MATERIAL SAFETY DATA SHEET

PRODUCT NAME : GS BATTERY

1. Product and Company Identification

Product name: GS Battery (sealed maintenance free batteries)

Synonyms: STP turbo pump batteries

Item Numbers: E21932003, E21932004, E21932005

European Contact Details

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General enquiries

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Highwood Office Park, Tewksbury, MA 01876

General enquiries
+(1) 978-658-5410
Toll Free: 1-800-848-9800

24 h Emergency telephone number:

Chemtrec: 1-800-424-9300

2. Hazards Identification

EMERGENCY OVERVIEW

Not hazardous in normal use. Hydrogen and oxygen are generated during charging, and there is a risk of fire or explosion if these gases come in contact with a source of ignition. Exposure to the electrolyte (dilute sulphuric acid) can occur if the battery is damaged or its vents are tampered with. Shorting across the battery terminals produces high electrical currents.

For short and long term exposure effects see Section 11 Toxicological data.

Eye Effects: None under normal conditions of use. Severe eye damage can result from contact with the electrolyte.

Skin Effects: None under normal conditions of use. Severe burns can result from contact with the electrolyte.

Ingestion/Oral Effects: None under normal conditions of use. Severe burns to the mouth and gastrointestinal tract can result from ingestion of the electrolyte.

Inhalation Effects: None under normal conditions of use. Inhalation of mists/vapours from the electrolyte can damage the lungs and result in pulmonary oedema.

Other Information: Exposure to the electrolyte (dilute sulphuric acid) should only occur if the battery case has been damaged, or if the battery vents have been tampered with.

The battery contains lead and lead compounds, which are toxic. However, exposure to these substances cannot occur during normal use. Refer to Section 13 for additional information on the toxic effects of lead.

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MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known (for intact battery).

NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	0	Health	0	0 = No Hazard
Flammability	0	Flammability	0	1 = Slight Hazard
Instability	0	Reactivity	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

3. Composition/Information on Ingredients

Ingredient		% Weight	CAS No	Hazard class*	Risk phrase*
Electrode plate:	Lead and lead compounds	60 to 75	7439-92-1 (Pb)	Not applicable	Not applicable
	Barium compounds	0.3 (max)	7440-39-3 (Ba)	Not applicable	Not applicable
Electrolyte:	Dilute sulphuric acid (40%)	12 to 25	7664-93-9	Not applicable	Not applicable
Cells/lids:	ABS resin	5 to 15	9003-56-9	Not applicable	Not applicable
	Antimony trioxide	2 (max)	1309-64-4	Not applicable	Not applicable
	Bromine resin	4 (max)	-	Not applicable	Not applicable
Separators:	Glass fibre	1 to 3	-	Not applicable	Not applicable
Other metals:	Brass etc.	1 (max)	-	Not applicable	Not applicable
Other resins:	PP	1 to 5	9003-07-0	Not applicable	Not applicable
	Epoxy resin, rubber	1 to 5	-	Not applicable	Not applicable

*Hazard class & Risk phrase. These columns are only completed for ingredients which are classified as hazardous under EU Directive No 1272/2008 (as amended) and are present in sufficient concentration to make the overall substance hazardous. In all other situations, the column will be completed as “Not applicable”.

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4. First Aid Measures

Eyes:	(After contact with the electrolyte) Seek medical attention immediately and continue to flush the eyes with plenty of water until medical assistance arrives
Skin:	(After contact with the electrolyte) Wash the affected area with plenty of water. Seek medical attention if the affected area is large, or if blistering occurs.
Ingestion/Oral:	(After oral contact with or ingestion of the electrolyte) Seek medical attention immediately. If the patient is conscious, flush the mouth out with plenty of clean water, and have the patient drink milk or sodium bicarbonate solution, or plenty of clean water. Do not give anything by mouth to an unconscious person.
Inhalation:	If electrolyte fumes or vapours are inhaled, immediately remove the affected person to fresh air. If breathing problems occur, a qualified individual should administer oxygen or artificial respiration as indicated. Seek immediate medical attention.
Other Information:	The first aid measures given above will only be applicable to electrolyte leakage or damage to the battery.

5. Fire Fighting Measures

Extinguishing Media:	Use powder, foam or inert gas.
Fire and Explosion Hazard:	Hazardous decomposition products of sulphuric acid: sulphur dioxide, sulphur trioxide, hydrogen sulphide and hydrogen.
Special Protective Equipment for Fire Fighters:	Fire fighters should wear a self-contained breathing apparatus (SCBA), which meets appropriate standards, operated in positive pressure mode, and full turnout gear.

For Flammability Properties - see Section 9

6. Accidental Release Measures

If electrolyte is spilled from the battery, put on the necessary personal protective equipment and neutralise the spill with potassium nitrate (saltpetre), sodium bicarbonate (baking soda), sodium carbonate (soda ash), or calcium oxide (lime).

Wash the area of the spill with plenty of water. It is acceptable to flush the neutralised acid into drains or sewers.

7. Handling and Storage

Handling:	Keep the battery upright. Due to the low internal resistance and high power density of the battery, high levels of short circuit current can develop across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining a battery. Keep the battery away from naked flames and other sources of ignition. Charge the battery in a well-ventilated area. Do not attempt to disassemble or modify the battery.
Storage:	Store batteries in their original protective packaging. Store away from high temperatures, high humidity, condensation, rain and dripping water. Store away from naked flames and other sources of ignition.

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8. Exposure Controls/Personal Protection

Exposure Limits:

Ingredient	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
Lead/lead compounds	0.05 mg/m^3 - 8 H TWA (elemental, organic cpds.)	30 μg/m^3 (action level) 50 μg/m^3 - 8 H TWA	0.15 mg/m^3 (as Pb)
Sulphuric acid	1 mg/m^3 - TWA 3 mg/m^3 - STEL	1 mg/m^3 - TWA	1 mg/m^3 - TWA

Personal Protection:

Engineering Measures: Provide ventilation in areas where batteries are charged. Provide eye wash stations and emergency showers.

Respiratory Protection: None required under conditions of normal use. Wear a respirator in cases of electrolyte leakage/ battery damage.

Hand/Skin Protection: None required under conditions of normal use. Wear protective gloves in cases of electrolyte leakage/ battery damage.

Eye/Face Protection: None required under conditions of normal use. Wear goggles or face shield in cases of electrolyte leakage/ battery damage.

Hygiene Measures: Practice good workplace hygiene. Do not eat, drink or smoke when handling material. Wash hands before eating, drinking or smoking.

Other/General Protection: Immediately change clothing that is contaminated with electrolyte.

9. Physical and Chemical Properties

Lead

Appearance and Odour	Silver -grey metal. No odour	Boiling point	No data available	ºC/ºF
pH (as supplied)	Not applicable	Freezing Point	327 / 620	ºC/ºF
Solubility in Water	Insoluble	Auto Ignition	Not applicable	ºC/ºF
Volatile Content by Volume	None	Flash Point	Not applicable	ºC/ºF
Specific Gravity	11.34			
Vapour Pressure (mbar)	1 (at 25 ºC)	Vapour Pressure (Torr)	0.75 (at 77 ºF)	

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Sulphuric acid

Appearance and Odour	Clear colourless liquid. Acidic odour.	Boiling point	110 / 230	°C/°F
pH (as supplied)	No data available	Freezing Point	-56.4 / -69.5	°C/°F
Solubility in Water	100% soluble	Auto Ignition	Not applicable	°C/°F
Volatile Content by Volume	No data available	Flash Point	Not applicable	°C/°F
Specific Gravity	About 1.3			
Vapour Pressure (mbar)	37 (30% at -30 °C)	Vapour Pressure (Torr)	27.75 (30% at -22 °F)	

Lead sulphate

Appearance and Odour	White odourless powder	Boiling point	1070 / 1958	°C/°F
pH (as supplied)	No data available	Freezing Point	No data available	°C/°F
Solubility in Water	40 mg/l @ 15 °C	Auto Ignition	Not applicable	°C/°F
Volatile Content by Volume	No data available	Flash Point	Not applicable	°C/°F
Specific Gravity	6.2			
Vapour Pressure (mbar)	No data available	Vapour Pressure (Torr)	No data available	

Lead dioxide

Appearance and Odour	Brown odourless powder	Boiling point	290 / 554	°C/°F
pH (as supplied)	No data available	Freezing Point	No data available	°C/°F
Solubility in Water	Insoluble	Auto Ignition	Not applicable	°C/°F
Volatile Content by Volume	No data available	Flash Point	Not applicable	°C/°F
Specific Gravity	9.4			
Vapour Pressure (mbar)	No data available	Vapour Pressure (Torr)	No data available	

ABS resin

Appearance and Odour	Black or grey solid	Boiling point	No data available	°C/°F
pH (as supplied)	No data available	Freezing Point	No data available	°C/°F
Solubility in Water	Insoluble	Auto Ignition	Not applicable	°C/°F
Volatile Content by Volume	No data available	Flash Point	Not applicable	°C/°F
Specific Gravity	1.2			
Vapour Pressure (mbar)	No data available	Vapour Pressure (Torr)	No data available	

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10. Stability and Reactivity

Note: The following data applies to electrolyte (sulphuric acid).

Stability:	Stable.
Material/Conditions to Avoid:	Reactive materials, strong bases, most organic compounds. Excessive heat.
Hazardous Decomposition:	Sulphur dioxide, sulphur trioxide, hydrogen sulphide and hydrogen
Hazardous Polymerisation:	No data available.

11. Toxicological Information

For a comprehensive description for the various toxicological (health) effects which may arise if the user comes into contact with the substance or preparation refer to Section 2 Hazards Identification.

Animal data:

LD50 value:	Oral: 500 mg/kg for lead/lead compounds, 2140 mg/kg for sulphuric acid.
LC50 value:	No information available.

Carcinogenicity:

The batteries contain materials (lead and sulphuric acid) known to cause cancer or reproductive toxicity.

12. Ecological Information

No information available.

13. Disposal Considerations

Neutralised electrolyte (sulphuric acid) may be flushed into drains or sewers.

Spent/waste batteries must be treated as hazardous waste and disposed of in accordance with all local, state and federal regulations.

14. Transport Information

This product is classified as dangerous under transport regulations.

PARAMETER	EUROPEAN	CANADIAN TDG	UNITED STATES DOT
Proper Shipping Name	Batteries, wet, non-spillable, electric storage	Batteries, wet, non-spillable, electric storage	Batteries, wet, non-spillable, electric storage
Hazard Class	8	8	8
Identification Number	2800	2800	2800
Shipping Label	CORROSIVE	CORROSIVE	CORROSIVE

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15. Regulatory Information

European Regulatory Information

This product has been classified in accordance with EU Regulation No 1272/2008 (as amended) on the Classification, Labelling and Packaging of Substances and Mixtures.

Classified as dangerous to supply : No

Risk Phrases :	Not applicable
Safety Phrases :	Not applicable
Symbols :	None

United States Regulatory Information

Product is a manufactured article not subject to TSCA listing.

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product constitutes an "article" and, as such is exempt from SARA 313 reporting requirements (40 CFR Part 372.38, Paragraph B).

California Proposition 65: This product contains chemicals (lead and sulphuric acid) known to the State of California to cause cancer or reproductive toxicity.

Canadian Regulatory Information

WHMIS Classification: Product is a manufactured article not subject to WHMIS regulations.

Product is a manufactured item not subject to DSL listing.

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16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Sources of information for this data sheet:

- GS Yuasa Power Supply Product Safety Data Sheet for "Small control valve-type lead acid batteries; Types NP, NPH, RE, REH, PXL, PWL and PE (flame resistant) (excluding NP0.8-12, NP3-6, NP4-6, NP2-12, PXL 12023 and PWL 12V38)". Ref [060623 (Flame-resistant ABS) Types NP, NPH, RE, REH, PE, PXL, PWL].

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; **ANSI** - American National Standards Institute; **Canadian TDG** - Canadian Transportation of Dangerous Goods; **CAS** - Chemical Abstracts Service; **Chemtrec** - Chemical Transportation Emergency Center (US); **DSL** - Domestic Substances List; **EH40 (UK)** - HSE Guidance Note EH40 Occupational exposure limits; **HMIS** - Hazardous Material Information Service; **LC** - Lethal Concentration; **LD** - Lethal Dose; **NFPA** - National Fire Protection Association; **OSHA** - Occupational Safety and Health Administration, US Department of Labour; **PEL** - Permissible exposure limit; **SARA (Title III)** - Superfund Amendments and Reauthorization Act; **SARA 313** - Superfund Amendments and Reauthorization Act, Section 313; **SCBA** - Self-Contained Breathing Apparatus; **STEL** - Short Term Exposure Limit; **TLV** - threshold limit value; **TSCA** - Toxic Substances Control Act Public Law 94-469; **TWA** - Time-Weighted Average; **US DOT** - US Department of Transportation; **WHMIS** - Workplace Hazardous Materials Information System.

Revisions:

Dec 2010 - Data Sheet updated to revise statements in Section 14.
