

Material Safety Data Sheet N° FX-MSDS-EN260116-E

SECTION 1 : Identification of the product and of the manufacturer/supplier

Product identifier	Valve Regulated Lead-Acid (VRLA) Battery
Manufacturer / Supplier	IZYX SYSTEMS 9, rue de la forêt noire - 67720 WEYERSHEIM Tel & Emergency : +33 388 75 32 32 E-mail : sav@izyx-systems.com
Models	FX
References	FX120.8 / FX121.3 / FX122.1 / FX123.2 / FX1204 / FX1207 / FX1212 / FX1218 / FX1224 / FX1238 / FX1265

SECTION 2 : Hazards identification

The VRLA battery presents no chemical hazards during normal operation provided the recommendations for handling, storage, transport and usage are observed. If the battery is broken and the internal components exposed hazards may exist which require careful attention.

Classification according to CLP :

This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

2.1	According to Regulation EC N° 1272/2008	Classification of the substance or mixture	Category
Hazard Statements (CLP)	Acute Toxicity (Oral/Dermal/Inhalation)	H314	1A
	Corrosion/Irritation, Eye Damage		
	Reproductive	H360	1A
	Carcinogenicity	H350	1A, 1B
Environmental	Toxicity (repeated exposure)	H372	2
	Aquatic Chronic	H410	1
	Aquatic Acute	H400	1

2.2	Label Elements
	

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2.2	Signal Word (CLP) - DANGER		
Hazard Statements		Causes skin irritation, burns and serious eye damage	H314
		Irritating to respiratory tract	H333
		May cause cancer if ingested or inhaled	H350
		May damage fertility or the unborn child if ingested or inhaled	H360
		May cause harm to breast-fed children	H362
		Proven risk of serious effects on organs following repeated or prolonged exposure	H372
		Very toxic to aquatic life	H400
		Very toxic to aquatic life with long lasting effects	H410

Precautionary Statements		Obtain special instructions before use	P201
		Do not handle until all safety precautions have been read and understood	P202
		Avoid breathing dust/fumes/gases/mists/vapors/aerosols	P260
		Wash thoroughly after handling	P264
		Do not eat, drink, or smoke when using this product	P270
		Use only outdoors or in a well-ventilated area	P271
		Avoid release to the environment	P273
		Wear protective gloves/protective clothing, eye protection/face protection	P280

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2.3	Other Hazards
Hazard not otherwise classified	Unknown Toxicity : 0.6% of the mixture consists of ingredient(s) of unknown toxicity
	VRLA batteries can be heavy. Use mechanical lifting aids or apply appropriate manual handling techniques
	VRLA batteries can produce very high discharge currents and cause serious electric shocks if the terminals are short-circuited.
	Interactions with other Chemicals : Use of alcoholic beverages may enhance toxic effects
	VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx. 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition.
	The VRLA battery poses no chemical risk during normal operation, provided that the recommendations for handling, storage, transport, and use are followed.
	If the VRLA battery is damaged and its internal components are exposed, risks may exist and require special attention.

SECTION 3 : Composition / Information on ingredients

Components	Substances	% BY Wt.	Chemical Symbol	CAS N°
Electrode plate	Metallic lead	31.1%	Pb	7439-92-1
	Lead Dioxide	32%		1309-60-0
Battery Electrolyte	Dilute sulfuric acid	20%	H ₂ SO ₄	7664-93-9
Separator Material	Fiberglass	2%		60676-86-0
Case Material	ABS (UL94-V0)	14.9%		9003-56-9

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SECTION 4: First aid measures for acute exposure

Under normal battery use conditions, the internal components pose no health hazard. This information is only relevant if the VRLA battery has been damaged, broken, and people are in direct contact with the internal components.

4.1 Battery Electrolyte - Sulfuric Acid

SPEED IS ESSENTIAL - OBTAIN IMMEDIATE MEDICAL ATTENTION.

Inhalation	Supply fresh air. If necessary, give oxygen. Keep warm. Seek immediate medical advice. Lead : Remove from exposure, gargle, wash nose and lips. Consult physician
Skin Contact	Wash off skin thoroughly water. Remove contaminated clothing and wash before reuse. In severe cases obtain medical attention.
Eye Contact	Rinse thoroughly with water for at least 15 minutes. Consult a doctor immediately if the eyes have been directly exposed to the acid.
Ingestion	Give large quantities of water. Do not induce vomiting or aspiration into the lungs may occur can cause permanent injury or death.
Self-Protection for the first help	Wearing protective eyewear (safety glasses or face shield) and heavy-duty gloves is mandatory. In case of inhalation, wearing a face mask or respirator may be necessary.

4.2 Electrode plate - Metallic lead

Inhalation	Remove the person from exposure to fresh air. Seek advice from a medical doctor
Skin Contact	Wash thoroughly with soap and water to prevent accidental ingestion or inhalation. Consult a doctor if pain or rash does not subside.
Eye Contact	Immediately rinse the eyes with an ophthalmic solution or clean water for at least 10 minutes, keeping the eyelids open. Then take the person to the hospital without delay.
Ingestion	Rinse mouth with water and drink plenty of water. Do not induce vomiting. Consult a doctor.
Self-Protection for the first help	Wearing protective eyewear (safety glasses or face shield) and heavy-duty gloves is mandatory. In case of inhalation, wearing a face mask or respirator may be necessary.

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4.3 Separator Material – Fiberglass

Inhalation	Remove the person from exposure to fresh air. Seek advice from a medical doctor
Skin Contact	Wash thoroughly with soap and water to prevent accidental ingestion or inhalation. Consult a doctor if pain or rash does not subside.
Eye Contact	Immediately rinse the eyes with an ophthalmic solution or clean water for at least 10 minutes, keeping the eyelids open. Then take the person to the hospital without delay.
Ingestion	Rinse mouth with water and drink plenty of water. Do not induce vomiting. Consult a doctor.
Self-Protection for the first help	Wearing protective eyewear (safety glasses or face shield) and heavy-duty gloves is mandatory. In case of inhalation, wearing a face mask or respirator may be necessary.

4.4 Case Material – ABS (UL94-V0)

Inhalation	The material may burn in a fire, releasing toxic fumes and decomposition products. If decomposition products are inhaled, keep the patient calm, move them to fresh air, and consult a doctor. If a large amount is inhaled, transport the person to a hospital. Note to physician: treat according to symptoms (decontamination, vital functions), no specific antidote known.
Skin Contact	Areas affected by molten materials should be quickly placed under cold running water and covered with a sterile protective dressing. Consult a doctor.
Eye Contact	May cause irritation or injury due to mechanical action and traces of battery electrolyte. Rinse immediately and thoroughly with eye wash solution or clean water for at least 10 minutes, keeping the eyelids open. Then transport the person to the hospital without delay.
Ingestion	Rinse mouth with water and drink plenty of water. Do not induce vomiting. Consult a doctor.
Self-Protection for the first help	Wearing protective eyewear (safety glasses or face shield) and heavy-duty gloves is mandatory. In case of inhalation, wearing a face mask or respirator may be necessary.

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SECTION 5: Firefighting and explosion hazard measures

General Information	VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx. 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition. The VRLA battery poses no chemical risk during normal operation, provided that the recommendations for handling, storage, transport, and use are followed. If the VRLA battery is damaged and its internal components are exposed, risks may exist and require special attention. Use a self-contained positive pressure breathing apparatus. Beware of acid splashes when applying water and wear acid-resistant clothing, gloves, mask, and goggles. If the batteries are charging, disconnect the power supply to the charging equipment, but note that battery strings connected in series may still present a risk of electric shock even when the charging equipment is turned off.
Extinguishing Media	CO2, dry chemical powder, or water spray. Do not use carbon dioxide directly on the cells. Avoid inhaling vapors. Use appropriate means to fight the surrounding fire. Water extinguishers must never be used to put out an electrical fire.
Special Hazards	Carbon monoxide, Sulphur Dioxide, Sulphur Trioxide, Lead fumes and vapors, toxic fumes from decomposition of battery case materials.
Advice for Fire-Fighters	Fully acid-resistant protective clothing must be worn when fighting fires. Full-face visor or safety glasses. Respiratory equipment or self-contained breathing apparatus (SCBA).

SECTION 6: Accidental Release Measures

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

General Information	VRLA batteries are designed to be handled safely and do not leak electrolyte under normal conditions. In the event of accidental damage, wear heavy-duty gloves when handling the battery to protect yourself from any invisible electrolyte leaks.
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6.1 Case Material – ABS (UL94-V0)

Clean-up Methods	Assume that the battery case material is contaminated and proceed as follows for plate grids and active materials.
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6.2 Separator Material – Fiberglass

Clean-up Methods	Assume that the battery case material is contaminated and proceed as follows for plate grids and active materials.
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6.3 Electrode plate - Metallic lead

Personal Precautions	Eye protection (safety glasses or face shield) and heavy-duty gloves are required. If the material is wet, wearing a face mask or respirator is not required. If the material is dry, wearing a face mask or respirator is required.
Clean-up Methods	Large solid pieces can be picked up and placed in bags for recycling. Never use a brush to sweep up debris, as this could create lead dust in the air. Clean the contaminated area with water to remove all traces of debris. Battery debris and cleaning products should be collected and placed in a sealed inert container (e.g., a self-sealing plastic bag or bucket) for disposal.
Environmental Precautions	Do not allow the product to flow into a waterway. Materials exposed to lead must be placed in a sealed inert container (e.g., a plastic bag with a self-sealing closure or a bucket) before disposal.

6.4 Battery Electrolyte - Sulfuric Acid

Personal Precautions	Be sure to wear appropriate, acid-resistant personal protective clothing (including heavy-duty gloves, safety glasses, and respiratory protection) during cleanup and disposal of spills.
Clean-up Methods	Small spillages : Neutralize and absorb the spill using sodium carbonate, sodium bicarbonate (available in supermarkets), sodium carbonate, or powdered calcium carbonate. Clean the spill area with water to remove all traces of debris. Battery debris and cleaning products should be collected and placed in a sealed inert container (e.g., a resealable plastic bag or bucket) for disposal. Large spillages : VRLA batteries pose virtually no risk of significant electrolyte spillage, as the electrolyte is completely absorbed by the active materials and separator. Cover the spill area with dry sand, soil, sawdust, or other inert material. Neutralize the electrolyte using sodium carbonate, sodium bicarbonate (available in supermarkets), sodium carbonate, or calcium carbonate powder. Clean the spill area with water to remove all traces of debris and electrolyte. Cleaning materials should be collected and placed in a sealed inert container (e.g., a self-sealing plastic bag or bucket) for disposal.
Environmental Precautions	Battery electrolyte must not be poured into drains, sewage systems, or waterways.

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SECTION 7: Handling and Storage ingredients

7.1 Handling

Safety Precautions For Handling	General safety considerations: Do not drop batteries: dents and deformations in the casing may indicate internal damage to the battery. Cracks may cause electrolyte leakage. Do not place VRLA batteries cover to cover to avoid short-circuiting the terminals.
	Only trained operators should be allowed to handle VRLA batteries.
	Mechanical handling aids (e.g., forklifts and pallet trucks) will be required to handle individual batteries weighing more than 25 kg.
	Mechanical lifting aids (e.g., forklifts and pallet trucks) will be required to move the battery pallets. Approximate weight: 1 ton.
	PPE: No specialized protective clothing or equipment is required, except when handling heavy loads.
	Hygiene: There are no special requirements other than standard good practices in the workplace.

7.2 Storage

Conditions For Safe Storage And Incompatibility	Keep batteries in their original packaging whenever possible. When batteries are removed from their original packaging (e.g., for transporting small quantities), ensure that the new packaging protects the batteries from damage and the risk of short-circuiting the terminals.
	Store VRLA batteries in a cool, well-ventilated area with a solid, impervious surface and adequate containment in case of accidental acid spillage.
	Store under cover and protect from direct sunlight and weather, including rain, snow, and other water sources.
	Protect against physical damage and exposure to organic solvents and other incompatible materials.
	Do not store VRLA batteries near heat sources, open flames, or sparks.
	Be especially careful in dry conditions to avoid the risk of electrostatic discharge.
	Storage of large quantities of VRLA batteries may require approval from the local environmental protection agency and/or local water authority.
	Pallets of VRLA batteries are heavy. Store them at ground level or in lower levels of storage systems (e.g., racking).

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7.3 End-of-Life

End-of-Life (EC WEEE Regulations)	Ensure batteries are removed from end-of-life equipment and collected for recycling by an approved contractor.
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7.4 Specific End Uses

Specific End Uses	1. Refer to EN IEC 62485-1:2018, Safety requirements for secondary batteries and battery installations – Part 1 General safety information. 2. Refer to EN IEC 62485-2:2018, Safety requirements for secondary batteries and battery installations – Part 2 Stationary batteries.
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SECTION 8: Exposure Controls and Personal Protection

8.1 Control Parameters

Control Parameters	There are no specific control parameters for handling, storing and installing VRLA batteries.
	VRLA batteries emit hydrogen, a highly flammable gas that forms explosive mixtures in air at concentrations between 4% and 76%. Never install VRLA batteries in a sealed enclosure during storage, transport, or use.

8.2 Exposure Control

Exposure Control	There are no special exposure controls for the handling, storage, installation or use of VRLA batteries.
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8.3 Personal Protection

Personal Protection	When there is no evidence of damage or visible traces of liquid (electrolyte) or solid deposits on the batteries, they can be handled safely without additional personal protective equipment.
	Be sure to use electrical insulation equipment when installing batteries (e.g., insulating mats and covers, insulated tools).
	Remove all metal objects from the person when working with VRLA batteries: e.g., jewelry (rings, watches, bracelets, necklaces), pens, flashlights, etc.
	If free electrolyte is suspected, safety glasses should be worn and, if large quantities are present, chemical goggles or a face shield.
	If there are signs of damage or liquid (electrolyte) or solid deposits, rubber gloves and acid-resistant clothing should be worn when handling the batteries and affected packaging to protect against the effects of any electrolyte that may be present.

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8.4 UL Cautionary Statement

UL Cautionary Statement	"Warning: Risk of fire, explosion, or burns. Do not disassemble; heat above 50°C; or incinerate".
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SECTION 9: Physical and Chemical Properties

The undamaged product is a manufactured item packaged in an inert plastic (ABS) case, which will burn if exposed to high temperatures or ignition sources. FX Series VRLA batteries are manufactured with UL94-V0 flame-retardant ABS cases.

Form	Battery
Color	Black
Odor	Odorless
Voltage	12V
Capacity	0.8 Ah to 65Ah
Melting Point	>300°C
pH	Not applicable unless individual components exposed.
Flash point	Not applicable unless individual components exposed.
Flammability	Not applicable unless individual components exposed.
Relative density	Not applicable unless individual components exposed.
Solubility (water)	Not applicable unless individual components exposed.
Solubility (other)	Not applicable unless individual components exposed.

SECTION 10: Stability and Reactivity

Stability	Within the operational temperature range -20 to +50 °C the undamaged product is stable.
Condition 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 circuit.
Incompatibilities	Contact with fuels and organic materials may cause fire or explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and release flammable hydrogen gas. No additional precautions are required in case of mechanical shock. Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent sulfur trioxide, carbon monoxide, sulfuric acid mists, sulfur dioxide, and hydrogen.
Hazardous Decomposition Products	Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide. Temperatures above the melting point may produce toxic metallic fumes, vapors, or dust; contact with strong acids or bases, or in the presence of nascent hydrogen, may generate highly toxic arsine gas.
Hazardous Polymerization	Will Not Occur.

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SECTION 11: Toxicological Information

Routes of Entry	
Sulfuric Acid	Harmful by all routes of entry.
Lead Compounds	Hazardous exposure can occur only when products are heated, oxidized or otherwise processed or damaged to create dust, vapor or fumes. The presence of nascent hydrogen may generate highly toxic arsine gas.
Inhalation	
Sulfuric Acid	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	
Sulfuric Acid	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 and must be treated by a physician.
Skin Contact	
Sulfuric Acid	Severe irritation, burns and ulceration.
Lead Compounds	Not absorbed through the skin.
Arsenic compounds	Contact may cause dermatitis and skin hyperpigmentation.
Eye contact	
Sulfuric Acid	Severe irritation, burns, cornea damage, and blindness.
Lead Compounds	May cause eye irritation.
Effects of Overexposure - Acute	
Sulfuric Acid	Severe skin irritation, damage to cornea, upper respiratory irritation.
Lead Compounds	Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.
Effects of Overexposure - chronic	
Sulfuric Acid	Possible erosion of tooth enamel, inflammation of nose, throat & bronchial tubes.
Lead Compounds	Anemia, neuropathy, particularly of the motor nerves, with wrist drop, kidney damage, reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage. Encephalopathy and damage to the blood forming (hematopoietic) tissues.
Carcinogenicity	
Sulfuric Acid	The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as Group 1 carcinogens for humans. In accordance with OSHA 29 CFR 1910.1200 Appendix F guidelines, this is approximately equivalent to GHS Category 1A. This classification does not apply to sulfuric acid in liquid form or sulfuric acid contained in a battery. Inorganic acid mist (sulfuric acid mist) is not generated during normal use of this product. Misuse of the product, such as overcharging, may result in the formation of sulfuric acid mist.
Lead Compounds	Lead is listed by IARC as a Group 2A - likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, this is approximately equivalent to GHS Category 1B. Proof of carcinogenicity in humans is lacking at present.

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SECTION 11: Toxicological Information / suit

Arsenic	Arsenic is classified by the IARC in Group 1 - carcinogenic to humans. In accordance with the guidelines in Appendix F of OSHA Standard 29 CFR 1910.1200, this is approximately equivalent to Category 1A of the GHS.
Medical Conditions Generally Aggravated by Exposure	Overexposure to sulfuric acid vapors can cause lung damage and aggravate lung conditions. Skin contact with sulfuric acid can aggravate conditions such as eczema and contact dermatitis. Lead and zinc compounds can aggravate certain forms of kidney, liver, and neurological diseases.
Acid Toxicity	
Inhalation LD50	
Electrolyte	LC50 rat: 375 mg/m3; LC50: guinea pig: 510 mg/m3
Elemental Lead	Acute Toxicity Point Estimate = 4500 ppm V (based on lead bullion)
Elemental arsenic	
Oral LD50	
Electrolyte rat	2140 mg/kg
Elemental Lead	Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)
Elemental arsenic	LD50 moudr : 145 mg/kg
Elemental Antimony	LD50 rat: 100mg/kg
Additional Health Data	All heavy metals, including the hazardous ingredients contained in this product, are primarily absorbed through inhalation and ingestion. Most problems related to inhalation can be prevented by taking appropriate precautions, such as ventilation and respiratory protection as described in section 8. Follow personal hygiene rules to avoid inhalation and ingestion: wash your hands, face, neck, and arms thoroughly before eating, smoking, or leaving the workplace. Keep contaminated clothing away from uncontaminated areas or wear protective clothing when in these areas. Limit the consumption and presence of food, tobacco, and cosmetics to uncontaminated areas. Work clothing and equipment used in contaminated clothing. This product is for industrial use only and must be kept out of the reach of children and their environment. The 19th amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metallic form, as potentially toxic to reproduction. Risk phrase 61: "May cause harm to the unborn child," applies to lead compounds, particularly soluble forms.

SECTION 12: Ecological Information

Environmental Fate: Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead.	
Environmental Toxicity:	
Aquatic Toxicity:	Sulfuric acid: 24-hr LC50, freshwater fish (Brachy danio rerio): 82 mg/L 96-hr-LOEC, freshwater fish (Cyprinus carpio): 22 mg/L Lead: 48 hr. LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion
Additional Information:	No known effects on stratospheric ozone depletion Volatile organic compounds: 0 % (by Volume) Water Endangering Class (WGK): NA

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13. Disposal Considerations

Sulfuric Acid	Neutralize as described above for a spill, recover the residue, and place it in a container labeled as containing hazardous waste. Dispose of it as hazardous waste. If you have any questions about labeling procedures, call your local battery distributor or the contact list. DO NOT DISPOSE OF CONTAMINATED LEAD ACID IN THE SEWER SYSTEM.
Spent Batteries	Send to a secondary smelter for recycling. Comply with applicable federal, state, and local regulations. Neutralize as in the previous step. Collect neutralized materials in a sealed container and treat them as hazardous waste, if applicable. A copy of this safety data sheet must be provided to any scrap dealer or secondary smelter along with the battery.

14. Transport Information

Land Transport	Land Transport (ADR / RID) • UN No: UN2800 • Classification ADR / RID: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • Packing Group ADR: not assigned • Tunnel code: E • ADR / RID: New and spent (used) batteries are exempt from all ADR / RID (special provision 598)
Sea Transport	Sea transport (IMO-IMDG Code) • UN No: UN2800 • Classification: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • EmS: F-A, S-B Non-Spillable batteries meet the requirements of Special Provision 238 *parts 1 & 2; they are exempt from all IMDG codes and are not subject to special regulation for sea transport
Air Transport	Air Transport (IATA-DGR) • UN No: 2800 • Classification: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • Special Provision A48: Packaging tests are not considered necessary • Special Provision A67: VRLA batteries meet the requirements of Packing Instruction 872. The battery has been prepared for transport so as to prevent: a) A short circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with an insulating cover (made from ABS) which prevents contact with the terminals. c) Unintentional activation is thus prevented. The words "NOT RESTRICTED" and the Special Provision (SP) number must be indicated on all shipping documents. • Special Provision: A164: The battery has been prepared for transport so as to prevent: a) Short-circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with a cover (made by ABS) which prevents contact with the terminals. c) Unintentional activation is thus prevented.

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15. Regulatory information

	Crossed-out wheeled bin indicating "SEPARATE COLLECTION" for all batteries and accumulators. Not to be disposed of with general domestic, commercial or industrial waste. Ref: The Batteries Directive 2006/66/EC
Pb	The Pb symbol indicates the heavy metal content of the battery and enables the Lead-Acid battery to be sorted for recycling. Ref: The Batteries Directive 2006/66/EC.
	The International Recycling Symbol, required by law in many countries world-wide to facilitate the identification of secondary batteries and accumulators for recycling. Ref: IEC 61429 : 1995, Marking of secondary cells and batteries with the International Recycling Symbol ISO 7000-1135.
EC Directives	Directive 2006/66/EC, on batteries and accumulators and waste batteries and accumulators Paragraph (Recital) 29 states: "Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment does not apply to batteries and accumulators used in electrical and electronic equipment."

16. Other Information

Abbreviations	Pb – the chemical symbol for Lead Ba – the chemical symbol for Barium Ca – the chemical symbol for Calcium Sn – the chemical symbol for Tin PbO ₂ – the chemical formulae for Lead Dioxide H ₂ SO ₄ – the chemical formulae for Sulphuric Acid VRLA – Valve Regulated Lead-Acid battery
Key References	SDS documents from suppliers for components and raw materials
Training Advice	Only trained, competent personnel, who have received special instructions for the hazards and risks, should be allowed to handle VRLA Batteries. See Section 7.1 for general advice
Further Information	To ensure the safe use of VRLA batteries, the following precautions must be observed: - Warning: Risk of fire, explosion, or burns. Do not disassemble, heat above 50°C, or incinerate. - Never short-circuit the battery terminals, as sparks and arcing can injure personnel and pose a fire and explosion hazard. - Batteries must always be charged on a voltage-regulated charging system with adequate ventilation to prevent the buildup of flammable gases and promote proper heat dissipation. - Do not charge VRLA batteries at temperatures above +50°C, nor discharge or store them at temperatures above +60°C. In the event of extreme charging equipment malfunction and/or battery failure, high voltage and temperature may occur, causing the release of hydrogen sulfide (H₂S), a toxic gas. If a rotten egg odor is detected (at extremely low concentrations), turn off the charging equipment, evacuate all personnel from the area, and ventilate well. Seek advice before resuming charging. - NEVER PLACE VRLA BATTERIES IN WATERTIGHT OR GAS-TIGHT ENCLOSURES DURING USE, TRANSPORT, OR STORAGE. VRLA batteries emit hydrogen gas, a highly flammable gas that forms explosive mixtures in air at concentrations ranging from approximately 4% to 76%. This gas can be ignited by a spark at any voltage, an open flame, or any other ignition source.

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Lieu et date de validation / **Place and date of validation**

Weyersheim 23/10/2025

Responsable Technique / **Technical Manager**
Bernard VERBRAEKEN



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Jean BURY

