



BATTERY SAFETY DATA SHEET

Issuing date: 1.07.15

Trade name: FIAMM SONICK Battery

1. Identification of article:

Identification:	Batteries containing sodium	
Trade name:	FIAMM SONICK Battery	
	Sodium/Nickel Battery	
Manufacturer:	FIAMM SONICK SA	
	Via Laveggio 15	
	6855 Stabio (TI)	Tel.: 0041-(0)91-6415511
	Switzerland	Fax- 0041-(0)91-6415533

Emergency contact: 24 hours emergency:
North America:
Contact: CHEMTREC
001 (800) 424-9300

Legal remark (EU)

These batteries are no "substances" or "preparations" according to Regulation (EC) No 1907/2006 EC, they are "articles" and no substances are intended to be released during handling.

Therefore there is no obligation to supply a MSDS according to Regulation (EC) 1907/2006, Article 31.

Legal Remark (U.S.A.)

Material Safety Data Sheets (MSDS) are required by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200.

This Hazard Communication Standard does not apply to "article".

Because these batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard.

Legal Remark (Canada)

This is not a controlled product under Workplace Hazardous Materials Information System (WHMIS).

This product meets the definition of a "manufactured article" and is not subject to the regulations of the Hazardous Products Act.

General remark

This "Safety Information" is provided as a service to our customers. The information contained in this Safety Data 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 situations.

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2. Hazards identification

FIAMM SONICK batteries are packed with a double stainless steel case.

The battery under standard conditions of use is not dangerous for the user.

These batteries can contain a considerable amount of energy, which may be a source of high electrical current and/or a dangerous voltage in the event of a short circuit.

3. Composition/information on ingredients

Potentially dangerous Constituents	% by Weight	CAS	EINECS	TLV (mg/m ³)	Symbols	R Sentence
Nickel (as metallic Ni)	≤ 14,5	7440-02-0	231-111-4	1.5	T	R40 R43 R48/23 R52/53
Sodium (Na)	≤ 4,5	7440-23-5	231-132-9	Not defined	F, C	R14/15 R34
Nickel Chloride (NiCl ₂)	≤ 8,1	7718-54-9	231-743-0	0.05	T, N	R49-38-61-68-23/25-42/43-48/23-50/53
Sodium fluoride	≤ 0,4	7681-49-4	231-667-8	2.5	T	R25-32-36/38
Nickel sulphide (as Ni ₃ S ₂)	≤ 0,7**	12035-72-2	234-829-6	0.1 (as Ni)	T, N	R49 R43 R48/23 R68 R50/53
Sodium Iodide	≤ 0,2	7681-82-5	231-679-3	10 3 inhalable dust	Xi	R36/37/38 R42/43
Sodium Aluminium Chloride (NaAlCl ₄)	≤ 14,5	7784-16-9	232-050-6	2 (as Al)	C	R14 R34

** Theoretical maximum % generated during battery use

4. First aid measures

General information:

Get away from the danger area immediately.

In case of mechanical damage the battery could release corrosive liquids/gas

IN CASE OF TRANSFER TO HOSPITAL, SEND/TAKE THIS SHEET WITH THE CASUALTY

- Inhalation:

Remove casualty from area of exposure and seek medical treatment, wear protective clothing and breathing apparatus if necessary. If breathing becomes rapid or bubbly, place in a sitting position and give oxygen if available. Transfer casualty to hospital as soon as possible.

- Skin contact:

In case of contact with chemicals drench affected skin with plenty of water and seek medical treatment.

- Eye contact:

Immediately wash out with plenty of water and continuing the treatment until medical assistance is provided. Transfer casualty to hospital as soon as possible.

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EXPOSURE EFFECT	
Exposure limit	The following applies only to leaking batteries. Intact batteries present no chemical hazard
Ingestion	Corrosive: nausea, vomiting, abdominal pain. Severe internal burns and damage
Inhalation	Corrosive, irritant: cough, difficult breathing, possible systemic effects, delayed pulmonary edema
Eyes	Corrosive: acid burns, redness
Skin	Corrosive: pain, redness. Thermal or acid burns may result in permanent damage
Other	RESP: delayed pulmonary edema

5. Fire-fighting measures

Keep public away from danger area. Keep upwind and use self-contained breathing apparatus.

Notify Police and Fire Department as soon as possible.

Tab .1 - Recommended Extinguishing Media

Extinguishing media	Recommended in	Effectiveness
Standard extinguisher according to the source of fire	Presence of external fire surrounding the battery	Undetermined
Fire extinguisher Class D, CO ₂ , Halogenated Hydrocarbon, Water in large amount	Emission of smoke and small flames from the battery	Medium, extinguish the fire and reduce time to reach inert state of the battery
Fire Extinguishers Class D, Dry Powder, Sodium Carbonate	Very unlikely event of leakage of metallic Sodium outside the battery**	High, neutralization of metal sodium

**** When a severe occurrence takes place the metallic sodium inside the cells reacts internally with the cathode material with heat development and no fire. Only a disrupting mechanical damage with generation of a large breach in the outer double steel container and simultaneously rupture of some cell cases can provide chances for a leak of a small amount of metallic sodium directly exposed to the environment and possibly the development of some flames but no risk of explosion.**

Such mechanical damage can be excluded during normal operation of the battery in the industrial stationary applications.

6. Accidental release measures

Caution measure for people:

Keep people that are not properly equipped away from the area.

Caution measure for emergency response team:

Wear protective clothing: Self-contained breathing apparatus or protective mask with filter against acid gas and powder (ABEKP3).
Chemical splash resistant goggles or face shield.
Protective gloves (chemical resistant and heat retardant).
Protective clothing (chemical resistant) including boots.

Intervention equipment: Shovel
Broom
Vacuum cleaner with high efficiency filters
Dry sand or other absorbent.

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Actions to do:

Any action has to be done only if there is no risk to people.

CONTAIN or COVER spilled corrosive substances with dry sand or dry earth

Collect powders and adsorbed liquids avoiding dust clouds and convey in sealed plastic containers to dispose of as potentially toxic material.

Not use water to wash spilled chemicals, avoid infiltrating them into soil or underground water.

The spilling of chemical substances contained inside the battery can happen only in case of battery damage causing the breaking of all the multiple cases present in the battery.

7. Handling and storage

HANDLING

- Instruction for a safe handling:

Handle with care and caution, avoid always that the items come in contact with water

Terminals should not be put in short circuit at any time.

Refer to the manufacturer's instruction sheet regarding handling and installation of this product.

Take special care to avoid damaging the battery case. Do not drop. Do not place other objects on top of the battery case. Use only the correct lifting and handling equipment.

STORAGE

- Storage place requirements:

Keep in dry area, away from heating sources and with temperature between – 25 and + 65 °C

- Packaging:

The batteries can be shipped unpacked or in wooden crates.

- Storage class:

not defined

8. Exposure controls/personal protection

Control of the professional use:

In standard conditions of use, the battery does not need any individual protection measure for the exposure to chemical agents.

9. Physical and chemical properties

FIAMM SONICK Battery

Solid object composed of multiple completely closed metal cases, which completely encloses the chemical substances that could be potentially dangerous.

Shape: cubical

Color: metallic

Smell: none

Using temperature Range: - 25 to + 65 °C

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10. Stability and reactivity

The battery is stable under standard conditions of use.

Severe mechanical or electrical damages of the battery can cause the failure of the battery with the emission of potentially corrosive and/or toxic substances for inhalation, ingestion and contact and could cause the generation of flammable gas and eventually fire without explosion.

If the external metallic boxes and cells are damaged, liquid electrolytes will leak out and cause a short circuit between other cells leading to successive battery cell destruction and overheating.

Cells are designed so that any severe distortion of the cell case will first break the internal ceramic insulator, causing free metallic sodium within the cell case to react with other constituents forming sodium chloride and aluminum, thus greatly minimizing the possibility of the leakage of any free metallic sodium.

11. Toxicological information

The intact battery does not permit any contact between the chemical products and the external environment.

12. Ecological information

The intact battery does not permit any contact between the chemical products and the external environment.

For any qualitative information about the chemical products see chapter 3 "Composition/Information on ingredients"

13. Disposal consideration

Do not dispose together with household waste materials

Do not burn

Return to the producer company Fiamm Sonick SA in Switzerland for the dispose and the recycling.

14. Transport information

- Batteries and cells must consist of hermetically sealed metal casings which fully enclose the dangerous goods and which are so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport.

UN number:	3292	"Batteries or cells containing sodium"
Class:	4.3	"Water reactive substances" In contact with water produces flammable gas
Packing group:	II	Materials of medium danger No packing group for shipment by air (IATA regulation) and by road (ADR regulation)
Packing instructions:	492	for air shipment
	P408	for road shipment
	P408	for sea shipment
Kemler nr:	not identified	
ERG:	4W	
Particular caution:	Protect from humidity and water Handle with care	

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Transport classification conforming to the following specific regulations:

For road or rail transport ADR/RID (SDR)

For air transport IATA.

For sea transport IMDG.

For road transport: transport category 2 – restriction code in gallery E

Use ADR vehicles only if the gross weight for each transport unit is > 333 kg.

During air transport: use only cargo flight

Conforming to the regulations the batteries or cells are transported:

At ambient temperature with the sodium at the solid state labeled and packed conforming to international rules (ADR, IATA, IMDG)

The batteries should be transported at an internal temperature lower than 80°C (176°F)

15. Regulatory information

The transport of Fiamm SoNick batteries are regulated by the United Nations as detailed in the "Model Regulations on the Transport of Dangerous Goods" last revised edition.

If the gross weight for transport unit is < 333 kg (Category 2), the transport should not be subject to ADR restrictions.

European Union: According to Directive 2006/66/EC, the batteries have to be marked with the crossed wheel bin symbol and waste batteries have to be collected and recycled.

Safety labeling: Dangerous when wet - Up (storage position) – Battery case could be very hot – Read operative instructions

16. Other information

Batteries are packed with a double stainless steel case and cells are hermetically sealed with metal cases which fully enclose the dangerous goods and which are so constructed and closed to prevent the release of the dangerous goods under normal conditions.

Risk Phrases list (related to the classification of the components contained inside the sealed cells):

R14	Reacts violently with water
R14/15	Reacts violently with water, liberating extremely flammable gases
R23/R25	Toxic by inhalation and if swallowed
R25	Toxic if swallowed
R32	Contact with acids liberates very toxic gas
R34	Causes burns
R36/38	Irritating to eyes and skin
R36/37/38	Irritating to eyes, respiratory system and skin
R38	Irritating to skin
R40	Limited evidence of a carcinogenic effect
R42/43	May cause sensitization by inhalation and skin contact
R43	May cause sensitization by skin contact
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R49	May cause cancer by inhalation
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R61	May cause harm to the unborn child
R68	Possible risk of irreversible effects

All data are indicated on our present knowledge basis.

Issued by	Approved by	N° of pages
G. Crugnola	P. Fiore	6

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