

Recycling Fluorescent Lights

OVERVIEW

Fluorescent lights have a longer life than incandescent lights and are more energy efficient. That means you can reduce the volume of wastes *and* use less fuel, helping to keep the environment clean. But there are some **health and environmental issues** of which you need to be aware. Fortunately, by learning how to first use them, and then recycle these bulbs, you can protect your community.

There are two parts to fluorescent lights:

1. The lamp bulb, and
2. The ballast in the fixture which holds the bulb.

Each part has its own issues.



Lamp bulbs contain mercury

The standard fluorescent lamp contains about twenty milligrams ("mg") of mercury. Fluorescent lamps are used all over the United States by millions of people, including us here at Zender. **There are no known health or environmental risks from lamps that are intact** (i.e. not broken). But *if a lamp cracks or breaks, mercury vapor can escape into the air or water*. Once in water or air, it can get into plants and animals. Mercury stays in the fat of an animal and does not decrease very much once it is there. Often, because larger animals eat lots of smaller animals, the larger the animal, the more mercury that it can often contain. This includes humans when they eat mercury-contaminated foods. The increase in the level of a contaminant in a human or animal over its lifetime is called "bioaccumulation".



Mercury is **very toxic** to the human nervous system. Chronic breathing of mercury vapors can cause a range of physical symptoms, including inability to coordinate body movement and impairment of hearing, speech and vision. Exposure to mercury in other forms can lead to skin rashes and kidney damage. For EPA's list of resources and information on the impacts of mercury on human health, see <http://www.epa.gov/hg/health.htm>.

To protect our health, our environment, and our subsistence resources from mercury contamination, fluorescent lamps must be properly handled and recycled.

Fluorescent ballasts may contain PCBs

All ballasts manufactured through 1979 contain PCBs. Fortunately, **after 1979 PCBs were banned** in ballasts made in the U.S. These newer ballasts are labeled "No PCBs." If a ballast is not labeled "No PCBs," you should assume it contains PCBs for now. PCBs, like mercury, can also bioaccumulate in the food chain and can cause health problems ranging from liver injury and skin disorders to reproductive problems. They are very hazardous and do not go away. For information on handling PCB ballasts, see the "Broken Lamp Handling Practices" section on the next page. You can find more information on the health effects of PCBs here <http://www.epa.gov/osw/hazard/tsd/pcbs/pubs/effects.htm>. For information on proper maintenance, removal, and disposal of PCB-containing ballasts, see <http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/ballasts.htm>.

Recycling fluorescent lights

When fluorescent light bulbs are recycled, mercury and the phosphor powder, the glass, metal, and other materials are sorted out for recycling. 100% of the glass, aluminum and other metals can be reclaimed and reused! Up to 99.9% of the mercury can be recovered and used again! The ballasts can be recycled to reclaim valuable metals such as copper and steel. So when you recycle these bulbs, you can feel good about what you are doing for your community and the entire earth. For information on fluorescent lights, their disposal/recycling, and how to clean up broken lights, see



<http://www.epa.gov/osw/hazard/wastetypes/universal/lamps/>. For information on compact fluorescent lights, see <http://www.epa.gov/cfl/>.

HOW TO RECYCLE FLUORESCENT LAMPS AND BALLASTS

To properly recycle fluorescent lamps and ballasts, kits can be purchased from companies in Anchorage (or out-of-state). The recycling kits come with a pre-paid shipping label and are either a cardboard box for lamps, or a drum/bucket for ballasts. Simple instructions are included on how to pack the lamps/ballasts in the containers provided. But generally, all you need to do is place the lamps/ballasts in the container and properly tape up the box/bucket. Once packed, the containers can simply be dropped off at your post office. You could also use the box the lamps were purchased in and ship them for recycling that way.

Depending on the company, you may need to pay a small amount to post the empty kits to your Village. You can also pick up the empty kits yourself when you're passing through Anchorage. For Total Reclaim's packing instructions for fluorescent lamps to be shipped out for recycling, see http://zendergroup.org/docs/TR_lights.pdf. For packing instructions for non-PCB-containing ballasts, see http://zendergroup.org/docs/TR_ballast.pdf

RECOMMENDED BROKEN LAMP HANDLING PRACTICES

If a lamp breaks in your home:

- ◆ **Get everyone out of the room quickly. Grab kids by the hand, do not linger.**
- ◆ **Close off the room quickly** to other parts of the building.
- ◆ **Open a window** to disperse any vapor that may escape, and
- ◆ **Leave the room as quickly as possible**, and for at least 30 minutes.
- ◆ **Once back, carefully scoop up the fragments with a stiff paper** (do not use your hands)
- ◆ **Wipe the area** with a disposable paper towel to remove all glass fragments.
- ◆ **Do not use a vacuum** as this disperses the mercury over a wider area.
- ◆ **Place all fragments in a sealed plastic bag.**



If a lamp ballast is not labeled "No PCBs," it may contain PCBs. **You have a leaking PCB ballast if you see clear or yellow oil on the surface of the ballast. Carefully place the ballast in its own sealed plastic bag. When cleaning up broken lamps or ballasts, wear chemically resistant gloves and safety**

goggles. Borrow them from the school or clinic if you don't have any. (See http://zendergroup.org/docs/Safety_gear.pdf for safety gear information). Contact PSC Environmental (contact info listed below) for more information on how to properly handle and dispose of/recycle broken lamps.

WHO TO CONTACT TO RECYCLE FLUORESCENT LAMPS AND BALLASTS AND THEIR COSTS

Total Reclaim of Alaska

12101 Industry Way, Unit #C4 Anchorage

Contact: Larry Zirkle Phone: 561-0544

<http://totalreclaim.com/ecolights.html>

Lamps Larry accepts both straight and CFL lamps from Villages for **free** in small quantities (less than 20 or so, but call to check). You can ship them to the Anchorage location (call for information on how to package them) or you can also drop them off. If you have more, the cost is \$1.14/lb. Total Reclaim also sells pre-paid recycling kits. Prices of kits for straight fluorescent lamps range from \$69 to \$89. Collection stations for CFLs range from \$89 to \$109.

Ballasts Will likely accept for free (if it is less than 20), but call to check. If you have more, the cost is \$0.20/lb. Pre-paid recycling kits for non-PCB-containing ballasts are \$99. **Total Reclaim does not accept PCB-containing ballasts.**

Also, see the next page for national companies that you can contact to compare prices to the companies listed above.



WHERE TO GO FOR MORE INFORMATION

www.absn.com The Alaska Building Science Network has a Community Energy Efficiency Program, consisting of free energy efficiency audits, upgrades, and training in rural Alaskan community buildings. They work with communities to achieve energy savings by replacing or installing energy-efficient lighting, switch boxes, motion sensors, set back thermostats, weather stripping and low mass boilers. They currently only work with 48 villages, call to see if your village is on the list. 907.562.9927 absn@alaska.net

<http://www.almr.org/> The Association of Lighting and Mercury Recyclers has educational resources about fluorescent lights, including a great CD with a video all about recycling lamps and ballasts (you can watch the video on-line as well! - just click on the CD icon on the home page)

<http://www.lamprecycle.org/> This site has more information about recycling fluorescent lights

<http://www.swana.org/> Contact SWANA for more information on how the solid waste industry is diverting waste lamps into recycling.

<http://www.epa.gov/osw/hazard/wastetypes/universal/lamps/> EPA's information on Lamps

http://www.almr.org/support_files/messageforall.htm This is another overview of Fluorescent Lamps

www.dec.state.ak.us/spar/perp/hazmat/faq_mercury.pdf ADEC's information on safe mercury management.

<http://www.epa.gov/mercury/spills/> EPA's information on what to do in the event of a mercury release or spill.

Note: Governments around the world have started to phase out incandescent lights in favor of more efficient CFL or LED lights. While the US is not phasing out incandescent lights per se, it has set minimum efficiency standards, requiring lamps used for general lighting to be 30% more efficient than incandescent lights currently in use. These standards will become effective 2012-2014, starting with 100-watt bulbs in 2012 and ending with 40-watt bulbs in 2014. Because the currently used incandescent lights do not meet these standards, they will likely no longer be available for purchase. This may result in an increase in CFLs and other fluorescent lights in your community. To help with long-term planning and/or plans for your community's recycling needs and budget, it may be good to include these projected increases in recycling costs due to greater numbers of CFL over the next few years.

NATIONAL FLUORESCENT LAMPS RECYCLING VENDORS

AERC Solutions

30677 Huntwood Avenue
Hayward, California 94544
510-429-1129
<http://www.aercrecycling.com/>

Ecolights Northwest

2200 6th Avenue South
Seattle, WA 98124
888-214-2327
<http://www.ecolights.com/>

Universal Recycling Technologies

111 Grant Avenue, Room 101
Endicott, NY 13760
877-278-0799
<http://www.universalrecyclers.com/>

WM LampTracker

415 Kaiser Industrial Dr
Kaiser, MO 65026
800-664-1434
<https://www.wmlamptracker.com/>

Fluorecycle, Inc.

27780 W. Concrete Drive, Unit A
Ingleside, IL 60041
815-363-4411
<http://www.fluorecycle.com/>

Green Lights Recycling Inc.

10040 Davenport St. NE
Blaine, MN, 55449-4423
800-208-8340
<http://www.greenlightsrecycling.com/>

Lighting Resources Inc.

805 East Francis St.
Ontario, CA 91761
800-572-9253
<http://www.lightingresourcesinc.com/>

Northeast Lamp Recycling

250 Main Street
E. Windsor, Ct 06088
888-657-5267
<http://www.nlrlamp.com/>

Veolia Environmental Services

200 E Randolph St, Ste 7900
Chicago, IL 60601
800-556-5267
<http://veoliaes.com/>

Southeast Recycling, Inc.

906 Chase Drive
Johnson City, TN 37604
800-592-3970
<http://www.recyclebulbs.com/>

Air Cycle Corporation

2200 Ogden Avenue
Suite 100
Lisle, IL 60532
800.909.9709
<http://www.aircycle.com/>

American Lamp Recycling

25 Industrial Way
Wappingers Falls, NY 12590
845-896-0058
<http://americanlamprecycling.com/>