

ENFUCELL SoftBattery® - Environmental information

March 2010

Chemical industry can have an impact on sustainable development first and foremost through its products. Therefore, Enfucell is part of the *Responsible Care*® program, the chemical industry's global voluntary initiative. As a member of this program, Enfucell is committed to improving our operations on a continuous basis in health, safety and environmental performance.

Enfucell acknowledges its responsibility in designing and manufacturing of power sources, and has committed to use recyclable materials and minimize the amount of harmful chemicals in its products. Enfucell requires its suppliers to confirm the quality and contents of their raw materials. Enfucell meets the requirements of *REACH (Registration, Evaluation and Authorisation of Chemicals)* and is the "downstream-user" of raw materials used in SoftBattery®. We have made sure that all our chemical suppliers are fulfilling REACH requirements.

Enfucell SoftBattery®, a thin, flexible and printed power source, is compliant with the *European directive 2006/66/EC of the European Parliament and of the Council on batteries and accumulators and waste batteries and accumulators* and *European Directive of the Restriction of the Use of certain Hazardous Substances (2002/95/EC) in electrical and electronic equipment (RoHS)*. This directive restricts use of hazardous substances such as lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).

Also, Enfucell SoftBattery® power sources are within the limits set in the *European Directive 94/62/EC on packaging and packaging waste* for using lead, mercury, cadmium, or hexavalent chromium in packaging and packaging inks.

Enfucell SoftBattery® power sources are compliant with the US packaging legislation (CONEG) for using lead, mercury, cadmium, or hexavalent chromium in packaging and packaging inks.

Based on the information given by Enfucell's suppliers, all the materials used in SoftBattery® are in conformity with the Chinese regulation: *Administrative Measure on the Control of Pollution Caused by Electronic Information Products* (also known as China RoHS). Concentration of lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) do not exceed 0,1 % and concentration of cadmium does not exceed 0,01 %. Any of these hazardous substances are not intentionally added. In addition, based on the information that we have received from our raw materials suppliers, SoftBattery® meets the Chinese requirements set for mercury content of the batteries, and Enfucell's zinc - manganese dioxide batteries have mercury content lower than 0,0001 %, although this has not been tested in an appropriately certified laboratory.

It is not possible to guarantee the total absence of any of the above mentioned hazardous chemicals due to the presence of trace element impurities in all substances.

For further information about the possible effects of any of the above mentioned legislation on your business or about regulations regarding the devices using printed batteries as power source, please seek local advice.

ENFUCCELL SoftBattery® - Safety information

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In normal use and under the given working environment as mentioned in the *Technical Specifications for SoftBattery®*, Enfucell SoftBattery® should induce no harm or hazard. All our batteries are compliant with European battery directive as well as RoHS. General safety instructions are given below.

Short circuit: Connecting the two terminals together on one battery, or the opposite terminals together on multiple batteries, can cause a short circuit. A short circuit very quickly discharges battery completely. Short circuiting will not cause any leakage of chemicals nor will it cause inflammation or explosion.

Danger of self-ignition: It is not possible to determine self-ignition temperature. Hydrogen gas generation is negligible when stored or used in normal conditions.

Liquid leakage: No leakage will occur.

Ruptured batteries: Limitations for bending radius of SoftBattery products can be found in the *Technical Specifications for SoftBattery®*. Corrosive material may be released from ruptured SoftBattery®. Avoid direct skin and eye contact of ruptured SoftBattery®.

Toxicological information: Under normal condition (during storing and discharge) release of toxic ingredients does not occur.

Flame resistance: Covering materials of batteries (e.g. MPET and PET) burn easily when exposed to fire. SoftBattery® does not tolerate fire.

Risk when used outside the recommended humidity and/or temperature range: No risks have been discovered at temperatures up to 100 °C. Heat generation is negligible when stored or used in normal conditions.

Transportation: In general, all batteries in all forms of transportation (ground, air or sea) must be packed in a safe and responsible manner. Zinc – manganese dioxide batteries, such as Enfucell SoftBattery®, are not listed as dangerous goods under the IATA Dangerous Goods Regulations.

Storage: Store in a cool, constant environment. If possible, store the batteries in original package. Elevated or widely alternating temperatures will result in shortened battery life and reduced performance.

CE marking: Individual printed batteries do not need to be CE marked in the European market. Devices using SoftBattery® as a power source or their package may, however, need CE marking.