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HAZARDOUS WASTE MANUAL

Procedure Cover Sheet

Procedure Title: Special Wastes

Procedure Number: TSO-07-05-REV 0

Effective Date: 01 September, 2007

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Procedure #: TSO-07-05-REV 0
Procedure Title: Universal Waste
Approval Date: August 20, 2007
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A. INTRODUCTION

The Universal Waste Rule permits certain hazardous wastes known as “universal wastes” to be managed under streamlined requirements. The rule is designed to encourage recycling and proper disposal of some common hazardous wastes and to reduce the regulatory burden on businesses that generate these wastes. Idaho has adopted the federal Universal Waste Rule described in 40 CFR 273, so Idaho’s requirements are identical to those of the federal government.

B. PURPOSE

The purpose of this procedure is to describe the types of waste that fit into the category of Universal Waste.

D. UNIVERSAL WASTES

Currently, four types of hazardous waste are considered Universal Waste.

1. *Batteries*

This group includes batteries such as nickel-cadmium (Ni-Cd) and small sealed lead-acid batteries, which are found in many common items including electronic equipment, portable computers, cell phones and emergency backup lighting. See the TSO procedure on Batteries for details on handling this type of waste.

2. *Agricultural Pesticides*

These are pesticides that have been recalled or banned from use, are obsolete, have become damaged, or are no longer needed due to changes in use.

3. *Spent Lamps*

This category includes lamps or bulbs that contain mercury or lead. Examples include fluorescent, high-intensity discharge (HID), neon, high-pressure sodium, mercury vapor, and metal halide lamps. See the TSO procedure on Light Bulbs for details about handling this type of waste.

4. *Mercury-Containing Equipment*

These are mercury-containing equipment used in industry, hospitals, and households. Examples include barometers, manometers, temperature and pressure gauges, and mercury switches (such as light switches in automobiles). Also included in this category are mercury-containing thermostats, which can contain as much as three grams of liquid mercury and are located in almost any building, including commercial, industrial, agricultural, community, and household buildings.

Since these groups of waste are in the special category of universal waste, they do not require the same hazardous waste labeling necessary for other hazardous wastes. Instead, a label stating, "Universal Waste" and the type of waste should be attached to boxes or containers holding the universal waste.



Procedure #: TSO-07-05-REV 0
Procedure Title: Light Bulbs
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A. INTRODUCTION

The disposal of light bulbs is governed by the Universal Waste Rule which encourages recycling and proper disposal (see Universal Waste). Spent bulbs are generated constantly throughout the university and are ultimately disposed of by the Technical Safety Office.

B. PURPOSE

The purpose of this procedure is to outline the Idaho State University disposal procedures for various types of light bulbs.

C. PROCEDURE

Though spent lamps are ultimately disposed of by the TSO, their collection is organized through Syed Hashim (ext. 2747), an Environmental Specialist at the ISU Physical Plant. He will contact and coordinate with the TSO when disposal shipments are required.

Spent lamps at ISU are placed into three categories:

- Fluorescent tube bulbs with green ends
- Other bulbs
- Broken bulbs

Spent lamps must be properly categorized before they can be disposed of by the TSO. Also, it is important to avoid breaking the bulbs since glass shards are a safety hazard and are difficult to contain.

Bulb Type I: Fluorescent bulbs with green ends

1. Check to see if the fluorescent bulb is one of the following:
Manufacturer: PHILIPS - fluorescent bulb has green color ends
Manufacturer: GE – fluorescent bulb has a green color label on one of its ends and the label reads either “Ecolux” F32T8/SP41/ECO or F34SP41/RS/WM/ECO
2. If the fluorescent bulb **is** one of the above types:

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- a. Box the used light bulbs in the original packaging or in a structurally sound box
 - b. Dispose of the box as municipal solid waste (i.e. in the regular trash)
3. If the fluorescent bulb **is not** one of the above types, then it is not considered Bulb Type I. Proceed to the procedure for disposing of Bulb Type II.

Bulb Type II: Fluorescent bulbs without green ends, incandescent bulbs, metal halides, sodium vapor lamps, high intensity lamps, etc.

1. Box the used light bulbs in the original packaging or in a structurally sound box
2. Stick a "Universal Waste" label on the box (stickers can be obtained from Syed Hashim at ext. 2747)
3. Write the building name and date on the waste label
4. Bring the box to the designated collection area (storage trailer behind the Heat Plant building)

Boxes should not be stored in the storage trailer for more than one year from the date on the label. Syed Hashim will inspect the trailer's spent lamp boxes once a month to ensure proper storage.

Broken Bulbs

If a bulb is broken, it must be handled differently since broken glass is a sharps danger and there is the possibility of gas release, depending on the type of bulb.

1. Open window, if possible, disperse gases
2. Clean up the broken pieces carefully using a broom and dustpan
3. Place the broken pieces in a structurally sound container or bag
4. Follow the Bulb Type II procedure



Procedure #: TSO-07-05-REV 0
Procedure Title: Batteries
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A. INTRODUCTION

A battery is defined in 40 CFR 273.9 as “a device consisting of one or more electrically connected electrochemical cells which is designed to receive, store and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed.”

B. PURPOSE

The purpose of this procedure is to illustrate correct steps for the handling and labeling of batteries in accordance with Federal and ISU requirements.

C. REQUIRED MATERIAL(S)

PPE (gloves)
Containers

D. PROCEDURE

Lead Acid Batteries:

1. Make sure the battery is not leaking.
2. If the battery is leaking, transfer the battery to a separate storage container. Containers should be in good condition, with no pitting, rusting, or leaking.
3. All lead-acid batteries and the containers for this type of battery should be transported in the TSO truck to Sterling Battery Company located at 559 North Harrison Avenue in Pocatello.

Other Batteries:

1. Make sure the battery is not leaking.
2. If the battery is leaking, transfer the battery to a separate storage container.

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3. All non-lead acid batteries and the containers for this type of battery shall be transported to the TAA shed for storage pending removal by Clean Harbors.
4. Refer to the "Regulatory Status of Spent Batteries" sheet to determine the classification of the battery.

E. ATTACHMENTS

Regulatory Status of Spent Batteries

REGULATORY STATUS OF SPENT BATTERIES

Battery Type	Regulatory Status	Recyclable	Notes	Disposal
Alkaline	non-hazardous	no	most common	ordinary trash
Carbon zinc	non-hazardous	no	labeled general purpose, heavy duty or "classic"	ordinary trash
Zinc air	non-hazardous	no	button size, pin hole	ordinary trash
Lithium, < 9 volts	non-hazardous	no	must be discharged	contact and return to vendor
Lithium, > 9 volts	hazardous (D003)	no		hazardous waste
Lead-acid	non-hazardous (if recycled)	yes	automotive-battery	contact TSO for listing of local recyclers
Sealed Lead acid	hazardous (D008, D002)	yes		hazardous waste
Nickel cadmium	hazardous (D007)	yes		hazardous waste
Mercuric oxide	hazardous (D009)	yes		hazardous waste
Silver oxide	hazardous (D011)	yes		hazardous waste

Adapted from the Michigan Pollution Control Agency, 1994.



Procedure #: TSO-07-05-REV 0
Procedure Title: Used Oil
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A. INTRODUCTION

Used oil is defined as "any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities" (40 CFR 279.1). Used oil is currently not classified as either a hazardous waste or a universal waste, but is subject to the federal requirements under 40 CFR 279. Even though classified as non-hazardous, waste oil must not be placed in the regular trash or disposed of down the drain.

B. PURPOSE

This procedure provides correct handling and labeling procedures for used oil in accordance with Federal, State, and University requirements. It incorporates regulations instructed by the "Standards for the Management of Used Oil" (40 CFR 279), as well as the Idaho State University policy of handling used oil.

C. REQUIRED MATERIAL(S)

PPE (gloves)
Used oil container
Used oil labels
Funnels and rags
Chlorine sniffer
Chlor-D-Tect

D. PROCEDURE

When used oil requires disposal, the following procedures shall be followed (as per 40 CFR 279.22):

1. All containers shall be labeled clearly as "Used Oil."
2. Oil of the same type and condition should be consolidated. Contaminated oil, chlorinated oil, and silicone oil such as vacuum pump oil should be labeled as hazardous waste and picked up by the disposal company, Tri-State.

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3. The chlorine sniffer should be used to detect chlorine/gas. If the chlorine sniffer responds, a Chlor-D-Tect 1000 should be used. This detector will show the levels of chlorine in ppm up to 1000 ppm. Tri-State Recycling will take oil if it contains less than 1000 ppm chlorine.
4. Hazardous oils should be consolidated into one container, and non-hazardous oils placed in a different container for recycling.
5. Containers should be in good condition, with no pitting, rusting, or leaking.
6. All oil handling (transportation, consolidation, etc.) must occur over an impermeable surface away from any non-protected floor drains.
7. Any used oil rags must be placed in a separate storage container, such as a trash bag, and labeled "Used Oil Rags."
8. Used oil containers and rags should be transported to and stored in the TSO shed until disposed of by Tri-State.



Procedure #: TSO-07-05-REV 0
Procedure Title: Used Fixer
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A. INTRODUCTION

Fixer, which is used for film developing and contains silver, is defined in 40 CFR 261.24(b) as a characteristic hazardous waste (D011). Fixer must be handled as hazardous waste, but filtering or recycling fixer can render it non-hazardous by removing the silver. A few places on campus filter out the silver using a special filtration process. These locations employ a separate company that routinely replaces the filtration system's silver filter. In locations where silver filtering is not performed, the fixer must be removed by the TSO to the TAA and prepared for recycling.

B. PURPOSE

The purpose of this procedure is to outline how to store used fixer and prepare it for removal by the recycling company.

C. REQUIRED MATERIAL(S)

Proper PPE (gloves, goggles, apron, etc.)
55-gallon drum funnel

D. PROCEDURE

The locations on campus that produce unfiltered fixer for eventual pick-up by the TSO collect the fixer in 5 gallon carboys. TSO staff should remove the full carboys and replace them with a clean, empty carboy. It is not necessary to place a hazardous waste label on the carboy, but it should have the phrase "used fixer" written in a visible location. The TSO's current recycler of fixer is Safety Kleen (208-243-0030). Safety Kleen will only accept fixer in 55 gallon drums for removal, and ISU is charged per drum. In order to minimize costs, it is best to fill the drum before paying to have it removed. When pouring fixer, use a 55 gallon drum funnel and absorbent pads to prevent spills.

The TSO currently stores two 55 gallon fixer drums, one in the TAA and another at the Mass Communications photography lab. The TAA drum is filled progressively with fixer from picked-up carboys. The drum in the

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photography lab remains in its location until full. When either or both of the 55 gallon drums are full, Safety Kleen should be called to arrange a pick-up. TSO staff must ensure that all paperwork involved in the shipment is properly collected (see procedure on Hazardous Waste Shipments).



Procedure #: TSO-07-05-REV 0
Procedure Title: Paint
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A. INTRODUCTION

Many types of paint or paint-related material are found on campus and are disposed of by the TSO. Dissimilar types of paint waste can be treated differently depending on their constituents and containment.

B. PURPOSE

The purpose of the procedure is to describe how to dispose of different categories of paint waste, including spray paint, latex paint, oil-based paint, or other paint-related materials such as stains, primers, thinners, etc.

C. PROCEDURE

Latex (Water-Based) Paint

Latex paint is considered non-hazardous (see the procedure on Waste Characterization). However, since latex paint can pose a threat to small living organisms, it is best to dry the paint in the can before disposal. To dry the paint, simply remove the lid and place the can in a convenient, out-of-the-way location in the TAA shed. For large quantities of latex paint, mix in a non-flammable drying agent such as clay-based kitty litter or vermiculite. Once the paint is dry, the container can be recapped and placed into the regular garbage.

Spray Paint

The best method for preparing spray paint for disposal, as approved by the Idaho DEQ, is to puncture the can in a completely enclosed system. The excess paint within the can must be collected in a container and labeled as hazardous waste. The start date is considered the time of collection. Once labeled, the paint container should be properly stored in the TAA. The spent spray can may be thrown away or recycled once the container is considered empty (see the procedure on Empty Containers).

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Oil-Based Paint / Paint Related Material

All other paints or paint-related material are classified as hazardous waste (see the procedure on Waste Categorization). These must be labeled and stored in the TAA as hazardous waste.



Procedure #: TSO-07-05-REV 0
Procedure Title: Empty Containers
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A. INTRODUCTION

Empty hazardous waste containers, by virtue of holding hazardous waste, become hazardous waste themselves and need to be disposed of as such. When these containers become old or unusable, special steps must be taken to ensure their proper disposal.

B. PURPOSE

This procedure describes the criteria for considering a container empty or hazardous waste, and the proper methods of disposal for both categorizations.

C. REQUIRED MATERIAL(S)

PPE (gloves, safety goggles, long sleeves)
Garbage Bag(s)
Cardboard Box(es)
Duct Tape
Hammer / Saw

D. PROCEDURE

The classification of an empty container as either hazardous or non-hazardous is dependent on the waste that the container held. Hazardous waste classifications include characteristic waste, acutely hazardous waste (p-listed), or compressed gases with a reactive explosion hazard. The disposal procedure differs for each type of waste.

Characteristic Hazardous Waste

A container that once held characteristic hazardous waste is empty if all the waste has been removed by conventional methods such as pouring or pumping, and either 1) there is not more than 2.5 cm of residue on the bottom of the container, or 2) the container contains less than 3% waste by weight [40 CFR 261.7(b)(1)].

Acutely Hazardous Waste

A container that once held a p-listed waste is considered empty if 1) the container has been triple rinsed with a solvent capable of removing the waste, 2) another method is used that has proved to be as good as a triple rinse at removing the waste, or 3) the container has an inner liner that prevents the waste from coming into contact with the container [40 CFR 261(b)(3)].

Hazardous Waste as a Compressed Gas

A container that has once held a pressurized hazardous gas is considered empty when the pressure within the container is approximately equal to atmospheric pressure [40 CFR 261.7(b)(2)]. The TSO does not remove compressed gases from any container except spray paint (see the procedure on Paint).

E. DISPOSAL

If a container is not considered empty, then the container must be disposed of as a solid hazardous waste.

If a container is considered empty, then the container may be disposed of as suggested by the disposal company, Clean Harbors. The container must be destroyed in such a way that its destruction renders it unusable under all circumstances. This means that glass bottles should be broken with a hammer and that plastic carboys/bottles should be cut in half. The broken glass should be placed inside a garbage bag within a cardboard box. The bag should be tied and the cardboard box should be taped shut with duct tape and labeled with the words "broken glass." Plastics can be placed inside a garbage bag and, if desired, also placed inside a cardboard box and taped shut. These broken containers, whether glass, plastic or both, can be disposed of in the regular garbage.

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REVISION TRACKER

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