Material Safety Data Sheet

JMT Gel Battery

1. PRODUCTS AND COMPANY IDENTIFICATION

Chemical / Trade Name

Valve Regulated Lead-Acid Gel Battery

Chemical Family / Classification

Electric Storage Battery, Gel Battery

Manufacturer

Johannes J. Matthies GmbH & Co. KG
Hammerbrookstraße 97
D-20097 Hamburg
+49 (0) 40 2 37 21-0
info@matthies.de
www.matthies.de

2. HAZARDOUS INGREDIENTS / IDENTIFY INFORMATION

Component-Chemical / Common Names	CAS Number	Approximate % by Weight or Volume	Approximate Air Exposure Limits (ug/m³)		
			OSHA	ACGIH	NIOSH
Inorganic Lead Compound:					
* Lead	7439-92-1	63-78	50	150	100
* Tin	7440-31-5	0-006	2000	2000	--
* Arsenic	7440-38-2	0-003	10	200	--
* Calcium	7440-70-2	0,002	--	--	--
* Antimony	7440-36-0	0,2	500	500	--
Electrolyte (Sulfuric acid)	7664-93-9	10-30	1000	1000	1000
Gel SiO2	--	0,2	--	--	--
Case Material:		5-6	N/A	N/A	N/A
Polypropylene	9003-07-0				
Polystyrene	9003-53-6				
Styrene Acrylonnitrite	9003-54-7				
Polycarbonate	--				
Hard Rubber	--				
Polyethylene	--				
Acrylonitrite Butadiene Styrene	9003-56-9				
Styrene Butadiene	9003-55-8				
Polyvinylchloride	9002-86-2				
Plate separator material:	--				
* Inorganic lead and electrolyte (Acid Gel) are the primary components of every battery. Other ingredients may be present dependant upon battery type.					

1. Classification of the substance

1.1 Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]
8B: Non flammable corrosive materilas.

1.2 Classification according to 67/548/EEC or 1999/45/EG
Xi: Irritating
C: Corrosive

2. Label elements

2.1 Labeling according to Regulation (EC) No 1272/2008
Product identifier: Valve Regulated Lead Battery

Hazard pictogramms

C: Corrosive

Xi: Irritating

NFPA Hazard Rating

Flammability (Red) = 0
Health (Blue) = 0
Reactivity (Yellow) = 0
Sulfuric acid is water-reactive if concentrated.

WHMIS

Signal word Caution

Hazard statements

Contact with internal components may causes irritation or severe burns
Irritating to eyes, respiratory system and skin

Precautionary stetements

Avoid contact with internal acid
Avoid heat, sparks, and open flame while charging batteries
Keep containers tightly closed
Keep out reach of children

Other hazards

Adverse human health symptoms:

Eye:	(Acute):	Under normal conditions of use, no health effects are expected. Exposed to dust may cause irritation.
	(Chronic):	No data available.
Ingestion:	(Acute):	Under normal conditions of use, no health effects are expected. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping.
	(Chronic):	No data available.
Inhalation:	(Acute):	Under normal conditions of use, no health effects are expected. Contents of an open battery can cause respiratory irritation.
	(Chronic):	Repeated and prolonged exposure may cause irritation.
Skin:	(Acute):	Under normal conditions of use, no health effects are expected.
	(Chronic):	No data available.

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, leg and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy of the motor nerves with wrist drop, and potential reproductive effects.
Acute exposure to sulfuric acid cause severe irritation, burns and permanent tissue damage to all routes of exposure.
Chronic exposure to sulfuric acid may cause erosion of tooth enamel, inflammation of nose, throat and respiratory system.

3. PHYSICAL DATA

Appearance and Odor:	Manufactured article; no odor Electrolyte is a White Gel with a sharp, penetrating, pungent odor.
Electrolyte:	
Boiling Point:	Greater than 2516°F
Melting Point:	486 to 680 F
Solubility In Water:	100%
Evaporation Rate:	Not Applicable
(Butyl acetate=1)	
Specific Gravity (H2O=1):	9,6 to 11,3
Vapor Pressure:	Not Applicable
Vapor Density (AIR=1):	Not Applicable
% Volatiles By Weight:	Not Applicable

4. FIRE AND EXPLOSION HAZARD DATA

Flash Point:	N/A
Lower Explosive Limit (LEL):	4.1% (as hydrogen gas)
Upper Explosive Limit (UEL):	74.02% (as hydrogen gas)
Extinguishing Media:	Dry chemical, carbon dioxide, foam, and water. Do not use water on live electrical circuits.
Special Fire Fighting Procedures & Protective Equipment:	If batteries are on charge, shut off power. Avoid breathing vapors. Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application; wear acid-resistant protective gear.
Unusual Fire and Explosion Hazards:	Highly flammable hydrogen gas is generated during charging and operation of batteries. To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Follow manufacturer’s instructions for installation and service.
Additional Information:	Firefighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

5. REACTIVITY DATA

Stability:	This product is stable under normal conditions at ambient temperature.
Incompatibility (Materials to Avoid)	Avoid contact with strong bases, acids, combustible organic materials, halides, halogenated, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.
Hazardous Decomposition Products:	Thermal decomposition of electrolyte will produce sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide and hydrogen. High temperatures of lead compounds will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.
Conditions to Avoid:	Prolonged overcharges and any sources of ignition.

6. HEALTH HAZARD DATA

Potential Health Effects:

Routes of Entry:	Gel Sulfuric acid: Harmful by all routes of entry. Lead compounds: Hazardous exposure can occurs only when products is heated, oxidized or otherwise processed or damaged to create dust, fume or vapor.
Inhalation:	Respiratory tract irritation and possible long-term effects.
Ingestion:	May cause severe irritation/burns of mouth, throat, esophagus and digestive tract, and harmful or total lead poisoning. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.
Skin:	Direct contact with electrolyte (Gel) may cause severe irritation, burns and ulceration.
Eyes:	Directs contact with electrolyte (Gel) may cause severe irritation, burns, cornea damage, or blindness.
Acute Health Hazards:	Repeated or prolonged contact may cause skin irritation, damage to cornea, and upper respiratory irritation. Symptoms of lead toxicity include headache, fatigue, abdominal pain, and loss of appetite, muscular aches and weakness, sleep disturbances and irritability.
Chronic Health Hazards:	Overexposure to sulfuric acid, an internal component of the battery, may cause possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes. Lead absorption may cause nausea, weight loss, abdominal spasms, fatigue, and pain in arms, legs and joints. Other effects may include central nervous system damage, kidney dysfunction, anemia, neuropathy, particularly of the motor nerves, with wrist drop, and potential reproductive effects.

Carcinogenicity:

Sulfuric Acid: (In Gel)	The international Agency for Research on Cancer (IARC) has classified " strong inorganic acid mist containing sulfuric acid" as a Category I carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist
Lead Compounds:	Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.
Arsenic:	Listed by National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.
Medical Conditions Generally Aggravated By Exposure:	Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate skin diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurological diseases. Children and pregnant women must be protected from lead exposure. Persons with kidney disease may be at increased risk of kidney failure.
Additional Information:	No health effects are expected related to normal use of this products as sold.

7. FIRST AID PROCEDURES

Inhalation:	Sulfuric acid: If breathing is difficult, remove to fresh air immediately. If symptoms persist, seek medical attention. Lead: Remove from exposure, gargle, wash nose and lips; consult physician.
Ingestion:	Sulfuric acid: Give large quantities of water; do NOT induce vomiting; consult your physician. Lead: Consult your physician immediately.
Skin Contact:	Sulfuric acid: Flush with a lot of water for at least 15 minutes. Remove contaminated clothing, and shoes. Lead: Wash immediately with soap and water.
Eye Contact:	Sulfuric acid and lead: Flush immediately with a lot of water for at least 15 minutes; consult your physician

Material Safety Data Sheet

JMT Gel Battery

8. PRECAUTIONS FOR SAFE HANDING AND USE

Spill or Leak Procedures:	Contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistance clothing, boots, gloves, and face shield. Prevent spilled material from entering sewers and waterways.
Waste Disposal Methods:	Used batteries: Send to secondary lead smelter for recycling. 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 or federal EPA.
Handling and Storage:	Store batteries in cool, dry and well-ventilated area. Batteries should also be stored under roof for protection against adverse weather conditions. Protect containers from physical damage to avoid leaks and spills of acid. If battery case is broken, avoid contact wit internal components. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Do not allow conductive material to touch the both battery terminals. A short circuit may occur and cause battery failure and fire. Keep away from fire, Sparks and any heat source.
Precautionary Labeling:	Poison – Causes severe burns Danger- Contains sulfuric acid Keep away from children

9. CONTROL MEASURES

Engineering Controls:	Store and charge in well ventilated area. General ventilation is acceptable.
Work Practices:	Handle batteries carefully, do not tip to avoid spills. Avoid contact with internal components. Wear protective clothing when filling acid or handling batteries. Wash hands after handling.
Respiratory Protection;	Not required under normal conditions. See special firefighting procedures (Section IV)
Skin Protection:	Wear rubber or plastic acid-resistant gloves as a standard procedure to prevent skin contact.
Eye Protection:	Wear protective glasses with side shields or chemical goggles or face shield.
Other Protective Clothing or Equipment:	Not required under normal use conditions for absorbed electrolyte type batteries.

10. OTHER REGULATORY INFORMATION

Transportation Information:

Ground – US DOT:	No proper shipping name; not regulated as a hazardous material. VRLA batteries have been tested and meet the non-spill able criteria listed in CFR 49, 173.159 (d) (3) (i) and (ii). Non-Spill able batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met: 1. The batteries must be protected against short circuits and securely packaged. 2. The batteries and their outer packaging must be plainly and durably marked “NON-SPILL ABLE” or “NONSPILLABLE BATTERY”.
Aircraft-ICAO-IATA:	No proper shipping name; not regulated as a hazardous material. VRLA batteries have been tested and meet the non-spill able criteria listed in IATA Packing Instruction 806 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words “Not Restricted, as per Special Provision A67” must be included in the description on the Air Waybill.

Material Safety Data Sheet

JMT Gel Battery

Vessel–IMO–IMDG	No proper shipping name; not regulated as a hazardous material. VRLA batteries have been tested and meet the non-spill able criteria listed in IMDG Code Special Provision 238.1 and 2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuit when packaged for transport.
Additional Information:	Each battery and the outer packaging must be plainly and durably marked “Non-spill able” or “Non-spill able Battery”. Transport requires proper packaging and paperwork, including the nature and quantity of goods, per applicable origin/destination/customs point as shipped.
Waste Disposal/RCRA:	Used lead-acid batteries are not regulated as hazardous as waste by the EPA when recycled, however state and international regulations may vary.
CERCLA (Superfund) and EPCRA:	(a) Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (Superfund) and EPCRA (Emergency Planning Community Right to Know) is 1,000ibs. State and local reportable quantities for spilled sulfuric acid may vary. (b) Sulfuric acid is a listed “Extremely Hazardous Substance” under EPCRA, with a Threshold Planning Quantity (TPQ) of 1,000 lbs. (c) EPCRA Section 302 notification is required if 1,000 lbs. Of more of sulfuric acid is present at one site. The quantity of sulfuric acid will vary by battery type. (d) EPCRA Section 312 Tier 2 reporting is required for batteries if sulfuric acid is present in quantities of 500 lbs. or more and/or if lead is present in quantities of 10,000lbs. Or more. (e) Supplier Notification: This product contains toxic chemicals, which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

Toxic Chemical	CAS NUMBER	Approximate % by Wt.
* Lead	7439-92-1	70
* Sulfuric Acid	7664-93-9	10-30
* Antimony	7440-36-0	0.2
* Arsenic	7440-38-2	0.003

* Not present in all battery types.
If you distribute this product to other manufacturers in SIC Codes 20 though 39, this information must be provided with the first shipment of each calendar year. The Section 313 supplier notification requirement does not apply to batteries, which are “consumer products”.

TSCA: Ingredients in Dynavolt Battery’s batteries are listed in the TSCA Registry as follow:

Components	CAS NUMBER	TSCA Status
Electrolyte		
Sulfuric Acid	7664-93-9	Listed
Inorganic Lead Compound:		
Lead (Pb)	7439-92-1	Listed
Lead Oxide (PBO)	1917-36-8	Listed
Lead Sulfate (PbSO4)	7446-14-2	Listed
Antimony (Sb)	7440-36-0	Listed
Arsenic (As)	7440-38-2	Listed
Calcium (Ca)	7440-70-2	Listed
Tin (Sn)	7440-31-5	Listed

Disclaimer: This material Safety Data Sheet is based upon information and sources available at the time of preparation or revision date. We do not assume responsibility and disclaim liability of loss, damage or expense in any way connected with the handling, storage, use of or disposal of the product.