



Lab Waste Management Guideline



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Laboratory Waste Management Guidelines

The goals of these guidelines are to:

- a. Provide guidelines for school laboratory managers and members to sort laboratory-related waste.
- b. Introduce the above personnel to the hazards of laboratory-related waste.
- c. Introduce the above personnel to the laboratory-related waste safety facilities and equipment.
- d. Introduce the above personnel to the emergency disposal measures and precautions for laboratory-related waste.

We briefly describe how to legally dispose of laboratory-related waste and what to do when a hazardous situation occurs in relation to it.

This guide cannot cover all potential hazards and hazardous scenarios related to laboratory waste, but the risks that this manual does not mention also need to be taken into account by the above-mentioned personnel.



1. Introduction to laboratory waste classification

1. Experimental exhaust gas



2. Experimental waste liquid



3. Experimental solid waste

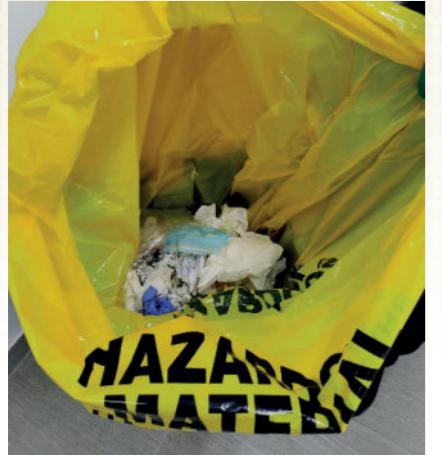


Classification according to the national hazardous waste generation pathway

Category	Code	Name	Picture	Characteristics
900-041-49		Chemical reagent packaging containers		T/In
		Laboratory solid waste (gloves, wipe paper, waste materials, etc.)		
		Wastewater station sludge		
		Laboratory solid waste (sharp objects)		
HW49 others		Laboratory liquid waste (Organic waste liquid)		T/C/I/R
		Laboratory liquid waste (Acidic waste liquid)		
		Laboratory liquid waste (alkaline waste solution)		
	900-039-49	Waste activated carbon (Exhaust gas disposal facility)		T

2. Hazardous waste temporary storage requirements

1. Determine the type and quantity of laboratory waste;



2. According to the waste characteristics of the inquiry packaging requirements to choose the container, to ensure that the material of the carrier with its suitability;

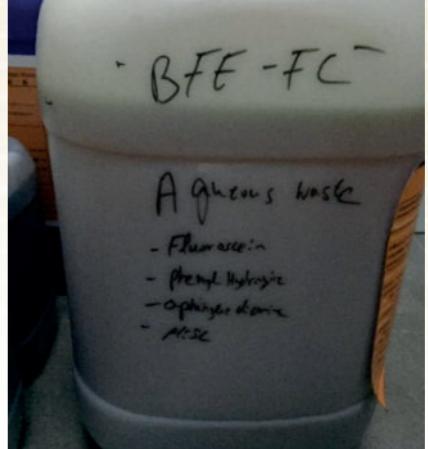
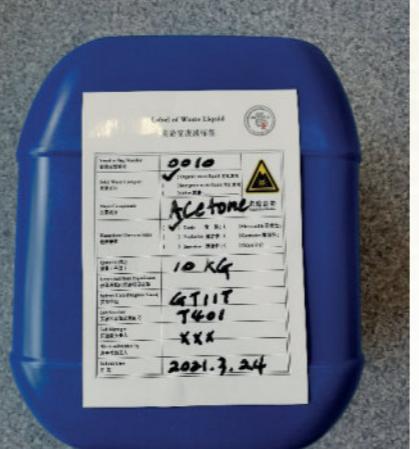


3. Prepare corresponding waste labels for different laboratory wastes and label them well.

Label of Waste Liquid	
实验室废液标签	
Vessel number	危废编号
Waste Liquid Category	危险废物
Major Component	主要成分
Hazardous Characteristics	危险特性
Quantity (Kg)	数量 (千克)
Generated from Experiment	实验产生的废物
Sample Unit (Program Name)	样本单位 (项目名称)
Lab Number	实验室编号
Lab Manager	实验室负责人
Waste submitted by	提交废弃物人
Submit Date	日期

Hazardous Wastes	
危险废物	
废物名称: 研究、开发和教学活动中、化学和生物实验室产生的废物(危险废物)	危险类别
废物类别: HW40其他废物	危险废物
废物代码: 900-047-49	
废物代码: T/C/NR	
Safety Measures	
安全措施: 避免摄入、避免生成或释放或溢出、存放与使用良好处、遇火源及热源、	
贮存: 避免接触或污染的水和酸碱。如皮肤接触: 用大量肥皂和清水清洗受影响部位。如发生皮肤或眼睛刺激不适, 立即就医。	
操作控制: 三部用温水小心地清洗15分钟以上。清洗时, 用手拧开瓶盖, 小心清洗各个部分及瓶盖周围。不要将液体冲入, 应当立即就医。	
个人: 避免食入, 如果摄入者有意识, 用水漱口; 如果摄入者失去意识, 请立即就医。如果摄入者吸入气管, 保持通风孔畅通, 喂大量的水, 并立即就医。	
废物产生单位: 广东以色列理工学院	
地址: 广东省汕头市大学路241号	
联系人: 许龙辉 0754-88071709 / 13502092229	
联系人: 许龙辉 0754-88071700 / 13502092223	

4. Post a special laboratory waste label in a conspicuous place on the container according to the waste information;



5. In accordance with the container calibration specifications to contain, and leave a certain amount of space (example: 25L waste containers shall not exceed 20L, 10L waste containers shall not exceed 8L, and the liquid volume shall not exceed 80% of the container volume, and more than 10cm from the container outlet);



6. The container must be covered with an inner lid to ensure that the packaging and container are well sealed



7. Regularly collected and transported to the designated hazardous waste temporary storage warehouse on campus for storage, the warehouse capacity should be within the design capacity.



3. Packaging requirements for on-campus experimental waste

1. Chemical reagent packaging containers



2. Laboratory solid waste (gloves, wiping paper, waste materials, etc.)



3. Wastewater station sludge



4. Laboratory solid waste (sharp objects)



5. Sterilized bio-containing waste



6. Laboratory liquid waste



4. The relevant regulations and rules of laboratory waste management

Category	Name	Document number
法律	中华人民共和国固体废物污染环境防治法	主席令 31 号
行政法规	危险废物经营许可证管理办法	国务院令第 408 号
	排污许可管理条例	国务院第 117 次常务会议通过
部门规章	危险废物转移联单管理办法	原国家环保总局令第 5 号
部门规章	国家危险废弃物名录	
	医疗废物分类目录	
	医疗废物集中处置技术规范 (试行)	国家环境保护总局环发 [2003]206 号
	危险化学品目录	(2015 版)
	危险废物豁免管理清单	
技术标准	移动实验室有害废物管理规范	GB/T 29478-2012
	危险废物收集贮存运输技术规范	HJ 2025-2012
	危险废物鉴别标准	GB5085.1—2007
	实验室有害物技术规范	GB/T 37140-2018
标准规范	环境保护图形标志 - 固体废物贮存 (处置) 场	GB/T 37140-2018
	危险废物贮存污染控制标准	GB 18597-2001
	实验室废弃化学品收集技术规范	GB/T 31190-2014

5. On-campus laboratory waste storage locations

1. Hazardous waste warehouse (Appearance)



2. Hazardous waste warehouse (internal)



3. Hazardous waste container (Appearance)



4. Hazardous waste container (internal)



5. Campus hazardous waste warehouse\container location



6. Collection and transfer of the laboratory waste

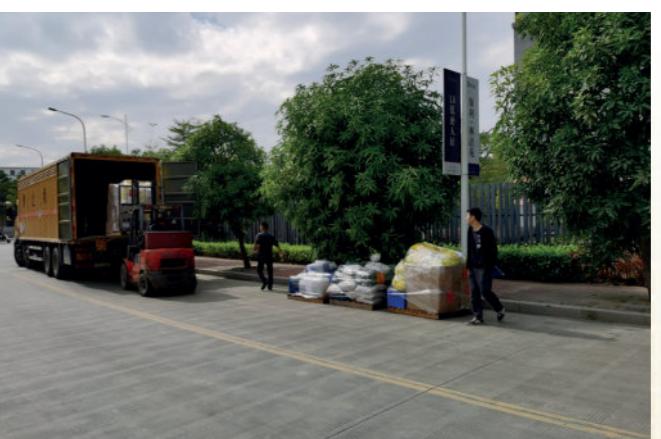
1. On-campus experimental waste collection, transportation and fixed-point storage



2. Pre-transfer waste packaging



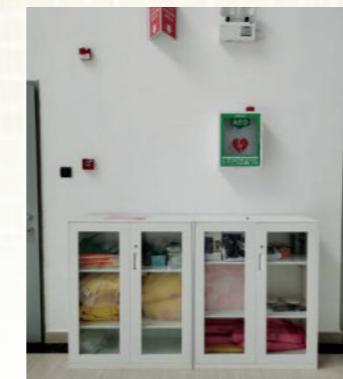
3. Outsourced professional transhipment



7. Waste spill emergency disposal materials and the corresponding location



Teaching
building:



Research
building:

List of emergency substances in the emergency treatment station :

No.	Equipment	Qty
1	Portable 4-in-1 gas detector + air pump + tube	1 set
2	TVOC detector + air pump + tube	1 set
3	Mercury vapor detector + air pump + tube	1 set
4	Explosion-proof air blower	1 set
5	Portable plastic chair	1 pc
6	Rubber hazardous waste barrel 20L (sealable)	4 pcs
7	Rubber hazardous waste barrel 20L	4 pcs
8	Hazardous waste bag 20L	10 pcs
9	Sorbent sock 2M	4 pcs
10	Sorbent pillow	2 pcs
11	Common absorbent material	1 box
12	Acid and alkali resistant absorbent material	1 box
13	Decontamination pool	1 pc
14	Scissors	2 pcs
15	Torch	2 pcs
16	Plastic besom	2 pcs
17	Plastic dustpan	2 pcs
18	Crucible holder / tweezers	3 pcs
19	Acid neutralizer	1 bottle
20	Alkali neutralizer	1 bottle
21	PH test paper	1 box
22	Trolley + warning tape + alert cone	1pc + 2 rolls + 4 pcs

8. Emergency reporting and disposal process.

8.1 Emergency report

1. Keep a safe distance away from the site.
2. Report the incident to the on-duty lab staff without delay.
3. Inform emergency response team about the incident.



Emergency report flow chart 紧急汇报流程

Report content 报告内容包括:

- Location where and when the event happened
发生地点和时间
- Type of the event and material
事故类型/物料类型
- Situation of personnel injury
人员受伤情况
- The name of reporter and contact way
报告人的姓名和联系方式
- If the leakage is serious, the person may be affected should be informed
如是大面积泄漏, 同时通知可能受影响区域的人员;
- If fire or typhoon happen, inform all affected persons to safe place.
如发生火灾、台风等重大灾害时, 发出内部报警信号, 告知相关区域的人员疏散至安全位置。

8.2. Emergency disposal

1 Assess the risk



From the moment spill occurs and throughout the response determine the risks that may affect human health, the environment and property. Always use safety FIRST. If possible, identify the spilled material and determine how much was spilled.

2 Select personal protective equipment (PPE)

Choose the appropriate PPE to safely respond to the spill. Consult Safety Data Sheets (SDS) and literature from chemical and PPE manufacturers for the best recommendations. If you are uncertain of the danger and the material is unknown, assume the worst and use the highest level of protection.



3 Confine the spill



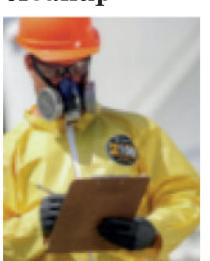
Use PIG Socks and booms to stop the flow of the liquid before it contaminates a water source. Use nonabsorbent barriers like the SpillBlocker Dike and DrainBlock Dike Cover to direct liquid and minimize the spill area and protect drains.

4 Stop the source

After liquid is confined, stop the source of the spill. This may simply involve turning a container upright or plugging a damaged drum or container. PIG Repair Putty barrel patches and cone plugs are effective at stopping leaks. Transfer liquids from the damaged container to a new one.



5 Evaluate the incident and implement cleanup



When the spill is confined and the leak has been stopped, reassess the incident and begin the cleanup. Place PIG Pillows and PIG Mat Pads throughout the spill area to absorb the remainder of the spill. Unused absorbents are not hazardous but absorbents that are saturated with acids, solvents, etc., may be considered hazardous waste and should be disposed of properly.



6 Decontaminate

Effective decontamination ensures the health and safety of emergency responders. You may also need to decontaminate the site and equipment by removing or neutralizing hazardous materials or dispose of media, such as soil that was exposed during the spill incident.



7 Complete required reports

Failure to complete all notifications and paperwork required for reporting spill incidents can result in severe penalties. Make sure you document the incident properly to make the final paperwork easier.



9. Emergency disposal personal protective measures

Personal protective equipment must be worn at all times when disposing of hazardous waste generated in the laboratory, regardless of the circumstances, including and not limited to:



1. safety glasses or goggles.

2. long-sleeved clothes with buttons fastened.

3. Dispose of hazardous waste from chemical laboratories containing corrosive and toxic substances, and wear protective gloves.



4. use shoes with good wrapping properties and choose protective shoe covers or chemical resistant boots according to the situation.



5. When disposing of certain special hazardous wastes, additional safety devices for breathing, head or body parts (such as protective full face shields, chemical resistant suits, strong corrosion resistant gloves and chemical resistant boots, etc.) should also be worn according to the hazardous characteristics and the guidance of the management staff.





本表格的数据
仅适用于Ansell手套

复合膜 丁腈橡胶 氯丁橡胶无内衬 聚乙烯醇针织布内衬 聚氯乙烯(乙烯基) 天然橡胶 氯丁橡胶/天然橡胶混合物

BARRIER™ SOL-VEX™ NEOPRENE™ PVA™ SNORKEL™ PREMIUM PINK™ CHEMI-PRO™*

化学物质名称	降解等级	渗透时间	渗透率																		
1. Acetaldehyde 乙醛	■	380	E	P	—	—	E	10	F	NR	—	—	E	7	F	E	10	F			
2. Acetic Acid 醋酸	■	150	—	G	270	—	E	60	—	NR	—	—	F	180	—	E	110	—			
3. Acetone 丙酮	▲	>480	E	NR	—	—	E	10	F	P	—	—	NR	—	—	E	10	G			
4. Acetonitrile 丙腈	▲	>480	E	F	30	F	E	20	G	■	150	G	NR	—	—	E	4	VG			
5. Acrylic Acid 丙烯酸	—	—	—	G	120	—	E	390	—	NR	—	—	E	80	—	E	65	—			
6. Acrylonitrile 丙烯腈	▲	>480	E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
7. Allyl Alcohol 丙烯丙醇	▲	>480	E	F	140	F	E	140	VG	P	—	—	P	60	G	E	20	VG			
8. Ammonia Gas 氨气	■	19	E	▲	>480	—	▲	>480	—	—	—	—	■	6	VG	—	—	■	27	VG	
9. Ammonium Fluoride, 40% 氟化铵 40%	—	—	—	E	>360	—	E	>480	—	NR	—	—	E	>360	—	E	>360	—			
10. Ammonium Hydroxide 氢氧化铵	E	30	—	E	>360	—	E	250	—	NR	—	—	E	240	—	E	90	—			
11. Amyl Acetate 醋酸戊酯	▲	>480	E	E	60	G	NR	—	—	G	>360	E	P	—	—	NR	—	—	P	—	
12. Amyl Alcohol 戊醇	—	—	—	E	30	E	E	290	VG	G	180	G	G	12	E	25	VG	E	45	VG	
13. Aniline 苯胺	▲	>480	E	NR	—	—	E	100	P	F	>360	E	F	180	VG	E	25	VG	E	50	G
14. Aqua Regia 王水	—	—	—	F	>360	—	G	>480	—	NR	—	—	G	120	—	NR	—	—	G	180	—
15. Benzaldehyde 苯甲醛	▲	>480	E	NR	—	—	NR	—	—	G	>360	E	NR	—	—	G	10	VG	G	25	F
16. Benzene, Benzol 苯	▲	>480	E	P	—	—	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
17. Benzotrichloride 三氯甲苯	—	—	—	E	>480	E	NR	—	—	—	—	—	—	—	—	NR	—	—	NR	—	—
18. Benzotrifluoride 三氟甲苯	—	—	—	E	170	G	F	—	—	—	G	<10	F	P	50	G	—	—	—	—	—
19. Bromine Water 溴水	—	—	—	E	>480	E	E	>480	E	—	—	—	—	—	—	—	—	—	—	—	
20. 1-Bromopropane 1-溴丙烷	▲	>480	E	■	23	F	■	<10	P	▲	>480	E	■	<10	F	■	<10	P	■	<10	P
21. Bromopropionic Acid 溴丙酸	▲	>480	—	F	120	—	E	420	—	NR	—	—	G	180	—	E	190	—	G	180	—
22. Butyl Acetate 乙酸丁酯	▲	>480	E	F	75	F	NR	—	—	G	>360	E	NR	—	—	NR	—	—	P	—	—
23. Butyl Alcohol 丁醇	▲	>480	E	E	>360	E	E	210	VG	F	75	G	G	180	VG	E	20	VG	E	45	VG
24. Butyl Carbitol 二甘醇二乙醚	—	—	—	E	323	E	G	188	F	E	>480	E	E	397	VG	E	44	G	E	148	G
25. Butyl Cellulosol 丙基溶纤剂	▲	>480	E	E	90	VG	E	120	F	■	120	G	P	—	E	45	G	E	40	G	
26. gamma-Butyrolactone 球蛋白素	▲	>480	E	NR	—	—	E	190	F	E	120	VG	NR	—	E	60	G	E	100	F	
27. Carbon Disulfide 二硫化碳	▲	>480	E	G	30	F	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
28. Carbon Tetrachloride 四氯化碳	—	—	—	G	150	G	NR	—	—	E	>360	E	F	25	F	NR	—	—	NR	—	—
29. Cellosolve Acetate 乙酸溶纤剂	▲	>480	E	F	90	G	E	40	P	▲	>360	E	NR	—	—	E	10	G	E	15	G
30. Cellosolve Solvent 纤维素溶剂	—	—	—	G	210	G	E	120	F	■	75	G	P	—	—	E	25	VG	E	20	VG
31. Chlorine Gas 氯气	▲	>480	E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32. Chlorobenzene 氯苯	▲	>480	E	NR	—	—	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
33. 2-Chlorobenzyli Chloride 邻2氯苯	—	—	—	E	120	E	P	—	—	E	>480	E	F	65	E	F	20	F	—	—	—
34. Chloroform 三氯甲烷	E	20	G	NR	—	—	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
35. Chloronaphthalene 氯萘	▲	>480	E	P	—	—	NR	—	—	G	>360	E	NR	—	—	NR	—	—	P	—	—
36. 2-chlorotoluene 2-氯甲苯	—	—	—	G	120	G	NR	—	—	F	—	—	F	—	—	NR	—	—	NR	—	—
37. Chromic Acid, 50% 铬酸 50%	—	—	—	F	240	—	NR	—	—	NR	—	—	G	>360	—	NR	—	—	NR	—	—
38. Citric Acid, 10% 柠檬酸 10%	—	—	—	E	>360	—	E	>480	—	P	—	—	E	>360	—	E	>360	—	E	>360	—
39. Cyclohexanol 环己醇	▲	>480	E	E	>360	E	E	390	VG	G	>360	E	E	360	E	E	10	G	E	20	G
40. Cyclohexanone 环己酮	▲	>480	E	F	103	G	P	—	—	E	>480	E	NR	—	—	P	—	—	P	—	—
41. 1,5-Cyclooctadiene 1,5-环辛二烯	—	—	—	E	>480	E	NR	—	—	P	—	—	NR	—	—	NR	—	—	NR	—	—
42. Diacetone Alcohol 双丙酮醇	▲	>480	E	G	240	E	E	140	G	■	150	G	NR	—	—	E	15	VG	E	60	VG
43. Dimethyl Phthalate 苯二酸二丁	—	—	—	G	>360	E	F	<10	F	E	>360	E	NR	—	—	E	20	—	G	>360	E
44. Diethylamine 二乙胺	▲	>480	E	F	45	F	P	—	—	NR	—	—	NR	—	—	NR	—	—	NR	—	—
45. Di-Isobutyl Ketone, DBK 二异丁基酮	▲	>480	E	E	120	F	P	—	—	G	>360	E	P	—	—	P	—	—	P	—	—
46. Dimethyl Acetamide, DMAc 二甲基乙酰胺	▲	>480	E	NR	—	—	NR	—	—	NR	—	—	E	15	G	E	30	G	E	30	G
47. Dimethyl Formamide, DMF 二甲基甲酰胺	▲	>480	E	NR	—	—	E	40	F	P	—	—									

US EPA Integrated Protection Combining Components of PPE				
	Level A	Level B	Level C	Level D
Respiratory protection	Positive pressure, SCBA	Positive pressure, SCBA	Full-face or half-mask, air-purifying respirator	Not required
Protective clothing	Fully encapsulating chemical protective suit	Chemical resistant clothing, liquid-tight	Chemical resistant clothing, liquid-tight	Coveralls or uniforms
Hand protection	Gloves, inner & outer, chemical resistant	Gloves, inner & outer, chemical resistant	Gloves, inner & outer, chemical resistant	Disposable gloves
Foot protection	Boots, chemical resistant, steel toe and shank	Boots, chemical resistant, steel toe and shank, or Boot-covers, chemical resistant	Boots, chemical resistant, steel toe and shank, or Boot-covers, chemical resistant	Safety shoes/boots or Boot-covers
				



Appendix 1: Emergency contact information on campus

Campus Fireman

Responsible Department 负责部门	Contact Number 联系电话
Firefighting Department 消防部门 	8807 7119 (24 Hours)

Campus Clinic & Frist Aid

Responsible Department 负责部门	Contact Number 联系电话
Frist Aid 医疗救助 	Campus Clinic 校医务室 8807 7120

Campus EHS Office

校园环境 / 健康 / 安全办公室

8807 7079 &

8807 7150

“Nothing we do is worth getting hurt for!”

实验室废弃物管理指引

指引目的：简述如何合法处置实验室相关废弃物和当发生与其相关的危险情景的对应处置。

- a. 为学校实验室管理人员及使用人员提供实验室相关废弃物的分类指引
- b. 为上述人员介绍与实验室相关废弃物的危害
- c. 为上述人员介绍与实验室相关废弃物的安全设施设备
- d. 上述人员介绍与实验室相关废弃物的应急处置措施及注意事项

本指引不能囊括所有实验室相关废弃物潜在危害和危险情景，但此手册未能详尽的风险也需要引起上述人员的重视。



一、实验室废弃物分类介绍

1. 实验废气



2. 实验废液



3. 实验固废



根据国家危废产生途径进行分类

废物类别	废物代码	废物名称	危险废物	危险特性
HW49 其他废物	900-041-49	化学试剂包装容器		
		实验室固体废物 (手套、擦拭纸、废弃材料等)		
		废水站污泥		
		实验室固体废物 (锋利物品)		
HW49 其他废物	900-047-49	实验室液体废物 (有机实验废液)		
		实验室液体废物 (酸性实验废液)		
		实验室液体废物 (碱性实验废液)		
	900-039-49	废活性炭 (废气处置设施)		T

二、校内危险废弃物暂存要求

1. 确定实验室废物种类、数量；



2. 根据废弃物特性查询包装要求选择盛装容器，保证承装物材质与之相适应；

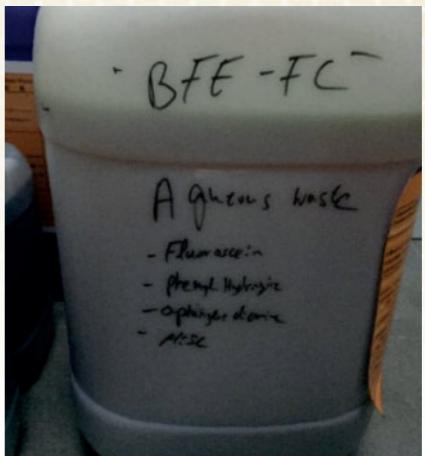
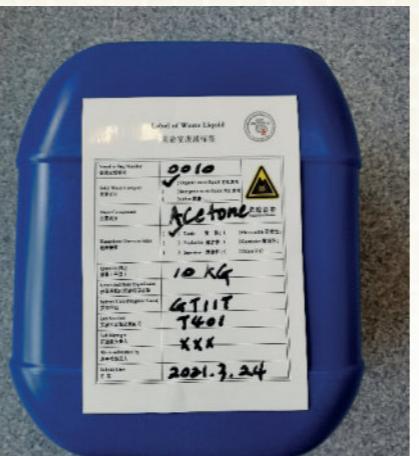


3. 针对不同实验室废弃物准备对应的废弃物标签，并做好标识；

Label of Waste Liquid	
实验室废液标签	
Vessel number	容器编号
Waste Liquid Category	废液类别 <input checked="" type="checkbox"/> Organic waste liquid 有机废液 <input type="checkbox"/> Inorganic waste liquid 无机废液 <input type="checkbox"/> Other 其他
Major Component	主要成分
Hazardous Characteristics	危险特性 <input checked="" type="checkbox"/> Toxic 有毒性 <input type="checkbox"/> Explosive 易爆性 <input type="checkbox"/> Corrosive 腐蚀性 <input type="checkbox"/> Infective 传染性 <input type="checkbox"/> Other 其它
Quantity (Kg)	数量 (千克)
Generated from Experiment	实验产生的实验项目名称
Sample Unit (Program Name)	样本单位
Lab Number	实验室名称及代码
Lab Manager	实验室负责人
Waste submitted by	废弃物提交人
Submit Date	日期



4. 根据废物信息在容器显眼处张贴专用实验室废弃物标签；



5. 按照容器标定的规格进行盛装，并留出一定的空间

(例：25L 废液容器不得超过 20L, 10L 废液容器不得超过 8L, 且液体容积不得超过 80% 的容器容积，且距离容器出口 10cm 以上)；



6. 容器必须盖好内盖，确保包装和容器密封良好；



7. 定期收运至校内指定的危险废弃物暂存仓库内储存，仓库容量应处于设计容纳范围内。



三、校内实验废弃物的包装要求

1. 化学试剂包装容器



2. 实验室固体废物（手套、擦拭纸、废弃材料等）



3. 废水站污泥



4. 实验室固体废物（锋利物品）



5. 灭菌后的含生物废物



6. 实验室液体废物



四、实验室废弃物管理的相关法规和规范

法规类别	名称	文号
法律	中华人民共和国固体废物污染环境防治法	主席令 31 号
行政法规	危险废物经营许可证管理办法	国务院令第 408 号
	排污许可管理条例	国务院第 117 次常务会议通过
部门规章	危险废物转移联单管理办法	原国家环保总局令第 5 号
	国家危险废弃物名录	
	医疗废物分类目录	
	医疗废物集中处置技术规范（试行）	国家环境保护总局环发 [2003]206 号
	危险化学品目录	（2015 版）
	危险废物豁免管理清单	
技术标准	移动实验室有害废物管理规范	GB/T 29478-2012
	危险废物收集贮存运输技术规范	HJ 2025-2012
	危险废物鉴别标准	GB5085.1—2007
	检验检测实验室技术要求验收规范	GB/T 37140-2018
标准规范	环境保护图形标志 - 固体废物贮存（处置）场	GB/T 37140-2018
	危险废物贮存污染控制标准	GB 18597-2001
	实验室废弃化学品收集技术规范	GB/T 31190-2014

五、校内实验室废弃物存放位置

1. 危险废弃物仓库 (外观)



2. 危险废弃物仓库 (内部)



3. 危险废弃物集装箱 (外观)



4. 危险废弃物集装箱 (内部)



5. 校内危险废弃物仓库 \ 集装箱位置



六、实验室废弃物的收运及转运

1. 校内实验废物收运及定点储存



2. 转运前废弃物包装



3. 委外专业转运



七、废弃物泄漏应急处置资源及相应位置



教学楼大堂：



科研楼大堂：

应急处理站内应急物质清单：

No.	Equipment	Qty
1	Portable 4-in-1 gas detector + air pump + tube	1 set
2	TVOC detector + air pump + tube	1 set
3	Mercury vapor detector + air pump + tube	1 set
4	Explosion-proof air blower	1 set
5	Portable plastic chair	1 pc
6	Rubber hazardous waste barrel 20L (sealable)	4 pcs
7	Rubber hazardous waste barrel 20L	4 pcs
8	Hazardous waste bag 20L	10 pcs
9	Sorbent sock 2M	4 pcs
10	Sorbent pillow	2 pcs
11	Common absorbent material	1 box
12	Acid and alkali resistant absorbent material	1 box
13	Decontamination pool	1 pc
14	Scissors	2 pcs
15	Torch	2 pcs
16	Plastic besom	2 pcs
17	Plastic dustpan	2 pcs
18	Crucible holder / tweezers	3 pcs
19	Acid neutralizer	1 bottle
20	Alkali neutralizer	1 bottle
21	PH test paper	1 box
22	Trolley + warning tape + alert cone	1pc + 2 rolls + 4 pcs

八、应急汇报及处置流程

8.1 应急汇报

1. 现场保持安全距离。
2. 立即向值班实验室人员报告事件。
3. 将事件通知应急小组。



Emergency report flow chart 紧急汇报流程

Report content 报告内容包括：

- Location where and when the event happened
发生地点和时间
- Type of the event and material
事故类型/物料类型
- Situation of personnel injury
人员受伤情况
- The name of reporter and contact way
报告人的姓名和联系方式
- If the leakage is serious, the person may be affected should be informed
如是大面积泄漏，同时通知可能受影响区域的人员；
- If fire or typhoon happen, inform all affected persons to safe place.
如发生火灾、台风等重大灾害时，发出内部报警信号，告知相关区域的人员疏散至安全位置。

8.2 应急汇报

1 风险评估



从泄漏发生到整个响应过程中，确定可能对人体健康，环境及财产产生影响的风险。总是把安全放在第一位。在有可能的情况下，应先确认泄漏的物质和泄漏量。

2 个人防护品的选择

在进行泄漏响应的时候应选择合适的 PPE。查阅材料安全性数据表和来自 PPE 和化学品厂商的文献进行最好的选择。如果不能确定危险程度或泄漏物质不明，请按最极端的预计并使用最高级别的防护。



3 封堵泄漏



在形成流淌趋势之前，使用非吸附介质来阻止液体的继续扩散。使用非吸附性屏障来封堵和引导漏液，以此来最小化泄漏区域及防止污染排水口。

4 阻断源头

泄漏液体被封堵后，需要阻断源头。可以通过放正容器，堵住泄漏口来简单实现。将液体从损坏的容易转移至新容器。



5 评估事件并实施清理



在泄漏被封堵和阻断之后，重新评估事件并实施清理。使用吸附介质对泄漏物质进行吸附处理。未使用的吸附介质为无害的，但是在吸附油渍，溶剂之后，应视为危险废弃物，进行对应合适的处理。



6 消毒

有效的消毒来确保应急人员的健康和安全。设备和场地也需要进行消毒，以此来除去泄漏处理时露出的物质。



7 完成事件报告

对事件的发生经过及处置方式进行详细的记录



九、应急处置个人防护措施

无论在任何情况下，处置实验室产生的危险废弃物均必须始终佩戴好个人防护用品，包括且不限于：

1. 安全眼镜或护目镜。
2. 长袖衣服，扣好纽扣。
3. 处置含有带腐蚀性、毒性的化学类实验室产生的危险废弃物，佩戴好防护手套。
4. 使用包裹性较好的鞋子，根据情况选择防护鞋套或防化靴。
5. 在处置某些特殊的危险废弃物时，还需根据危险特性和管理人员的指导，佩戴额外的呼吸、首部或身体部分的安全装置（如防护全面罩、防化服、耐强腐蚀的手套和防化靴等）。

注意手部清洁，在处置危险废弃物后用彻底清洗。





本表格的数据
仅适用于Ansell手套

化学物质名称	复合膜		丁腈橡胶		氯丁橡胶 无内衬		聚乙烯醇 针织布内衬		聚氯乙烯 (乙烯基)		天然橡胶		氯丁橡胶/ 天然橡胶混合物								
	BARRIER™		SOL-VEX™		NEOPRENE™		PVA™		SNORKEL™		PREMIUM PINK™		CHEMI-PRO™*								
	降解等 级	渗透时 间	渗透率	降解等 级	渗透时 间	渗透率	降解等 级	渗透时 间	渗透率	降解等 级	渗透时 间	渗透率	降解等 级	渗透时 间							
1. Acetaldehyde 乙醛	■	380	E	P	—	—	E	10	F	NR	—	—	E	7	F	E	10	F			
2. Acetic Acid 醋酸	■	150	—	G	270	—	E	60	—	NR	—	—	F	180	—	E	110	—			
3. Acetone 丙酮	▲	>480	E	NR	—	—	E	10	F	P	—	—	NR	—	—	E	10	G			
4. Acetonitrile 丙腈	▲	>480	E	F	30	F	E	20	G	■	150	G	NR	—	—	E	4	VG			
5. Acrylic Acid 丙烯酸	—	—	—	G	120	—	E	390	—	NR	—	—	E	80	—	E	65	—			
6. Acrylonitrile 丙烯腈	▲	>480	E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
7. Allyl Alcohol 丙烯醇	▲	>480	E	F	140	F	E	140	VG	P	—	—	P	60	G	E	>10	VG			
8. Ammonia Gas 氨气	■	19	E	▲	>480	—	▲	>480	—	—	—	—	■	6	VG	—	—	■	27	VG	
9. Ammonium Fluoride, 40% 氟化铵 40%	—	—	—	E	>360	—	E	>480	—	NR	—	—	E	>360	—	E	>360	—	E	>360	
10. Ammonium Hydroxide 氢氧化铵	E	30	—	E	>360	—	E	250	—	NR	—	—	E	240	—	E	90	—	E	240	
11. Amyl Acetate 醋酸戊酯	▲	>480	E	E	60	G	NR	—	—	G	>360	E	P	—	—	NR	—	—	P	—	
12. Amyl Alcohol 戊醇	—	—	—	E	30	E	E	290	VG	G	180	G	G	12	E	E	25	VG	E	45	VG
13. Aniline 苯胺	▲	>480	E	NR	—	—	E	100	P	F	>360	E	F	180	VG	E	25	VG	E	50	G
14. Aqua Regia 王水	—	—	—	F	>360	—	G	>480	—	NR	—	—	G	120	—	NR	—	—	G	180	—
15. Benzaldehyde 苯甲醛	▲	>480	E	NR	—	—	NR	—	—	G	>360	E	NR	—	—	G	10	VG	G	25	F
16. Benzene, Benzol 苯	▲	>480	E	P	—	—	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
17. Benzotrichloride 三氯甲苯	—	—	—	E	>480	E	NR	—	—	—	—	—	—	—	—	NR	—	—	NR	—	—
18. Benzotrifluoride 三氟甲苯	—	—	—	E	170	G	F	—	—	—	G	<10	F	P	50	G	—	—	—	—	—
19. Bromine Water 溴水	—	—	—	E	>480	E	E	>480	E	—	—	—	—	—	—	—	—	—	—	—	—
20. 1-Bromopropane 1-溴丙烷	▲	>480	E	■	23	F	■	<10	P	▲	>480	E	■	<10	F	■	<10	P	■	<10	P
21. Bromopropionic Acid 溴丙酸	▲	>480	—	F	120	—	E	420	—	NR	—	—	G	180	—	E	190	—	G	180	—
22. Butyl Acetate 乙酸丁酯	▲	>480	E	F	75	F	NR	—	—	G	>360	E	NR	—	—	NR	—	—	P	—	—
23. Butyl Alcohol 丁醇	▲	>480	E	E	>360	E	E	210	VG	F	75	G	G	180	VG	E	20	VG	E	45	VG
24. Butyl Carbitol 二甘醇二乙醚	—	—	—	E	323	E	G	188	F	E	>480	E	E	397	VG	E	44	G	E	148	G
25. Butyl Cellosolve 丙基溶纤剂	▲	>480	E	E	90	VG	E	120	F	■	120	G	P	—	E	45	G	E	40	G	
26. gamma-Butyrolactone 球蛋白素	▲	>480	E	NR	—	—	E	190	F	E	120	VG	NR	—	E	60	G	E	100	F	
27. Carbon Disulfide 二硫化碳	▲	>480	E	G	30	F	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
28. Carbon Tetrachloride 四氯化碳	—	—	—	G	150	G	NR	—	—	E	>360	E	F	25	F	NR	—	—	NR	—	—
29. Cellosolve Acetate 乙酸溶纤剂	▲	>480	E	F	90	G	E	40	P	▲	>360	E	NR	—	—	E	10	G	E	15	G
30. Cellosolve Solvent 纤维素溶剂	—	—	—	G	210	G	E	120	F	■	75	G	P	—	E	25	VG	E	20	VG	
31. Chlorine Gas 氯气	▲	>480	E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32. Chlorobenzene 氯苯	▲	>480	E	NR	—	—	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
33. 2-Chlorobenzyli Chloride 邻2氯苯	—	—	—	E	120	E	P	—	—	E	>480	E	F	65	E	F	20	F	—	—	—
34. Chloroform 三氯甲烷	E	20	G	NR	—	—	NR	—	—	E	>360	E	NR	—	—	NR	—	—	NR	—	—
35. Chloronaphthalene 氯萘	▲	>480	E	P	—	—	NR	—	—	G	>360	E	NR	—	—	P	—	—	P	—	—
36. 2-chlorotoluene 2-氯甲苯	—	—	—	G	120	G	NR	—	—	F	—	—	F	—	—	NR	—	—	NR	—	—
37. Chromic Acid, 50% 铬酸 50%	—	—	—	F	240	—	NR	—	—	NR	—	—	G	>360	—	NR	—	—	NR	—	—
38. Citric Acid, 10% 柠檬酸 10%	—	—	—	E	>360	—	E	>480	—	P	—	—	E	>360	—	E	>360	—	E	>360	—
39. Cyclohexanol 环己醇	▲	>480	E	E	>360	E	E	390	VG	G	>360	E	E	360	E	E	10	G	E	20	G
40. Cyclohexanone 环己酮	▲	>480	E	F	103	G	P	—	—	E	>480	E	NR	—	—	P	—	—	P	—	—
41. 1,5-Cyclooctadiene 1,5-环辛二烯	—	—	—	E	>480	E	NR	—	—	P	—	—	NR	—	—	NR	—	—	NR	—	—
42. Diacetone Alcohol 双丙酮醇	▲	>480	E	G	240	E	E	140	G	■	150	G	NR	—	—	E	15	VG	E	60	VG
43. Dimethyl Phthalate 苯二酸二丁	—	—	—	G	>360	E	F	<10	F	E	>360	E	NR	—	—	E	20	—	G	>360	E
44. Diethylamine 二乙胺	▲	>480	E	F	45	F</td															

美国环保局综合保护结合个人防护用品的组成部分				
	级别 A	级别 B	级别 C	级别 D
呼吸系统防护	正压, SCBA	Positive pressure, SCBA	全面罩或半面罩、空气净化呼吸器	不需要
防护服	全封闭化学防护服	耐化学药品服, 不透液	耐化学药品服, 不透液	工作服或制服
手部防护	手套, 内外, 耐化学品	手套, 内外, 耐化学品	手套, 内外, 耐化学品	一次性手套
脚部保护	钢制鞋头和鞋柄耐化学品靴子	钢制鞋头和鞋柄耐化学腐蚀靴子, 或耐化学腐蚀靴套	钢制鞋头和鞋柄耐化学腐蚀靴子, 或耐化学腐蚀靴套	安全鞋 / 靴子或靴盖
				



附件 1：校内紧急联系方式

Campus Fireman

Responsible Department 负责部门	Contact Number 联系电话
Firefighting Department 消防部门 	8807 7119 (24 Hours)

Campus Clinic & Frist Aid

Responsible Department 负责部门	Contact Number 联系电话
Frist Aid 医疗救助 	Campus Clinic 校医务室 8807 7120

Campus EHS Office

校园环境 / 健康 / 安全办公室

8807 7079 &

8807 7150

“Nothing we do is worth getting hurt for!”

Reaction number 反应类 编 号	Reaction number 反应类编 号	实 验 废 液 相 容 表 Lab waste liquid compatibility table																		
1	酸、矿物 (非氧化性) Acid, mineral (non-oxidizing)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
2	酸、矿物 (氧化性) Acid, mineral (oxidation)		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
3	有机酸 Organic acid			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
4	醇类、二甲酮及酸类 Alcohols, di-alcohols and acids				4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
5	农药、石棉等有毒物质 Toxic substances such as pesticides and asbestos					5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
6	低胺类 Amide						6	7	8	9	10	11	12	13	14	15	16	17	18	19
7	胺、脂肪族、芳香族 Amine, aliphatic, aromatic							7	8	9	10	11	12	13	14	15	16	17	18	19
8	偶氮化合物、重氮化合物和联胺 Azo compounds, diazo compounds & hydrazine								8	9	10	11	12	13	14	15	16	17	18	19
9	水 water									9	10	11	12	13	14	15	16	17	18	19
10	碱 Alkali										10	11	12	13	14	15	16	17	18	19
11	氰化物、硫化物和氟化物 Cyanide, sulfide and fluoride											11	12	13	14	15	16	17	18	19
12	二硫基氨基碳酸盐 Disulfonylaminocarbonate												12	13	14	15	16	17	18	19
13	酯类、醚类、酮类 Esters, ethers, ketones													13	14	15	16	17	18	19
14	易爆类 (注一) remark I Chemical for explosion material														14	15	16	17	18	19
15	强氧化剂 (注二) Strong oxidants															15	16	17	18	19
16	烃类、芳香族、不饱和 Hydrocarbons, aromatics, unsaturated hydrocarbons															16	17	18	19	19
17	卤化有机物 Halogenated organic matter															17	18	19	19	19
18	一般金属 General metal																18	19	19	19
19	铝、钾、镁、钙、钠等易燃金属 Flammable metals such as Al, K, Li, Mg, Ca, Na																	19	19	19

Reaction color
反应颜色

Result
结果

说明
Description

Example
示例

易爆物包括溶剂、废弹爆炸物、石油废料等
Explosives include solvents, waste explosives, petroleum waste, etc.

注一： Explosives include solvents, waste explosives, petroleum waste, etc.

注二： 强氧化剂包括铬酸、氯酸、双氧水、硝酸、高锰酸等
Strong oxidants include chromic acid, chloric acid, hydrogen peroxide, nitric acid, permanganic acid, etc.