

Electrical Safety Authority Warns of Unsafe Use of Electrical Equipment to Assemble Lichtenberg Generators

Hobbyists using high voltage to pattern wood, other materials has resulted in multiple serious injuries and fatalities being reported to ESA

The Electrical Safety Authority (ESA) is warning against using high voltage energy sources such as microwave oven transformers or similar components to manufacture Lichtenberg generators. These generators are used to create art and abstract objects by burning fractal patterns into various materials such as wood and acrylic.

Do not attempt to assemble or use a Lichtenberg generator for any purpose. They are extremely dangerous, contain live accessible wiring and components, and are unsafe for any use or handling. Both homemade and pre-built Lichtenberg generators are considered to have the potential to seriously injure and / or kill the user.

- ESA is aware of multiple incidents in Ontario involving these generators that were used in an unsafe manner resulting in a fatality and critical injuries..
- All of these generators, whether homemade or purchased, are unapproved by Certification Bodies / Inspection Bodies, have not been evaluated or tested to any Canadian safety standards and do not bear any recognized Canadian electrical safety certification marks.
- These generators are reportedly homemade, using instructions on the internet, and are assembled with parts and components that are obtained from a variety of sources and are not approved for this type of use.
- Some of these generators are marketed as complete products and indicate that they are built with approved/certified components. However, the overall product has not been evaluated to any known electrical safety standard(s) for this type of product, as applicable to Canadian consumers and marketplace.
 - o The risks associated with building and using a Lichtenberg Generator include:
 - Potentially unsafe construction and assembly methods
 - Both short and long term degradation of the product and components
 - Physiological effects of exposure to high voltage / high frequency energy sources
 - Lack of quality control processes and procedures

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- Inadequate instructions pertaining to usage, storage, maintenance, required type(s) of personal protective equipment, etc.

Picture 1 - Critical Hand Injury



- The critical hand injury shown above (which was not the only injury that this hobbyist received) could have resulted in a fatality by electrocution had a resuscitation not been performed on the victim. Others in the immediate vicinity could have been killed or received a shock or serious injury

Pictures 2 and 3 - Examples Of Homemade Lichtenberg Generators



- The combination of incorrect and/or unsuitable parts, dangerous assembly methods, and use of the finished product are considered to be major contributing factors resulting in the reported serious injury and fatality.

How to Report Unsafe Electrical Products

- If generators exist in the marketplace or are offered for sale they should be considered unsafe and reported to ESA or Health Canada immediately. When reported, suppliers within ESA's jurisdiction will be contacted. Consumers / hobbyists are encouraged to contact ESA at 1-877-ESA-SAFE or complete the online Product Safety Reporting Form.
- Lichtenberg generators may also have counterfeit electrical safety approval labels applied to them to falsely indicate that they are safe and approved. Since it is very unlikely that these products could meet any safety standards, and be approved, should a generator be found that appears to have a certification or approval mark do not purchase or use it. Please contact ESA or Health Canada immediately with the supplier details.

The disassembling of products such as a microwave oven and / or similar devices or appliances with the purpose of removing the high voltage transformer and other parts to build these generators creates a dangerous unapproved product. To build these generators, use and/or sell them is in breach of Ontario Regulation 438/07 Product Safety and 164/99 Ontario Electrical Safety Code.