



Minnesota
Pollution
Control
Agency

Managing Used Fluorescent Lamps, High-Intensity Discharge Lamps & PCB Ballasts

Hazardous Waste #4.20, May 2000

This fact sheet discusses waste management of fluorescent lamps, ballasts and similar waste.

Inside

Environmental Concerns	1
Preventing Pollution ..	1
Disposal Options	1
Lamp Handling	1
Lamp Storage	1
Lamp Transporter/Collection Site	2
Storing Lamps for Others	2
Ballast Storage	2
Lamp/Ballast Transportation Requirements	3
Record Keeping	3
License Requirements	3
If Light Fixture Fails .	3
If Ballast Leaked	3
More Information	4
Lamp Recyclers/Processors	5
Ballast Recyclers/Disposal	6

Environmental Concerns

Fluorescent lamps and high-intensity discharge (HID) lamps, including mercury vapor, high-pressure sodium, and metal halide lamps from businesses (and households) are banned from solid waste disposal in Minnesota because they contain mercury.

Even though new technology has reduced the amount of mercury in a fluorescent lamp and lamps may pass the Toxicity Characteristic Leaching Procedure (TCLP), this law still applies.

Ballasts from fluorescent lamps are assumed to contain polychlorinated biphenyls (PCBs) unless they are marked or tested to show they do not contain PCBs. Ballasts marked by the manufacturer stating they do not contain PCBs are not regulated as hazardous waste. They may be recycled or managed as an industrial solid waste. Because cost prohibits testing individual ballasts, the Minnesota Pollution Control Agency (MPCA) recommends managing non-leaking, non-marked ballasts according to the requirements in this fact sheet.

Note: Leaking PCB ballasts must be managed under state and federal hazardous waste rules. For more information, see *If the Ballast Has Leaked*, page 4.

Preventing Pollution

Compared to incandescent lighting, fluorescent lighting uses less energy. Less energy not only means lower lighting costs for your business, but also fewer air pollutants such as mercury, lead, nitrogen oxides and sulfur dioxide emitted by power plants.

Even though fluorescent lamps contain mercury, when managed properly, they have less environmental impact on our environment than conventional incandescents. Consider using fluorescent lamps whenever and wherever possible.

Disposal Options

Minnesota businesses have two options for disposing of fluorescent and HID lamps and non-leaking PCB ballasts:

1. Manage as hazardous waste following all hazardous waste rules; or
2. Recycle fluorescent and HID lamps and manage PCB ballasts following the policy requirements outlined in this fact sheet.

Lamp Handling Requirements

Do not place used lamps in the trash. Do not break or crush lamps because mercury may be released, posing health and environmental risks. Because of the potential for mercury release, and because some crushing processes are considered treatment and require a facility permit, the MPCA strongly discourages the use of portable or barrel-top crushers at this time. Please contact MPCA staff if you are considering using a drum-top crusher.

Lamp Storage Requirements

1. Store lamps in a manner that will prevent them from breaking. Recycling facilities request that you do not tape lamps together for storage or shipment. Some do not accept lamps that are taped together.



2. Mark the lamp storage area **or** each container *Used Lamps for Recycling or Hazardous Waste — Used Lamps*.
3. Store lamps in an on-site waste storage area where they will not break. If you cannot store them on site, you may transport the lamps to a storage location following the applicable transportation requirements described on page 3.

If lamps are accidentally broken, store them in a non-metal closed container marked *Broken Fluorescent Lamps*. You may send broken lamps to a recycling facility (there is an extra charge for broken lamps) or manage according to full hazardous waste rules.

Choosing a Lamp Transporter and Collection Site

A collection site is any retail store or other business that collects and stores lamps for transport to a recycling facility. They must follow the requirements outlined below, *Storing Lamps for Others*. Transporters must notify the MPCA that they are transporting lamps and must have a contract with a recycling facility in order for the facility to accept the lamps. Each recycling facility must have a signed Compliance Agreement with the MPCA.

To help you determine where to send your lamps:

1. Ask the collection site who will be transporting your lamps and to which recycling facility they will be taken.
2. Call the facility to make sure the transporter has a contract with that facility.
3. Call the MPCA Permits Unit (see page 4) to make sure the recycling facility has a signed Compliance Agreement form filed with the MPCA.

Storing Lamps for Others

Collection sites or businesses that store lamps for others must follow the applicable storage requirements below:

If storing fewer than 1,000 lamps for others, contact the MPCA Customer Assistance Center (see page 4) for a *Notification of Lamp Activity* form and provide:

- the name and location of the collection site;
- how many lamps you intend to store; and
- the length of storage time.

If storing 1,000 lamps or more for others, contact the MPCA for a lamp *Storage Compliance Agreement* form and:

1. Obtain a written agreement with a lamp recycling facility certifying:
 - the facility will accept lamps from you; and
 - the rate at which the facility will accept lamps from you.
2. Enter into a storage compliance agreement with the MPCA. The compliance agreement requires you to:
 - Provide personnel training in the techniques and hazards of handling lamps.
 - Maintain a contingency plan that describes the appropriate environmental and human health safeguards in place and the procedures and equipment that will be used in case of an emergency.
 - Maintain records for three years documenting how many and from whom lamps are received and when and to where they are shipped for recycling.
 - Establish financial assurance for closure of the storage/collection site.

Ballast Storage Requirements

Non-leaking PCB ballasts are classified as a special hazardous waste and may be managed under the reduced requirements of the Pilot Project for Special Hazardous Waste. Management under the Pilot Project requires:

1. Store waste ballasts in a container that will hold the waste at all times. For on-site storage, a coffee can or plastic ice cream pail with a tight-fitting cover may be sufficient for a small number of ballasts. For shipment off site, place ballasts in a Department of Transportation (DOT)-approved container. Mark both storage and shipping containers with the words: *PCB Ballasts for Recycling or Hazardous Waste PCB Ballasts*.
2. Inspect the storage area regularly to ensure ballasts/containers are not leaking. (Inspections do not need to be documented.) If ballasts are leaking, repackage them and manage according to the section entitled *If the Ballast Has Leaked*.
3. Ship the waste off site within 180 days of reaching the 500 kilogram Pilot Project accumulation limit.



Lamp/Ballast Transportation Requirements

Transportation fees for lamps usually include a pickup charge. If a number of businesses in an area can store their lamps and coordinate to have one truck sent out and routed to pick up all lamps, the charge may be substantially reduced. Many counties are organizing such routes. Look for an opportunity in your area or call your county solid waste office.

Both lamps and non-leaking ballasts may be transported by the generator to a Minnesota recycling facility or collection site. The waste must be transported in a business vehicle following applicable DOT hazardous material requirements **and** the requirements below:

When shipping within Minnesota: Use a waste-tracking invoice containing this information:

- date of shipment;
- location from which the waste was shipped;
- destination location; and
- amount of waste shipped (number of lamps; number or pounds of ballasts).

A hazardous waste manifest and a licensed hazardous waste transporter are not required for shipments to a recycling facility or storage location within Minnesota.

When shipping out of Minnesota: Use a hazardous waste manifest and a licensed hazardous waste transporter if you are shipping to a hazardous waste disposal facility. If you are shipping to a recycling or storage facility and the lamps do not pass through a state requiring a manifest, you may use a waste-tracking invoice as outlined above.

When shipping into Minnesota: You may use a waste-tracking invoice containing the information outlined above **unless** you are passing through a state that requires a hazardous waste manifest; then you must use a hazardous waste manifest.

Lamp/Ballast Record Keeping Requirements

Keep these records for a minimum of 3 years:

1. the number of lamps removed from service during each calendar year; and
2. waste-tracking invoices for ballasts and lamps.

If lamps are stored off site, also keep a record of the storage location of the lamps.

Lamp/Ballast License Requirements

A hazardous waste generator license is not required for non-leaking PCB ballasts. A hazardous waste generator license is not required in Greater Minnesota for lamp generators. For more information about lamp generator license requirements in a metropolitan county, call your county hazardous waste office.

If a Light Fixture Fails

1. Turn off the light immediately to prevent PCBs from leaking. Shut off power to the light by disconnecting the electricity at the fuse box.
2. If the ballast has leaked, evacuate and ventilate the area until the ballast unit cools (about 30 minutes).
3. Wear protective clothing: goggles, gloves, apron (and boots, if needed) made from neoprene, butyl or nitrile, and a chemical cartridge respirator with an organic vapor cartridge.
4. Remove the lamp fixture and metal covering to access the ballast. (Is the power off?) Cut the electrical wires to the ballast and remove it.

If the Ballast has Leaked

Waste from leaking ballasts is regulated by the Toxic Substances Control Act (TSCA).

1. Wear protective clothing (see *If a Light Fixture Fails*).
2. Clean all nonabsorbent surfaces:
 - Remove spilled PCB oil with a rag, paper towel or by scraping with a putty knife.
 - Wipe twice with a rag containing mineral spirits, kerosene, turpentine or rubbing alcohol.
 - Wipe once with a full-strength solution of a trisodium phosphate-based cleaner such as Soilex™ or Spic'n Span™.
3. Wrap all PCB-contaminated materials (the leaking ballast, rags, gloves, absorbent materials like drapes or carpet) in newspaper. Place in double plastic bags.
4. Store in DOT-approved containers.
5. Using a 6-inch yellow PCB label, label as PCB-contaminated hazardous waste and ship via hazardous waste transporter to a hazardous waste facility within one year.

NOTE: If one pound or more of PCBs (the amount in 12-16 ballasts) is released within 24 hours, notify the National Response Center.



More Information

Your metropolitan county and the Minnesota Pollution Control Agency have staff available to answer waste management questions. For more information, contact your metropolitan county hazardous waste office or the MPCA office closest to your county.

The Minnesota Technical Assistance Program (MnTAP) is a nonregulatory program whose staff can help you find ways to prevent or reduce waste.

Metro County Hazardous Waste Offices

- Anoka County (763) 422-7093
- Carver County (952) 361-1800
- Dakota County (952) 891-7020
- Hennepin County (612) 348-8100
- Ramsey County (651) 773-4466
- Scott County (952) 496-8177
- Washington County (651) 430-6655

Minnesota Pollution Control Agency

- Toll free (800) 657-3864
- Brainerd (218) 828-2492
- Detroit Lakes (218) 847-1519
- Duluth (218) 723-4660
- Marshall (507) 537-7146
- Rochester (507) 285-7343
- St. Paul (651) 297-2274
- Willmar (320) 214-3786

Web Site <http://www.pca.state.mn.us>

Minnesota Technical Assistance Program

- Toll free (800) 247-0015
- (612) 624-1300

Web Site <http://www.mntap.umn.edu>

Notification of Lamp Activity

- MPCA (651) 296-5763
- (800) 657-3724

Storage Compliance Agreement

- MPCA (651) 296-5763
- (800) 657-3864

Leaking Ballasts

- TSCA Hotline (202) 554-1404

Releases of one pound or more

- National Response Center .. (800) 424-8802