



MATERIAL SAFETY DATA SHEET

Doc. No. TGY/MSDS/005/ VRLA, Non Spillable Battery
Origin Date: 28.04.16
Rev.: 8
Latest Rev. Date: 21.01.2025

I. PRODUCT IDENTIFICATION

MANUFACTURER TATA AutoComp GY Batteries Pvt. Ltd., Plot No.C-2, Next to Wheels India, MIDC Ranjangaon, Taluka: Shirur, PUNE - 412220 Tel:+91-2138-672400 Fax:+91-2138-672499	CHEMICAL / TRADE NAME (as used on label)	VRLA (Valve Regulated Lead Acid), Non-Spillable Battery
CONTACT Safety Department TATA AutoComp GY Batteries Pvt Ltd, Pune - 412 220	CHEMICAL FAMILY/CLASSIFICATION	Electric Storage Battery

II. HAZARDOUS IDENTIFICATION

RISK PHRASES

Sulphuric Acid	R35 - Causes severe burns
Lead components	R61 - May cause harm to the unborn child R62 - Possible risk of impaired fertility R20/22 - harmful by inhalation and if swallowed R33 - Danger of cumulative effects

SAFETY PHRASES

Sulphuric Acid	S1/2 - Keep locked up and out of reach of children S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S30 - Never add water to this product S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible)
Lead components	S53 - Avoid exposure - obtain special instructions before use S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible)

III. INGREDIENTS

				Approximate Air Exposure Limits($\mu\text{g}/\text{m}^3$)	
Components	CAS Number	%by wt.	OSHA	ACGIH	NIOSH
Inorganic Components of					
Lead	7439-92-1	52.4	50	50	50
Lead Dioxide	1309-60-0	20.8	50	50	50
Non-Hazardous Ingredients	N/A	8.2	N/A	N/A	N/A
Electrolyte (Sulfuric acid)	7664-93-9	19-44	1000	200	1000

NOTE: The above components are for a fully charged lead acid design. Inorganic lead and electrolyte (mixture of water and sulfuric acid) are the primary components of every battery manufactured by TATA AutoComp GY Batteries Pvt. Ltd. Other ingredients may be present dependent upon battery type. Polypropylene is the principal case material of automotive and commercial batteries.

IV. PHYSICAL DATA

Materials (at normal temperatures) Volume of Sulfuric Acid -42-71%	Electrolyte	Specific Gravity ($\text{H}_2\text{O}=1$)	1.240 -1.280
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Boiling Point (Electrolyte)	112 °C (Approx.)	Vapour Pressure Hg at 20°C)	(mm) 10
Melting point	Not Applicable	Vapour Density (AIR=1)	> 1
Solubility in Water	100%	% Volatiles by Weight	Not Applicable
Appearance and Odour	A clear liquid with sharp penetrating, pungent odor. A battery is a manufactured article; no apparent Odour.	Evaporation Rate (Butyl acetate=1)	<1

V. CONTROL MEASURES

Engineering Controls and Work Practices:

Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant.

Handle batteries cautiously. Make certain vent caps are on securely. If battery case is damaged, avoid bodily contact with internal components. Wear protective clothing, eye and face protection, when charging or handling batteries. Follow all manufacturers' recommendations when stacking or palletizing. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Use a battery carrier to lift a battery or place hands at opposite corners to avoid spilling acid through the vents. Avoid contact with internal components of the batteries.

Hygiene Practices:

Wash hands thoroughly before eating, drinking or smoking after handling batteries.

Respiratory Protection:

None required under normal conditions. If an overcharging or overheating condition exists and concentrations of sulfuric acid mist are known or suspected to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

Protective Clothing:

None required under normal conditions. If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing, and boots.

Eye Protection:

None required under normal conditions. If battery case is damaged, chemical goggles or face shield.

Emergency Flushing:

In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

VI. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: Not Applicable

Flammable Limits: LEL=4.1% (Hydrogen Gas in Air); UEL=74.2%

Extinguishing media : CO₂; foam; dry chemical

Special Fire Fighting Procedures:

Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid





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resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but, note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

Unusual Fire and Explosion Hazards

In operation or when on charge, batteries generate hydrogen and oxygen gases (hydrogen is highly flammable and oxygen supports combustion). They must always be assumed to contain these gases which, if ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive electrolyte. Carefully follow manufacturer's instructions for installation and service. Keep away all sources of gas ignition, ensure that adequate ventilation is provided, and do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery.

VII. SPILLS

Remove combustible materials and all sources of ignition. Stop flow of material and contain spill by diking with soda ash, etc. Carefully neutralize spill with soda ash, etc. Make certain mixture is neutral then collect residue and place in a drum or other suitable container with a label specifying "contains hazardous waste" or (if uncertain call distributor regarding proper labeling procedures). Dispose of as hazardous waste. If battery is leaking, place battery in a heavy duty plastic bag. Wear acid resistant boots, face shield, chemical splash goggles and acid resistant gloves. DO NOT RELEASE UNNEUTRALIZED ACID.

VIII. STORAGE AND HANDLING

Store batteries under roof in cool, dry, well-ventilated areas that are separated from incompatible materials and from activities which may create flames, sparks, or heat. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short-circuit. Single batteries pose no risk of electric shock but there may be increasing risk of electric shock from strings of connected batteries exceeding three 12-volt units.

IX. PRECAUTIONS FOR USE

Exposure Standard

Workplace Exposure Standard for Metallic Lead is 0.15 mg/m³ in air.

Workplace Exposure Standard for Sulphuric acid is 1 mg/m³ in air.

Engineering Controls

Use only in a well-ventilated area.

Work Practices

Batteries are heavy, appropriate material handling equipment and techniques should be used. Handle batteries cautiously to avoid spills. Avoid contact with internal components. Wear protective clothing when handling batteries as detailed below in "Personal Protection". Always wash hands after handling batteries. Follow manufactures instructions for installation and service.

Personal Protection

Respirator Type: Not required under normal use.

Glove Type: Not required under normal use, however observe the following when handling Sulphuric acid, wear impervious PVC acid resistant gloves with elbow length gauntlet.
When handling lead, wear leather or similar type work gloves.

Eye Protection: Not required under normal use, however observe the following when handling Sulphuric acid, wear chemical goggles/face shield.

Clothing: When handling batteries, wear safety boots.

X. REACTIVITY DATA

Stability: Stable X Unstable

Conditions to Avoid: Prolonged overcharging and overheating current; sparks and other sources of ignition.

Incompatibility: (materials to avoid)

Electrolyte: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, most metals, carbides, chlorates, nitrates, picrate, 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, halogenated, potassium nitrate, permanganate, peroxides, nascent hydrogen, potassium, carbides, sulfides, phosphorus, sulfur, and reducing agents.

Hazardous Decomposition Products:

Electrolyte: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide, hydrogen.





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Hazardous polymerization: May Occur Will Not Occur X

XI. HEALTH HAZARD DATA

Routes of Entry:

Electrolyte: Harmful by all routes of entry. Under normal conditions of use, sulfuric acid vapors and mist are not generated. Sulfuric acid vapors and mist may be generated when product is overheated, oxidized, or otherwise processed or damaged.

Lead compounds: Under normal conditions of use, lead dust, vapors, and fumes are not generated. Hazardous exposure may occur when product is heated above the melting point, oxidized or otherwise processed or damaged to create dust, vapor, or fume.

Inhalation:

Electrolyte: 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:

Electrolyte: May cause severe irritation of mouth, throat, esophagus, and stomach.

Lead compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. This may lead rapidly to systemic toxicity. Acute ingestion should be treated by physician.

Skin Contact/Skin Absorption

Electrolyte: Severe irritation, burns, and ulceration. Sulfuric acid is not readily absorbed through the skin.

Lead compounds: Not readily absorbed through the skin.

Eye Contact:

Electrolyte: Severe irritation, burns, cornea damage, blindness.

Lead compounds: May cause eye irritation.

Effects of Overexposure - Acute:

Electrolyte: Severe skin irritation, burns, damage to cornea may cause blindness, upper respiratory irritation.

Lead compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, nausea, vomiting, diarrhea, muscular aches and weakness, sleep disturbances, and irritability.

Effects of Overexposure - Chronic:

Electrolyte: Possible erosion of tooth enamel; inflammation of nose, throat, and bronchial tubes, and scarring of the cornea.

Lead compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in both males and females.

Carcinogenicity:

Electrolyte: The National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC) have classified "strong inorganic acid mist containing sulfuric acid" as a substance that is carcinogenic to humans. This classification does not apply to sulfuric acid solutions in static liquid state or to electrolyte in batteries. Batteries

HEALTH HAZARD DATA CONTINUED....

subjected to abusive charging at excessively high currents for prolonged periods of time without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

Lead compounds: Listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Medical Conditions Generally Aggravated by Exposure:

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of electrolyte (water and sulfuric acid solution) with skin may aggravate skin diseases such as eczema and contact dermatitis.

Contact of electrolyte (water and sulfuric acid solution) with eyes may damage cornea and/or cause blindness. Lead and its compounds can aggravate some forms of kidney, liver, and neurologic diseases.

Emergency and First Aid Procedures:

Inhalation:

Electrolyte: Remove to fresh air immediately. If breathing is difficult, give oxygen.

Lead compounds: Remove from exposure, gargle, wash nose, eyes and lips; consult physician.

Ingestion:

Electrolyte: Give large quantities of water; **do not** induce vomiting; consult physician.

Lead compounds: Consult physician immediately.





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Skin:

Electrolyte: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes, and do not wear again until cleaned. If acid is splashed on shoes, remove and discard if they contain leather.

Lead compounds: Wash immediately with soap and water. Lead compounds are not readily absorbed through the skin.

Eyes:

Electrolyte and Lead compounds: Flush immediately with large amounts of water for at least 15 minutes; consult physician immediately.

XII. ECOLOGICAL DATA

Environmental Risk Phrase:

R58 – May cause long term adverse effects in the environment

XIII. DISPOSAL CONSIDERATIONS

Sulfuric Acid: Neutralize as described above for a spill, collect residue and place in a container labeled as containing hazardous waste. Dispose of as a hazardous waste. If uncertain about labeling procedures, call your local battery distributor or listed contact. DO NOT FLUSH LEAD CONTAMINATED ACID TO SEWER.

XIV. TRANSPORT INFORMATION

US DOT/IATA identification and description for this battery is:

Batteries, wet, Non-spillable, UN No. 2800, Class or division 8, Special Provision A67

Special Provision A67 states:

A Non-spillable batteries meeting the requirements of Packing Instruction 872 are not subject to these Regulations when carried as cargo if, at a temperature of 55°C, the electrolyte will not flow from a ruptured or cracked case. The battery must not contain any free or unabsorbed liquid. Any electrical battery or battery powered device, equipment or vehicle having the potential of dangerous evolution of heat must be prepared for transport so as to prevent:

- (a) a short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals); and
- (b) Unintentional activation

The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

Instruction 872. For ocean shipments, reference International Maritime Dangerous Goods Code, P. 8120

XV. REGULATORY INFORMATION

Poisons Schedule Number: S6 under the 'Standard for Uniform Scheduling of Drugs and Poisons'

XVI. OTHER INFORMATION

NFPA Hazard Rating for sulfuric acid:

Flammability (Red) = 0 Health (Blue) = 3 Reactivity (Yellow) = 2

Sulfuric acid is water-reactive if concentrated.

RCRA: Spent lead-acid batteries are not regulated as hazardous waste when recycled. Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosively).

CERCLA (Superfund) and EPCRA:

- (a) Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (Superfund) and EPCRA (Emergency Planning and Community Right to Know Act) is **1,000 lbs**. 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** or more of sulfuric acid is present at one site. An average automotive/commercial battery contains approximately 5 lbs of sulfuric acid. Contact your TATA AutoComp GY Batteries Pvt Ltd representative for additional information.
- (d) EPCRA Section 312 Tier Two reporting is required for non-automotive batteries if sulfuric acid is present in quantities





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of 500 lbs or more and/or if lead is present in quantities of 10,000 lbs or more.

(e) Supplier Notification:

This product contains a toxic chemical or chemicals subject to the reporting requirements of section 313 of (Title) III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Chemical	CAS	Percent by Weight
Lead (Pb)	7439-92-1	75-80
Electrolyte: Sulfuric Acid (H ₂ SO ₄)	7664-93-9	15-20
Copper (Cu)	7740-50-8	1-3

If you distribute this product to other manufacturers in SIC Codes 20 through 39, this information must be provided with the first shipment of each calendar year.

Note: The Section 313 supplier notification requirement does not apply to batteries that are "consumer products".

CAA: TATA AutoComp. GY Batteries Pvt. Ltd., 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 611 of the Clean Air Act Amendments (CAAA) of 1990, finalized on January 19, 1993, Exide established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

TSCA: Each ingredient chemical listed in Section II of this MSDS is also listed on the TSCA Registry.

"WARNING: This product contains lead, a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm".

PREPARED BY:

**TATA AUTOCOMP GY BATTERIES PVT LTD.,
PLOT NO: C-2, RANJANGAON MIDC, SHIRUR TALUKA
PUNE- 412210**

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