

Universal Waste Lamp Handling and Recycling Procedures for Cornell Greenhouse Personnel

Definitions: refer to Terminology in the R5 Operations Department & Cornell Environmental Health & Safety (EH&S) *Proper Disposal of Light Bulbs at Cornell University's Ithaca Campus*

Helpful Tips

- **For storage and recycling of Universal Waste used non-broken bulbs**
 - Using the original boxes is recommended with the R5 Operations label
 - If original box is not available, store in a new box packed so they will not break and be sure it is labeled and sealed (contact R5 Operations for labels)
 - Odd sized bulbs or compact fluorescent bulbs may be stored in printer paper boxes or 5 gallon buckets with lids (check with R5 at 254-1666 for questions on difficult to store or unusual bulbs)
 - Keep boxes dry and undamaged
 - Remove packing inserts
 - Fill boxes as full as possible to prevent breakage
 - Segregate bulbs by type and length whenever possible
 - Boxes should be closed with clear tape as soon as they are in use and even if not full, including covering handle holes or any other openings (see attached photographs)
 - Loose bulbs, open boxes, and/or bulbs sticking out of boxes are subject to DEC fines
 - Do not tape bulbs together, place tape on bulbs for any reason or bundle them together with rubber bands
 - Only bulbs generated by the facility should be stored and recycled
- **For storing and recycling broken bulbs**
 - Wear appropriate PPE for handling glass and to avoid being cut
 - Avoid creating dust when sweeping up broken bulbs
 - Avoid breathing dust when cleaning up broken bulbs
 - Contact R5 Operations for additional information on handling broken bulbs
 - Keep a broken lamp container in each facility. Where needed, R5 Operations will work with areas to determine the best container set up
 - Place in a hard-walled container, plastic lined container which is sealable
 - Keep sealed
 - R5 Operations will supply containers, if desired

**Safety, Health & Environmental Management (SHEM) for Cornell Greenhouses
Universal Waste Lamp Handling and Recycling Procedures for Greenhouse Personnel**

- Label the container “Hazardous Waste - Broken Lamps”
 - Appropriate labels are available from R5 Operations (254-1666 or recycle@cornell.edu).
- Store the container in a “Satellite Accumulation Area”
 - Do NOT store in mechanical rooms or hot locations such as greenhouses.
- Broken bulbs may be stored until the container is full

Storing and Recycling of Universal Waste Lamps (bulbs) at remote facilities (Geneva, Long Island, etc.)

- Universal waste cannot be transported between DEC regions
- Refer to the R5 Operations Department & Cornell Environmental Health & Safety (EH&S) *Proper Disposal of Light bulbs at Cornell University’s Remote Facilities* or for questions for a specific remote facility contact R5 Operations by calling 607-254-1666 or e-mailing recycle@cornell.edu
- Geneva Experiment Station: B&P is designated to properly manage and dispose of the spent fluorescent lamps (for more information contact Geneva NYSAES: B&P).

Safely Removing a Light Bulb

- Use personal protective equipment appropriate to job including protection for hands and eyes
- Remember that bulbs may shatter forming small particles
- Use appropriate equipment, such as ladders if you have had formal ladder safety training that allows you to handle bulbs so that you are not handling the bulbs over your head
- If lubricating bulbs when they are inserted, use a dielectric grease – nothing flammable
- Frequency of light bulb changing depends on the manufacturer’s recommendations, bulb life, the task and the location

Storage of New Bulbs

- Store new bulbs in a designated location in the original boxes if possible
- Location chosen should help prevent bulb breakage, ie preventing boxes from falling, and be away from heat sources (e.g. not in electrical rooms or greenhouses)
- Dating boxes by the purchase date is not required but useful

Storage of “Good Lamps” That Are Not New

- Same as storage of new bulbs but with a different colored (green) sticker label
 - The wording on the label will read “GOOD LAMPS” with the smaller type at the bottom of the sticker “DO NOT DISCARD” to make it doubly clear that these bulbs are still good

**Safety, Health & Environmental Management (SHEM) for Cornell Greenhouses
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Training

- All greenhouse personnel will receive Cornell R5 Operations Department/EH&S training on handling Universal Waste Lamps (non-broken bulbs) and Hazardous Waste lamps (broken bulbs).
- All greenhouse personnel will receive site specific training on handling and storage of Universal Waste Lamps (non-broken bulbs) and Hazardous Waste Lamps (broken bulbs).
- All greenhouse personnel will complete an annual refresher training checklist on Universal Waste Lamp and broken bulb handling and storage
- A Universal Waste Lamp/Broken Bulb Handling and Recycling Training Checklist is available at <http://greenhouses.cals.cornell.edu/>

References and Resources

Cornell R5 Operations Department <http://r5.fs.cornell.edu/about/howTo.cfm#Light%20Bulbs>

Proper Disposal of Light bulbs at Cornell University's Ithaca Campus April 16, 2014

<http://r5.fs.cornell.edu/file/Used%20Lamp%20Recycling%20Procedures%2020140415.pdf>

Cornell R5 Operations Department & Environmental Health & Safety on-line training

*SHEM Universal Waste Lamp/Broken Bulb Handling & Recycling for Cornell Greenhouse Personnel
Annual Training Checklist*

College of Agriculture and Life Sciences (CAL S) Occupational and Environmental Health (OEH) -
Greenhouse page <http://greenhouses.cals.cornell.edu>

Cornell Environmental Health & Safety (EH&S) Ladder Safety

http://sp.ehs.cornell.edu/osh/occupational-safety/fall-prevention/Documents/Ladder_safety_toolbox_talk.pdf

Cornell EH&S Personal Protective Equipment (PPE) Assessment Form

http://sp.ehs.cornell.edu/osh/occupational-safety/personal-protective-equipment/Documents/PPE_Assessment_Form.pdf

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Light Bulb Storage Photos

Proper labeling



Storage



End of box taped close



Tape over holes

