

**MATERIAL SAFETY DATA SHEET**

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

SDS Date of Preparation: October 21, 2013

1 **Product Identification:**

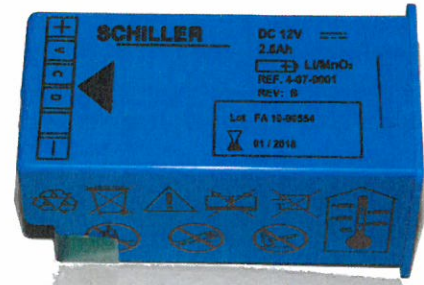
<b>Battery Name</b>	<b>Ref. No.</b>	<b>Part. No.</b>	<b>Voltage</b>	<b>Lithium</b>
SCHILLER FRED easy Batteries	4-07-0001	2.230280	12V	Lithium-Metal > 2g

2 **Physical Appearance:** blue rectangle (8 cm x 4.5 cm x 4 cm)

**Product Use:** Energy Source for SCHILLER FRED easy

3 **Company Identification:**

SCHILLER Medical  
 Alain Weissinger  
 4,Rue Louis Pasteur  
 F-67162 WISSEMBOURG



**Emergency Phone Number:** Country contact number: ++33 (0)6 78 03 30 63

**SECTION 2: HAZARDS IDENTIFICATION**

CAUTION: Battery can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Keep in original package until ready to use. Do not carry batteries loose in your pocket or purse. Keep batteries away from children. If swallowed, consult a physician at once.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS Number	EINECS Number	Amount	Classification
Manganese Dioxide	1313-13-9	215-202-6	15-45%	Xn, R20/22
1,2-Dimethoxyethane	110-71-4	203-794-9	5-10%	F, Repr Cat 2, Xn, R11, R19, R20, R60, R61
Propylene Carbonate	108-32-7	203-572-1	1-10%	Xi, R36
Lithium	7439-93-2	231-102-5	1-5%	C, F, R14/15, R34
Lithium Trifluoromethane Sulfonate	33454-82-9	251-528-5	0-5%	Xi R36/37/38
Carbon Black	1333-86-4	215-609-9	0-5%	None
Ethylene Carbonate	96-49-1	202-510-0	0-5%	Xi R36/37/38
Graphite	7782-42-5	231-955-3	0-5%	None



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#### SECTION 4: FIRST AID MEASURES

**General Advice:** The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

**Eye Contact:** If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical advice.

**Skin Contact:** If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical advice.

**Inhaled:** If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical advice.

**Swallowed:** If battery is swallowed seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. If mouth area irritation or burning has occurred, rinse the mouth and surrounding area with tepid water for at least 15 minutes. Do not give ipecac.

#### SECTION 5: FIRE FIGHTING MEASURES

**Fire and Explosion Hazards:** Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

**Extinguishing Media:** Use any extinguishing media that is appropriate for the surrounding fire.

**Special Fire Fighting Procedures:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (batteries may explode in heat of fire).

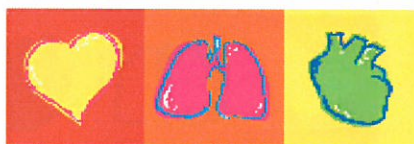
**Hazardous Combustion Products:** Thermal degradation may produce hazardous fumes of lithium and manganese; hydrofluoric acid, oxides of carbon and sulfur and other toxic by-products.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Irritating vapors and flammable may be released from leaking or ruptured batteries. Eliminate all ignition sources. Evacuate the area and allow the vapors to dissipate. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal. Remove spilled liquid with absorbent and contain for disposal.

#### SECTION 7: HANDLING AND STORAGE

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolyze or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in a pocket or bag.





**Storage:** Store batteries in a dry place at normal room temperature.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following occupational exposure limits are provided for informational purposes. No exposure to the battery components should occur during normal consumer use. **Refer to specific country regulations for additional exposure limit information.**

Chemical Name	Exposure Limits
Manganese Dioxide	0,5 mg/m <sup>3</sup> TWA UK WEL 0,5 mg/m <sup>3</sup> TWA (inhalable) DFG MAK 0,2 mg/m <sup>3</sup> VL Belgium 0,2 mg/m <sup>3</sup> TWA Denmark LV
1,2-Dimethoxyethane	None established
Propylene Carbonate	None established
Lithium	None established
Lithium Trifluoromethane Sulfonate	None established
Carbon Black	3,5 mg/m <sup>3</sup> , 7 mg/m <sup>3</sup> STEL UK WEL 3,6 mg/m <sup>3</sup> VL Belgium 3,5 mg/m <sup>3</sup> TWA Denmark LV
Ethylene Carbonate	None established
Graphite	4 mg/m <sup>3</sup> TWA UK WEL (respirable dust) 10 mg/m <sup>3</sup> TWA UK WEL (inhalable dust) 1,5 mg/m <sup>3</sup> TWA DFG MAK (respirable dust)

**Ventilation:** No special ventilation is needed for normal use.

**Respiratory Protection:** None required for normal use.

**Skin Protection:** None required for normal use. Use butyl rubber gloves when handling leaking batteries.

**Eye Protection:** None required for normal use. Wear safety goggles when handling leaking batteries.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Appearance and Odor:** Batteries, labeled SCHILLER (Ref. 4-07-0001)

**Water Solubility:** Insoluble

**Flash Point:** 29°F (-2°C) (1,2-Dimethoxyethane)

## SECTION 10: STABILITY AND REACTIVITY

**Stability:** This product is stable.

**Incompatibility/Conditions to Avoid:** Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.



**Hazardous Decomposition Products:** Thermal decomposition may produce hazardous fumes of lithium and manganese; hydrofluoric acid, oxides of carbon and sulfur and other toxic by-products.

**Hazardous Polymerization:** Will not occur

## SECTION 11: TOXICOLOGICAL INFORMATION

### Potential Health Effects:

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

**Eye Contact:** Contact with battery contents may cause irritation.

**Skin Contact:** Contact with battery contents may cause irritation.

**Inhalation:** Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

**Ingestion:** Swallowing is not anticipated for larger batteries due to battery size. Smaller batteries may be swallowed. If battery is swallowed, seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas, may occur following exposure to a leaking battery.

### Acute Toxicity Data:

Manganese Dioxide: LD50 oral rat >3478 mg/kg

1,2-Dimethoxyethane: LDLo oral rat 1000 mg/kg, LCLo inhalation rat 63 g/m<sup>3</sup>/6 hr

Propylene Carbonate: LD50 oral rat 29100 uL/kg; LD50 dermal rabbit >20 ml/kg; LC50 inhalation rat >5 g/m<sup>3</sup>

Ethylene Carbonate: LD50 oral rat 10,000 mg/kg; LD50 dermal rabbit >3000 mg/kg

Lithium Trifluoromethane Sulfonate: LD50 oral rat 1250-1500 mg/kg

**Chronic Effects:** The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.

**Target Organs:** Skin, eyes and respiratory system.

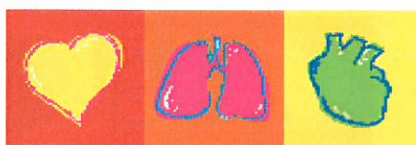
**Carcinogenicity:** None of the components of this product are listed as carcinogens by the EU Directive on the classification and labeling of substances.

## SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

## SECTION 13: DISPOSAL INFORMATION

Disposal should be in accordance with national and local regulations. Do not incinerate for disposal except for in a controlled incinerator.



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#### SECTION 14: TRANSPORT INFORMATION

**Dangerous Goods**    Lithium-Metal > 2g  
**ADR Class**            Class 9  
**UN 3090 / PI 968:**    Lithium-Metal Batteries  
**UN 3091 / PI 969:**    Lithium-Metal Batteries packed with equipment  
**UN 3091 / PI 970:**    Lithium-Metal Batteries contained in equipment  
**Packing group:**    II

SCHILLER Medical certifies that its lithium batteries pass the requirements of the UN Manual of Tests and Criteria, Part III subsection 38.3.

#### SECTION 15: REGULATORY INFORMATION

IATA Guidance Document – Transport of Lithium Metal and Lithium Ion Batteries  
UN Manual of Tests and Criteria, Part III subsection 38.3.

#### SECTION 16: OTHER INFORMATION

**Preparation of MSDS:**

#### SCHILLER MEDICAL SAS

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