

TO: LFEV Team
FROM: Rob Lombino
DATE: 13 May 2014
SUBJECT: Hazmat Analysis Memo

ABSTRACT:

This memo details how the analysis requirements relating to Hazardous Materials have been met in our system's final design.

REQUIREMENTS:

1. *Hazardous materials should be avoided in designs. If use of a hazardous material is essential to the function of the design and there is no non-hazardous alternative, the use of the hazardous material must comply with the Lafayette College Chemical Hygiene Plan.*

-Our design uses 7 LiFePO₄ Prismatic Battery Cells in a single pack. These are rated for 3.2V 60 Ah, 10C Rate (192 wh). The Lafayette College Chemical Hygiene Plan classifies them as a hazardous substance:

-(8) Flammable and Explosive Substances

A number of highly flammable substances are in common use in laboratories. Explosive substances are materials that decompose under conditions of mechanical shock, elevated temperature, or chemical action, with the release of large volumes of gases and heat.

-Our Safety Plan includes Equipment Guidelines for the use and storage of the cells and complies with the Lafayette College Chemical Hygiene Plan.

2. *All materials used in electronic circuit fabrication must meet 2002/95/EC RoHS directives.*

-The materials used in our design that meet the RoHS directives according to the documentation provided by their distributors include all products purchased from Technologic Systems, Zoro Tools, Newark, Mouser, and Digikey.

-The materials used in our design that do not meet the RoHS directives according to the documentation provided by their distributors include all products purchased from Gigavac.

3. *NiCd or Lead-Acid batteries may not be used in new designs.*

-Our design does not use either NiCd or Lead-Acid batteries.

4. Any portion of the design or prototype that is discarded must be discarded according to the Lafayette College Chemical Hygiene plan.

-We do not plan on discarding any portion of the design or prototype during this iteration of the project.

5. Projects should discard the collected electronic waste in an ecological-friendly manner as per the 2002/96/EC WEEE directive, either by ecological disposal or by reuse/refurbishment of the collected waste.

-All cells will be implemented into a functional pack or reused in subsequent project iterations.