

Mercury in the Environment (<http://www.epa.gov/mercury/index.html>)

NYSDEC Information on Mercury (<http://www.dec.ny.gov/chemical/285.html>)

6. Definitions:

- 6.1. Agricultural Pesticides: those pesticides that have been recalled or banned from use, are obsolete, have become damaged, or are no longer needed due to changes in cropping patterns or other factors.
- 6.2. Batteries: batteries such as nickel metal hydride (Ni-MH), nickel cadmium (Ni-Cd), lithium ion (Li-ion), and small sealed lead acid (Pb), which are found in many common items in the business and home setting, including electronic equipment, mobile telephones, portable computers, and emergency backup lighting.
- 6.3. Lamps: fluorescent lighting which typically contain mercury and sometimes lead, and are found in businesses and households. Examples of common types of lamps include fluorescent, high intensity discharge (HID), neon, mercury vapor, high pressure sodium, and metal halide lamps.
- 6.4. Thermostats: such devices contain as much as 3 grams of liquid mercury and are located in almost any building, including commercial, industrial, agricultural, community and household buildings. This category also includes other mercury containing equipment, such as thermometers and other mercury containing switches.
- 6.5. Universal Waste: is a low risk hazardous waste. Universal waste categories include: mercury containing equipment, batteries, industrial pesticides and lamps.

7. Procedures:

7.1. Universal Waste Collection and Disposal

- 7.1.1.** Used Fluorescent Lamps are considered universal waste. High intensity discharge (HID) lamps including: mercury vapor, high pressure sodium, metal halide, UV lamps and neon tubes are considered universal wastes. Farmingdale State College is permitted to accumulate used bulbs in containers for up to one year from the date the first bulb is collected and placed in a container. Used lamps should be packed in their original box, a plain (no markings) cardboard box sufficient enough to contain all bulbs inside and is able to be fully closed, or in containers provided by an approved outside contractor. Used lamp container(s) must stay closed at all times, except when adding bulbs. Employees who generate universal waste may self-transport it to the Recycling Center where it is left to be sorted and placed into containers – this (packaging) can be done at the time of drop off, or otherwise shall be completed by the evening support staff *that day/evening*. There, the boxes and/or bulb tubes are set up within the universal waste storage area, labeled and dated to await pickup by an approved outside contractor. To initiate a large-scale pickup of universal waste (such as from a large re-lamping project), the Physical Plant can be contacted directly (x2107) to make collection, transportation and storage arrangements, or a Work Order can be submitted. If a used lamp container is approaching the one year deadline and there has not been a scheduled pickup, contact EH&S at x2105. For labeling information see Section 7.2.
- 7.1.2.** Broken fluorescent light tubes must be handled as hazardous waste (refer to the Hazardous Waste Management Policy). Do not intentionally break lamps! Do not place broken lamps into boxes with unbroken lamps. Broken bulbs and clean-up residue must be placed into a

container capable of being securely closed (such as the 5 gallon hazardous waste bucket located in the universal waste storage area within the Recycling Center); bagging the waste prior to placing into an outer container is recommended (such as in a zip lock bag). Wear disposable nitrile gloves when handling broken lamps. A dust mask* is also recommended to reduce the risk of inhaling fine particles and debris resulting from broken bulbs. Contact EH&S at x2105 for the pickup and disposal of a full broken lamps container, or submit a Work Order to request a pickup and to request a replacement container. For labeling information, see Section 7.2.

**** Please note that a dust mask will not protect against harmful mercury vapors. Therefore, exposure should be limited and a dust mask should only be used if/when the risk of exposure to vapors has been controlled.***

7.1.3. Certain mercury containing equipment (MCE) is also considered universal waste. When replacing old thermostats, verify whether the thermostat contains a mercury switch. The mercury switch is a small self-enclosed glass tube with visible liquid mercury. Mercury thermometers are also another common MCE that may be managed as universal waste. Waste MCE can be collected in a sealed container. When the container is full, please contact EH&S at x2105 or submit a Work Order to request a pickup. For labeling requirements, see Section 7.2 of this policy. If a piece of MCE breaks, it must be managed as hazardous waste and handled as broken lamps outlined above.

7.1.4. Used Batteries are a concentrated source of various heavy metals. The main constituents of concern for human health and the environment include lead and mercury. Leaking batteries should be considered hazardous waste and placed in separate non-leaking, sealed containers and labeled with a hazardous waste label and managed in accordance with the Hazardous Waste Management Policy. The accumulation area for used batteries collected around campus is staged in the universal waste storage area of the Recycling Center. The used battery containers must be properly labeled. Used, rechargeable batteries are also collected in two centrally located areas on campus – the Bookstore and in Horton Hall, where recycling boxes are set up. Disposal of used batteries may also be initiated by submitting a Work Order, or arrangements can be made to transport them to the Recycling Center where they'll be placed into their respective segregation containers to await pickup by an approved contractor for recycling (when applicable/available) or disposed of through our hazardous waste contractor (depending on battery type, size, condition, etc.).

The following is a table of the most commonly used batteries that are managed as universal waste.

Type of Battery	Common Uses	Hazardous Component
<i>Non-rechargeable</i>	<i>Non-rechargeable</i>	<i>Non-rechargeable</i>
Carbon Zinc	Many uses	*
Mercuric Oxide	Medical equipment	Mercury
Silver Oxide (Button)	Calculators, watches, cameras	Silver
Zinc – air (Button)	Hearing aids, pagers, cameras	Mercury

Lithium	Computers, cameras	Lithium
<i>Rechargeable</i>	<i>Rechargeable</i>	<i>Rechargeable</i>
Small Sealed Lead Acid	Tools, camcorders ,small generators	Lead
Large Sealed Lead Acid	Large generators	Lead
Nickel-Cadmium	Smoke alarms, tools, small generators	Cadmium

7.1.5. Many of the batteries identified in the table above can also be recycled through a limited battery collection and recycling program. Please see Attachment 1 for more details.

7.1.6. Agricultural Pesticides are not typically managed for disposal as universal waste at Farmingdale State College. Please contact the Office of EH&S at x2105 for further information.

7.2. Labeling

7.2.1. Used Fluorescent Lamps – Containers must have a label affixed with the words “Universal Waste - Used Fluorescent Lamps” or “Universal Waste – Spent Fluorescent Bulbs” (all words are interchangeable) and must have the date the first tube was placed in the container, marked on the label.

7.2.2. Broken Fluorescent Lamps – The 5-gallon hazardous waste bucket designated for broken bulbs must have a Hazardous Waste label affixed with the words “Broken Fluorescent Bulbs” listed as the waste description. A new label must be affixed to the bucket each time the bucket is removed for disposal. Remove the old Hazardous Waste label first.

7.2.3. Used Mercury Containing Thermostats – Containers must have a label affixed with the words: “Universal Waste - Used Mercury-containing Thermostats” and must have the date the first thermostat was placed in the container marked on the label.

7.2.4. Used Batteries – Containers must have a label affixed with the words: “Universal Waste - Used Batteries” and must have the date the first battery was placed in the container marked on the label. Make every effort to segregate specific battery chemistries into separate containers and mark them according to battery type (i.e. Universal Waste – NiCad batteries).

7.2.5. All labels are available from EH&S (x2105).

7.3. Training

7.3.1. Only trained personnel may handle Universal Waste. Universal Waste Management Training is required if an employee, contractor or designated person:

- generates;
- packages;
- prepares for shipment;
- manages collection and storage activities; and/or,
- transports universal waste.

7.3.2. New employees may not manage or handle universal waste unless supervised by someone who has been satisfactorily trained. Employees must receive training in the management and handling of universal waste within six months of commencing work where their duties expose them to universal waste handling activities.

7.3.3. Universal waste management training is provided by EH&S. For more information, visit <http://www.farmingdale.edu/administration/administration-finance/environmental-health-safety/training.shtml>

8. Related attachments, forms or documents:

Attachment 1: Call2Recycle Battery and Cell Phone Recycling Program Description and Sign

Attachment 2: English/Spanish “Handling of Used Fluorescents and HID Lamps” Guide *for posting*

Attachment 3: English/Spanish OSHA Quick Card “Avoiding Mercury Exposure from Fluorescent Bulbs” *for distribution/reference*

ATTACHMENT 1

With its eye on the environment, Farmingdale State College (FSC) has joined a national program called Call2Recycle to conveniently recycle used rechargeable batteries and old cell phones generated on Campus. This program will strengthen and enhance FSC's existing program by providing more convenient and safe disposal options to the Campus Community.

The program is to be administered by EH&S. The program elements are as follows:

- Empty boxes will be provided by EH&S to pre-determined locations around Campus.
- Prior to any box being distributed, each box should be properly "set up". This includes:
 1. Before the box is brought to a location, the plastic shrink wrap should be removed from the box.
 2. Fill in the return/outbound shipping label either by affixing a pre-printed address label, use an address stamp or hand write the following address:

Farmingdale State College
EH&S – Horton Hall
2350 Broadhollow Road
Farmingdale, NY 11735
 3. Using a marker or bold pen/ink, "check off" or mark with an "X" the designated check box to indicate the material is Universal Waste.
 4. Write the date* when the box is set up to the appropriate field.
**Universal Waste rules dictate that the box MUST BE SHIPPED within one year of that date!*
 5. Fold cover in half and insert "lips" into slots in back/top of box to stand up.
 6. Place an instructional sign into a clear page protector and post sign directly above wherever the box is set up. A copy of the instructional sign can be found on the page directly after this attachment.
- When the boxes filled, they are to be shipped via UPS to the recycling facility. There are three (3) options to ship the full boxes:
 1. If UPS generally makes pickups at the building where the box is located, it can be sealed up as per the instructions on the box and handed to the UPS driver (all boxes are pre-addressed and pre-paid);
 2. EH&S can be contacted and a request made to have someone from the department pick up the full box. Once the box is picked up, it will be brought back to Horton Hall where it will be prepped for shipment and left for UPS to pick up; or,
 3. Full boxes can be brought to Horton Hall and dropped off in room 160 designated for EH&S where the box(es) will be prepped for shipment and left for UPS pick up.
- Once the boxes are received at the recycling facility (INMETCO in Ellwood City, Pennsylvania), an automatic replenishment system will generate an order to ship a new box to Horton Hall, where EH&S will inventory the box(es) and distribute to the building where the original box was generated using the same steps listed above (it may take up to 3 weeks transit time for the return of the boxes to the recycling facility and the replenishment order delivered to Horton Hall).

Additional information can be found on our website:

http://www.farmingdale.edu/administration/administration-finance/environmental-health-safety/rechargeable_battery_and_cell_phone_recycling.shtml

Recharging the planet. Recycling your batteries.™

call2recycle®

You can
RECYCLE your
rechargeable **BATTERIES** and
CELLPHONES
here!



It's easy:

- 1) Bag it - one battery or cellphone per bag
- 2) Drop it in the box
- 3) When full, close and tape shut (using the self-adhesive tape on the box) and contact EH&S at (631) 420-2105 to arrange for shipment through UPS using pre-paid shipping.

call2recycle.org

**Farmingdale
State College**
State University of New York

ATTACHMENT 2

Handling of Used Fluorescent & HID* Lamps

1. All used lamps must be packaged in original shipping container or an appropriately sized cardboard box or drum. Remove cardboard spacers from shipping boxes or the lamps won't fit all the way into the boxes.
2. Any unbroken, used lamps should be labeled "Universal Waste – Used Fluorescent Lamps" with the date if placed in a box with new lamps.
3. Label outside of box as "Universal Waste – Used Fluorescent Lamps". Put accumulation start date on label (labels available from EH&S).
4. Do not intentionally break lamps. Do not place broken lamps into boxes with unbroken lamps.
5. Broken bulbs & clean-up residue must be placed into a separate cardboard box (using an inner bag/liner, as necessary), can, pail, fiber or metal drum, labeled as **hazardous waste** and sealed. Wear gloves when handling debris (a dust mask is also recommended).
6. Completely fill box. Do not force lamps into boxes. Box ends must be cross-folded shut when in use and secured with 3-inch packing tape when full.
7. When a box is full or you no longer are actively adding bulbs to it, you may self-transport it to the designated storage area in the Recycling Center, preferably using a vehicle with a separate cab/trunk/etc. so as to keep separate from occupied space, or, contact EH&S at 420-2105 or ehs@farmingdale.edu to discuss options for a pick-up.
8. Do not store boxes outside or exposed to weather.

*HID lamps include: arc lamps, germicidal lamps, high-pressure sodium lamps, mercury vapor lamps, metal halide lamps, neon lamps and ultra-violet lamps.

If you have any questions, contact EH&S at 420-2105

Thank you in advance for your cooperation

Manejo de utiliza fluorescentes y HID* lámparas

1. Todos utilizan lámparas debe ser empacado en contenedor de envío original o una caja de cartón de tamaño adecuado o tambor. Quite los separadores de cartón de cajas de envío o las luces no se ajusta en las cajas de.
2. Cualquier intactas, utilizadas lámparas deben etiquetarse "Universal residuos – utiliza lámparas fluorescentes" con la fecha si se coloca en una caja con nuevas lámparas de.
3. Etiqueta fuera de cuadro como "Universal residuos – utiliza lámparas fluorescentes". Fecha de comienzo de acumulación puesta en etiqueta (etiquetas de EH&S).
4. No romper intencionalmente lámparas. No coloque lámparas rotas en cajas con lámparas intactas.
5. Bulbos de roto y limpiar el residuo deben colocarse en una caja de cartón separada (usando un bolso/trazador de líneas interno, según sea necesario), poder, cubo, fibra o tambor de metal, etiquetado como residuos peligrosos y sellado. Lleve guantes al manipular desechos (también se recomienda una mascarilla).
6. Llenar la caja completamente. No fuerce las lámparas en cajas. Extremos de la caja deben ser doblado Cruz cuando en uso y asegurado con cinta de embalaje de 3 pulgadas cuando completo.
7. Cuando una caja está llena o no activamente está añadiendo bulbos que, puede uno mismo-el transporte a la zona de almacenamiento designada en el centro de reciclaje, preferentemente utilizando un vehículo con un taxi/tronco/etc. separado con el fin de mantener separadas del espacio ocupado, o, EH&S 420-2105 o las ehs@farmingdale.edu para discutir opciones para un pick-up contacto.
8. No almacene cajas exteriores o expuestas a la intemperie.

* HID lámparas incluyen: lámparas de arco, lámparas germicidas, de alta presión lámparas de sodio, lámparas de vapor de mercurio, halogenuros metálicos, lámparas de neón y lámparas ultravioletas.

Si usted tiene alguna pregunta, póngase en contacto con EH&S en 420-2105

Gracias de antemano por su colaboración

ATTACHMENT 3

Avoiding Mercury Exposure from Fluorescent Bulbs

Metallic mercury poses health risks from inhalation and skin exposure. Tubular or compact fluorescent bulbs contain small amounts of the metal mercury sealed inside. If fluorescent bulbs are broken, small amounts of mercury will be released into the environment. Proper cleanup will reduce workers' exposure to the low levels of mercury anticipated when a fluorescent bulb is accidentally broken.

How Workers Can Be Exposed

- Breathing mercury vapor in the air.
- Skin contact with mercury.

Health Effects and Symptoms

- Signs of mercury poisoning include tremors; mood, memory or coordination changes; and skin irritation or allergy.
- Exposure to mercury can harm unborn children.

Preventing Accidental Breakage

- Handle bulbs carefully and store away from workers.
- Package bulbs in a sturdy container to prevent breakage.
- Label containers of fluorescent bulbs.

Safe Cleanup of Broken Fluorescent Bulbs

- Notify workers and tell them to stay away from the area.
- Open any windows and doors to air out the room.
- **Do not** use a broom or vacuum cleaner unless the vacuum cleaner is specifically designed to collect mercury.
- Wear appropriate disposable chemical-resistant gloves.
- Use a commercial mercury spill kit if available, or scoop up pieces of glass and powder with stiff paper or cardboard to avoid contact with the broken glass.
- Use sticky tape to pick up any remaining pieces of glass.
- Wipe down hard floors with a damp paper towel.
- Place all pieces of glass and cleanup materials in a sealable plastic bag or a glass jar with a lid.
- Wash your hands thoroughly after cleanup.

Disposing of Fluorescent Bulbs

- Follow EPA and state government regulations for disposal of fluorescent bulbs and mercury-contaminated waste.

For more information:



U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

Cómo evitar exponerse al mercurio de las bombillas fluorescentes

El mercurio metálico representa un riesgo para la salud cuando se inhala o entra en contacto con la piel. Las bombillas fluorescentes tubulares o compactas contienen pequeñas cantidades de mercurio metálico en su interior. Cuando las bombillas fluorescentes se quiebran, liberan al exterior pequeñas cantidades de mercurio. La debida limpieza disminuye la exposición del trabajador a esos niveles bajos de mercurio que se producen en el ambiente cuando se rompe accidentalmente una bombilla fluorescente.

Cómo queda expuesto el personal al mercurio

- Respirando el vapor de mercurio del aire.
- Por contacto de la piel con el mercurio.

Efectos sobre la salud y síntomas

- Entre los signos de envenenamiento por mercurio están los temblores; los cambios de humor, de memoria o de coordinación, y la irritación o alergia de la piel.
- La exposición al mercurio puede perjudicar al feto durante el embarazo.

Cómo evitar roturas accidentales

- Maneje las bombillas cuidadosamente y almacénelas fuera del alcance de los empleados.
- Empaquete las bombillas en una caja resistente para evitar que se rompan.
- Ponga etiquetas en las cajas de bombillas fluorescentes.

Limpieza sin peligro de las bombillas fluorescentes rotas

- Pida a los empleados que no se acerquen al lugar donde están los fragmentos.
- Abra ventanas y puertas para ventilar la pieza.
- **No** use escobas ni tampoco aspiradoras a menos que éstas estén hechas específicamente para recoger mercurio.
- Utilice guantes desechables resistentes a los productos químicos.
- Use equipo comercial para la recogida de derrames de mercurio, si lo tiene, o recoja los trozos de vidrio y el polvo con un papel o cartón rígido para evitar el contacto con los vidrios rotos.
- Utilice cinta adhesiva para recoger los trozos de vidrio que aún queden.
- Limpie el piso (si es duro) con una toalla húmeda de papel.
- Coloque todos los trozos de vidrio y material de limpieza en una bolsa de plástico de cierre hermético o en un recipiente de vidrio con tapa.
- Lávese bien las manos después de la limpieza.

Cómo deshacerse de las lámparas fluorescentes

- Siga los reglamentos de la EPA y del Gobierno del Estado para deshacerse de bombillas fluorescentes y de los residuos contaminados con mercurio.

Para más información:



Departamento del Trabajo de EE.UU.

www.osha.gov (800) 321-OSHA (6742)