



# PRODUCT INFORMATION SHEET

N° DXK43E03en

*Industrial Batteries*

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Title : **LEAD ACID BATTERIES**

## GENERAL REMARK

This leaflet was prepared in cooperation with the Committee of Environmental Affairs of EUROBAT (May 2003), reviewed by EUROBAT TC members (September 2003) and CEM (October – November 2003). Text revised and updated in June 2015

Batteries are "articles" according to Regulation (EC) No 1907/2006 EC, they are not "substances" nor "mixtures", therefore there is no obligation to supply a safety data sheet (SDS) according to Regulation (EC) 1907/2006, and Regulation CLP (EC) 1272/2008.

Information on safe handling is provided as a service to our customers.

This product information sheet contains valuable information critical to the safe handling and proper use of the product. The details presented are in accordance with our present knowledge and experiences, they cannot advise all possible situation.

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name & Use: FIAMM Lead Acid Battery for stationary applications

Company Identification FIAMM S.p.A.  
Viale Europa, 75 I - 36075 Montecchio Maggiore (Vicenza)  
Telephone +390444709311; Fax +390444699237

Competent person: [alberto.chilese@fiamm.com](mailto:alberto.chilese@fiamm.com)

## 2. HAZARDS IDENTIFICATION

No hazards occur during the normal operation of a Lead Acid Battery as it is described in the instructions for use that are provided with the Battery. Lead acid Batteries have three significant characteristics:

- They contain an electrolyte which contains diluted sulphuric acid. Sulphuric acid may cause severe chemical burns.
- During the charging process or during operation they might develop hydrogen gas and oxygen, which under certain circumstances may result in an explosive mixture.
- They can contain a considerable amount of energy, which may be a source of high electrical current and a severe electrical shock in the event of a short circuit.

The Batteries have to be marked with the symbols listed under item 15.

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**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Component	% Weight	SUBSTANCE# EINECS# CAS#	Hazard Category	Hazard statement Code
Metallic lead and lead compounds	60-70	082-001-00-6 - -	Acute Tox 4 Acute tox. 4 Repr. 1A Specific effect STOT RE 2	H302 H332 H360 H360Df H373
			(*) See in § 12.2 "Environmental information" hazards to the aquatic environment	
Electrolyte, Sulphuric Acid solution	20-30	016-020-00-8 231-639-5 7664-93-9	Skin Corr. 1A	H314
Polymer	6-9	-	-	-

Note: Batteries do not contain Cadmium (Cd) nor Mercury (Hg)

**4. FIRST AID MEASURES**

This information is of relevance only if the Battery is broken and this results in a direct contact with the ingredients.

4.1 General	Electrolyte (diluted sulphuric acid):	sulphuric acid acts corrosively and damages skin
	Lead compounds:	lead compounds are classified as toxic for reproduction (if swallowed)
4.2 Electrolyte (Sulphuric acid)	after skin contact:	rinse with water, remove and wash wetted clothing
	after inhalation of acid mist:	inhale fresh air, seek advice of a medical doctor
	after contact with the eyes:	rinse under running water for several minutes, seek advice of a medical doctor
	after swallowing:	drink lot of water immediately, swallow activated carbon, do not induce vomiting, seek advice of a medical doctor
4.3 Lead compounds	after skin contact:	clean with water and soap
	after inhalation:	inhale fresh air, seek advice of a medical doctor
	after contact with the eyes:	rinse under running water for several minutes, seek advice of a medical doctor
	after swallowing:	wash mouth with water, seek advice of a medical doctor

**5. FIRE FIGHTING MEASURES**

**Suitable fire extinguishing agents:**

CO2 or dry powder extinguishing agents

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**Unsuitable fire extinguishing agents:**

Water, if the battery voltage is above 120 V

**Special protective equipment:**

Protective goggles, respiratory protective equipment, acid protective equipment, acidproof clothing in case of larger stationary battery plants or where larger quantities are stored.

**6. ACCIDENTAL RELEASE MEASURES**

This information is of relevance only if the battery is broken and the ingredients are released.

In the case of spillage, use a bonding agent, such as sand, to absorb spilt acid; use lime / sodium bicarbonate for neutralisation; dispose of with due regard to the official local regulations; do not allow penetration into the sewage system, into earth or water bodies.

**7. HANDLING AND STORAGE**

Store under roof in cool ambience charged lead acid batteries do not freeze up to 50°C; prevent short circuits. Seek agreement with local water authorities in case of larger quantities of batteries to be stored. If batteries have to be stored, it is imperative that the instructions for use are observed.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

8.1 Lead and Lead compounds

No exposure to lead and lead containing battery paste during normal conditions of use.

8.2 Electrolyte (Sulphuric Acid diluted solution)

Exposure to sulphuric acid and acid mist might occur during filling and charging.

Threshold value in workplace: occupational exposure limits for sulphuric acid mist are regulated on a national basis.

Hazard symbol: Skin Corr. 1A, corrosive

Personal protective equipment: Protective goggles, rubber or PVC gloves, acid resistant clothing, safety boots.

CAS No: 7664-93-9

Hazard statement code: H314 Causes severe skin burns and eye damage.

Precautionary statements: P260 Do not breathe dust/fume/ gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P310 Immediately call a POISON CENTER or doctor/physician.

P405 Store locked up.

P501 Dispose of contents/container to authorized companies for recycling or disposal of waste

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

	Lead and Lead compounds	Electrolyte (diluted sulphuric acid solution)
Appearance		
form :	solid	liquid
colour :	grey	colourless
odour :	odourless	odourless
Safety related data		
solidification point :	327 °C	approx 35 to 60 °C
boiling point :	1740 °C	approx. 108 to 114 °C
solubility in water :	very low (0.15 mg/l)	complete
density (20°C) :	11.35 g/cm <sup>3</sup>	1.2 to 1.35 kg/l
vapour pressure (20°C) :	N.A.	N.A.

Lead and Lead compounds used in Lead Acid batteries are poorly soluble in water, Lead can be dissolved in an acidic or alkaline environment only.

**10. STABILITY AND REACTIVITY** (referred to diluted sulphuric acid, density 1.2 ÷ 1.35 kg/l)

- Corrosive, non flammable liquid
- Thermal decomposition at 338° C.
- Destroys organic materials such as cardboard, wood, textiles.
- Reacts with metals, producing hydrogen
- Vigorous reactions on contact with sodium hydroxide and alkalis.

**11. TOXICOLOGICAL INFORMATION**

This information does not apply to the finished product "lead acid battery". This information only applies to its compounds in case of a broken product. Different exposure limits exist on a national level.

**11.1 Electrolyte (diluted sulphuric acid):**

Sulphuric Acid is intensely corrosive to skin and mucous membranes; the inhalation of mists may cause damage to the respiratory tract.

Acute toxicity data:

- LD<sub>50</sub> (oral, rat) = 2.140 mg/kg
- LC<sub>50</sub> (inhalation, rat) = 510 mg/m<sup>3</sup>/2h

**11.2 Lead and Lead compounds**

Lead and its compounds used in a Lead Acid Battery may cause damage to the blood, nerves and kidneys when ingested. The lead contained in the active material is classified as toxic for reproduction.

Title : **LEAD ACID BATTERIES****12. ECOLOGICAL INFORMATION**

This information is of relevance if the battery is broken and the ingredients are released to the environment.

**12.1 Electrolyte (diluted sulphuric acid)**

In order to avoid damage to the sewage system, the acid has to be neutralised by means of lime or sodium carbonate before disposal. Ecological damage is possible by change of pH. The electrolyte solution reacts with water and organic substances, causing damage to flora and fauna. The electrolyte may also contain soluble components of lead that can be toxic to aquatic environments

**12.2 Lead and Lead compounds**

Chemical and physical treatment is required for the elimination from water. Waste water containing lead must not be disposed of in an untreated condition.

The former classification of Lead compounds as toxic for the aquatic environment R50/53 had been triggered from test results generated in the 80's for soluble Lead compounds (Lead Acetate). The hardly soluble Lead compounds such as Battery Lead Oxide were not tested at this time. Tests on Battery Lead Oxide were carried out in 2001 and 2005.

The respective test results conclude that Battery Lead Oxide is not toxic for the environment, neither R50 nor R50/53 nor R51/53. From this it follows that the general classification for Lead compounds (R50/53) does not apply to Battery Lead Oxide. As the result of this the Risk Phrase R52/53 (Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment) applies to Battery Lead Oxide (see chapter 12 – Ecological Information)

Effects of Battery Lead Oxide in the aquatic environment:

- Toxicity for fish: 96 h LC 50 > 100 mg/l
- Toxicity for daphnia: 48 h EC 50 > 100 mg/l
- Toxicity for alga: 72 h IC 50 > 10 mg/l

The results demonstrate these Battery Lead Oxide compounds in a concentration of 100 mg/l have no adverse effect on fish and daphnia. A concentration of these Battery Lead Oxide of 10 mg/l has no adverse effect on the rate of growth and the biomass. For the classification according to Directive 67/548/EEC the most sensitive adverse effect has to be considered.

As a result of the toxicity for alga at > 10 mg/l Battery Lead Oxide has to be classified according to the R-Phrases 52/53 (Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment).

With the use of the CLP risk phrases become:

R50 -> Aquatic Acute 1 - H400 Very toxic to aquatic life.

R50/53 -> Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

R51/53 -> Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.

R52/53 -> Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

**13. DISPOSAL CONSIDERATIONS**

Spent lead acid batteries (EWC 160601) are subject to regulation of the EU Battery Directive and its adoptions into national legislation on the composition and end of life management of batteries.

Spent Lead Acid batteries are recycled in lead refineries (secondary lead smelters). The components of a spent Lead Acid battery are recycled or reprocessed.

To simplify the collection and recycling or reprocessing process, spent Lead Acid batteries must not be mixed with other batteries.

By no means may the electrolyte (diluted sulphuric acid) be emptied in an inept manner. This process is to be carried out by the processing companies only.

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Title : **LEAD ACID BATTERIES****14. TRANSPORT INFORMATION****Land Transport (ADR/RID, U.S. DOT)**

UN N°: UN2794  
Classification ADR/RID: Class 8  
Proper Shipping Name: BATTERIES, WET, FILLED WITH ACID, electric storage  
Packing Group ADR: not assigned  
Label required: Corrosive  
ADR/RID: New batteries are excepted from all ADR/RID (special provision 598).

**Sea Transport (IMDG Code)**

UN N°: UN2794  
Classification: Class 8  
Proper Shipping Name: BATTERIES, WET, FILLED WITH ACID, electric storage  
Packing Group: not assigned  
EmS-FIRE & SPILL: F-A, S-B  
Label required: Corrosive  
Marine Pollutant: no

**Air Transport (IATA-DGR)**

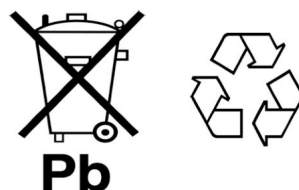
UN N°: UN2794  
Classification: Class 8  
Proper Shipping Name: BATTERIES, WET, FILLED WITH ACID, electric storage  
Packing Group: not assigned  
Label required: Corrosive

**15. REGULATORY INFORMATION**

The following legislation do not apply to lead-acid batteries:

- RoHS directive 2002/95/EC, updated by directive 2011/65/UE
- Low Voltage directive 73/23/EEC, updated by directive 2006/95/EC, if the voltage is < 75 V
- ELV directive 2000/53/EC
- EMC directive 89/336/EEC, updated by directive 2004/108/EC

In accordance with EU Battery Directive and the respective national legislation, Lead Acid batteries have to be marked by a crossed out dust bin with the chemical symbol for lead shown below, together with the ISO return/recycling symbol.

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Labelling might vary due to application and dimension of the Battery. The manufacturer, respectively the importer of the batteries shall be responsible for placing the symbols (a minimum size is specified). In addition, consumer/user information on the significance of the symbols may be attached.



Electrical  
Accumulators



Wear safety  
goggles



Dangerous voltage  
electrical risk



No smoking, no  
open flames



Observe  
operating  
instructions

**16. OTHER INFORMATION**

Meaning of the hazard statement codes:

H302: Harmful if swallowed.

H332: Harmful if inhaled.

H360 May damage fertility or the unborn child

H360Df; May damage the unborn child. Suspected of damaging fertility.

H372: May cause damage to organs through prolonged or repeated exposure.

H413: Causes severe skin burns and eye damage.

The information given above is provided in good faith based on existing knowledge and does not constitute an assurance of safety under all conditions. It is the user's responsibility to observe all laws and regulations applicable for storage, use, maintenance or disposal of the product. If there are any queries, the supplier should be consulted. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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