

Compact Fluorescent Lightbulbs and Health Issues

Some people have read in the media about the potential health effects of fluorescent light 'flicker'. What is this and is it serious?

Compact fluorescent lamps (CFLs) flash on and off very quickly, with CFLs flickering at a rate of more than 20,000 times per second and linear fluorescent tubes at more than 100 times per second. This rate of flickering is generally not visible by the human eye. To give an example, CFLs would flash on and off at around 200 times faster than your average television screen.

If your fluorescent lamp has a noticeable flicker it is likely to be faulty and should be replaced.

Previous, older style compact fluorescent lightbulbs had low quality magnetic ballast and sometimes had a visible flicker. Modern style CFLs use electronic ballast which allows the lightbulb to start faster, uses a very high frequency to flash the light on and off and has no visible flicker at all. Low Energy Supplies and Services only uses modern, high quality CFLs with electronic ballast.

Compact fluorescent lightbulbs are simply smaller versions of the fluorescent tube lighting you see used in many places such as offices, supermarkets, shopping centres, banks and other public places such as libraries and schools.

Are CFLs safe to use for people with light sensitivity conditions?

CFLs generate a very similar amount of ultra-violet light to incandescent lamps. One UK study found that UV light levels from unfiltered CFLs ranged between 50 and 140 microwatts per lumen while several incandescent bulbs exceeded 100 microwatts per lumen.

No fluorescent lighting technology presents anywhere near the high levels of UV danger to light sensitive persons that sunlight presents. A recent study in the US found that UV exposure from sitting under typical office fluorescent lights for eight continuous hours is equivalent to just over one minute of sun exposure (Lytle et al An Estimation of Squamous Cell Carcinoma Risk from Ultraviolet Radiation Emitted by Fluorescent Lamps Photodermatol Photoimmunol Photomed (1993)).

Do CFLs contain mercury and is this a problem?

Energy saving CFLs do contain small amounts of mercury, an essential component in their operation.

The Australian Government in consultation with the lighting industry is currently developing standards for mercury content in CFLs - these standards are likely to align with European levels at 5 milligrams per bulb (this amount would fit on the tip of a ballpoint pen).

Leading firms in the lighting industry now produce compact fluorescent lamps with mercury content as low as 2 milligrams.

Research conducted in the USA and Europe shows that on a lifecycle basis, individual CFLs are responsible for releasing less mercury into the environment than incandescent light bulbs. Mercury is a byproduct of coal-fired power generation, and since CFLs use much less electricity than an incandescent light bulb and last longer, they are responsible for less mercury pollution.

How do I dispose of a CFL if it breaks?

Although the mercury content of CFLs is small, every product containing mercury must be handled with care.

Lighting manufacturers typically recommend that if a CFL breaks you should follow some simple, safe precautions.

Open nearby windows and doors to ventilate the room for at least 15 minutes. Use disposable gloves and using a disposable brush sweep up the broken bulb (Do not use a vacuum cleaner, because this could trap or spread the mercury through the house.) Then use a moist paper towel to wipe up any remaining fragments. Wrap the pieces in newspaper, and seal them with the gloves, brush and paper towel in a plastic bag for safe disposal in your general waste bin (not recycling bin).

More information about correct disposal of these light bulbs:

www.environment.gov.au/settlements/waste/lamp-mercury.html

Information sourced from:

- Australian Government Department of Climate Change website, <http://www.greenhouse.gov.au/energy/cfls/index.html#health>
- Discussions with lighting suppliers and engineers