric acid	under CERCLA (Superfund) and		
	EPCRA (Emergency Planning and Community Right to I			av varv.
Section 31	/312 Hazard Categorization:			
	EPCRA Section 312 Tier Two reporting is required for n	on-automotive batteries if sulfuri	c acid is present in quantities of 500 lbs or more and/	or if lead is
	present in quantities of 10,000 lbs or more. For more info			
Section 313	EPCRA Toxic Substances:			
	40 CFR section 372.38 (b) states: If a toxic chemical is	present in an article at a covered	facility, a person is not required to consider the quant	ity of the
	toxic chemical present in such article when determining	whether an applicable threshold I	has been met under § 372.25, § 372.27, or § 372.28 o	Γ
	determining the amount of release to be reported under §		-	person
	or the person produced the article. However, this exempt	ion applies only to the quantity o	f the toxic chemical present in the article.	
Supplier N				
	This product contains toxic chemicals, which may be rep			
	If you are a manufacturing facility under SIC codes 20 th	rough 39, the following informat	ion is provided to enable you to complete the required	1 reports:
	Toxic Chemical	CAS Number	· · · · · · · · · · · · · · · · · · ·	
			Approximate % by Wt.	
	Lead	7439-92-1	45 - 60	
	Sulfuric Acid Electrolyte (Sulfuric Acid/Water)	7664-93-9	15 - 20	
			01-02	
	Tin San 40 CEP Part 370 for more details	7440-31-5	0.1 - 0.2	
	See 40 CFR Part 370 for more details.			
	If you distribute this product to other manufacturers in St of each calendar year.	IC Codes 20 through 39, this info	rmation must be provided with the first shipment	
	The Section 313 supplier notification requirement does n	ot apply to batteries, which are "	consumer products".	

EnerSy	S.	SAFETY DATA SHEET	<b>@HAWKER</b>	Form #: SDS 853026 Revised: 05/14/15 Supersedes: NEW ECO #: 1001584
TSCA: TSCA S	ection 8b - Inventory Status: All chemica	ls comprising this product are either exem	pt or listed on the TSCA Inventory.	
	Section 12b (40 CFR Part 707.60(b)) No no of individual section 5, 6, or 7 actions.	otice of export will be required for articles	, except PCB articles, unless the Agency so re	quires in the
	ection 13 (40 CFR Part 707.20): No impo al Import Requirements of the Toxic Subs	ort certification required (EPA 305-B-99-0 tances Control Act, Section IV.A).	01, June 1999, Introduction to the	
	*	ted handling requirements when managed vaste; EPA hazardous waste number D002	in compliance with 40 CFR section 266.80 or (corrosivity) and D008 (lead).	40 CFR part 273.
chemics of 1990	lls (ODC's), defined by the USEPA as Clas , finalized on January 19, 1993, EnerSys e	ss I substances. Pursuant to Section 611of	emissions of CFC's and other ozone depleting f the Clean Air Act Amendments (CAAA) Class I ODC's prior to the May 15, 1993 dead	
	tion 65:			
cancer a	nd reproductive harm. Batteries also cont		, chemicals known to the State of California to California to cause cancer. Wash hands after	
INTERNATIONAL Distribu		trolled Product Regulations (CPR) 24(1) as	nd 24(2).	
Distribu	tion into the EU to follow applicable Dire	ctives to the Use, Import/Export of the pro	duct as-sold.	
XVI. OTHER INFO Revised: 05/14/2015				
Revised: 05/14/2015				
	ag for Sulfuric Acid:			
	bility (Red) = 0	Reactivity (Ye	-	
Health (	Blue) = 3	Sulfuric acid i	is water-reactive if concentrated.	

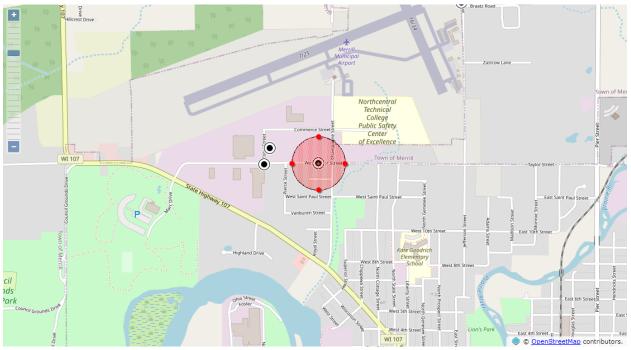


# Vulnerability Zone Maps for Nitric Acid





# **B.** Re-evaluation Scenario



Lincoln County: Local Emergency Planning Committee (LEPC)



# EMERGENCY MANAGEMENT



# 2023 Off Site Plan: Packaging Corporation of America (PCA)

Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

# **Table of Contents**

I.	Facility Information
II.	Facility Emergency Contacts
III.	Extremely Hazardous Substances (EHS)
IV.	Primary Emergency Responders
V.	Support Available at Facility
VI.	General information and Assumptions (Disclaimer)
VII.	Hazard Analysis Summary
VIII	Population Protection
IX.	Distribution List
X.	Supporting Documentation
	chment A, Record of Change and Review
Atta	chment B, Facility Layout and Site Information
Atta	chment C, Transportation Route Map
Atta	chment D, Safety Data Sheet for Ammonia (Aqueous)
Atta	chment E, Safety Data Sheet for Sulfuric Acid (Battery Acid)24
Atta	chment F, Vulnerability Zone Map for Ammonia (Aqueous)
Atta	chment G, Vulnerability Zone Map Sulfuric Acid (Battery Acid)

# I. Facility Information

#### A. Packaging Corporation of America

- 1. Address: N9090 County Road E, Tomahawk, WI 54487
- 2. Phone: (715) 453-2131
- 3. Facility ID # (Assigned by WEM): 9159

# **II.Facility Emergency Contacts**

#### A. Tier II Contact:

- 1. Name: Kristy Neumann
- 2. Position: Manager
- 3. Emergency Phone: (715) 966-1239
- 4. Email: <u>kneumann@packagingcorp.com</u>

#### **B.** Tier II Emergency Coordinator:

- 1. Name: Nick Spencer
- 2. Position: Manager
- 3. Emergency Phone: (715) 966-1662
- 4. Email: <u>nicolasspencer@packagingcorp.com</u>

#### C. Tier II Alternative Coordinator:

- 1. Name: Logan Garski
- 2. Position: Safety Specialist
- 3. Emergency Phone: (715) 966-9572
- 4. Email: logangarski@packagingcorp.com

# III. Extremely Hazardous Substances (EHS)

## A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)
7664-41-7	Ammonia (Aqueous)	18,600	18,600	> 10 miles
7664-93-9	Sulfuric Acid (Battery Acid)	4500	4,500	< 0.1 miles

## **B. EHS Chemicals UNDER Threshold Planning Quantity (TPQ)**

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)
108-91-8	Cyclohexanamine	3,600	3,600	0.1 miles

# **IV.** Primary Emergency Responders

#### A. Packaging Corporation of America Emergency Response Team

- 1. Phone: (715) 453-2131 ext. 211
- **B.** Lincoln County Sheriff's Office
  - 1. Phone: 911 or (715) 563-6272

#### C. Lincoln County Emergency Communications Center

1. Phone: 911 or (715) 563-6272

#### **D. Lincoln County Emergency Management**

1. Phone: (715) 218-0128

#### E. Tomahawk Fire Department

1. Phone: 911 or (715) 453-8180

#### F. Tomahawk Police Department

1. Phone: 911 or (715) 453-2121

# V. Support Available at Facility

#### A. Chemical Emergency Monitoring Equipment:

- 1. pH meter-two (2) 85 gallon over packs
- 2. Bbl. for hydrocarbons
- 3. Colorimetric Indicator Tubes
- 4. Multiple gas indicators

#### **B.** Personal Protective Equipment:

- 1. Self-Contained Breathing Apparatus (SCBA)—eight (8)
- 2. Spare oxygen tanks for SCBA—eight (8)

#### C. Other Equipment or Supplies:

- 1. Registered Nurse (RN)—One (1) full-time employee
- 2. Emergency Medical Technician (EMT)—One (1) full-time employee
- 3. Emergency Medical Responder (EMR)—Nineteen (19) full-time employees
- 4. Firefighter—Thirteen (13) full-time employees
- 5. Hazardous Material (HAZMAT) Technician—Seventeen (17) full-time employees

#### D. Outside Resources Available:

- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

The Tomahawk Fire Department is capable of handling minor hazardous materials incidents; however, if the incident exceeds the ability/capability of Tomahawk Fire Department LCSO Communications Center will request the appropriate agency. Lincoln County contracts with two (2) external hazmat response teams dependent on level of release, for Level B response Oneida County Sheriff Office Hazardous Materials Response Team; whereas, for Level A response Wausau Wisconsin Hazardous Response Team.

For Level A incidents, the response of Wausau Wisconsin Hazardous Response Team must be requested through the Wisconsin Emergency Management (WEM) State Emergency Operations Center (SEOC). Contact the WEM SEOC Duty Officer at (800) 943-0003 for response.

- 2. Chemtrec: (800) 424-9300
  - a) Unknown response time
- 3. National Response Center: (800) 424-8802
  - a) Unknown response time
- 4. REI—Spill & Response Recovery: (800) 734-7745
  - a) Unknown response time

# VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

# VII. Hazard Analysis Summary

Packaging Corporation of America (PCA) is a paper mill located at N9090 Highway E in Tomahawk, WI. Processes conducted at the facility include but are not limited to pulp and paper mill. Extremely Hazardous Substances (EHS) utilized and stored at the facility include aqueous ammonia, sulfuric acid (battery acid), and cyclohexanamine.

Packaging Corporation of American operates seven (7) days a week utilizing three shifts to provide 24hour operations consisting of 400 employees. PCA employs its own fire and medical response which includes Hazmat Technicians.

#### A. Greatest Potential for Release

1. Ammonia (aqueous) at Packaging Corporation of American is present at 18,600 pounds in a concentration of 29% solution and stored in a 18,600 above ground tank.

# **B.** Vulnerability Zones (by chemical)

Ammonia (Aqueous): CAS #7664-41-7						
Amount Released:	18	18,600 lbs.				
Concentration:	30	30%				
Physical State:	Gas					
Diked Area:	No					
Level of Concern (LOC):	Level of Concern (LOC): 0.035 gm/m <sup>3</sup>					
LOC Type:	Greenbook LOC					
Worst Case Scenario		Re-Evaluation Scenario				
Duration:		10 minutes	Duration	10 minutes		
Wind Speed:		3.4 mph	Wind Speed:	11.9 mph		
Ground Roughness:		Rural	<b>Ground Roughness:</b>	Urban		
Atmospheric Stability Class:		F	Atmospheric Stability Class:	D		
Risk:		Low	Risk:	Low		
Consequences:		Low	Consequences:	Low		
Overall Risk:		Low	Overall Risk:	Low		
Threat Zone Radius:		> 10 miles	Threat Zone Radius:	0.4 miles		

Sulfuric Acid (Battery Acid): CAS #7664-93-9					
Amount Released:	4,500 lbs.	,500 lbs.			
Concentration:	Concentration: 100%				
Physical State:	Liquid (Ambient)				
Diked Area:	No				
Level of Concern (LOC): 0.008 gm/m <sup>3</sup>					
LOC Type:	Greenbook LOC				
Worst Case Scenario			Re-Evaluation Scenario		
Duration:	10 min	utes	Duration	10 minutes	
Wind Speed:	3.4 mpl	h	Wind Speed:	11.9 mph	
Ground Roughness:	Rural		Ground Roughness:	Urban	
Atmospheric Stability Class: F			Atmospheric Stability Class:	D	
Risk:	Low		Risk:	Low	
Consequences:	Low		Consequences:	Low	
Overall Risk:	Low		Overall Risk:	Low	
Threat Zone Radius:	< 0.1 m	niles	Threat Zone Radius:	< 0.1 miles	

AMERCOR 1848 (Cyclohexanamine): CAS #108-91-8					
Amount Released:	12,000 lbs.				
Concentration:	30%				
Physical State:	Liquid (Ambient)				
Diked Area:	No				
Level of Concern (LOC):	0.16 gm/m <sup>3</sup>				
LOC Type:	Greenbook LOC				
Worst Case Scenario			Re-Evaluation Scenario		
Duration:		10 minutes	Duration	10 minutes	
Wind Speed:		3.4 mph	Wind Speed:	11.9 mph	
Ground Roughness:		Rural	<b>Ground Roughness:</b>	Urban	
Atmospheric Stability Class: F		F	Atmospheric Stability Class:	D	
Risk:		Low	Risk:	Low	
Consequences:		Low	Consequences:	Low	
Overall Risk:		Low	Overall Risk:	Low	
Threat Zone Radius:		0.1 miles	Threat Zone Radius:	< 0.1 miles	

#### C. Estimation of Population Affected

- 1. Ammonia (Aqueous)
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be less than 500 employees, less than 3,432 persons in general population and fourteen (14) special facilities.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be 500 employees and no other populations or facilities affected.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.
- 2. Sulfuric Acid (Battery Acid)
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be less than 10 employees and no other populations or facilities affected.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be 10 employees and no other populations or facilities affected.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that no shelter, isolation, or evacuation would have to take place in conjunction with this extremely hazardous chemical. Special Facilities Affected.

#### **D.** Critical Infrastructure

- 1. Samuel & Sons
  - a) 1119 Bridge Street, Tomahawk, WI 54487
  - b) (715) 453-5326

#### E. Hospital

- 1. Aspirus Tomahawk Hospital
  - a) 401 W. Mohawk Drive, Tomahawk, WI 54487
  - b) (715) 453-7200

#### F. Nursing Homes/Assisted Living Facilities

- 1. Country Terrace of Wisconsin
  - a) 300 Theiler Drive, Tomahawk, WI 54487
  - b) (715) 224-3701
- 2. Railway Group Home
  - a) 18 South Railway Street, Tomahawk, WI 54487
  - b) (715) 453-7615
- 3. Our Way, Inc.
  - a) 825 Charles Avenue, Tomahawk, WI 54487
  - b) 427 North 5<sup>th</sup> Street, Tomahawk, WI 54487
  - c) (715) 453-8281
- 4. Milestone Senior Living Tomahawk
  - a) 314 East Lincoln Avenue, Tomahawk, WI 54487
  - b) (715) 224-3747
- 5. Riverview Health Services
  - a) 428 North 6<sup>th</sup> Street, Tomahawk, WI 54487
  - b) (715) 453-2511
- 6. Golden Age (Tomahawk Health Services)
  - a) 720 East King Road, Tomahawk, WI 54487
  - b) (715) 453-2164

#### G. Schools

- 1. Tomahawk Elementary School
  - a) 1048 East King Road, Tomahawk, WI 54487
  - b) (715) 453-2126
- 2. Tomahawk Middle School
  - a) 1048 East King Road, Tomahawk, WI 54487
  - b) (715) 453-5371
- 3. Tomahawk High School
  - a) 1048 East King Road, Tomahawk, WI 54487
  - b) (715) 453-2106

- 4. Wisconsin Virtual School
  - a) 304 Kaphaem Road, Tomahawk, WI 54487
  - b) (715) 453-1953
- 5. Tomahawk Head Start
  - a) 1048 East King Road, Tomahawk, WI 54487
  - b) (715) 453-1008

#### H. Child Care/Day Care

- 1. Tomahawk Child Care
  - a) 648 East Lincoln Avenue, Tomahawk, WI 54487
  - b) (715) 453-1602

# VIII.Population Protection

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

# **IX.** Distribution List

- Packaging Corporation of America
- Tomahawk Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Oneida County Emergency Management

# X. Supporting Documentation

#### A. Attachments

- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Ammonia (Aqueous)
- 5. Attachment E, Safety Data Sheet for Sulfuric Acid (Battery Acid)
- 6. Attachment F, Vulnerability Zone Map for Ammonia (Aqueous)
- 7. Attachment G, Vulnerability Zone Map for Sulfuric Acid (Battery Acid)

## Attachment A

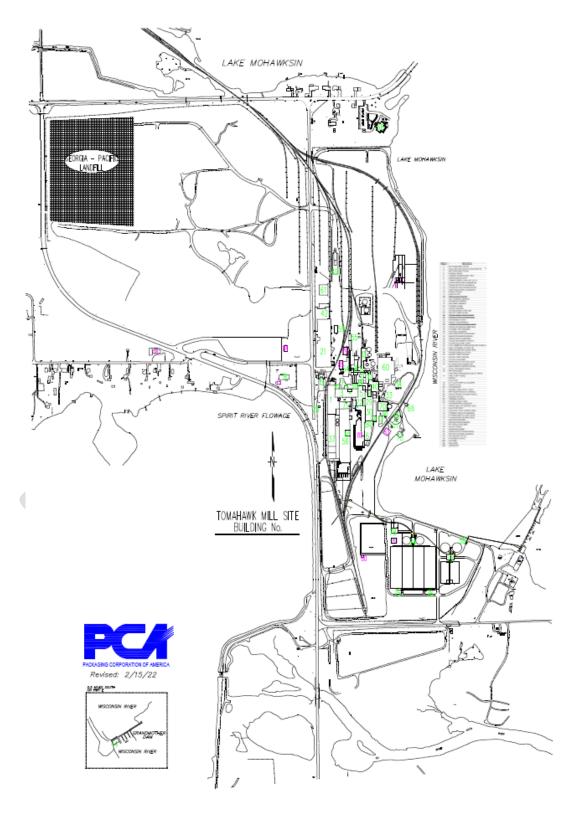
# **Record of Change/ Review /Signature**

Date	Contributor	Description of Change	Page Number(s)

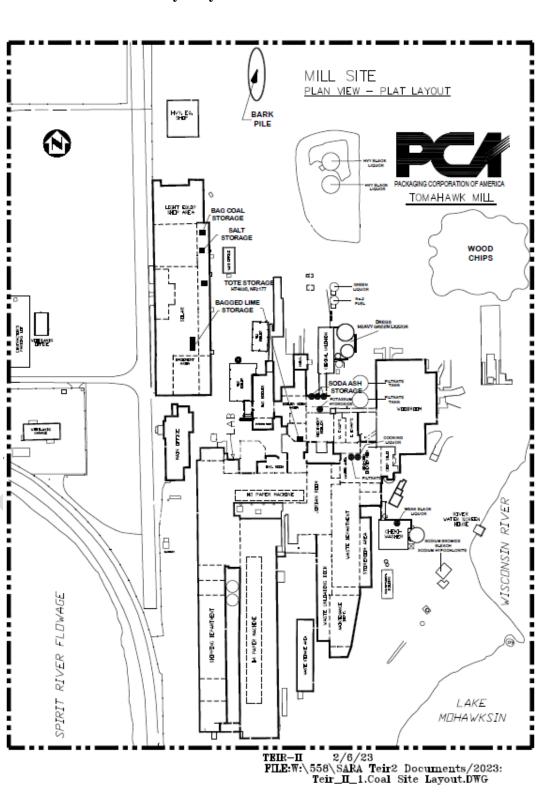
Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.

## Attachment B

## **Facility Layout and Site Information**



Attachment B cont.



Facility Layout and Site Information

## Attachment C

## **Transportation Route Map**



## Attachment D

## Safety Data Sheet for Ammonia (Aqueous)

AMMONIUM HYDROXIDE Product ID: NH0026 Revised: 06-07-2022 Replaces: 02-24-2020	I 
1. IDENTIFICATION	
on the Label: Other Identifiers: Product ID: Recommended Use: Restrictions on Use:	AMMONIUM HYDROXIDE Ammonium Hydroxide; Aqueous Ammonia; Ammonia Water; Ammonia Solution MIXTURE Please follow all Hydrite Technical Literature, Hydrite SDS and Hydrite Product Labels associated with this material's use instructions. If you require further instruction on approved uses for this material, please contact your Hydrite Service Representative. It is not recommended that this product be used in a manner that is inconsistent with the Hydrite Technical Literature, the Hydrite SDS or product label associated with this material. If you have questions regarding use of this product, please contact your Hydrite Service Representative.
Hydrite Chemical Co. 17385 Golf Parkway Brookfield, WI 53045 (262) 792-1450	EMERGENCY RESPONSE NUMBERS: 24 Hour Emergency #: (414) 277-1311 CHEMTREC Emergency #: (800) 424-9300
2. HAZARD(S) IDENT	IFICATION
GHS Classification(s):	Skin Corrosion/Irritation Category 1C Serious Eye Damage/Eye Irritation Category 1 Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3 Acute Toxicity - Oral Category 4
GHS Label Elements:	
GHS Hazard Symbols:	
Signal Word:	Danger
Hazard Statements:	Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation.
Precautionary Stateme	nts:
Prevention:	Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### Safety Data Sheet for Ammonia (Aqueous)

AMMONIUM HYE Product ID: NH0							
	Specific tre	y call a POISON CENTER or doctor/ atment (see First Aid on SDS or on t aminated clothing before reuse.					
Storage:		Store in a well-ventilated place. Keep container tightly closed. Store in a secure manner.					
Disposal:	Dispose of	in accordance with local, regional an	d international regula	tions.			
Hazards not oth	Hazards not otherwise classified: May react with certain metals to form explosive/flammable hydrogen gas. May be corrosive to certain metals. Ammonium hydroxide is very volatile and may release ammonia as a gas. Ammonia vapor, in concentrations of 16-25% volume by weight in air, is flammable, toxic by inhalation and corrosive. Take all appropriate precautions.						
3. COMPOSIT	3. COMPOSITION/INFORMATION ON INGREDIENTS						
Substances/Mixtures:							
Chemical or Con Ammonium Hydr	mmon Name/Synony oxide	<u>/ms</u>	CAS Number 1336-21-6	<u>% by Wt.</u> ~55 - 62%			
Note:	CONTAINS ~27-3	0% AMMONIA (CAS# 7664-41-7).					

Note: Any chemical identity and/or exact percentage not expressly stated is being withheld as a trade secret or is due to batch variation.

#### 4. FIRST-AID MEASURES

#### Description of Necessary Measures:

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.

Skin Contact: If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. GET MEDICAL ATTENTION IMMEDIATELY.

**Ingestion:** If swallowed: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. After dilution with water, fruit juice or diluted vinegar may be administered to accomplish neutralization.

#### Most Important Symptoms/Effects, Acute and Delayed:

Eye Contact: CORROSIVE-Causes severe irritation and burns. Vapors may cause: burns. May cause: corneal damage. conjunctivitis. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Concentrated ammonia may produce liquefication necrosis and deep penetrating burns. Contact may cause: dermatitis (inflammation of the skin).

Skin Absorption: May be harmful if absorbed through skin.

Inhalation: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. nose. lungs. respiratory tract. May cause: chest pain. coughing. asthma. pink frothy sputum. lung fibrosis. running nose. pulmonary edema. chemical pneumonitis. death. Effects may be delayed.

**Ingestion:** CORROSIVE-Causes severe irritation and burns. May produce systemic effects similar to inhalation. May cause: headache. drowsiness. liver congestion. urinary retention. nausea. vomiting. coma. death. May cause swelling of the: lips. larynx. May cause damage to the: mouth. throat. esophagus.

#### Safety Data Sheet for Ammonia (Aqueous)

#### AMMONIUM HYDROXIDE Product ID: NH0026

Indication of Immediate Medical Attention and Special Treatment Needed: The conventional symptoms of developing pulmonary edema should be observed regularly. Anyone exposed to ammonia who breathes in short, rapid shallow breaths should be immobilized. In most cases 24 hour bed rest, under the observation of a physician, will be necessary before it can be determined that the victim is out of danger. Anyone who accidentally has been exposed to high or unknown concentrations of ammonia and who has ammonical breath, tightness of the chest, bloodshot eyes with swollen lids, and a cough that may discharge bloody mucous is seriously ill. Medical assistance should be summoned immediately. SUCH A PERSON SHOULD BE IMMOBILIZED AT ONCE, eyes washed, and oxygen administered by a physician. Any sort of movement on the victim's part will aggravate the developing edema and may result in death.

#### 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Foam. Carbon dioxide. Dry chemical. Water spray.

Specific Hazards Arising from the Chemical:

**Fire and Explosion Hazards:** Contact with strong oxidizing agents may cause an explosion. The presence of oil or other combustible materials will increase the fire hazard. The heat of a welding or cutting torch could cause an explosion. Ammonia will combine readily with either silver oxide or mercury to form explosive fulminating compounds. Contact with halogens and chlorates can cause explosions.

Hazardous Combustion Products: Nitrogen oxides. Ammonia.

Special Protective Equipment and Precautions for Fire-Fighters: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers and disperse vapors. Run-off from fire control may cause pollution.

#### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, Emergency Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

Methods and Materials for Containment and Clean Up: Shut off source of leak if safe to do so. Keep upwind of leak or spill. Contain spill, place into drums for proper disposal. Flush remaining area with water to remove trace residue and dispose of properly. CAUTIOUSLY neutralize remaining residue with dilute acid such as Acetic, Hydrochloric or Sulfuric. Soak up residue with inert absorbent material. Place in non-leaking containers for immediate disposal. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

#### 7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. CORROSIVE MATERIAL. Avoid dust or mist formation.

Conditions for Safe Storage, Including any Incompatibilities: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Keep away from all sources of ignition. Avoid copper bearing fittings on pipes, tanks, etc.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines: Component Ammonium Hydroxide

Limits 50 ppm TWA; 35 mg/m3 TWA

#### Safety Data Sheet for Ammonia (Aqueous)

#### AMMONIUM HYDROXIDE Product ID: NH0026

#### ACGIH Exposure Guidelines: <u>Component</u> Ammonium Hydroxide 25 ppm TWA; 35 ppm STEL

Note:

Exposure limits for Ammonia: 50 ppm-TWA (OSHA); 25 ppm-TWA, 35 ppm-STEL (ACGIH).

Appropriate Engineering Controls: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

#### Individual Protection Measures:

**Eye/Face Protection:** Wear chemical safety goggles while handling this product. Do not wear contact lenses. Wear additional eye protection such as a face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Impervious. Chemical-resistant.

**Respiratory Protection:** Respiratory protection may be required to avoid overexposure when handling this product. If exposure limits are exceeded, wear: NIOSH approved full facepiece respirator with: Ammonia cartridge. NIOSH/MSHA-Approved (or equivalent) full facepiece airline respirator in the positive pressure mode with emergency escape provisions. NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Full body suit. Protective clothing.

**General Hygiene Conditions:** Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid. Color: Clear. Colorless. Odor: Pungent ammonia odor. Odor Threshold: N.D. pH: > 13 (as is) Freezing Point (deg. F): N.D. Melting Point (deg. F): N.D. Initial Boiling Point or Boiling Range: N.A. Flash Point: N.A. Flash Point Method: N.A. Evaporation Rate (nBuAc = 1): N.D. Flammability (solid, gas): N.D. Lower Explosion Limit: N.A. Upper Explosion Limit: N.A. Vapor Pressure (mm Hg): N.D. Vapor Density (air=1): N.D. Specific Gravity or Relative Density: 0.895 @ 25 F Solubility in Water: Complete Partition Coefficient (n-octanol/water): N.D. Auto-ignition Temperature: No Data Decomposition Temperature: N.D.

#### Safety Data Sheet for Ammonia (Aqueous)

#### AMMONIUM HYDROXIDE Product ID: NH0026

Viscosity: N.D. % Volatile (wt%): N.D. VOC (wt%): N.D. VOC (lbs/gal): N.D. Fire Point: N.D.

#### 10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions.

Conditions to Avoid (e.g., static discharge, shock, or vibration): Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames. Avoid elevated temperatures.

Incompatible Materials: Acids. Strong oxidizing agents. Combustible materials. Halogens or halogen compounds. Oleum. Acrolein. Sodium hydroxide. Chlorates. Chromium trioxide. Ethylene oxide. Boron. Chlorites. Dimethyl trioxide. Phosphorous trioxide. Propylene oxide. Nitrogen tetroxide. Silver nitrate. Silver chloride. Potassium chlorate. Potassium ferricyanide. Dimethyl sulfate. Metals. Copper. Organic Acids. Gaseous or liquid ammonia will vigorously attack, copper, silver, zinc and their alloys. It will combine readily with either silver oxide or mercury to form explosive fulminating compounds. Avoid use of nonferrous metals. Galvanized surfaces. Forms explosive compounds with many heavy metals (gold, silver, mercury, etc.) and their salts, especially halide salts. Sodium hypochlorite. Silver. Zinc. Gold. Brass. Bronze. Aluminum. Mercury. Galvanized steel.

Hazardous Decomposition Products: Ammonia. Nitrogen oxides.

#### 11. TOXICOLOGICAL INFORMATION

Routes of Exposure: Eyes. Ingestion. Inhalation. Skin.

#### Symptoms/Effects: Acute, Delayed and Chronic:

**Eye Contact:** CORROSIVE-Causes severe irritation and burns. Vapors may cause: burns. May cause: corneal damage. conjunctivitis. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Concentrated ammonia may produce liquefication necrosis and deep penetrating burns. Contact may cause: dermatitis (inflammation of the skin).

Skin Absorption: May be harmful if absorbed through skin.

Inhalation: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. nose. lungs. respiratory tract. May cause: chest pain. coughing. asthma. pink frothy sputum. lung fibrosis. running nose. pulmonary edema. chemical pneumonitis. death. Effects may be delayed.

**Ingestion:** CORROSIVE-Causes severe irritation and burns. May produce systemic effects similar to inhalation. May cause: headache. drowsiness. liver congestion. urinary retention. nausea. vomiting. coma. death. May cause swelling of the: lips. larynx. May cause damage to the: mouth. throat. esophagus.

Dermal LD50

No Data

#### Numerical Measures of Toxicity:

Component	Oral LD50
Ammonium Hydroxide	Rat: 350 mg/kg

Acute Toxicity Estimates (ATE): Oral: 586 mg/kg

#### Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Medical Conditions Aggravated by Exposure to Product: Eye disorders. Liver disorders. Lung disorders. Respiratory system disorders. Skin disorders. Allergies.

Inhalation LC50

No Data

#### Safety Data Sheet for Ammonia (Aqueous)

#### AMMONIUM HYDROXIDE Product ID: NH0026

Other: Exposure to atmospheric concentrations of ammonia above 5000 pmm in air will produce death by suffocation within minutes. Atmospheric ammonia in concentrations above 2000 ppm will burn and blister the skin after a few seconds of exposure. Excess ammonia in the body is detoxified in the liver by conversion to urea. Those with a history of reduced liver function should avoid exposure to ammonia. Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the kidney, eye, respiratory, cardiovascular and nervous systems.

#### 12. ECOLOGICAL INFORMATION

Ecotoxicological Information: This material is expected to be very toxic to aquatic life. The 96 hour LC50 values for fish are less than 1 mg/L. The 48 hour EC50 values for daphnia are less than 1 mg/L.

Chemical Fate Information: This material is not expected to significantly bioaccumulate.

#### 13. DISPOSAL CONSIDERATIONS

#### Hazardous Waste Number: D002

**Disposal Method:** Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

#### 14. TRANSPORTATION INFORMATION

#### DOT (Department of Transportation):

Identification Number:	UN2672
Proper Shipping Name:	Ammonia Solution
Hazard class:	8
Packing Group:	III
Marine Pollutant:	Ammonia solution
Label Required:	CORROSIVE
Reportable Quantity (RQ):	100# (Ammonia); 1000# (Ammonium Hydroxide)

#### 15. REGULATORY INFORMATION

TSCA Inventory Status: This product or all components of this product are listed on the EPA/TSCA Inventory of Chemical Substances.

SARA Title III Section 311/312 Category Hazards: Please see Section 2 of this SDS.

Regulated Components:	CAS	<b>CERCLA</b>	SARA	SARA	<u>U.S.</u>	WI	Prop
Component	Number	RQ	EHS	<u>313</u>	HAP	HAP	<u>65</u>
Ammonium Hydroxide	1336-21-6	Yes	Yes	Yes	No	Yes	No

Note:

\* Section 313 threshold and release determinations are based on 10% of the total aqueous ammonia manufactured, processed or otherwise used. This product contains Ammonia (CAS# 7664-41-7) which is subject to 313 reporting requirements. If ammonia is released to the environment, it is subject to EPCRA 302 and 304 reporting requirements: CERCLA RQ of 100 pounds, SARA RQ of 100 pounds, and TPQ of 500 pounds. Ammonia is not an EPA HAP.

#### 16. OTHER INFORMATION

Hazard Rating System Health: 3\* Flammability: 1 Reactivity: 0

#### Safety Data Sheet for Ammonia (Aqueous)

#### AMMONIUM HYDROXIDE Product ID: NH0026

\* = Chronic Health Hazard

NFPA Rating System Health: 3 Flammability: 1 Reactivity: 0 Special Hazard: None

SDS Abbreviations N.A. = Not Applicable N.D. = Not Determined HAP = Hazardous Air Pollutant VOC = Volatile Organic Compound C = Ceiling Limit N.E./Not Estab. = Not Established

SDS Prepared by: JAK

Reason for Revision: New format. Changes made throughout the SDS.

Revised: 06-07-2022 Replaces: 02-24-2020

The data in this Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

EnerSys	s	AFETY DATA SI	IFFT		Form #: SDS 853024 Revised: AD 01/04/19
Course ford Schutzers	5	ALLI DALASI			Supersedes: AC
I. PRODUCT IDENTIFICATION					ECO #: 1002070
Chemical Trade Name (as used on label):			Chemical Family/Cl	lassification:	
Non-Spillable Lead Acid Battery			Electric Storage Batte		
Synonyms:					
Industrial Battery, Traction Battery, Stations	ary Battery,		Telephone:		
Deep Cycle Battery				emergencies, contact En	
Manufacturer's Name/Address:			Environmental, Healt	th & Safety Dept. at 610	-208-1996
EnerSys			25		
P.O. Box 14145 2366 Bernville Road			24-Hour Emergency		
Reading, PA 19612-4145			CHEMITKEC DOME	STIC: 800-424-9300	CHEMTREC INT'L: 703-527-3877
II GHS HAZARDS IDENTIFICATION		Charles and the second second			
HEALTH			ENVIRONMENTAL		PHYSICAL
Acute Toxicity			Aquatic Chronic I		Explosive Chemical, Division 1.3
Concernance of the Law Instruments of the	Category 4		Aquatic Acute 1		Exposite Constituti, Division 1.5
	Category 1A				
	Category 1	1			
Reproductive C	Category 1A	1			
	Category 1B	1			
	Category 1A	1			
	Category 1A	1			
	Category 2	1			
Toxicity (repeated exposure)					
GHS LABEL: HEALTH	and the second		ENVIRONMENTAL	and Party Later	PHYSICAL
DANGER! Causes severe skin burns and serious eye dat May damage fertility or the unborn child if in nhaled. May cause cancer if ingested or inhaled. Causes damage to central nervous system, bi idneys through prolonged or repeated expos May form explosive air/gas mixture during ci ixtremely flammable gas (hydrogen).	ngested or lood and sure-	Wear protective glov Avoid breathing dust Use only outdoors or Contact with internal Irritating to eyes, resj Obtain special instru-	er handling. smoke when using this p es/protective clothing, o /fume/gas/mist/vapors// in a well-ventilated are components may cause piratory system, and ski ctions before use.	eye protection/face prote spray. a. e irritation or severe bur	ns. Avoid contact with internal acid.
DANGER! Causes severe skin burns and serious eye dat May damage fertility or the unborn child if in nhaled. May cause cancer if ingested or inhaled. Causes damage to central nervous system, bi idneys through prolonged or repeated expos May form explosive air/gas mixture during of extremely flammable gas (hydrogen). Explosive, fire, blast, or projection hazard.	ngested or lood and sure-	Wash thoroughly afte Do not eat, drink or s Wear protective glov Avoid breathing dust Use only outdoors or Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a	er handling. smoke when using this p es/protective clothing, o /fume/gas/mist/vapors// in a well-ventilated are components may cause piratory system, and ski ctions before use.	eye protection/face prote spray. a: e irritation or severe bur n. ve been read and unders	ns. Avoid contact with internal acid.
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Enc	r <b>Sys.</b> sa				Form #: SDS 853024
LIIC	SA SA	FETY DATA SH	EET		Revised: AD 01/04/19
-	Prover Stall Schedular				Supersedes: AC
Other:	Control of all and the second				ECO #: 1002070
Councer.	Silicon Dioxide (Gel batteries only)	7631-86-9	1-5		
	Sheet Molding Compound	7031-80-9	1-5		
	(Glass reinforced polyester)	-			
		imani componente of	1.0	and the Provention	
	Inorganic lead and electrolyte (sulfuric acid) are the p	runary components or e	very battery manufactu	ired by EnerSys.	
IV FIRST	Other ingredients may be present dependent upon batt AID MEASURES	ery type. Contact your	EnerSys representative	g for additional information,	
Inhalation				and the second	
	Sulfuric Acid: Remove to fresh air immediately. If be	reathing is difficult, giv	e oxygen. Consult a ph	Astician	
	Lead: Remove from exposure, gargle, wash nose and	lins: consult abysician	e ondigens consult a bu	· · · · · · · · · · · · · · · · · · ·	
Ingestion:	informati Bullist	nipo, consure priyotetan.			
	Sulfuric Acid: Give large quantities of water; do not i	nduce vomiting or aspi	ration into the lunes m	ay occur and can cause nermanent initiary or	death:
	consult a physician.	interest community or aspe	renous may the heady in	ay occur and can cause permanent injury or	acata,
	Lead: Consult physician immediately.				
Skin:					
	Sulfuric Acid: Flush with large amounts of water for a	at least 15 minutes: rem	love contaminated cloth	hing completely, including shoes	
	If symptoms persist, seek medical attention, Wash con	taminated clothing bef	ire reuse. Discard cont	aminated shoes	
	Lead: Wash immediately with soap and water,	annande eroening oes	ore reare. Discard com	annumeu snoes,	
Eyes:					
	Sulfurie Acid and Lead: Flush immediately with large	amounts of water for a	least 15 minutes while	lifting lids	
	Seek immediate medical attention if eyes have been es			to the second seco	
V. FIRE F	IGHTING MEASURES	posed an eerly to sere:		State and the second state of the	
Flash Point	1: N/A	Flammable Limits:	LEL = 4.1% (Hydrogen	(Gas) UEL = 74.2%	
Extinguish	ing Media: CO2; foam; dry chemical. Do not use carbo	on dioxide directly on co	ells. Avoid breathing va	apors. Use appropriate media for surrounding	e fire.
Special Fir	E Fighting Procedures:			7	5.000 C
	If batteries are on charge, shut off power. Use positiv	e pressure, self-contain	ed breathing apparatus	. Water applied to electrolyte generates	
	heat and causes it to spatter. Wear acid-resistant cloth	ing, gloves, face and ey	e protection.	11	
	But note that strings of series connected batteries may	still pose risk of electri	c shock even when cha	rging equipment is shut down.	
Unusual Fi	re and Explosion Hazards:				
	Highly flammable hydrogen gas is generated during ch	arging and operation o	f batteries. To avoid ris	sk of fire or explosion, keep sparks or other	
	sources of ignition away from batteries. Do not allow	metallic materials to sit	multaneously contact n	egative and positive terminals of cells and	
	batteries. Follow manufacturer's instructions for instal	lation and service.			
	DENTAL RELEASE MEASURES			4	Long String String to States
Spill or Lea	k Procedures:				
	Stop flow of material, contain/absorb small spills with	dry sand, earth, and ve	rmiculite. Do not use e	combustible materials. If possible, carefully	
	neutralize spilled electrolyte with soda ash, sodium bic	arbonate, lime, etc. W	ear acid-resistant clothi	ing, boots, gloves, and face shield. Do not	
	allow discharge of unneutralized acid to sewer. Acid m	ust be managed in acco	ordance with local, stat	e, and federal requirements.	
	Consult state environmental agency and/or federal EP/	\			
	LING AND STORAGE		C SAULT AND AND SAU		and the second second second
Handling:	and in second concerning the second				
Uniess invol	ved in recycling operations, do not breach the casing or	empty the contents of	the battery. Handle care	efully and avoid tipping.	
	llow electrolyte leakage. There may be increasing risk o				
Keep contail	ters tightly closed when not in use. If battery case is br	oken, avoid contact wit	h internal components,		
Keep vent ci	aps on and cover terminals to prevent short circuits. Pla	ce cardboard between	ayers of stacked autom	otive batteries to avoid damage and short cit	rcuits.
Keep away t	rom combustible materials, organic chemicals, reducing	substances, metals, st	ong oxidizers and wate	er. Use banding or stretch wrap to secure ite	ms for
shipping.					
Storage:					
store batters	es in cool, dry, well-ventilated areas with impervious su	rfaces and adequate co	ntainment in the event	of spills. Batteries should	
also be store	d under roof for protection against adverse weather con-	ditions. Separate from	incompatible materials	Store and handle only	
in areas with	adequate water supply and spill control. Avoid damag	e to containers. Keep a	way from fire, sparks a	nd heat. Keep away from metallic objects co	buld
bridge the te	minals on a battery and create a dangerous short-circuit	t			
Charging:					
There is a po	ssible risk of electric shock from charging equipment a	nd from strings of serie	s connected batteries, v	whether or not being charged. Shut-off powe	r to
chargers who	enever not in use and before detachment of any circuit e	onnections. Batteries b	cing charged will gener	rate and release flammable hydrogen gas.	
	ce should be ventilated. Keep battery vent caps in posit	ion. Prohibit smoking a	and avoid creation of fl	ames and sparks nearby.	
Wear face an	d eye protection when near batteries being charged.				

SAFETY DATA SHEET						
III. EXPOSURE CONTROLS/		N	A State of the		10000000000	ECO #: 1002070
Exposure Limits (mg/m3) Note: N	K.E.= Not Established					
NGREDIENTS Chemical/Common Names)	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead and Lead Compounds						
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,c)
Arsenic	0.01	0,01	0.002	0.2	0.01	N.E.
alcium	N.E	N.E	N.E	N.E	N.E	N.E.
l'in	2	2	2	2	2	NE
Electrolyte (Sulfuric Acid)	1	0.2	1	I	0.2	0.05(c)
olypropylene	N.E	N.E	N.E	N.E	N.E	N.E
Polystyrene	N.E	N.E	N.E	N.E	N.E	N.E
tyrene Acrylonitrile	N.E	N.E	N.E	N.E	N.E	N.E
crylonitrile Butadiene						
Styrene Styrene Butadiene	N.E	N.E	N.E	N.E	N.E	N.E
olyvinylchloride	N.E	N.E	N.E	N.E	N.E	N.E
	N.E	N.E	N.E	N.E	1	N.E
Polycarbonate, Hard						
tubber, Polyethylene	N.E	N.E	N.E	N.E	N.E	N.E
Silicon Dioxide Gel Batteries Only)	N.E					
Ger Batteries (Jity)	N,E	N.E	N.E	N.E	N.E	N.E
heet Molding Compound Glass reinforced polyester) OTES:	N.E	N.E	N.E	N.E	N.E	N.E
Handle batteries cautio clothing, eye and face p positive and negative to <b>Respiratory Protection</b> (NIOSH/M None required under no respiratory protection. ikin Protection: If battery case is damag	1: Il-ventilated area. If mechan waly to avoid spills. Make co protection when filling, charg erminals of the batteries. Cha <b>1SHA approved):</b> ormal conditions. When con ged, use rubber or plastic acid	ical ventilation is used, ertain vent caps are on s ging or handling batterie arge the batteries in area contrations of sulfaric ac l-resistant gloves with el	components must be acid ecurely. Avoid contact w s. Do not allow metallic s with adequate ventilation cid mist are known to exc	rith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO	ously contact both the entilation is acceptable SH or MSHA-approv	5.
with unlimited water su	acid is handled in concentrat apply. Acid-resistant apron.	ions greater than 1%, er Under severe exposure o	emergency conditions, we	ns and showers should car acid-resistant cloth	be provided, ing and boots.	
If battery case is damag ther Protection: In areas where sulfuric with unlimited water su	acid is handled in concentral apply. Acid-resistant apron. led when adding water or ele	ions greater than 1%, er Under severe exposure o	emergency conditions, we	ns and showers should car acid-resistant cloth	be provided, ing and boots.	
If battery case is damag ther Protection: In areas where sulfuric with unlimited water sa Face shield recommend C PHYSICAL AND CHEMICAL roperties Listed Below are for El	acid is handled in concentral apply. Acid-resistant apron. led when adding water or ele L PROPERTIES	ions greater than 1%, er Under severe exposure o	emergency conditions, we	ns and showers should car acid-resistant cloth	be provided, ing and boots.	
If battery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recommend C PHYSICAL AND CHEMICAL roperties Listed Below are for Eb Boiling Point:	acid is handled in concentral apply. Acid-resistant apron. led when adding water or ele L PROPERTIES	ions greater than 1%, er Under severe exposure o	emergency conditions, we	ear acid-resistant cloth	be provided, ing and boots. 1.215 to 1.350	
If battery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recommend C. PHYSICAL AND CHEMICAL roperties Listed Below are for El Boiling Point: Melting Point:	acid is handled in concentral apply. Acid-resistant apron. led when adding water or ele L PROPERTIES	ions greater than 1%, er Under severe exposure e ctrolyte to batteries, was 203 - 240° F N/A	emergency conditions, we sh hands after handling.	tar acid-resistant cloth D = 1):	ing and boots.	
If battery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recommend C. PHYSICAL AND CHEMICAL roperfies Listed Below are for El Boiling Point: Melting Point: Solubility in Water:	acid is handled in concentral apply. Acid-resistant apron. led when adding water or ele L PROPERTIES lectrolyte:	ions greater than 1%, er Under severe exposure e ctrolyte to batteries, was 203 - 240° F	smergency conditions, we sh hands after hundling. Specific Gravity (H20	tar acid-resistant cloth D = 1): Hg):	ing and boots.	
If battery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recommend C. PHYSICAL AND CHEMICAL operties Listed Below are for El Boiling Point: Melting Point:	acid is handled in concentral apply. Acid-resistant apron. led when adding water or ele L PROPERTIES lectrolyte:	ions greater than 1%, er Under severe exposure e ctrolyte to batteries, was 203 - 240° F N/A	emergency conditions, we sh hands after handling. Specific Gravity (H20 Vapor Pressure (mm	D = 1): Hg): = 1):	ing and boots. 1.215 to 1.350 10	
If battery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recommend CPHYSICAL AND CHEMICAL operfiles Listed Below are for El Boiling Point: Melting Point: Solubility in Water:	acid is handled in concentral pply. Acid-resistant apron. ted when adding water or ele L PROPERTIES fectrolyte:	ions greater than 1%, er Under severe exposure o ctrolyte to batteries, was 203 - 240° F N/A 100%	Specific Gravity (H2C Vapor Pressure (nm Vapor Density (AIR =	D = 1): Hg): = 1): :	1.215 to 1.350 10 Greater than 1 N/A	ture (as hydrosen ess)
If battery case is damag ther Protection: In areas where sulfuric with unlimited water su Face shield recommend CPHYSICAL AND CHEMICAL operfiles Listed Below are for El Boiling Point: Melting Point: Solubility in Water:	acid is handled in concentral apply. Acid-resistant apron. led when adding water or ele 	ions greater than 1%, er Under severe exposure e ctrolyte to batteries, was 203 - 240° F N/A 100% Less than 1	Specific Gravity (H20 Vapor Pressure (am Vapor Density (AIR = % Volatile by Weight	D = 1): Hg): = 1): :	1.215 to 1.350 10 Greater than 1 N/A	tare (as hydrogen gas)

Ene	SAFETY DATA SHEET	Form #: SDS 853024 Revised: AD 01/04/19 Supersedes: AC ECO #: 1002070
X. STABIL	ITY AND REACTIVITY	800 #: 1002070
stability: S		
	t is stable under normal conditions at ambient temperature	
	Fo Avoid: Prolonged overcharge; sources of ignition	
Incompatib	lity: (Materials to avoid)	
	Sulfuric Acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing age	ints,
	metals, sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammal	ble
	hydrogen gas.	
	Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydroge and reducing agents.	m
Inverdous	Arsenic compounds; strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-arsin Decomposition Products:	С,
anal dous l	Sulfuric Acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.	
	Lead Compounds: High temperatures likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nasci	unit .
	hydrogen may generate highly toxic arsine gas.	201
	olymerization:	
	Will not occur	
L TOXICO	DOGICAL INFORMATION	A PARANCE INTE
Routes of En		and the second se
	Sulfaric 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, va	upor .
	or fume. The presence of nascent hydrogen may generate highly toxic arsine gas.	
nhalation:		
	Sulfurie 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.	
ngestion:		
	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 sys	temie
	axicity and must be treated by a physician.	
kin Contact	E Sulfuric Acid: Severe irritation, burns and ulceration.	
	Lead Compounds: Not absorbed through the skin.	
ve Contact:	Arsenic Compounds: Contact may cause demotitis and skin hyper pigmentation.	
	Sulfuric Acid: Severe irritation, burns, cornea damage, and blindness.	
	Lead Components: May cause eye irritation.	
	erexposure - Acute:	
	Sulfaric Acid: Severe skin irritation, damage to comea, upper respiratory irritation.	
- i	ead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep	
	listurbances and irritability.	
	erexposure - Chronic:	
	ulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.	
1	cad Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and	
1	emales. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abr	ormal
	onduction velocities in persons with blood lead levels of 50mcg/100 ml or higher. Heavy lead exposure may result in central nervous system	Arman
	ncephalopathy and damage to the blood-forming (hematopoietic) tissues.	oannige,
arcinogenic		
5	ulfuric Acid; The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" and	a
(	proup 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric	
a	cid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse o	f the
F	roduct, such as overcharging, may result in the generation of sulfuric acid mist.	
	ead Compounds: Lead is listed as a Group 2A carcinogen, likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 191	0.1200
	appendix F, this is approximately equivalent to GHS Category 1B. Proof of carcinogenicity in humans is lacking at present.	
A	rsenic: Arsenic is listed by IARC as a Group 1 - carcinogenic to humans. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F,	this is
0	pproximately equivalent to GHS Category 1A.	
edical Cond	litions Generally Aggravated by Exposure:	
(	verexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggra	vate
	iseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologie diseases.	

EnerSys.	SAFETY DATA SHEET	Form #: Revised;	SDS 853024 AD 01/04/19
Power/Full Solutio	N75	Supersede	
Acute Toxicity:		ECO #:	1002070
Inhalation LD50:			
Electrolyte: LC50 rat: 375 m	g/m3; LC50: guinea pig: 510 mg/m3		
Elemental Lead: Acute Toxi	city Point Estimate = 4500 ppmV (based on lead bullion)		
Elemental Arsenic: No data			
Oral LD50:			
Electrolyte: rat: 2140 mg/kg			
Elemental Lead: Acute Toxic	tity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)		
Elemental Arsenie: LD50 mo			
Elemental Antimony; LD50	rat: 100 mg/kg		
Additional Health Data:			
All heavy metal	s, 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 pe	rsonal hygiene to avoid inhalation and ingestion: wash hands, face, nock and arms thoroughly before eating, smoking or leaving	the	
worksite. Keep	contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of	of food.	
tobacco and cos	anetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated area	as and	
never taken hon	ne or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated	from	
children and the	ir environment.		
The 19 <sup>th</sup> Amend	ment 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.		
XII. ECOLOGICAL INFO			11200
Environmental Fate:			
Lead is very per	sistent in soil and sediments, No data on environmental degradation. Mobility of metallic lead between ecological compartments	s is slow.	
Bioaccumulatio	n of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain.		
Most studies inc	clude lead compounds and not elemental lead.		
Environmental Toxicity: Ac	uatic Toxicity:		
Sulfuric acid:	24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L		
	96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L		
Lead:	48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion		
Arsenic:	24 hr LC50, freshwater fish (Carrassisus auratus) >5000 g/L.		
Additional Information:			
	ets on stratospheric ozone depletion.		
-	c compounds: 0% (by Volume)		
and the local division of the local division	ering Class (WGK): NA SRATIONS (UNITED STATES)		
Spent batteries: Send to see	and it on the second se		
40 CER Section 266 80 are m	ter. This should be managed in accordance with approved local, state and federal requirements. Consult state environmental		
agency and/or federal EPA.	c. This should be managed in accordance with approved local, state and rederal requirements. Consult state environmental		
Electrolyte:			
	caled containers and handle as applicable with state and federal regulations. Large water-diluted spills, after		
neutralization and testing the	value containers and nandre as appreciate with state and rederal regulations. Large water-diluted spats, after suld be managed in accordance with approved local, state and federal requirements. Consult state environmental		
agency and/or federal EPA.	and be managed in accordance with approved near, since and redering requirements. Consult since environmental		
Following local. State/Proving	cial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.		
and only room	and the experimental approxime to visit of the contracteristics will be the responsibility of the end-diser,		

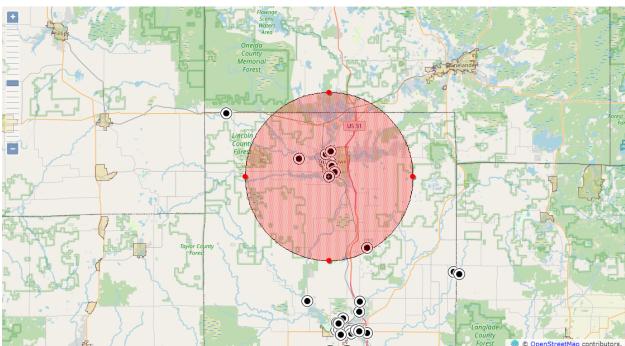
EnerSys.	SAF	ETY DATA SHEE	т	Form #: SDS 853024 Revised: AD 01/04/19 Supersedes: AC ECO #: 1002070
XIV: TRANSPORT INFORMATION	The set for any Poor	Real moders		
	asportation/s HMR. Batte	ery and outer package mi	s meet the requirements of 49 CFR 173.159(f) and ust be marked "NONSPILLABLE" or "NONSPIL	
	goods regulations because tation Association (IATA)	) Dangerous goods Regu	equirements of Packing Instruction 872 and Specia ations and International Civil Aviation Organizati	
	ED" , SPECIAL PROVISI	ION A67" must be provi	ded on an airway bill when air waybill is issued.	
International Maritime Danger			batteries meet the requirements of Special Provisi at be protected against short circuits.	on 238 of the
XV. REGULATORY INFORMATION				
UNITED STATES: EPA SARA Title III:				
Section 302 EPCRA Extremely Hazardous : Sulfuric acid is a listed "Extrer EPCRA Section 302 notificati 40 CFR Part 355, The quantity	nely Hazardous Substanc on is required if 1000 lbs of sulfuric acid will vary	or more of sulfuric acid	Threshold Planning Quantity (TPQ) of 1,000 lbs. is present at one site (40 CFR 370.10). For more in your EnerSys representative for additional inform	
Section 304 CERCLA Hazardous Substance				
Reportable Quantity (RQ) for :			tund) and State and local reportable quantities for spilled su	lévés szid menyeme
present in quantities of 10,000			i if sulfuric acid is present in quantities of 500 lbs R 370,10 and 40 CFR 370,40.	or more and/or if lead is
toxic chemical present in such determining the amount of rele	article when determining ase to be reported under !	whether an applicable to § 372.30. This exemption	covered facility, a person is not required to consid- threshold has been met under § 372.25, § 372.27, c n applies whether the person received the article fi- quantity of the toxic chemical present in the article	r § 372.28 or tom another person
	concernent service and the service services and	the second secon	Section 313 Toxic Chemical Release Inventory (Fo information is provided to enable you to complete	
Ir	xic Chemical	CAS Number	Approximate % by Wt.	
	Lead	7439-92-1	60	
(Sulfuric	Electrolyte Acid (H2SO4/H2O))	7664-93-9	10 - 30	
	* Antimony	7440-36-0	2	
	* Arsenic	7440-38-2	0.2	
See 40 CRG Part 370 for more	Tin details.	7440-31-5	0.2	
If you distribute this product to of each calendar year.	o other manufacturers in S	IC Codes 20 through 39	, this information must be provided with the first	shipment
The Section 313 supplier notif	ication requirement does	not apply to batteries, w	hich are "consumer products".	
<ul> <li>Not present in all battery typ</li> </ul>	es. Contact your EnerSys	s representative for addit	ional information.	

Ene	SAFETY DATA SHEET	Form #: SDS 853024 Revised: AD 01/04/19 Supersedes: AC ECO #: 1002070
TSCA:	TSCA Section %b Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.	
	TSCA Section 12b (40 CFR Part 707.60(b)) No notice of export will be required for articles, except PCB articles, unless the Agency so requires context of individual section 5, 6, or 7 actions.	in the
	TSCA Section 13 (40 CFR Part 707.20): No import certification required (EPA 305-B-99-001, June 1999, Introduction to the Chemical Import Requirements of the Toxic Substances Control Act, Section IV.A).	
RCRA:	Spent Lead Acid Batteries are subject to streamlined handling requirements when managed in compliance with 40 CFR section 266.80 or 40 CF Waste sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) and D008 (lead).	R part 273.
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 611of 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.	
STATE RI	EGULATIONS (US): <u>Proposition 65:</u> 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 handli	
INTERNA	TIONAL REGULATIONS: 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.	
	Article 33 (1) of the REACH regulation (Reg. EC 1907/2006), which entered into force on 1 <sup>st</sup> of June 2007 in the European Union, requires that manufacturers communicate the presence of Substances of Very High Concern (SVHC) in articles (lead batteries) in concentration greater than (weight.	
	Effective the 27 <sup>th</sup> of June 2018, the European Chemical Agency (ECHA) updated the Candidate List with the inclusion of Lead Metal (CAS No.: 7439-92-1). This inclusion of Lead as an SVHC applies to all of EnerSys Lead based battery products regardless of the design (Flooded, Gel, AGM, etc).	
	IER INFORMATION AD 01/04/19	
NFPA Haz	Flammability (Red) = 0 Reactivity (Yellow) = 2	
DISCLAIN	Health (Blue) = 3 Sulfuric acid is water-reactive if concentrated.	
This Safety the manufa	Data Sheet is created by the manufacturer to comply with the requirements of 29 CFR 1910.1200. To the extent allowed by law, cturer hereby expressly disclaims any liability to any third party, including users of this product, including, but not limited to, consequential or ges, arising out of the use of, or reliance on, this Safety Data Sheet.	

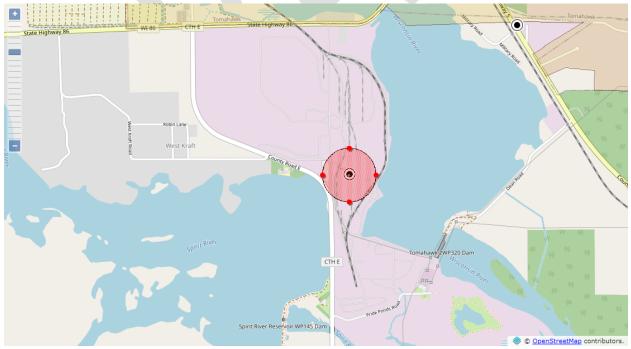
## Attachment F

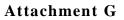
## Vulnerability Zone Maps for Ammonia (Aqueous)

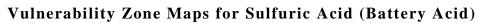
## A. Worst Case Scenario



# **B.** Re-evaluation Scenario









WP145 Dam

© OpenStreetMap contributors.

Lincoln County: Local Emergency Planning Committee (LEPC)



# EMERGENCY MANAGEMENT



# 2023 Off Site Plan: Samuel, Son & Company (USA) Inc.

Lincoln County Board of Supervisors Chair Don Friske Lincoln County Administrative Coordinator Renee Krueger Lincoln County Director of Emergency Management Tyler Verhasselt Lincoln County LEPC Chair Richard Burns This page intentionally left blank.

# **Table of Contents**

I.	Facility Information	
II.	Facility Emergency Contacts	
III.	Extremely Hazardous Substances (EHS)	
IV.	Primary Emergency Responders	
V.	Support Available at Facility	)
VI.	General information and Assumptions (Disclaimer)7	,
VII.	Hazard Analysis Summary	,
VIII	Population Protection	)
IX.	Distribution List	)
X.	Supporting Documentation	)
Atta	chment A, Record of Change and Review	
Atta	chment B, Facility Layout and Site Information	
Atta	chment C, Transportation Routes Map14	
	chment D, Safety Data Sheet for Nitric Acid15	
Atta	chment E, Safety Data Sheet for Sulfuric Acid21	
Atta	chment F, Vulnerability Zone Map for Nitric Acid	5
Atta	chment G, Vulnerability Zone Map for Sulferic Acid	)

# I. Facility Information

#### A. Samuel, Son & Company (USA) Inc.

- 1. Address: 1119 A Bridge Street, Highway CC, Tomahawk, WI 54487
- 2. Phone: (715) 453-5326
- 3. Facility ID # (Assigned by WEM): 91786

# **II.Facility Emergency Contacts**

#### A. Tier II Contact:

- 1. Name: Paul Maguire
- 2. Position: EHS Specialist
- 3. Office Phone: (715) 453-5326 ext. 12459
- 4. Emergency Phone: (715) 966-0392
- 5. Email: <u>paul.maguire@samuel.com</u>

#### **B.** Tier II Emergency Coordinator:

- 1. Name: Mike Winkler
- 2. Position: EHS Manager
- 3. Office Phone: (715) 735-9311 ext. 12426
- 4. Emergency Phone: (715) 701-6441
- 5. Email: mike.winkler@samuel.com

# III. Extremely Hazardous Substances (EHS)

## A. EHS Chemicals OVER Threshold Planning Quantity (TPQ)

CAS #	Chemical Name	Maximum Daily Quantity (lbs.)	Max. Amount. of Largest Container (lbs.)	Vulnerability Zone (miles)
7697-37-2	Nitric Acid	1,691	900	0.3 miles
7664-93-9	Sulfuric Acid	3,950	3,950	< 0.1 miles

# IV. Primary Emergency Responders

#### A. Lincoln County Sheriff's Office

1. Phone: 911 or (715) 563-6272

#### **B.** Lincoln County Emergency Communications Center

1. Phone: 911 or (715) 563-6272

#### C. Lincoln County Emergency Management

1. Phone: (715) 218-0128

#### D. Tomahawk Fire Department

1. Phone: 911 or (715) 453-8180

#### E. Tomahawk Police Department

1. Phone: 911 or (715) 453-2121

# V. Support Available at Facility

#### A. Chemical Emergency Monitoring Equipment:

1. None

#### **B.** Personal Protective Equipment:

1. None

#### C. Other Equipment or Supplies:

1. None

#### D. Outside Resources Available:

- 1. Lincoln County Emergency Management
  - a) Pursuant to Lincoln County's Emergency Operations Plan (EOP), the incident commander and/or unified command will identify the need for hazmat response and relay that request to Lincoln County Sheriff's Office (LCSO) Communication Center whom with contact the appropriate team.

The Tomahawk Fire Department is capable of handling minor hazardous materials incidents; however, if the incident exceeds the ability/capability of Tomahawk Fire Department LCSO Communications Center will request the appropriate agency. Lincoln County contracts with two (2) external hazmat response teams dependent on level of release, for Level B response Oneida County Sheriff Office Hazardous Materials Response Team; whereas, for Level A response Wausau Wisconsin Hazardous Response Team.

For Level A incidents, the response of Wausau Wisconsin Hazardous Response Team must be requested through the Wisconsin Emergency Management (WEM) State Emergency Operations Center (SEOC). Contact the WEM SEOC Duty Officer at (800) 943-0003 for response.

- 2. Chemtrec: (800) 424-9300
  - a) Unknown response time
- 3. National Response Center: (800) 424-8802
  - a) Unknown response time
- 4. REI—Spill & Response Recovery: (800) 734-7745
  - a) Unknown response time

# VI. General information and Assumptions (Disclaimer)

The vulnerability zones set forth in this plan are based on the Environmental Protection Agency's (EPA) Technical Guidance for Hazard Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an airborne release of an EHS occur.

A re-evaluation scenario with more realistic parameters has also been computed. Parameters used for both scenarios have been described as part of the hazard analysis summary.

CAMEO Suite software was used in the preparation of vulnerability zones. It should be noted that CAMEO*fm* cannot compute zones greater than 10 miles nor less than 0.1 miles. Thus, results that fall into these situations will be notes as "> 10 miles" or "< 0.1 miles".

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein.

# VII. Hazard Analysis Summary

#### A. Greatest Potential for Release

1. Nitric acid is in the electropolishing and waste water pre-treatment room where the chemicals are stored. The room is engineered to containerize all spills and keep them from entering the sanitary sewer or getting outside. The room is engineered to be closed off, including vents over the processes. Production is stable throughout the year.

# **B.** Vulnerability Zones (by chemical)

Nitric Acid: CAS #7697-37-2	,			
Amount Released:	90	0 lbs.		
Concentration:	10	0%		
Physical State:	Lie	quid (Ambient)		
Diked Area:	No	)		
Level of Concern (LOC):	0.0	$026 \text{ gm/m}^3$		
LOC Type:	Gr	eenbook LOC		
Worst Case Scenario			<b>Re-Evaluation Scenario</b>	
Duration:		10 minutes	Duration	10 minutes
Wind Speed:		3.4 mph	Wind Speed:	11.9 mph
Ground Roughness:		Rural	Ground Roughness:	Urban
Atmospheric Stability Class:		F	Atmospheric Stability Class:	D
Risk:		Low	Risk:	Low
Consequences:		Low	Consequences:	Low
Overall Risk:		Low	Overall Risk:	Low
Threat Zone Radius:		0.3 miles	Threat Zone Radius:	< 0.1 miles

Sulfuric Acid: CAS #7664-93	-9			
Amount Released:	3,950 lbs.			
Concentration:	100%			
Physical State:	Liquid (Ambient	)		
Diked Area:	No			
Level of Concern (LOC):	$0.008 \text{ gm/m}^3$			
LOC Type:	Greenbook LOC			
Worst Case Scenario		Re-Evaluation Scenario		
Duration:	10 minutes	Duration	10 minutes	
Wind Speed:	3.4 mph	Wind Speed:	11.9 mph	
Ground Roughness:	Rural	Ground Roughness:	Urban	
Atmospheric Stability Clas	s: F	Atmospheric Stability Class:	D	
Risk:	Low	Risk:	Low	
Consequences:	Low	Consequences:	Low	
Overall Risk:	Low	Overall Risk:	Low	
Threat Zone Radius:	< 0.1 miles	Threat Zone Radius:	< 0.1 miles	

#### C. Estimation of Population Affected

#### 1. Nitric Acid

- a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be 40 employees and no other populations or facilities affected.
- b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be 40 employees or less and no other populations or facilities affected.
- c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
- d) Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.
- 2. Sulfuric Acid
  - a) In the credible worst case scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be less than 10 employees and no other populations or facilities affected.
  - b) In the re-evaluation scenario the total number of persons that could be affected by a release of the extremely hazardous substance would be 10 employees and no other populations or facilities affected.
  - c) Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.
  - d) Experience indicates that no shelter, isolation, or evacuation would have to take place in conjunction with this extremely hazardous chemical.

#### **D.** Critical Infrastructure

a) None affected

# **VIII.** Population Protection

The determination to shelter in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be time enough for safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter-in-place. Preferred areas for protective sheltering would be interior hallways, rooms on the side of the building away from where the hazard is approaching. Doors, windows, and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside the risk zone.

Roles and responsibilities relative to evacuation and sheltering may be found in the Lincoln County Emergency Operations Plan.

# **IX.** Distribution List

- Samuel, Son & Company (USA) Inc.
- Tomahawk Fire Department
- Wisconsin Emergency Management Northeast Regional Office
- Oneida County Sheriff Office Hazardous Materials Response Team
- Wausau Wisconsin Hazardous Response Team
- Oneida County Emergency Management

# X. Supporting Documentation

#### A. Attachments

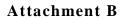
- 1. Attachment A, Record of Change and Review
- 2. Attachment B, Facility Layout and Site Information
- 3. Attachment C, Transportation Route Map
- 4. Attachment D, Safety Data Sheet for Nitric Acid
- 5. Attachment E, Safety Data Sheet for Sulfuric Acid
- 6. Attachment F, Vulnerability Zone Map for Nitric Acid
- 7. Attachment G, Vulnerability Zone Map for Sulfuric Acid

## Attachment A

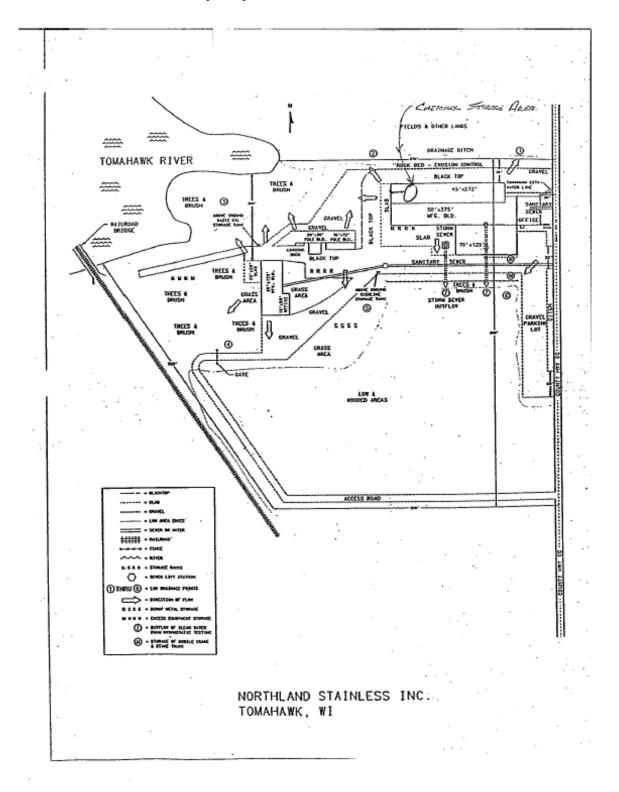
## **Record of Change/ Review /Signature**

Date	Contributor	Description of Change	Page Number(s)

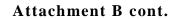
Please see EPCRA Hazardous Materials Off-Site Plan Transmittal Form for approval and signatures.



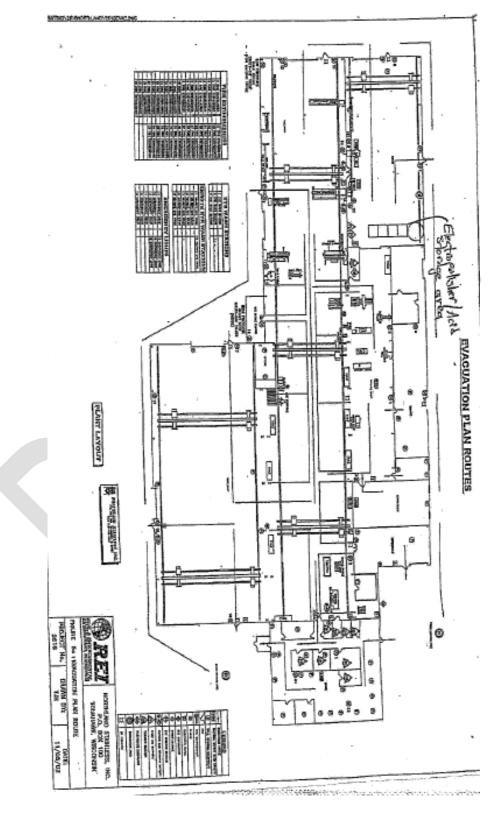
**Facility Layout and Site Information** 



2023 Off Site Plan: Samuel, Son & Company (USA) Inc.



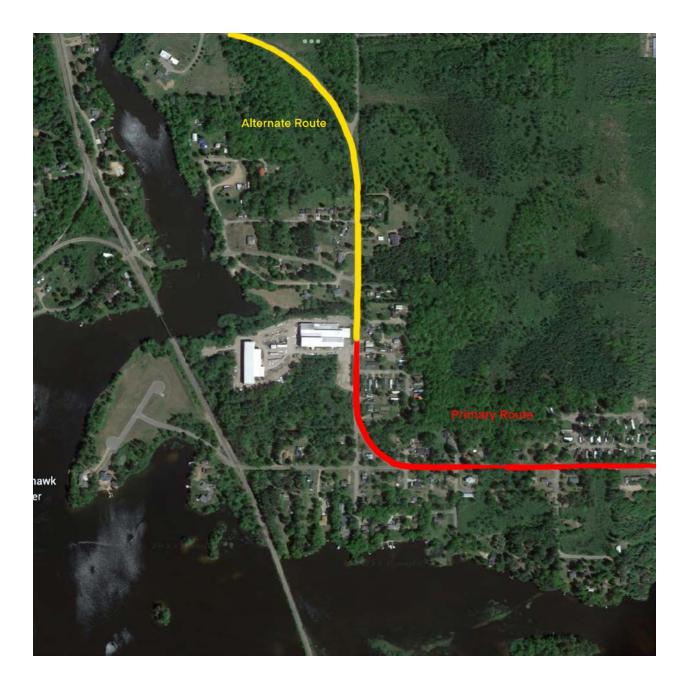
Facility Layout and Site Information



2023 Off Site Plan: Samuel, Son & Company (USA) Inc.

## Attachment C

## **Transportation Route Map**

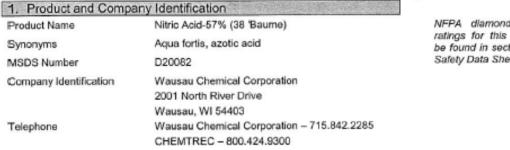


#### Attachment D

## Safety Data Sheet for Nitric Acid

#### WAUSAU CHEMICAL CORPORATION SAFETY DATA SHEET

## Nitric Acid-57% (38 'Baume)





NFPA diamond and HMIS ratings for this product may be found in section 16 of this Safety Data Sheet.

2. Hazards Identification	a service of the service of the service service and the service of the service service of the se
Form	Liquid
Color	Colorless to light yellow
Odor	Pungent, irritating
OSHA/HCS Status	Material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200); corrosive, target organ effect (lungs, teeth, cardiovascular system)
GHS Classification	Oxidizing liquids (Category 3) Skin corrosion (Category 1A) Serious eye damage (Category 1)
Pictogram	$\otimes$
Signal Word	Danger
Hazard Statement(s)	
H272	May intensify fire; oxidizer.
H314	Causes severe skin burns and eye damage.
Precautionary Statement(s)	
P210	Keep away from heat.
P220	Keep/Store away from clothing/ combustible materials.
P221	Take any precaution to avoid mixing with combustibles.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

#### Safety Data Sheet for Nitric Acid

#### WAUSAU CHEMICAL CORPORATION SAFETY DATA SHEET



#### Potential Acute Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	Harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes severe eye burns.

See section 11 for more detailed information on health effects and symptoms

3. Composition/Information on Ing	redients	
Ingredient Name	CAS Number	<u>WT %</u>
Nitric Acid	7697-37-2	56-58
Water	7732-18-5	42-44

4. First Aid Measures	
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
Skin Contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Protection of First Aid Personnel	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear gloves while removing contaminated clothing. If it is suspected that dust, vapor, mist, or gas is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

<ol><li>Fire-fighting Measure</li></ol>	S
Flammability of the Product	Not flammable or combustible
Flash Point (Method)	None
Auto Ignition Temperature	None
Extinguishing Media	
Suitable	Flooding quantities of water spray, dry chemical, carbon dioxide, or alcohol-resistant foam.
Special Fire-fighting Procedures & Hazards	Do not use solid water spray near ruptured tanks or spills. Water may react with acid and cause splattering. Wear chemical protective clothing and positive pressure self-contained breathing apparatus. Approach upwind to avoid toxic vapors.
Unusual Fire & Explosion Hazards	Nitrogen oxides could be present from vented or ruptured tanks. If water stream is added, considerable heat could be generated and splattering could occur.
6. Accidental Release M	leasures
Personal Precautions	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Contain spillage, and then place in container for disposal according to local regulations.

Spill

## Safety Data Sheet for Nitric Acid

Wausau Chemi Safety Data S		RPORATION	<b>S</b>
7. Handling and Stora	ige		
Handling	Avoid o	contact with skin and e	yes. Avoid inhalation of vapor or mist.
Storage	Keep o	containers tightly closed	d in a dry and well-ventilated area.
8. Exposure Controls,	Personal	Protection	
Ingredient Name	ACGIH	ITLV	OSHA PEL
Nitric Acid	2 ppm	– TWA	2 ppm – TWA
Engineering Measures	handlin	exhaust ventilation or o ag or using this product below exposure limits.	ther engineering controls are normally required when to avoid overexposure. Maintain adequate ventilation. Keep
Hygiene Measures		In accordance with go breaks and at the end	ood industrial hygiene and safety practice. Wash hands of workday.
Respiratory	respira cartrido	tor with multi-purpose	s air-purifying respirators are appropriate use a full-face combination (US) or type ABEK (EN 14387) respirator incering controls. If the respirator is the sole means of plied air respirator.
Eyes and Face	Tightly	fitting safety goggles. ion tested and approve	Faceshield (8-inch minimum). Use equipment for eye ad under appropriate government standards.
Skin	selecte	ete suit protecting agai d according to the con c workplace.	nst chemicals. The type of protective equipment must be centration and amount of the dangerous substance at the
9. Physical and Chem	ical Prope	erties	
Appearance		Colorless to light ye	allow liquid
Odor		Pungent, irritating	
pH		Less than 1	
Water Solubility		100%	
Vapor Density (air = 1)		Not applicable	
Evaporation rate (butyl ace	tate = 1)	Not applicable	
Boiling Point ('F)		244 °F (117.8 °C)	
Freezing Point (%)		-44 F (-42.2 °C)	
Specific Gravity (H <sub>2</sub> 0 = 1 @	070 F)	1.330	
Vapor Pressure (mm Hg, 2	(3 0	Less than 1	

10.Stabi	lity an	d Reactivit	y		And a plant of the second	196
Stable:	х	Unstable:	Hazardous Polymerization:	Occurs:	Does Not Occur:	Х
Conditions	to Avo	id	None known			
Materials 1	lo Avoid	1	Most metals, metallic powders, carbides, it combustibles, organics, and readily oxidiz	nydrogen sulfide, tu ed materials.	rpentine, organic acids,	
Decompos	sition Pr	roducts	Nitrogen oxides and possible hydrogen.			

Not applicable

Volatile Organic (VOC) Content

#### Safety Data Sheet for Nitric Acid

#### WAUSAU CHEMICAL CORPORATION SAFETY DATA SHEET



11. Toxicological Infor	mation
Eye	Causes severe eye burns.
Nitric Acid	Eyes – no data available
Dermal	May be harmful if absorbed through skin. Causes skin burns.
Nitric Acid	Dermal LD50 – no data available
	Skin corrosion/irritation: rabbit – extremely corrosive and destructive to tissue (Draize Test)
Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Nitric Acid	Inhalation LC50 – no data available
Oral	Harmful if swallowed.
Nitric Acid	Oral LD50 – human – 430 mg/kg
Potential Chronic Health	n Effects
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible, or confirmed human carcinogen by IARC, ACGIH, NTP, or OSHA.
Mutagenicity	No data available
Teratogenicity	No data available
Fertility Effects	Reproductive toxicity - rat - Oral
	Effects on Newborn: Biochemical and metabolic.
	Developmental Toxicity - rat – Oral
	Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Over-exposure Signs/Sy	Imptoms

#### Over-exposure Signs/Symptoms

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may provoke the following symptoms: spasm, inflammation and edema of the bronchi, spasm, inflammation and edema of the larynx, pneumonitis, pulmonary edema. Symptoms and signs of poisoning are: burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema. Effects may be delayed., Large doses may cause: conversion of hemoglobin to methemoglobin, producing cyanosis, marked fall in blood pressure, leading to collapse, coma, and possibly death.

Biodegradability	No data available
Ecotoxicity	Toxicity to fish: LC50 - Asterias rubens - 100 - 330 mg/l - 48 h
13. Disposal Consid	erations
Waste Disposal	Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.
	No component of this product is listed as a hazardous waste.

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

## Safety Data Sheet for Nitric Acid

WAUSAU CHEMICA SAFETY DATA SHE		Ľ.		
US DOT 49 CFR 172.101	Non-bulk Shipments (Drums/Totes)	Bulk Shipments (Tank Trucks/Rail Cars)		
Proper Shipping Name	Nitric Acid	Same		
Hazard Class	8	Same		
Identification Number	UN2031	Same		
Packing Group	1	Same		
Reportable Quantities	RQ=1000 lbs.	Same		
Placards/Labels	Corrosive	Same		
15. Regulatory Informatic				
CERCLA / SARA Emergency Reporting	State or local reporting requirements may counsel for further guidance on your resp	art 300) and/or SARA Title III (40 CFR Part 355), differ from federal requirements. Consult ionsibilities under these laws.		
ARA Title III Section 313	Nitric Acid CERCLA reporting amount – 1000 lbs. The following components are subject to reporting levels established by SARA Title III, Section 313:			
	Nitric Acid (CAS# 7697-37-2)			
Clean Water Act (CWA) Section 311	the submission of a National Pollutant Dis application to EPA.	Section 311 as hazardous substances requiring scharge Elimination System (NPDES) permit		
ISCA – Toxic Substances Control Act	Nitric Acid All components of this product are listed of are excluded from listing requirements.	on the Toxic Substances Control Act Inventory or		
RCRA – Resource Conservation and Recovery Act	waste fails to pass any of EPA's four test	us waste regulations do not apply unless the s for determining hazardous wastes. Note: If this of the user to determine whether the material the time of disposal.		
	No components listed			
State Regulations				
Massachusetts	· · · · · ·	ents are listed: Nitric Acid (CAS #7697-37-2)		
New Jersey		nents are listed: Nitric Acid (CAS #7697-37-2)		
Pennsylvania	RTK Substances: The following compon	nents are listed: Nitric Acid (CAS #7697-37-2)		
California	Proposition 65: This product does not or California to cause cancer, birth defects,	ontain any chemicals known to the State of or any other reproductive harm.		

16. Other Information

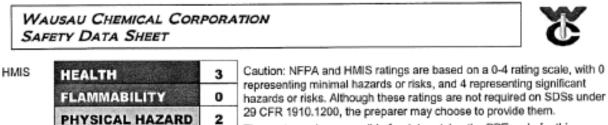
Date of Issue

12/6/2013 | 4/7/2015-updated GHS classification and corresponding statements, section 2 | 6/13/2016-reviewed for accuracy (ST)

NFPA



#### Safety Data Sheet for Nitric Acid



The customer is responsible for determining the PPE code for this material.

#### Notice to Reader

PPE

The information contained herein is given in good faith, but no warranty, representation, inducement, or license of any kind is made, except that the information is accurate to the best of Wausau Chemical Corporation's knowledge, or is obtained from sources believed by Wausau Chemical Corporation to be reliable and accurate. Wausau Chemical Corporation does not assume any legal responsibility for use or reliance upon the information being furnished. Customers are encouraged to conduct their own tests. Before using any product, read the container label directions, as well as, the Safety Data Sheet.



## Attachment E

		FETV DATA OF	IRET		Form #: SDS 853024 Revised: AD 01/04/19
Liloroyo.	5/	AFETY DATA SI	IEET		Supersedes: AC
BRODUCT INPATIENCY TRON					ECO #: 1002070
I. PRODUCT IDENTIFICATION Chemical Trade Name (as used on lat	hel):	and the second second	Chemical Family/Cla	wification.	
Non-Spillable Lead Acid Battery	and -		Electric Storage Batter		
Synonyms:				-	
Industrial Battery, Traction Battery, Sta	itionary Battery,		Telephone:		
Deep Cycle Battery			For information and er	mergencies, contact EnerSys	
Manufacturer's Name/Address:			Environmental, Health	& Safety Dept. at 610-208-	1996
EnerSys P.O. Box 14145					
2366 Bernville Road			24-Hour Emergency CHEMTREC DOMES		MTREC INT'L: 703-527-3877
Reading, PA 19612-4145			CHEMINED DOMES	THE. 800-424-9300 CHE	MIRDS INTE: 703-327-3677
II GHS HAZARDS IDENTIFICATIO	DN			Contraction and	
HEALTH			ENVIRONMENTAL		PHYSICAL
Acute Toxicity			Aquatic Chronic I		Explosive Chemical, Division 1.3
(Oral/Dermal/Inhalation)	Category 4	1	Aquatic Acute 1		
Skin Corrosion/Irritation	Category 1A	1			
Eye Damage	Category 1	1		1	
Reproductive	Category 1A	1			
Carcinogenicity (lead compounds) Carcinogenicity (arsenic)	Category 1B Category 1A	1			
Carcinogenicity (acid mist)	Category 1A Category 1A	1			
Specific Target Organ	Category 2	1			
Toxicity (repeated exposure)		1			
GHS LABEL:		Statistics and statistics	Post State of State		
HEALTH			ENVIRONMENTAL		PHYSICAL
Hazard Statements	V	Precautionary State	ments		V
DANGER!		Wash thoroughly after			
auses severe skin burns and serious cy-	e damage.		moke when using this pr	roduct.	
day damage fertility or the unborn child	-		÷ ,	e protection/face protection	
nhaled.		2.0 10.00	/fume/gas/mist/vapors/sp		
day cause cancer if ingested or inhaled.		Use only outdoors or			
-					
auses damage to central nervous system	m, blood and				bios learning with internal sold
		Contact with internal	components may cause	irritation or severe burns. A	void contact with internal acid.
idneys through prolonged or repeated e	exposure.	Contact with internal Irritating to eyes, resp	components may cause piratory system, and skin	irritation or severe burns. A	void contact with internal acid.
idneys through prolonged or repeated e day form explosive air/gas mixture duri	exposure.	Contact with internal Irritating to eyes, resp Obtain special instru-	components may cause piratory system, and skin ctions before use:	irritation or severe burns. A	void contact with internal acid.
idneys through prolonged or repeated e day form explosive air/gas mixture duri ixtremely flammable gas (hydrogen).	ing charging.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a	components may cause piratory system, and skin ctions before use. Il safety precautions have	irritation or severe burns. A	void contact with internal acid.
Tauses damage to central nervous system idneys through prolonged or repeated e day form explosive air/gas mixture duri ixtremely flamnable gas (hydrogen). ixplosive, fire, blast, or projection hazar day cause harm to breast-fed children	ing charging.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursin	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e day form explosive ait/gas mixture duri ixtremely flammable gas (hydrogen). ixplosive, fire, blast, or projection hazar	xposure. ing charging. rd.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during	components may cause piratory system, and skin ctions before use. Il safety precautions have	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e flay form explosive air/gas mixture duri ixtreniely flammable gas (hydrogen). ixplosive, fire, blast, or projection hazar flay cause harm to breast-fed children larmful if swallowed, inhaled, or contact	xxposure. ing charging. rd. ct with skin	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursin	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e day form explosive air/gas mixture duri ixtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar day cause harm to breast-fed children larmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag L COMPOSITION/INFORMATIO	xxposure. ing charging. rd. ct with skin ge.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursin	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fed children armful if swallowed, inhaled, or contac auses skin irritation, serious eye damag L. COMPOSITION/INFORMATIO	xxposure. ing charging. rd. ct with skin ge.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursiny /sparks/open flames/hot Approximate % by	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fod children farmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag II. COMPOSITION/INFORMATIO Jomponents	xxposure. ing charging. rd. ct with skin ge.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat	components may cause piratory system, and skin ctions before use. Il safety precautions hav pregnancy/while nursin /sparks/open flames/hot	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fod children farmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag II. COMPOSITION/INFORMATIO Jomponents	xxposure. ing charging. rd. ct with skin ge.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number	components may cause piratory system, and skin ctions before use. Il safety precautions hav pregnancy/while nursin /sparks/open flames/hot Approximate % by Wt.	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fod children farmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag IL COMPOSITION/INFORMATIO fomponents torganic Lead Compound:	xxposure. ing charging. rd. ct with skin ge.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursiny /sparks/open flames/hot Approximate % by	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtreniely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fed children larmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag IL COMPOSITION/INFORMATIO omponents torganic Lead Compound: Lead	xxposure. ing charging. rd. ct with skin ge.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1	components may cause piratory system, and skin ctions before use. Il safety precautions hav pregnancy/while nursin //sparks/open flames/hot Approximate % by Wt. 45-60	irritation or severe burns. A e been read and understood g	void contact with internal acid.
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idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fod children farmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag IL COMPOSITION/INFORMATIO fomponents torganic Lead Compound: Lead Lead Dioxide * Antimony * Arsenic * Calcium	xxposure. ing charging. rd. ct with skin ge.	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-36-0 7440-38-2 7440-70-2	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursiny /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar lay cause harm to breast-fed children armful if swallowed, inhaled, or contac auses skin irritation, serious eye damag L COMPOSITION/INFORMATIO omponents torganic Lead Compound: Lead Lead Dioxide • Antimony • Arsenic • Calcium • Tin	exposure. ing charging. rd. ct with skin ge. <u>N ON INGREDIENTS</u>	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-38-2 7440-70-2 7440-71-5	components may cause piratory system, and skin ctions before use. Il safety precautions hav pregnancy/while nursin /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.04 0.2	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fod children larmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag L. COMPOSITION/INFORMATIO fomponents torganic Lead Compound: Lead Lead Dioxide * Antimony * Arsenic * Calcium * Tin lectrolyte (Sulfuric Acid (H2SO4/H2)	exposure. ing charging. rd. ct with skin ge. <u>N ON INGREDIENTS</u>	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-36-0 7440-38-2 7440-70-2	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursing /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.2 0.2 0.2 0.2 10-30	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fed children larmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag I. COMPOSITION/INFORMATIO imponents torganic Lead Compound: Lead Lead Dioxide • Antimony • Arsenic • Calcium • Tin lectrolyte (Sulfuric Acid (H2SO4/H2- ase Material:	exposure. ing charging. rd. ct with skin ge. <u>N ON INGREDIENTS</u>	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-36-0 7440-38-2 7440-70-2 7440-31-5 7664-93-9	components may cause piratory system, and skin ctions before use. Il safety precautions hav pregnancy/while nursin /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.04 0.2	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fod children farmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag <b>I. COMPOSITION/INFORMATIO</b> tomponents tead Lead Dioxide Antimony Arsenic Calcium Tin lectrolyte (Sulfurie Acid (H2SO4/H2) ase Material: Polypropylene	exposure. ing charging. rd. ct with skin ge. <u>N ON INGREDIENTS</u>	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-36-0 7440-38-2 7440-70-2 7440-31-5 7664-93-9 9003-07-0	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursing /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.2 0.2 0.2 0.2 10-30	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fod children farmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag IL COMPOSITION/INFORMATIO iomponents torganic Lead Compound: Lead Lead Dioxide Antimony Arsenic Calcium Tin lectrolyte (Sulfuric Acid (H2SO4/H2) ase Material: Polypropylene Polystyrepe	exposure. ing charging. rd. ct with skin ge. <u>N ON INGREDIENTS</u>	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-38-2 7440-31-5 7664-93-9 9003-07-0 9003-53-6	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursing /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.2 0.2 0.2 0.2 10-30	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri xtremely flammable gas (hydrogen). xplosive, fire, blast, or projection hazar fay cause harm to breast-fed children larmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag L COMPOSITION/INFORMATIO components torganic Lead Compound: Lead Lead Dioxide • Antimony • Arsenic • Calcium • Tin lectrolyte (Sulfaric Acid (H2SO4/H2) ase Material: Polypropylene Polystyrene Styrene Acrylonitrile	exposure. ing charging. rd. ct with skin ge. N ON INGREDIENTS O))	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-38-2 7440-70-2 7440-70-2 7440-71-5 7664-93-9 9003-07-0 9003-53-6 9003-54-7	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursing /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.2 0.2 0.2 0.2 10-30	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e fay form explosive air/gas mixture duri ixtremely flammable gas (hydrogen). ixplosive, fire, blast, or projection hazar fay cause harm to breast-fed children farmful if swallowed, inhaled, or contac auses skin irritation, serious eye damag IL COMPOSITION/INFORMATIO iomponents horganic Lead Compound: Lead Lead Dioxide • Antimony • Arsenic • Calcium • Tin lectrolyte (Sulfuric Acid (H2SO4/H2) ase Material: Polypropylene Polystyrepe	exposure. ing charging. rd. ct with skin ge. N ON INGREDIENTS O))	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-38-2 7440-31-5 7664-93-9 9003-07-0 9003-53-6	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursing /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.2 0.2 0.2 0.2 10-30	irritation or severe burns. A e been read and understood g	void contact with internal acid.
idneys through prolonged or repeated e May form explosive air/gas mixture duri Extremely flammable gas (hydrogen). Explosive, fire, blast, or projection hazar fay cause harm to breast-fed children farmful if swallowed, inhaled, or contac Causes skin irritation, serious eye damag IL COMPOSITION/INFORMATIO Components norganic Lead Compound: Lead Lead Dioxide • Antimony • Arsenic • Calcium • Tin lectrolyte (Sulfuric Acid (H2SO4/H2) ase Material: Polypropylene Polystyrene Styrene Acrylonitrile Acrylonitrile Butadiene Sty	xxposure. ing charging. rd. ct with skin ge. IN ON INGREDIENTS O))	Contact with internal Irritating to eyes, resp Obtain special instru- Do not handle until a Avoid contact during Keep away from heat CAS Number 7439-92-1 1309-60-0 7440-36-0 7440-36-0 7440-38-2 7440-31-5 7664-93-9 9003-07-0 9003-07-0 9003-53-6 9003-56-9	components may cause piratory system, and skin ctions before use. Il safety precautions have pregnancy/while nursing /sparks/open flames/hot Approximate % by Wt. 45-60 15-25 2 0.2 0.2 0.2 0.2 0.2 10-30	irritation or severe burns. A e been read and understood g	void contact with internal acid.

Ene	SA	FETY DATA SH	EET		Form #: SDS 853024 Revised: AD 01/04/19 Supersedes: AC
Other:		1			ECO #: 1002070
	Silicon Dioxide (Gel batteries only)	7631-86-9	1-5		
	Sheet Molding Compound	7051-00-9	1-5		
	(Glass reinforced polyester)	-			
	Inorganic lead and electrolyte (sulfuric acid) are the p	rimary components of e	every battery manufactu	ared by EnerSys.	
TAL DISTORT	Other ingredients may be present dependent upon bat	tery type. Contact your	EnerSys representative	e for additional information,	
	AID MEASURES		NOAM IN THE REAL	the state of the second state of the	
Inhalation:		d			
	Sulfuric Acid: Remove to fresh air immediately. If be		e oxygen. Consult a ph	lysician.	
	Lead: Remove from exposure, gargle, wash nose and	lips; consult physician.			
Ingestion:	a state of the first second day of the state				
	Sulfuric Acid: Give large quantities of water; do not i	induce vomiting or aspi	ration into the lungs m	ay occur and can cause permanent injury or	death;
1	consult a physician.				
	Lead: Consult physician immediately.				
Skin:					
	Sulfuric Acid: Flush with large amounts of water for a	at least 15 minutes; rem	love contaminated cloth	hing completely, including shoes.	
1	If symptoms persist, seek medical attention, Wash con	staminated clothing bef	ore reuse. Discard cont	aminated shoes.	
	Lead: Wash immediately with soap and water,				
Eyes:					
	Sulfuric Acid and Lead: Flush immediately with large	amounts of water for a	least 15 minutes while	e lifting lids	
	Seek immediate medical attention if eyes have been en			in the second	
V. FIRE F	IGHTING MEASURES	ipiced anteeny to serve.		the second s	
Flash Point		Flammable Limits:	LEL = 4.1% (Hydrosen	Gas) UEL = 74.2%	the state of the state of the
Extinguishi	ng Media: CO2; foam; dry chemical. Do not use carbo	on dioxide directly on o	alls. Assaid breathing st	appes Lice amenaniste madia for automatic	a fire
Special Fire	Fighting Procedures:	in alondo aneedy on e	and retord oreadining vi	aports: One appropriate media for surroundin	g me.
	If batteries are on charge, shut off power. Use positiv	e pressure, self-contain	ad branthing approxim	Water english to electrolyte engine	
	heat and causes it to spatter. Wear acid-resistant cloth	ing glover face and o	ed oreaning apparatus	water applied to electrolyte generates	
	But note that strings of series comparted batteries page	still noon sick of alustri	e protection.		
Descend Fig	But note that strings of series connected batteries may re and Explosion Hazards:	still pose risk of electri	c shock even when cha	irging equipment is shut down.	
Causeau ru					
	Highly flammable hydrogen gas is generated during ch	narging and operation o	f batteries. To avoid ri	sk of fire or explosion, keep sparks or other	
	sources of ignition away from batteries. Do not allow	metallic materials to sir	multaneously contact n	egative and positive terminals of cells and	
	batteries. Follow manufacturer's instructions for instal	llation and service.			
	ENTAL RELEASE MEASURES		2		
Spill or Lea	k Procedures:				
	Stop flow of material, contain/absorb small spills with	dry sand, earth, and ve	rmiculite. Do not use o	combustible materials. If possible, carefully	
	neutralize spilled electrolyte with soda ash, sodium bio	carbonate, lime, etc. W	ear acid-resistant cloth	ing, boots, gloves, and face shield. Do not	
	allow discharge of unneutralized acid to sewer. Acid n	nust be managed in acco	ordance with local, stat	e, and federal requirements.	
	Consult state environmental agency and/or federal EP/	Α.			
VII. HAND	LING AND STORAGE		SALL A SALEN		
Handling:					
Unless invol-	ved in recycling operations, do not breach the casing or	empty the contents of t	the battery. Handle care	cfully and avoid tipping.	
which may a	llow electrolyte leakage. There may be increasing risk of	of electric shock from st	rines of connected batt	teries.	
Keep contain	ters tightly closed when not in use. If battery case is br	oken avoid contact with	h internal components	Net Belot	
Keen vent ca	ps on and cover terminals to prevent short circuits. Pla	on cardboard batware I	n montal components,	and an instantion to see 14 december of the second	
Keen munu fr	por on and cover ternament to prevent short encluse. The	substances motels st	ayers of stacked autom	onve batteries to avoid damage and short ci	reuits.
chinning.	rom combustible materials, organic chemicals, reducing	s awostances, metals, su	ong oxidizers and wate	cr. Use banding or stretch wrap to secure ite	ams for
shipping.					
Storage:	a far and the confluence for a set of the				
store batterie	s in cool, dry, well-ventilated areas with impervious su	rlaces and adequate co	ntainment in the event	of spills. Batteries should	
also be stored	d under roof for protection against adverse weather con-	ditions. Separate from	incompatible materials	Store and handle only	
in areas with	adequate water supply and spill control. Avoid damag	e to containers. Keep a	way from fire, sparks a	ind heat. Keep away from metallic objects co	ould
bridge the ter	minals on a battery and create a dangerous short-circuit	t.	-		
Charging:					
	ssible risk of electric shock from charging equipment a	nd from strings of series	s connected batteries	shether or not being charged. Shut-off nour	r lo
chargers whe	never not in use and before detachment of any circuit e	onnections. Batteries h	cing charged will acros	rate and release flammable histories and	
Charging spa	ce should be ventilated. Keep battery vent caps in posit	tion. Prohibit smaking	and avoid creation of a	amest and spacks non-be-	
Wear face an	d eye protection when near batteries being charged.		and a cond areas of 0 11	annes and spanks nearby.	

SAFETY DATA SHEET						
TIL EXPOSURE CONTROLS (xposure Limits (mg/m3) Note:	PERSONAL PROTECTION		A CONTRACT OF	a hard a state		ECO #: 1002070
suposure Linites (ing/in3) (vote; )	N.E NOT Established	1	1			T
NGREDIENTS	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Chemical/Common Names)						
ead and Lead Compounds						
norganic)	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,e)
ursenic	0.01	0.01	0,002	0,2	0,01	N.E
Calcium	N.E	N.E	N.E	N.E	N.E	N.E
in Electrolyte (Sulfuric Acid)	2	2	2	2	2	N.E
	1	0.2	1	I	0.2	0.05 (c)
olypropylene	N.E	N.E	N.E	N.E	N.E	N.E
olystyrene	N.E	N.E	N.E	N.E	N.E	N.E
tyrene Acrylonitrile crylonitrile Butadiene	N.E	N.E	N.E	N.E	N.E	N.E
tyrene	N.E	N.E	N.E	N.E	N.E.	N.E
Styrene Butadiene	N.E	N.E.	N.E.	N.E N.E	N.E.	
olyvinylchloride	N.E	N.E.	N.E.	N.E N.E		N.E N.E
olycarbonate, Hard	17:44	19.15	NLD	N.E.	1	N.E
tubber, Polyethylene	N.E	N.E	N.E	N/F		
Silicon Dioxide	19.65	N.E	N.B	N.E	N.E	N.E
Gel Batteries Only)	N.E	N.E	N.E	N.E	N.E	N.E
		1100	11.0	14.12	14.6	N.E.
heet Molding Compound						
Glass reinforced polyester)	N.E	N.E	N.E	N.E	N.E	N.E
) Thoracie fraction ) Based on OEL;s Of Austria, Bel ngincering Controls (Ventilation	n):	_				
) Thoracie fraction ) Based on OEL;s Of Austria, Bel ngincering Controls (Ventilation Store and handle in we Handle batteries causi clothing, eye and face positive and negative t espiratory Protection (MOSH// None required under n respiratory protection. dn Protection:	b): cll-ventilated area. If mechanice ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg MSHA approved): normal conditions. When concert output the concert output the second	al ventilation is used ain vent caps are on g or handling batter the batteries in are intrations of sulfuric	l, components must be acid securely. Avoid contact w ies. Do not allow metallic cas with adequate ventilation acid mist are known to exo	rith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO	ously contact both the entilation is acceptable SH or MSHA-approve	
Handle batteries cauti clothing, eye and face positive and negative t <u>Respiratory Protection (NIOSH/A</u> None required under n respiratory protection. <u>Kin Protection:</u> If battery case is dama ye Protection:	a): ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg MSHA approved);	al ventilation is used ain vent caps are on g or handling batter e the batteries in an intrations of sulfaric esistant gloves with	l, components must be acid securely. Avoid contact w ies. Do not allow metallic cas with adequate ventilation acid mist are known to exo	rith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO	ously contact both the entilation is acceptable SH or MSHA-approve	
) Thoracic fraction ) Based on OEL;s Of Austria, Bel ngineering Controls (Ventilation Store and handle in wi Handle batteries cautic clothing, eye and face positive and negative t espiratory Protection (NIOSH/M None required under n respiratory protection. If battery case is dama we Protection: If battery case is dama ther Protection: In areas where sulfuric with unlimited water s Face shield recommen C PHYSICAL AND CHEMICA	a); ell-ventilated area. If mechanic: ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg <u>MSHA approved</u> ; icormal conditions. When concer- ged, use rubber or plastic acid-re ged, use chemical goggles or fail acid is handled in concentration upply. Acid-resistant apron. Ur ded when adding water or electric L PROPERTIES	al ventilation is used ain vent caps are on g or handling batter g the batteries in ar ntrations of sulfurie esistant gloves with oc shield. ns greater than 1%, ider severe exposure	l, components must be acid securely. Avoid contact w ies. Do not allow metallic as with adequate ventilation acid mist are known to exo elbow-length gauntlet, acid emergency eyewash station comergency eyewash station	vith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO deresistant apron, cloth ns and showers should	susly contact both the entilation is acceptable. SH or MSHA-approve hing and boots.	
) Thoracic fraction ) Based on OEL;s Of Austria, Bel ngincering Controls (Ventilation Store and handle in wy Handle batteries cautic clothing, eye and face positive and negative t espiratory Protection (NIOSM) None required under n respiratory protection. if battery case is dama ye Protection: If battery case is dama ther Protection: In areas where sulfuric with unlimited water so Face shield recommen 2. PHYSICAL AND CHEMICA	a); ell-ventilated area. If mechanic: ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg <u>MSHA approved</u> ; icormal conditions. When concer- ged, use rubber or plastic acid-re ged, use chemical goggles or fail acid is handled in concentration upply. Acid-resistant apron. Ur ded when adding water or electric L PROPERTIES	al ventilation is used ain vent caps are on g or handling batter e the batteries in an intrations of sulfurie esistant gloves with ce shield. Ins greater than 1%, ider severe exposur robyte to batteries, w	I, components must be acid securely. Avoid contact w ies. Do not allow metallic r eas with adequate ventilation acid mist are known to exc elbow-length gauntlet, aci emergency eyewash station comergency conditions, w ash hands after handling.	vith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO d-resistant apron, cloth ns and showers should car acid-resistant cloth	busly contact both the entilation is acceptable. SH or MSHA-approve hing and boots. be provided, ing and boots.	
Thoracic fraction     Thoracic fraction     Thoracic fraction     Thoracic fraction     Thoracic fraction     Thoracic fraction     Store and handle in w     Handle batteries cautic     clothing, eye and face     positive and negative t     expiratory Protection (NIOSH/M     None required under n     respiratory protection.     If battery case is dama     ther Protection:         If battery case is dama     ther Protection:         If battery case is dama     ther Protection:         In areas where sulfuric         with unlimited water as         Face shield recommen     .     PHYSICAL AND CHEMICA         Your and the point:	a); ell-ventilated area. If mechanic: ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg <u>MSHA approved</u> ; icormal conditions. When concer- ged, use rubber or plastic acid-re ged, use chemical goggles or fait acid is handled in concentration upply. Acid-resistant apron. Ur ded when adding water or electric L PROPERTIES	al ventilation is used ain vent caps are on g or handling batter e the batteries in ar intrations of sulfurie esistant gloves with ee shield. Ins greater than 1%, ider severe exposur- obyte to batteries, w 203 - 240° F	I, components must be acid securely. Avoid contact w ies. Do not allow metallic : easy with adequate ventilation acid mist are known to exc elbow-length gauntlet, aci emergency eyewash station comergency conditions, we ash hands after handling. Specific Gravity (H2C	vith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO d-resistant apron, cloti ns and showers should car acid-resistant cloth D = 1):	susly contact both the entilation is acceptable SH or MSHA-approve hing and boots. be provided, ing and boots. 1.215 to 1.350	
Thoracic fraction     Thoracic fraction     Thoracic fraction     Thoracic fraction     Store and handle in we     Handle batteries cautio     clothing, eye and face     positive and negative t     expiratory Protection (NOSH/N     None required under n     respiratory protection.     if Protection (NOSH/N	a); ell-ventilated area. If mechanic: ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg <u>MSHA approved</u> ; icormal conditions. When concer- ged, use rubber or plastic acid-re ged, use chemical goggles or fait acid is handled in concentration upply. Acid-resistant apron. Ur ded when adding water or electric L PROPERTIES	al ventilation is used ain vent caps are on g or handling batter te the batteries in are intrations of sulfurie esistant gloves with ce shield. Ins greater than 1%, ader severe exposur robyte to batteries, w 203 - 240° F N/A	I, components must be acid securely. Avoid contact w ies. Do not allow metallic : cas with adequate ventilation acid mist are known to exc elbow-length gauntlet, aci emergency eyewash station e emergency conditions, we ash hands after handling. Specific Gravity (H2C Vapor Pressure (mm	vith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO d-resistant apron, clott ns and showers should car acid-resistant cloth D = 1): Hg):	susly contact both the entilation is acceptable SH or MSHA-approve hing and boots. be provided, ing and boots. 1.215 to 1.350 10	
) Thoracic fraction ) Based on OEL;s Of Austria, Bel ngineering Controls (Ventilation Store and handle in wi Handle batteries cautie clothing, eye and face positive and negative t espiratory Protection (NIOSH/M None required under n respiratory protection. If battery case is dama ve Protection: If battery case is dama ther Protection: In areas where sulfuric with unlimited water as Face shield recommen CPHYSICAL AND CHEMICA repeated below are for E Boiling Point: Solubility in Water:	a): cill-ventilated area. If mechanice ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg <u>WSHA approved</u> ): tormal conditions. When concest ged, use rubber or plastic acid-r ged, use rubber or plastic acid-r ged, use chemical goggles or far acid is handled in concentration upply. Acid-resistant apron. Ur ded when adding water or electr L PROPERTIES lectrolyte:	al ventilation is used ain vent caps are on g or handling batter e the batteries in are intrations of sulfaric esistant gloves with ce shield. Ins greater than 1%, inder severe exposum objet to batteries, w 203 - 240° F N/A 100%	I, components must be acid securely. Avoid contact w ies. Do not allow metallic ; as with adequate ventilation acid mist are known to exc elbow-length gauntlet, aci emergency eyewash station comergency eyewash station comergency conditions, we ash hands after handling. Specific Gravity (H2C Vapor Pressure (mm Vapor Density (AIR =	vith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO d-resistant apron, clott ms and showers should car acid-resistant cloth D = 1): Hg): = 1):	busly contact both the entilation is acceptable SH or MSHA-approve hing and boots. be provided, ing and boots. 1.215 to 1.350 10 Greater than 1	
) Thoracie fraction ) Based on OEL;s Of Austria, Bel ngineering Controls (Ventilation Store and handle in w Handle batteries cautie clothing, eye and face positive and negative t espiratory Protection (NIOSH/M None required under n respiratory protection. din Protection: If battery case is dama re Protection: If battery case is dama ther Protection: In areas where sulfuric with unlimited water s Face shield recommen <b>PHYSICAL AND CHEMICA</b> operties Listed Below are for Boiling Point: Melting Point:	a); cill-ventilated area. If mechanic: ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg <u>MSHA approved</u> ; terminal conditions. When concest ged, use rubber or plastic acid-r ged, use rubber or plastic acid-r ged, use chemical goggles or far a acid is handled in concentration upply. Acid-resistant apron. Ur ded when adding water or electr L PROPERTIES lectrolyte: Batyl Acetate = 1)	al ventilation is used ain vent caps are on g or handling batter the batteries in an intrations of sulfuric esistant gloves with or shield. ns greater than 1%, nder severe exposur rolyte to batteries, w 203 - 240° F N/A 100% Less than 1	I, components must be acid securely. Avoid contact w ies. Do not allow metallic r zas with adequate ventilatie acid mist are known to exc elbow-length gauntlet, aci emergency eyewash station e mergency conditions, we ash hands after handling. Specific Gravity (H2C Vapor Pressure (am Vapor Density (AIR = % Volatile by Weight	vith internal componen materials to simultaneo on. General dilution ve ceed the PEL, use NIO d-resistant apron, clott ms and showers should car acid-resistant cloth D = 1): Hg): = 1):	susly contact both the entilation is acceptable SH or MSHA-approve hing and boots. be provided, ing and boots. 1.215 to 1.350 10	
Thoracie fraction ) Based on OEL;s Of Austria, Bel ngineering Controls (Ventilation Store and handle in w Handle batteries cautie clothing, eye and face positive and negative t ispiratory Protection (NIOSH/M None required under n respiratory protection. in Protection: If battery case is dama re Protection: If battery case is dama in Protection: If battery case is dama re Protection: If battery case is dam	b): coll-ventilated area. If mechanice ously to avoid spills. Make cert protection when filling, chargin terminals of the batteries. Charg <u>MSHA approved</u> ): terminal conditions. When concest ged, use rubber or plastic acid-re ged, use chemical goggles or fact acid is handled in concentration upply. Acid-resistant apron. Ur ded when adding water or electric L PROPERTIES lectrolyte: Butyl Acetate = 1) pH:	al ventilation is used ain vent caps are on g or handling batter e the batteries in are intrations of sulfaric esistant gloves with ce shield. Ins greater than 1%, inder severe exposum objet to batteries, w 203 - 240° F N/A 100%	I, components must be acid securely. Avoid contact w ies. Do not allow metallic ; as with adequate ventilation acid mist are known to exc elbow-length gauntlet, aci emergency eyewash station comergency eyewash station comergency conditions, we ash hands after handling. Specific Gravity (H2C Vapor Pressure (mm Vapor Density (AIR =	vith internal component materials to simultaneo on. General dilution ve ceed the PEL, use NIO d-resistant apron, cloth d-resistant apron, cloth car acid-resistant cloth D = 1): Hg): = 1): t:	busly contact both the entilation is acceptable SH or MSHA-approve hing and boots. be provided, ing and boots. 1.215 to 1.350 10 Greater than 1	rd

EnerSys. SAFETY DATA SHEET	Form #: SDS 853024 Revised: AD 01/04/19 Supersedes: AC ECO #: 1002070
X. STABILITY AND REACTIVITY	000 0. 1002010
Stability: Stable Unstable	
This product is stable under normal conditions at ambient temperature	
Conditions To Avoid: Prolonged overcharge; sources of ignition	
incompatibility: (Materials to avoid) Sulfuric Acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducin	g agents,
metals, sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flar hydrogen gas.	nmable
Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hy and reducing agents.	irogen
Arsenic compounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-	arring
Izzardous Decomposition Products:	
Sulfuric Acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.	
Lead Compounds: High temperatures 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.	
Lazardous Polymerization:	
Will not occur	
IL TOXICOLOGICAL INFORMATION	State of the state
toutes 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 du	st, vapor
or fume. The presence of nascent hydrogen may generate highly toxic arsine gas.	
ahalation:	
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.	
agestion:	
Sulfaric 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	- customio
toxicity and must be treated by a physician.	systemic
kin Contact:	
Sulfuric Acid: Severe irritation, burns and ulceration.	
Lead Compounds: Not absorbed through the skin.	
Arsenic Compounds; Contact may cause dermatitis and skin hyper pigmentation.	
ve Contact:	
Sulfuric Acid: Severe invitation, burns, cornea damage, and blindness. Lead Components: May cause eye irritation.	
ffects of Overexposure - Acute:	
Sulfarie Acid: Severe skin irritation, damage to comea, upper respiratory irritation.	
Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep	_
disturbances and irritability.	1
ffeets of Overexposure - Chronic:	
Sulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.	
Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males	
formalies. Formation systems to be and and have a summarized in the unclude a summarized and age; 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	t abnormal
conduction velocities in persons with blood lead levels of 50mcg/100 ml or higher. Heavy lead exposure may result in central nervous sy encephalopathy and damage to the blood-forming (hematopoietic) tissues.	stem damage,
arcinogenicity:	
Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid	d'as a
Group 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulf	uric
acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Mist	ase of the
product, such as overcharging, may result in the generation of sulfuric acid mist.	
Lead Compounds: Lead is listed as a Group 2A carcinogen, likely in animals at extreme doses. Per the guidance found in OSHA 29 CFF	1910.1200
Appendix F, this is approximately equivalent to GHS Category 1B. Proof of carcinogenicity in humans is lacking at present.	
Arsenic: Arsenic is listed by IARC as a Group 1 - carcinogenic to humans. Per the guidance found in OSHA 29 CFR 1910.1200 Append	ix F, this is
approximately equivalent to GHS Category 1A.	
edical Conditions Generally Aggravated by Exposure:	
edical 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 a diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic disease	ggravate

EnerSys.	SAFETY DATA SHEET		SDS 853024 AD 01/04/19 es: AC 1002070
Inhalation LD50: Electrolyte: LC50 rat: 375 mg/m3; LC50	: guinea pig: 510 mg/m3 stimate = 4500 ppmV (based on lead bullion)		
Oral LD50: Electrolyte; rat: 2140 mg/kg Elemental Lead: Acute Toxicity Estimate Elemental Arsenie; LD50 mouse: 145 m Elemental Antimony; LD50 rat: 100 mg			
Most inhalation problems c Follow good personal hygie worksite. Keep contaminate tobacco and cosmetics to ne	the hazardous ingredients in this product, are taken into the body primarily by inhalation and ingestion. an be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8. me to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving t ed clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence o ne-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated area ared with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated i cent.	f food, is and	
The 19 <sup>th</sup> Amendment to EC Risk phrase 61: May cause XII. ECOLOGICAL INFORMATION	Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction. harm to the unborn child, applies to lead compounds, especially soluble forms.		
Environmental Fate: Lead is very persistent in so Bioaccumulation of lead occ	il and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments curs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. smpounds and not elemental lead.	is slow.	
96 hr- LC Lead: 48 hr LC	ity: 50, freshwater fish (Brachydanio rerio): 82 mg/L DEC, freshwater fish (Cyprinus carpio): 22 mg/L 50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion 50, freshwater fish (Carrissisus auratus) >5000 g/L		
Additional Information: - No known effects on strate - Volatile organic compound - Water Endangering Class (	ls: 0% (by Volume) (WGK): NA		
40 CFR Section 266.80 are met. This sho agency and/or federal EPA.	(UNITED STATES) smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of uld be managed in accordance with approved local, state and federal requirements. Consult state environmental		
neutralization and testing, should be man agency and/or federal EPA.	iners and handle as applicable with state and federal regulations. Large water-diluted spills, after aged in accordance with approved local, state and federal requirements. Consult state environmental		
Following local, State/Provincial, and Fed	leral/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.		

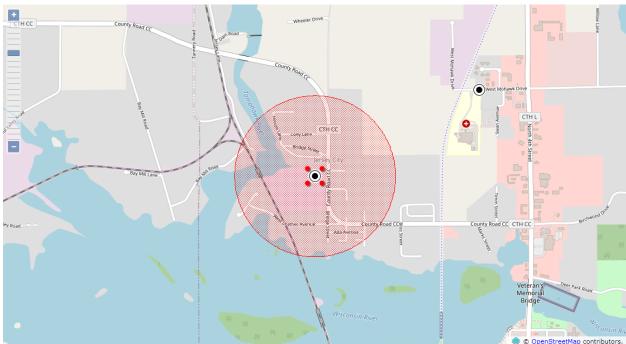
EnerSys.	SAF	ETY DATA SHEI	τ	Form #: SDS 853024 Revised: AD 01/04/19 Supersedes: AC ECO #: 1002070
XIV: TRANSPORT INFORMATION	the second second	Reader investor	SERVICE REPORT OF A REAL	
of the U.S. Department of Transp Battery terminals must be protect	ortation/s HMR. Batte	ery and outer package m	s meet the requirements of 49 CFR 173.159(f) ust be marked "NONSPILLABLE" or "NONSP	
	on Association (IATA	) Dangerous goods Regu	equirements of Packing Instruction 872 and Sp lations and International Civil Aviation Organi	
	", SPECIAL PROVIS	ION A67" must be provi	ded on an airway bill when air waybill is issued	d.
			batteries meet the requirements of Special Pro- ist be protected against short circuits.	vision 238 of the
XV. REGULATORY INFORMATION				
UNITED STATES:				
EPCRA Section 302 notification 40 CFR Part 355, The quantity of	ly Hazardous Substanc is required if 1000 lbs	or more of sulfuric acid	Threshold Planning Quantity (TPQ) of 1,000 l is present at one site (40 CFR 370,10). For mo t your EnerSys representative for additional inf	re information consult
Section 304 CERCLA Hazardous Substances: Reportable Quantity (RQ) for spi EPCRA (Emergency Planning an			fund) and State and local reportable quantities for spiller	d sulfuric acid may vary.
present in quantities of 10,000 lb Section 313 EPCRA Toxic Substances: 40 CFR section 372,38 (b) states:	s or more. For more in	formation consult 40 CF	s if sulfuric acid is present in quantities of 500 R 370.10 and 40 CFR 370.40. covered facility, a person is not required to co breshold has been met under § 372.25, § 372.2	esider the quantity of the
determining the amount of release	e to be reported under	§ 372.30. This exemptio	n applies whether the person received the artici quantity of the toxic chemical present in the art	le from another person
	and the second sec	a contract strength and the strength of the	Section 313 Toxic Chemical Release Inventory information is provided to enable you to comp	and the second
Toxic	c Chemical	CAS Number	Approximate % by Wt.	
Eb	Lead ectrolyte	7439-92-1	60 10 - 30	
(Sulfuric Ac	id (H2SO4/H2O))	7664-93-9	10 - 30	
• /	untimony	7440-36-0	2	
•	Arsenic	7440-38-2	0,2	
See 40 CRG Part 370 for more de	Tin stails.	7440-31-5	0.2	
If you distribute this product to of of each calendar year.	her manufacturers in S	SIC Codes 20 through 35	, this information must be provided with the fi	rst shipment
The Section 313 supplier notifica	tion requirement does	not apply to batteries, w	hich are "consumer products",	
<ul> <li>Not present in all battery types.</li> </ul>	Contact your EnerSy	s representative for addi	tional information.	

Ene	SAFETY DATA SHEET	Form #: SDS 853024 Revised: AD 01/04/19 Supersedes: AC ECO #: 1002070
TSCA:	TSCA Section %b - Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.	
	TSCA Section 12b (40 CFR Part 707.60(b)) No notice of export will be required for articles, except PCB articles, unless the Agency so requires context of individual section 5, 6, or 7 actions.	in the
	TSCA Section 13 (40 CFR Part 707.20): No import certification required (EPA 305-B-99-001, June 1999, Introduction to the Chemical Import Requirements of the Toxic Substances Control Act, Section IV.A).	
RCRA:	Spent Lead Acid Batteries are subject to streamlined handling requirements when managed in compliance with 40 CFR section 266.80 or 40 CF Waste sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) and D008 (lead).	FR part 273,
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 611of 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.	
	EGULATIONS (US): <u>Proposition 65:</u> 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 handli	
INTERNA	TIONAL REGULATIONS: 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.	
	Article 33 (1) of the REACH regulation (Reg. EC 1907/2006), which entered into force on 1st of June 2007 in the European Union, requires that manufacturers communicate the presence of Substances of Very High Concern (SVHC) in articles (lead batteries) in concentration greater than tweight.	
	Effective the 27 <sup>th</sup> of June 2018, the European Chemical Agency (ECHA) updated the Candidate List with the inclusion of Lead Metal (CAS No.: 7439-92-1). This inclusion of Lead ns an SVHC applies to all of EnerSys Lead based battery products regardless of the design (Flooded, Gel, AGM, etc).	
	IER INFORMATION	
[	AD 01/04/19	
NFPA Ha	rard Rating for Sulfuric Acid: Flammability (Red) = 0 Reactivity (Yellow) = 2	
	Health (Blue) = 3 Sulfuric acid is water-reactive if concentrated.	
DISCLAI		
	Data Sheet is created by the manufacturer to comply with the requirements of 29 CFR 1910.1200. To the extent allowed by law,	
	cturer hereby expressly disclaims any liability to any third party, including users of this product, including, but not limited to, consequential or	
	ges, arising out of the use of, or reliance on, this Safety Data Sheet.	

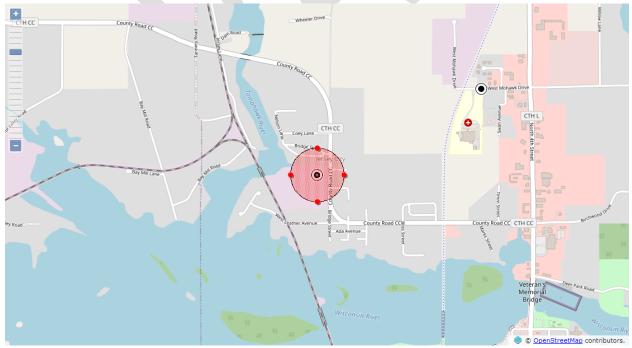


## Vulnerability Zone Maps for Nitric Acid

## A. Worst Case Scenario



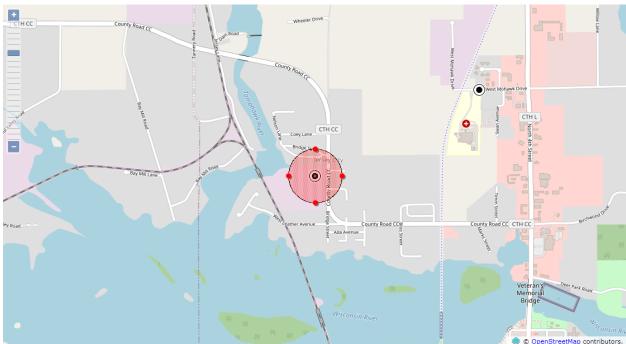
# **B.** Re-evaluation Scenario



## Attachment G

## Vulnerability Zone Maps for Sulfuric Acid

# C. Worst Case Scenario



# D. Re-evaluation Scenario

