

MATERIAL SAFETY DATA SHEET MSE SEALED LEAD ACID BATTERY SERIES

Section I: Chemical Product and Company Identification

Product Identity:

Sealed Lead Acid Battery

Trade Name:

Panasonic MSE Valve Regulated Lead Acid Battery Series

Distributor:

 Panasonic Industrial Company - Battery Sales Group
 Two Panasonic Way/7A-1, Secaucus, New Jersey 07094

Manufacturer:

 Matsushita Battery Industrial
 Osaka, 570, Japan

**For Chemical Emergency
Spill, Leak, Fire, Exposure or Accident
Call CHEMTREC - Day or Night
1-800-424-9300**

Telephone Number for General Information
 Toll Free 1-800-793-3772
 Internet: www.panasonic.com/batteries

Section II: Hazardous Ingredients / Identity Information

Component	Common Name	Chemical Name	OSHA PEL	ACGIH TLV	CAS#
Lead	(Negative Electrode and Grid)	Pb	0.05 mg/m ³	0.15 mg/m ³	7439-92-1
Lead Oxide	(Positive Electrode)	PbO ₂	0.05 mg/m ³	0.15 mg/m ³	1309-60-0
Lead Sulfate	(Positive and Negative Electrode)	PbSO ₄	0.05 mg/m ³	0.15 mg/m ³	7446-14-2
Sulfuric Acid	(Electrolyte)	H ₂ SO ₄	1.0 mg/m ³	1.0 mg/m ³	7664-93-9

Percentages of components are dependant both on the model of the battery and state of charge/discharge of the battery. Sulfuric Acid is reportable under Sections 311, 312 and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). Reportable Quantity: 500 Pounds.

Overall Chemical Reaction: $PbO_2 + Pb + 2H_2SO_4 \rightleftharpoons 2PbSO_4 + 2H_2O$

Note: Panasonic Sealed Lead Acid batteries are a sealed, non-spillable design. Under normal use and handling the customer has no contact with the internal components of the battery or the chemical hazards. Under normal use and handling these batteries do not emit regulated or hazardous substances. Warning: Battery terminals/posts and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. The only possible exposure would be the terminal posts on MSE models 150, 200 and 300. MSE models 500 through 1440 do NOT have lead terminal posts, but are tin-plated brass terminal posts. Wash hands thoroughly after working with batteries and before eating, drinking or smoking.

Section III: Physical / Chemical Characteristics

Boiling Point:	Electrolyte 110°C - 112°C
Vapor Pressure:	Electrolyte 11.7 mm Hg. at 20°C
Vapor Density (AIR = 1):	Electrolyte 3.4
Solubility in Water:	Lead, Lead Oxide and Lead Sulfate are insoluble in water. Sulfuric Acid is 100% soluble in water.
Appearance and Odor:	The entire battery is a solid article consisting of an opaque plastic case with two protruding lead terminals or tin-plated brass terminals. The battery is odorless. Sulfuric Acid is a liquid.
Specific Gravity (H2O = 1)	Electrolyte 1.300

Health Hazard Information (Acute and Chronic) - Sulfuric Acid only.

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category I carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within the battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulfuric acid mist.

Routes of Entry:	By inhalation (mist), skin and eyes, ingestion.
Acute:	Tissue destruction on contact. May cause 2nd and 3rd degree burns or blindness. Ingestion will cause corrosive burns on contact. May be fatal if swallowed.
Chronic:	Inhalation of mists may cause upper respiratory irritation.
Signs and Symptoms:	Irritation and burning of exposed tissues.
Medical Conditions:	Respiratory disorders may be aggravated by prolonged inhalation of mists.

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Section IV: Emergency and First Aid Procedures

Battery Electrolyte

Inhalation:	Remove to fresh air. Give oxygen or artificial respiration if needed. Get immediate medical attention.
Eye Contact:	Flush with plenty of water for at least 15 minutes. Get immediate medical attention.
Skin Contact:	Remove contaminated clothing and flush affected areas with plenty of water for at least 15 minutes.
Ingestion:	Do not induce vomiting. Dilute by giving large quantities of water. If available give several glasses of milk. Do not give anything by mouth to an unconscious person. Give CPR if breathing has stopped. Get immediate medical attention.

Section V: Fire and Explosion Hazard Data

Flash Point:	Not Applicable
Flammable Limits:	Lower 4.10% (Hydrogen gas) Upper 74.20%
Extinguishing Media:	Dry chemical, foam, halon or CO ₂ .

Special Fire Fighting Procedures:

If batteries are on charge, turn off power. Use positive pressure, self-contained breathing apparatus in fighting fire. Water applied to electrolyte generates heat and causes it to splatter. Wear acid resistant clothing. Ventilate area well.

Unusual Fire and Explosion Hazards:

Hydrogen and oxygen gases are generated in cells during normal battery operation or when on charge. (Hydrogen is flammable and oxygen supports combustion). These gases enter the air through the vent caps. To avoid risk of fire or explosion, keep sparks and other sources of ignition away from the battery. Do not allow metal objects to simultaneously contact both positive and negative terminal of batteries. Ventilate area well.

Section VI: Reactivity Data

Stability:	Stable under normal conditions.
Conditions to Avoid:	Sparks and other sources of ignition. Prolonged overcharge. Fire or explosion hazard due to possible hydrogen gas generation.

Incompatibility:

Combination of sulfuric acid with combustibles and organic materials may cause fire and explosion. Avoid strong reducing agents, most metals, carbides, chlorates, nitrates, picrate.

Hazardous Decomposition Products: Hydrogen gas may be generated in an overcharged condition, in fire or at very high temperatures. CO, CO₂ and sulfur oxides may emit in fire. Hazardous polymerization will not occur.

Section VII: Precautions for Safe Handling and Use

Steps to be Taken in Case of Broken Battery Case or Electrolyte Leakage:

Neutralize any electrolyte or exposed internal battery parts with soda ash (sodium bicarbonate) until fizzing stops. Keep untrained personnel away from electrolyte and broken battery. Place broken battery and clean-up materials in a plastic bag or non-metallic container. Dispose of clean-up materials as a hazardous waste. Ventilate area as hydrogen gas may be given off during neutralization.

Waste Disposal Method:

This battery is recyclable. It is illegal to dispose of this battery by another means than ultimately returning to a secondary lead smelter for recycling. For more information on recycling these batteries call toll-free, 1-800-SAV-LEAD (1-800-728-5323). Hazardous Waste Codes: D002, D008.

Precautions to be Taken in Handling, Storing and Transportation:

Store in cool, dry area away from combustible materials. Do not store in sealed, unventilated areas. Avoid overheating and overcharging.

Other Precautions:

Do not charge in unventilated areas. Do not use organic solvents or other than recommended chemical cleaners on battery.

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Section VIII: Control Measures / Personal Protection**General:**

Normal room ventilation is sufficient during normal use and handling. Recommend 2 to 3 room air changes per hour to prevent buildup of hydrogen gas.

Personal Protective Equipment (In the Event of Battery Case Breakage):

Always wear safety glasses with side shields or full face shield.

Use rubber or neoprene gloves.

Wear acid resistant boots, apron or clothing.

Work/Hygienic Practices:

Remove jewelry, rings, watches and any other metallic objects while working on batteries. All tools should be adequately insulated to avoid the possibility of shorting connections. DO NOT lay tools on top of battery. Be sure to discharge static electricity from tools and individual person by touching a grounded surface in the vicinity of the batteries, but away from cells. Batteries are heavy. Serious injury can result from improper lifting or installation. DO NOT lift, carry, install or remove cells by lifting or pulling the terminal posts for safety reasons and because terminal posts and post seals may be damaged. DO NOT wear nylon clothes or overalls as they can create static electricity. DO KEEP a fire extinguisher and emergency communications device in the work area.

IMPORTANT:

Wash hands thoroughly after working with batteries and before eating, drinking or smoking.

Section IX: Regulatory Information**NFPA Hazard Rating for Sulfuric Acid:**

Flammability (Red) = 0

Health (Blue) = 3

Reactivity (Yellow) = 2

Section X: Transportation Information**Identification and Proper Shipping Name:**

Batteries – Wet, Non-Spillable, Electric Storage, UN 2800.

DOT - Unregulated, meets the requirements of 49 CFR 173, 159 (d).

IATA/ICAO - Unregulated, meets the requirements of Special Provision A67.

IMO - Unregulated.

*For all modes of transportation, each battery and outer package must be labeled: “Non-Spillable” or “Non-Spillable Battery.” This label must be visible during transportation.

Section XI: California Proposition 65 Information

The State of California has determined that certain battery terminals contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. The only possible exposure would be the terminal posts on MSE models 150, 200 and 300. MSE models 500 through 1440 do NOT have lead terminal posts, but are tin-plated brass terminal posts. **IMPORTANT:** WASH HANDS THOROUGHLY AFTER WORKING WITH BATTERIES AND BEFORE EATING, DRINKING OR SMOKING.

Section XII: Other Information - Notice to Readers**NOTICE TO READERS:**

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein. This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his own particular use. Panasonic Industrial Company does not accept liability for any loss or damage that may occur, whether direct, indirect, incidental or consequential, from the use of this information nor do we offer warranty against patent infringement. Additional information is available by calling the telephone number on page one (1) designated for this purpose.

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