FACILITIES MANAGEMENT – OFFICE OF ENVIRONMENTAL HEALTH AND SAFETY

HAZARDOUS WASTE DISPOSAL PROGRAM

10/24/19 – Last Revision

The U.S. Environmental Protection Agency (EPA) has developed, under the Resource Conservation and Recovery Act of 1976 (RCRA), a complex set of regulations to control hazardous wastes. The University is currently holding a permit issued by the U.S. EPA as a hazardous waste generator. This permit allows the University, within strict U.S. EPA and NYS Department of Environmental Conservation (NYS DEC) guidelines, to manage all hazardous waste on campus. The Office of Environmental Health and Safety has instituted the following Hazardous Waste Disposal Program, in order to handle the hazardous waste generated on campus. This program is coordinated by the University's Chemical Hygiene Officer/ Hazardous Waste Specialist.

State law (Chapter 719 of the laws of 1981) established criminal penalties for the unlawful possession, handling, and disposing of hazardous wastes. Representation and indemnification under section 17 of the Public Officer's Law would not be available in cases of liability imposed under criminal statutes. Because of the possibilities of personal liability and prison terms, campus personnel are advised to familiarize themselves with the University's Hazardous Waste Disposal Program for the proper storage and disposal of hazardous wastes. The University at Albany encourages the use of green chemistry and whenever possible, waste minimization practices should be followed. **ALL HAZARDOUS WASTE LEAVING THE UNIVERSITY FOR DISPOSAL IS REQUIRED TO BE INCINERATED, UNLESS SPECIAL PERMISSION IS RECEIVED FROM EH&S OR INCINERATION IS NOT POSSIBLE.** The procedures stated below are to be followed by campus generators when identifying, storing and disposing of hazardous waste:

1. IDENTIFICATION

The responsibility for the identification of hazardous waste (waste chemicals, waste chemical containing products, and out-of-date chemicals) within the University necessarily rests with the faculty and staff who have created the waste (generators) in research, instruction and construction. See the following pages for the definitions of generator and hazardous waste. The Chemical Hygiene Officer/ Hazardous Waste Specialist will provide assistance in the identification of hazardous waste.

2. LABELING AND STORAGE

All containers of hazardous waste must be properly labeled with free labels provided by the Office of Environmental Health and Safety in Chemistry B72. The waste chemicals must be identified by their **proper chemical name (not formulas**), including proportions of a mixture. The label must say **"HAZARDOUS WASTE**". ***The label must be completed before it will be accepted for disposal by the Office of Environmental Health and Safet***y. The University is liable for the mislabeling of hazardous waste. Do not date the waste as the EH&S Office will date it, when it is put into the Hazardous Waste Room. Once a container is **full,** you must call

the EH&S Office at 518 442-3495 **as soon as possible**. All waste must be kept in **sealed containers** at all times, unless you are actively pouring into the container. Zip-loc bags for dry debris must also be labeled and sealed**. It is illegal to evaporate waste.** Do not mix incompatible wastes. Ensure the waste container is compatible with the waste and use the appropriately sized container, as our disposal costs are somewhat determined by the container size.

3. **UNKNOWNS**

Unknown chemicals cannot be accepted for disposal by the Office of Environmental Health & Safety. The EH&S Office has no way of disposing of unknowns. If the person wishing to dispose of the waste chemicals cannot trace down the identity of the waste, the Office of Environmental Health & Safety can have the University's Hazardous Waste Disposal Company identify them for a substantial cost to the generator. For this reason, the Office of Environmental Health and Safety strongly encourages Departments and Researchers that have either departing faculty, staff or students, to have these departing persons identify any waste they may have generated before they leave. The Office of Environmental Health & Safety will assist in the identification of hazardous waste and arranging for its storage and ultimate disposal. The Office of Environmental Health & Safety is not responsible for cleaning abandoned laboratories of waste chemicals.

4. **STORAGE, PACKAGING AND COORDINATING DISPOSAL**

All chemical wastes must be packaged by the generator in a manner, which will allow them to be transported and stored without danger of spillage, escape of dangerous vapors, or hazardous reaction. Again, all wastes must be properly labeled. Once a container of hazardous waste is **full** or ready to be disposed of, the Hazardous Waste Specialist **must be contacted as soon as possible** at 518 442-3495. The Hazardous Waste Specialist will then pick up the waste container as soon as possible and will either put it into storage or pour if off in the Hazardous Waste Room. Another container of the same waste stream **cannot** be utilized, until the full waste container has been picked up. Do not accumulate any waste in your lab for longer than 2 months. This does not include full containers of waste, which must be disposed of immediately. **Routine disposal of hazardous waste through the EH&S Office is encouraged and it's free! Do NOT stockpile old chemicals. If you haven't used it in 2 years, let the EH&S Office dispose of it for you.**

5. **TRANSPORTATION**

The Hazardous Waste Specialist in the Office of Environmental Health & Safety **must** be contacted at 518 442-3495, in order to arrange for a pickup of hazardous waste. No waste is to be dropped off at the EH&S Office without prior permission from the Hazardous Waste Specialist or their designee.

6. **COSTS**

The Office of Environmental Health and Safety pays for the disposal of routinely generated hazardous waste, excluding hazardous waste generated by construction projects. The EH&S Office tries to reduce the cost of hazardous waste disposal in many ways: by bulking waste chemicals when possible, disposing of full lab packs, using a bid process for contracting with a

waste disposal company and by brokering usable chemicals within the University. Even with these combined efforts, the cost for the disposal of waste chemicals far exceeds their original purchase price. It is thus recommended that the researcher order only the amount of a particular chemical that can be used within a year and/or by a particular research project. This will ultimately save the University money and it is definitely safer to store smaller amounts of chemicals. Chemical clean outs of labs or other areas are not considered routinely generated hazardous wastes. Please refer to the Laboratory Decommissioning Policy and Checklist when performing a laboratory cleanout. See Appendix S of the University's Chemical Hygiene Plan. https://www.albany.edu/ehs/pdf/LabDecommissioningCheckList6-2013.pdf

7. CONSTRUCTION/RENOVATION WASTE

Before any waste leaves a construction/renovation area on campus, if first must be determined, if the waste is considered a regulated waste (hazardous, universal, biological, radioactive, etc.) by the U.S. EPA and/or the NYS DEC. If the waste is a regulated waste, the project is responsible for the costs associated with the proper disposal of this waste. All governmental waste regulations and University at Albany requirements must be adhered to during any construction project/renovation.

The University at Albany requires that only the staff of the EH&S Office can sign for Uniform Hazardous Waste Manifests using the University at Albany's EPA ID number. The University at Albany also requires that all hazardous waste be incinerated, unless a special dispensation is given by the EH&S Office. EH&S requires that all lead paints chips going out as hazardous waste must also be tested for PCBs, before they leave the University for disposal. Contact the EH&S Office for the appropriate procedures for handling waste profiles.

B. DEFINITIONS

GENERATOR

A generator is anyone who disposes of waste that is defined by the Environmental Protection Agency (EPA) to be a "hazardous waste". You are a generator if, in your work/research at the University, you produce or find a hazardous chemical that you intend to discard. It is your responsibility to ensure that this waste is handled correctly as described in the above Hazardous Waste Disposal Program. Be aware that there are substantial civil and criminal penalties for any person, company, corporation, institution, association, etc. who improperly disposes of hazardous waste.

HAZARDOUS WASTE

A waste is defined by EPA to be hazardous, if it meets ANY of the following:

1. It is a "solid waste or a combination of solid wastes (a solid waste includes semi-solid, liquid, or contained gaseous material) which, because of its concentration, quantity, or physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality, or an increase in serious irreversible or incapacitating illness, or may pose a substantial present or potential hazard to human health, or the

environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

2. It is included in lists of specifically identifiable compounds published by EPA. See Appendix F – EPA Hazardous Waste List.

3. It is a listed waste mixed with nonhazardous materials.

4. It has the characteristics of being ignitable, corrosive, reactive, or EP Toxicity, as defined by EPA. See below.

5. It is personally known to you to be hazardous based upon knowledge of the materials or processes used in producing the waste.

6. The four characteristics that determine if a waste is hazardous are as follows:

a. ***Characteristic of Ignitability***

1. It is a liquid, other than an aqueous solution containing less than 24% alcohol by volume, and has a flash point of less than 60°C (140°F).
2. It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and when ignited burns so vigorously and persistently that it creates a hazard.
3. It is an ignitable compressed gas; any material or mixture having in the container an absolute pressure exceeding 40 p.s.i. at 70°F or any liquid flammable material having a vapor pressure exceeding 40 p.s.i. absolute at 100°F.

4. It is an oxidizer; a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.

b. ***Characteristic of Corrosivity***

1. It is aqueous and has a pH less than or equal to 2, or greater than or equal to 12.5, as determined by a pH meter.
2. It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inches) per year at a test temperature of 55°C (130°F) as determined by test methods specified by the National Association of Corrosion Engineers.

c. ***Characteristic of Reactivity***

1. It is normally unstable and readily undergoes violent change without detonating,
2. It reacts violently with water,
3. It forms potentially explosive mixtures with water,

4. When mixed with water, it generates toxic gases or vapors in a quantity sufficient to present a danger to human health or the environment,
5. It is a cyanide or sulfide-bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases or vapors in a quantity sufficient to present danger to human health or the environment,
6. It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement,
7. It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure,
8. It is a forbidden explosive, a Class A explosive or a Class B explosive as defined in 49 CFR 173.51 and 173.53 (see section 370.1(e) of this Title).

d. ***Characteristic of EP (Extraction Procedure) Toxicity***

(1) A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in subdivision 370.1(e) of this Title, the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 at a concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this subdivision.

In NYS, all solid wastes containing 50 parts per million (ppm) by weight (on a dry weight basis for other than liquid wastes) or greater of polychlorinated biphenyls (PCBs) are listed hazardous wastes. There are a very few exceptions to this; small capacitors and drained PCB articles, as defined in NYS DEC's regulations Part 371. Please contact the EHS Office with any questions on PCB wastes.

All non-empty aerosol cans are considered hazardous waste, as are all compressed gas cylinders, whether they are empty or not.

All scrapped lead paint waste must be tested for PCBs, before it is are sent out as waste.

Table 1. -- Maximum Concentration of Contaminants for the Toxicity Characteristic

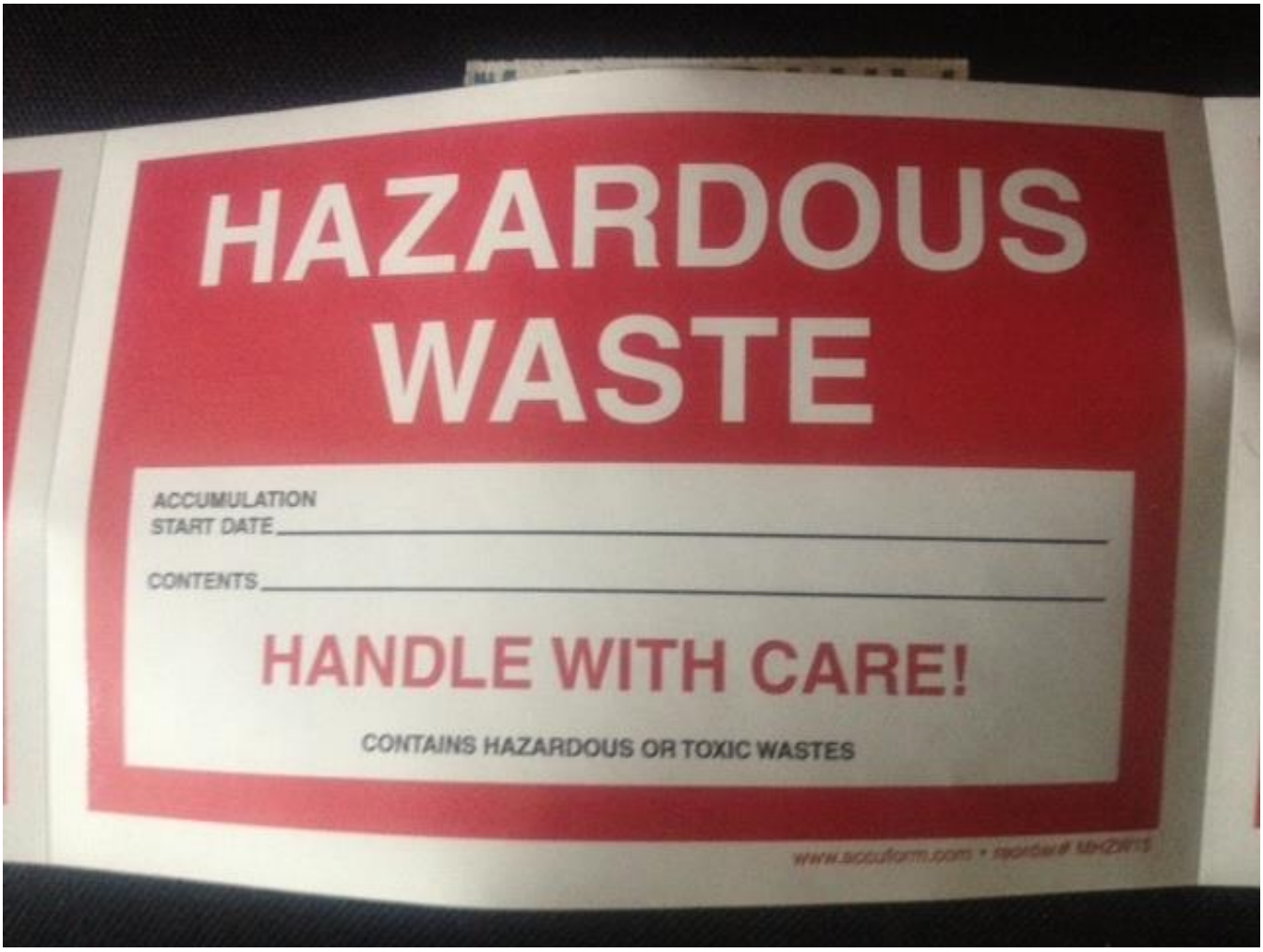
Contaminant Concentration for Toxicity			
EPA HW No.[1]	Contaminant	CAS No.[2]	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	[4]200.0
D024	m-Cresol	108-39-4	[4]200.0
D025	p-Cresol	106-44-5	[4]200.0
D026	Cresol		[4]200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	[3]0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	[3]0.13

D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentrachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	[3]5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

FOOTNOTE 1: Hazardous waste number. FOOTNOTE 2: Chemical abstracts service number. FOOTNOTE 3: Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level. FOOTNOTE 4: If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

(2) A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table 1 which corresponds to the toxic contaminant causing it to be hazardous.

C. HAZARDOUS WASTE LABEL



These labels are provided for free by the Office of Environmental Health and Safety in Chemistry B72.
All Hazardous Waste should be labeled with the words "Hazardous Waste" and the container's contents should be listed, no abbreviations or chemical formulas allowed.
DO NOT DATE YOUR WASTE. EH&S dates it when it is put into the University's Hazardous Waste Rooms.