

LEMANIA ENERGY SA

MATERIAL SAFETY DATA SHEET

Valve Regulated Lead-Acid Rechargeable battery

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product name: Valve Regulated Lead-Acid Rechargeable battery EXODUS PRO, TEK-HD and REDTEK series
Company: LEMANIA ENERGY SA
Address: 390, Rue de Bernex, CH-1233, Bernex, Geneva, Switzerland
E-mail: contact@lemania-energy.com
Tel: +41-22-777 37 02
Fax: +41-22-777 37 04

SECTION 2: INFORMATION ON INGREDIENTS

Product name: Valve Regulated Lead-Acid Rechargeable battery

Ingredient	CAS No.	Concentration	Hazardous Label
Inorganic Lead/Lead Compounds	7439-92-1	~ 72%	T
Sulfuric Acid	7664-93-9	~ 20%	C
Fiberglass Separator	65997-17-3	~ 2%	/
Container Plastic (ABS or PP)	9003-56-9 (ABS)	~ 5%	/
	9003-07-0 (PP)		/

SECTION 3: HAZARDS IDENTIFICATION

Hazards Identification: The battery has passed the vibration test, pressure differential test and leakage test at 55°C according to Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulation 18th SPECIAL PROVISION 238. It is not restricted to IATA Dangerous Goods Regulation (DGR) 56th according to special provision A67 and is not restricted to IMDG CODE according to special provision 238.

Emergency Overview: The internal battery materials may cause severe irritation to eyes and skin. Causes burns.

SECTION 4: FIRST-AID MEASURES

Skin Exposure: If the internal battery materials of an opened battery cell come into contact with the skin, immediately flush with plenty of water for at least 15 minutes. Seek immediate medical attention.

Eye Exposure: In case of contact the electrolyte contained inside the battery with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Seek immediate medical attention.

Inhalation Exposure: If potential for exposure to mist or dusts occurs, remove immediately to fresh air and seek medical attention.

Oral Exposure: If swallowed, do not induce vomiting. Seek immediate medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing Media: Suitable: Dry chemical, Sandy soil, Carbon dioxide or appropriate foam.

Firefighting:

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific hazards: Emit toxic fumes under fire conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

If batteries show signs of leaking, avoid skin or eyes contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean up. Mix with inert material (e.g. dry sand, vermiculite) and transfer to sealed container for disposal.

SECTION 7: HANDLING AND STORAGE

Handling

Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse and overcharge. More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, acid resistant gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. No smoking at working site. Materials to Avoid: Strong oxidant, Combustible materials and Corrosives.

Storage:

Store in a cool; well-ventilated area. Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Materials to Avoid: Strong oxidant, Combustible materials and Corrosives.

SECTION 8: EXPOSURE CONTROL/PPE

Engineering Controls: Use ventilation equipment if available. Safety shower and eye bath.

Personal Protective Equipment:

Respiratory: Wear government approved air-purifying respirator if needed.

Eye: Chemical safety glasses.

Clothing: Wear appropriate protective clothing.

Hand: Wear acids resistant gloves.

Other Protect: No smoking, drinking and eating at working site. Wash thoroughly after handling.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Black or gray plastics cement case (containing dielectric)
Odor:	Odorless
MP/MP Range:	>300°C
pH Value:	1~2
Solubility:	Partial soluble in water

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Materials to Avoid: Strong oxidant, Corrosives.

Conditions to Avoid: Avoid exposure to heat and open flame, Avoid mechanical or electrical abuse and overcharge. Prevent short circuits. Prevent movement which could lead to short circuits.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: Sulfur oxides, Sulfuric acid mist, Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity Data: Not available.

Irritation Date: The internal battery materials may cause severe irritation to eyes and skin. Causes burns.

Carcinogenicity: The International Agency on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a category 1 carcinogen (inhalation), a substance that is carcinogenic to humans. This classification does not apply to the sulfuric acid contained within the battery. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mish at high levels.

SECTION 12: ECOLOGICAL INFORMATION

Lead and its compounds can result in a threat if released into the environment.

In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulfates, and phosphates, and precipitates out of the water column. Lead may occur as sorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water. Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or by chelation with humic or fulvic acids in the soil. Leak (dissolved phase) is bioaccumulated by plants and animals, both aquatic and terrestrial.

SECTION 13: DISPOSAL CONSIDERATIONS

Appropriate Method of Disposal of substance:

Lead-acid batteries are completely recyclable. Return whole scrap batteries to distributor, manufacturer or lead smelter for recycling. For neutralized spills, place residue in acid-resistant containers with sorbent material, sand or earth and dispose of in accordance with local, state and federal regulations for acid and lead compounds. Contact local and/or state environmental officials regarding disposal information.

SECTION 14: TRANSPORT INFORMATION

We hereby certify that all EXODUS PRO, TEK-HD & REDTEK Valve Regulated Lead-acid Rechargeable batteries conform to the UN2800 classification as " Batteries, wet, Non-Spillable, and electric storage" as a result of passing the Vibration and Pressure Differential Test described in D.O.T., 49 CFR 173.159(f), and IMO/IMDG, and ICAO/IATA packing instruction 872 and note A48, A67, A164 and A183. The batteries are not restricted to IMO/IMDG code according to special provision 238. EXODUS PRO, TEK-HD & REDTEK Batteries having met the related conditions are EXEMPT from hazardous goods regulations for the purpose of transportation by DOT, and IATA/ICAO, and therefore are unrestricted for transportation by any means. For all modes of transportation, each battery outer package is labeled "NON-SPILLABLE". All our Batteries are marked non-spillable.

SECTION 15: REGULATORY INFORMATION

EU Regulation:

In accordance with EU2006/66/EC Battery Directive, VRLA batteries should present crossed-out wheeled bin symbol of lead together with the ISO recycling symbol. Does not contain any mercury, Hg, (<0.0005%) or cadmium, Cd, (<0.002%).



SECTION 16: OTHER INFORMATION

Products such as Batteries are not in the scope of regulation which requires the publication of an EU Safety Data Sheet (91/155/EEC).