

Anatomy of a CFL

"Going Green" for a long time was a phrase used to describe those on the far left, old hippies and tree-huggers. However, at this point, greening is becoming more and more mainstream and more necessary for businesses to remain competitive. Your business and the environment are really more closely linked than you probably thought. Some businesses have more obvious impacts on the environment than others; all of us have some environmental impact, through what is purchased, how much energy and water is used, and many other factors.

By improving the environmental performance of your business, you help to ensure a clean and healthy environment for future generations, as well as a healthy business future. There are many ways to improve the environmental impact of your company, but one that is very easy to implement and not terribly expensive to put into place is the use of Compact Fluorescent Lamps or CFLs in place of the traditional incandescent bulb.

There are many reasons to switch from incandescent bulbs to CFLs. CFLs are about 3 to 4 times more efficient than an incandescent bulb. This translates to a decrease in the amount of energy needed to light the bulb, a decrease in the cost to light the same area, and less carbon dioxide (CO₂) produced when producing the needed energy. Although CFLs are more costly to purchase, they will last 8 to 10 times longer than any incandescent. So, although the bulbs cost more, you'll be buying fewer bulbs. You'll also be spending less on your electric bill.

The CFLs of today are vastly improved when compared to their earlier relatives. Major complaints about early CFLs, like a slow start time and a constant humming sound, have been designed out. The CFL of today consists of 3 major pieces- a lamp, ballast, and an adapter. The lamp is the glass portion of a light bulb that most people think of but it has a more specific definition in a CFL. The lamp is a combination of electrodes, gasses and other electrical devices designed to provide artificial light through the conversion from electricity. The ballast is used to convert electrical current into the appropriate voltage, amperage and waveform necessary to operate the lamp. The screw base of the light bulb is the adapter. In the US the Edison base is most commonly used but other forms can be found, especially in other countries.

Since a CFL is really just a different configuration of a fluorescent bulb, it contains small amounts of mercury as a vapor inside the lamp. Most CFLs available today contain 3 to 5 mg of mercury per bulb, with some brands containing as little as 1 mg. Mercury is considered a poison, but there is virtually no threat to a person's health when the bulb is intact. Problems arise when CFLs are broken, put in landfills and waste incinerators or simply crushed in the back of a garbage truck. The mercury is released and can contribute to air and water pollution.

However, most scientists agree that this potential release of mercury contributes less mercury to the environment than using incandescent. This is because CFLs use less electricity- Coal-fired power plants are the biggest source of mercury emissions in the atmosphere. To help prevent these releases the Environmental Protection Agency (EPA) recommends that these bulbs be recycled. This has proven problematic because most municipalities don't have the capabilities to collect and process recycled CFLs.

Some large retailers (like Home Depot and IKEA) have or are working toward providing their customers with a CFL recycling drop off at their stores.

The EPA has set out procedures to be used to clean up after a CFL has been broken. The complete set of procedures can be found at www.epa.gov/hg/spills, but they have a listing of things to never do after a CFL breaks.

- Never use a vacuum to clean up mercury. The vacuum will put mercury into the air and actually increase your exposure.
- Never use a broom to clean up mercury. It will break the mercury into smaller pieces and spread them even further.
- Never put mercury down a drain. If it goes all the way down the drain, it can cause pollution of your septic tank or sewage treatment plant.
- Never wash clothing or any item that have come in contact with mercury in a washing machine. It may contaminate the machine and/or pollute sewage.
- Never walk around if your shoes may be contaminated with mercury. Wherever you walk may then be contaminated with mercury.

Although there are very real, though minor, risks associated with using CFLs at your business as well as your home, they are far outweighed by the benefits. Lower long-term cost for bulbs, lower electric bills is really enough of an incentive for most. When you add in that there is a benefit to the environment- everyone wins.

For additional help with safety and OSHA compliance, take advantage of the resources available through NCMA. These resources include the NCMA Block Plant Safety Software. The software is available from NCMA at (703) 713-1900 at a cost of \$150 for up to 3 plants/year (nonmember \$450).