

Clearing the Misconceptions

The Truth about CFLs

Do Compact Fluorescent Bulbs (CFL) Contain Mercury?

Yes, CFLs do contain very small amounts of mercury vapor that is required in order to produce light. The vapor is contained within the bulb and is in no way released when they are in use. In fact at the end of the bulb's rated life, very little mercury is even available for release into the environment.

How much mercury is contained within a CFL?

Product	Amount of Mercury	Number of Equivalent CFLs
Compact Fluorescent Bulb	5 milligrams	1
Watch Battery	25 milligrams	5
Dental Amalgams	500 milligrams	100
Home Thermometer	500 milligrams – 2 grams	100 – 400
Float Switches in Sump Pumps	2 grams	400
Tilt Thermostat	3 grams	600
Electrical Tilt Switches and Relays	3.5 grams	700

What are the health risks associated with a broken CFL?

The greatest risk you face with a broken CFL is cutting yourself on a shard of glass. Since there are only trace amounts of mercury (about the same size as the tip of a ball point pen) in each bulb there is no immediate health risk.

How should I clean up if a CFL breaks?

If a CFL bulb happens to break – sweep the area thoroughly to remove all the glass fragments. Inside of the tubing is a white phosphor powder which allows us to see the visible light in different shades. Though not harmful you should wash your hands thoroughly and wipe the area down with a damp cloth to remove the powder and any tiny glass shards.

What do I do with a CFL once it has burnt out?

Once a CFL has burnt out it should be disposed of with the other Hazardous Household Waste as indicated by the Region of Waterloo's Waste Management Department. If this is not an option for you – bulbs should be put into a plastic bag and tied off before disposing of them with your regular household waste.

Is using CFL's damaging to the environment because of their mercury content?

The United States' Environmental Protection Agency concludes that a typical CFL over the course of its life will put less mercury into the environment than using incandescent light to produce equivalent lighting. Coal is a major source of energy and a by-product of its burning is mercury. Therefore by requiring more energy to operate, use of incandescent bulbs, is actually responsible for releasing more mercury into the environment than using CFL bulbs.

If I have a lamp that is rated to a maximum of 40W can I use a 60W equivalent CFL bulb?

The wattage of the light bulb is the actual power that it draws from the lamp. That is the advantage of a CFL is that it draws 75% less power but produces the same light intensity (lumens). So as long as the Wattage of the CFL is lower than the maximum rating for the lamp it's fine.

Is it true that you should leave CFLs on because they take more energy to start up each time they're turned on?

No, you should not leave them on. Even though there can be a brief increase in energy when the ballast charges the cathodes, this quick spike normally lasts only 1/10 of a second and draws about the equivalent of 5 seconds worth of typical energy consumption. Therefore it is better to turn them off when you leave a room – even if you know you'll be back.

Does turning a CFL on and off wear them out faster?

Each CFL has a published rated life span in hours. Most are rated around 20,000 hours when left on for 3 hours at a time. Every time a fluorescent is turned on, a tiny amount of the coating on the electrodes is burned off. Eventually the coating will wear off and the bulb will begin to fail. At a rated life of 20,000 hours when left on for 3 hours at a time – a light bulb will typically get 6,667 starts before it fails. If you use the CFL for less than 3 hours each time, you will get a shorter life out of it. In comparison when you leave it on for more than 3 hours at a time it will increase the life of the bulb it will cost you more in energy to leave it on continuously.

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More information on Compact Fluorescent Bulbs is available at <http://oee.nrcan.gc.ca/energystar/english/consumers/> and click on *Switch and Save*, or at www.lightingdesignlab.com

