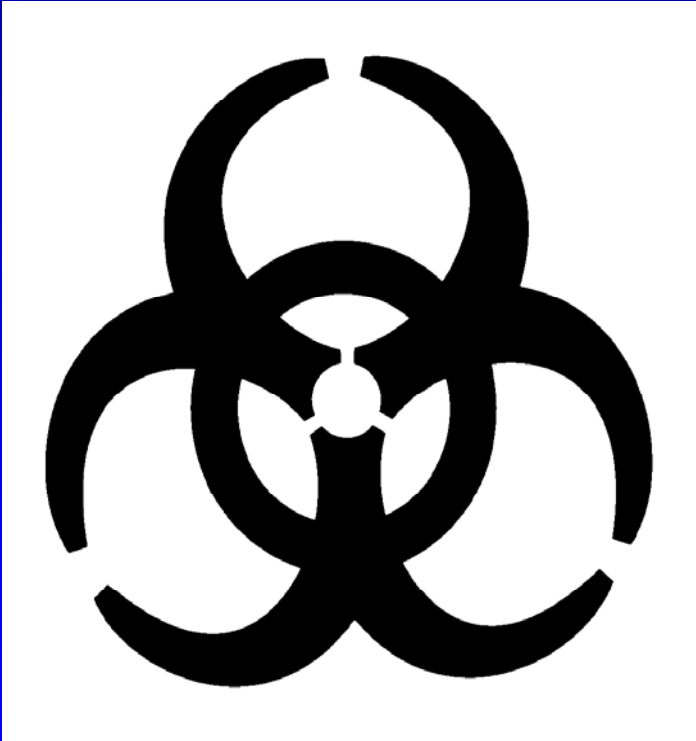


Health and Safety Grand Rounds!!

in Collaboration with
Al-Essa Medical and Scientific Equipment Company



Kuwait University
Health Science Center
29 May 2013

Welcome to planet earth!



Bin Bear!



Ed Krisiunas, MT(ASCP), MPH

President

WNWN International

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860-839-3993 (mobile)

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ekrisiunas@gmail.com

SKYPE : Boutiquewaste

THIS WEEK

EDITORIALS

WORLD VIEW Reform PhD programmes or close them down **p.261**

SINUS VIRUS Lab culture breakthrough could offer cold comfort **p.262**

PENGUINS Populations plummet as Antarctic ice melts **p.263**



Accidents in waiting

Every researcher and institution should question their own attitudes to safety in the lab after the death of an undergraduate student in a Yale University workshop.

21 APRIL 2011 | VOL 472 | NATURE |

FACEBOOK



Sheharbano Sangji (left) and Michele Dufault.

<http://lsci.epfl.ch/files/content/sites/lsci/files/load/Yale-accidentLesson.pdf>

Grand Rounds – From Wikipedia:

Grand rounds are an important teaching tool and ritual of medical education and inpatient care, consisting of presenting the medical problems and treatment of a particular patient to an audience consisting of doctors, residents and medical students. The patient was traditionally present for the round and would answer questions; grand rounds have evolved with most sessions now rarely having a patient present and being more like lectures. An actor portrays the patient in some instances.

http://en.wikipedia.org/wiki/Grand_rounds

Patient Assessment:

History and Physical
Analysis
Diagnosis
Treatment
Follow-up

Health and Safety Grand Rounds

**Patient: Kuwait University Health Science Center
DOB: 1982**

In 1982 Kuwait University established the Health Sciences Center (HSC) to be the governing institution for the Faculty of Medicine, the Faculty of Allied Health Sciences, the Faculty of Pharmacy and the Faculty of Dentistry. The HSC is headed by a Vice President and a Health Sciences Council.

Vice President's Office
 Administration
 Counselling & Guidance Office
 Technical Support
 Administration
 English Language Unit
 HSC Library Administration
 Medical Principles and Practice
 Research Core Facility

Vice President's Office

Health, Safety and Environment

The Vice President Office for Health Sciences is keen on enhancing environmental health and safety at HSC through:

- ⊕ HSC Medical Waste Management System
- ⊕ Environmental and Occupational Health
- ⊕ Facility Safety
- ⊕ Laboratory Safety



[e-Resources](#)



[Forms](#)



[Links](#)



[Training & Continuous Education](#)



[FAQ](#)



[Contact Us](#)

- HSC Services
- ⊕ E-Learning
- HSC Email
- ⊕ HSC Directory
- TSA Help Desk
- HSC Staff Info. Access
- Employment
- HSC Resource Scheduler
- ⊕ PC Teaching Labs Cat.

Events & News Calendar

Apr	May 2013							Jun
Sun	Mon	Tue	Wed	Thu	Fri	Sat		
28	29	30	1	2	3	4		
5	6	7	8	9	10	11		
12	13	14	15	16	17	18		
19	20	21	22	23	24	25		
26	27	28	29	30	31	1		
2	3	4	5	6	7	8		

Events & News

⊕ **HSC Training Workshop on Laboratory Safety by Health Sciences Center**
 Date: May 28, 2013
 Time: 08:30 AM – 02:30 PM
 Venue: HSC Auditorium
 Contact: For your queries, please contact 24838620
 Comments: Attendance of all HSC academic, supporting academic and technical staff is OBLIGATORY

⊕ **Faculty Seminar on Peroxisomal Disorders:**
 Help us Make a Difference at

Follow-up consult brought at the request of the HSC Laboratory & Environmental Safety Committee

History

Extensive Health and Safety and Waste Management Presentations January – February 2012

- 1. Global Perspective**
- 2. Environmental Health and Safety Issues**
- 3. Activities that generate Medical Waste**
- 4. Risk Assessment**
- 5. Definitions of Medical Waste - WHO**
- 6. Management of waste in the facility**
- 7. Decontamination**
- 8. Transport, Treatment/ Disposal of Medical Waste**



- Vice President's Office
- Administration
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- HSC Library Administration
- Medical Principles and Practice
- Research Core Facility

Vice President's Office

Health, Safety and Environment

Training & Continuous Education

 [Orientation Sessions on the HSC Medical Waste Management System- 2011](#)

 [Medical Waste Management Training Workshop- 2012](#)




The Vice President Office for Health Sciences in collaboration with Al-Essa Medical and Scientific Equipment Company- KUWAIT and WNN International- USA held a training workshop on medical waste management in January/February 2012. The workshop aimed to educate the HSC staff and students about how medical wastes should be properly managed.

The PowerPoint presentations and videos are available below:

- Lecture 1: [PowerPoint Presentation/Video](#) (Session A; Session B)
- Lecture 2: [PowerPoint Presentation/Video](#) (Session A; Session B)
- Lecture 3: [PowerPoint Presentation/Video](#) (Session A; Session B)
- Lecture 4: [PowerPoint Presentation/Video](#) (Session A; Session B)
- Lecture 5: [PowerPoint Presentation/Video](#) (Session A; Session B)
- Lecture 6: [PowerPoint Presentation/Video](#) (Session A; Session B)
- Lecture 7: [PowerPoint Presentation/Video](#) (Session A; Session B)
- Lecture 8: [PowerPoint Presentation/Video](#) (Session A; Session B)

 [Online Certification](#)


HSC Services

-  [E-Learning](#)
- [HSC Email](#)
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- [TSA Help Desk](#)
- [HSC Staff Info. Access](#)
- [Employment](#)
- [HSC Resource Scheduler](#)
-  [PC Teaching Labs Cal.](#)

Events & News Calendar

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 **Faculty Seminar on Peroxisomal Disorders:**
Molecular Mechanisms of



Day 1 Physicals (Assessments):

Faculty of Allied Health Sciences

Faculty of Dentistry

Kuwait University Dental Center

Objectives: Review Health and Safety and Waste Management Practices relative to training that was provided last year





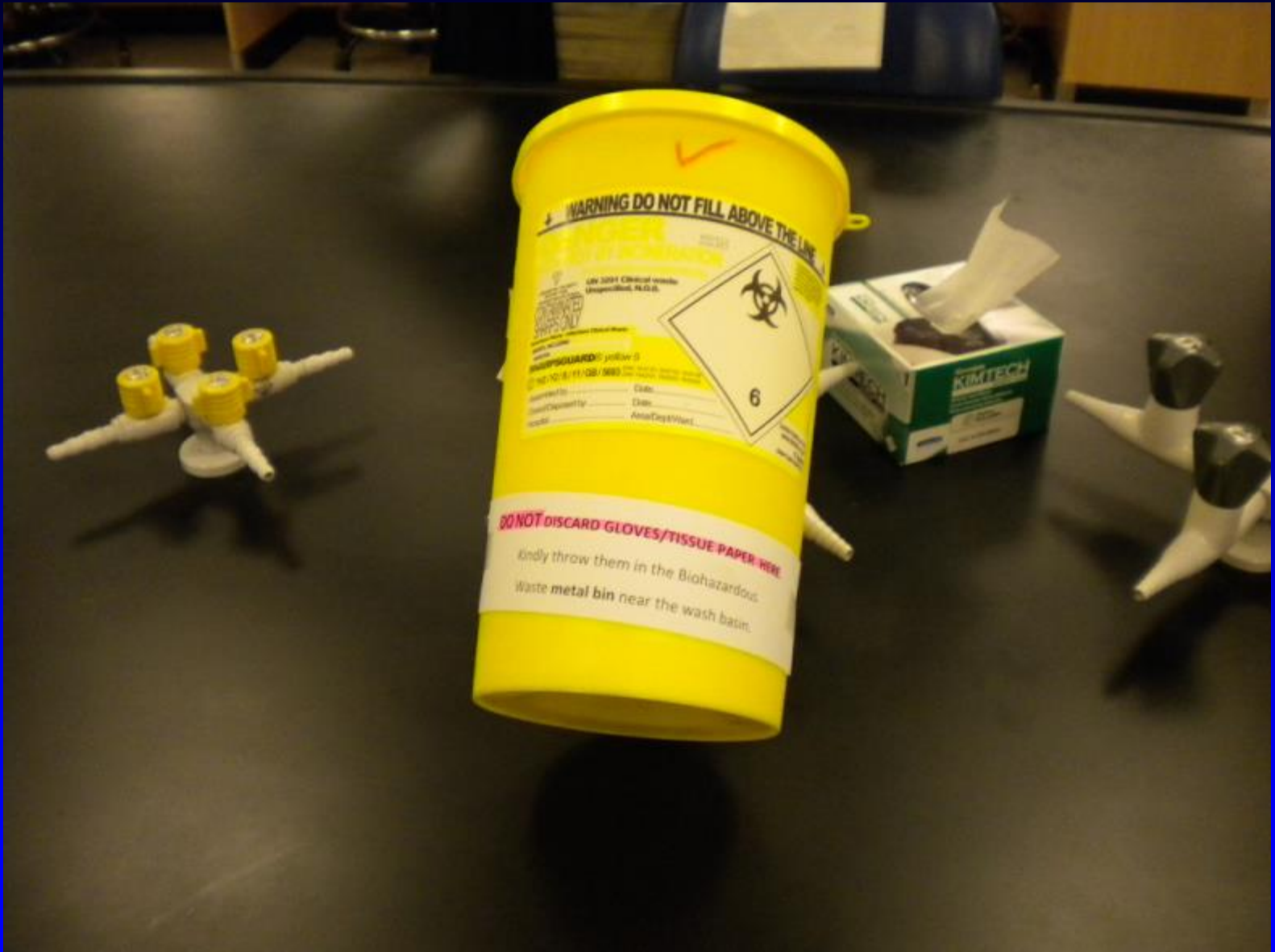












WARNING DO NOT FILL ABOVE THE LINE



DO NOT DISCARD GLOVES/TISSUE PAPER HERE
Kindly throw them in the Biohazardous
Waste metal bin near the wash basin.





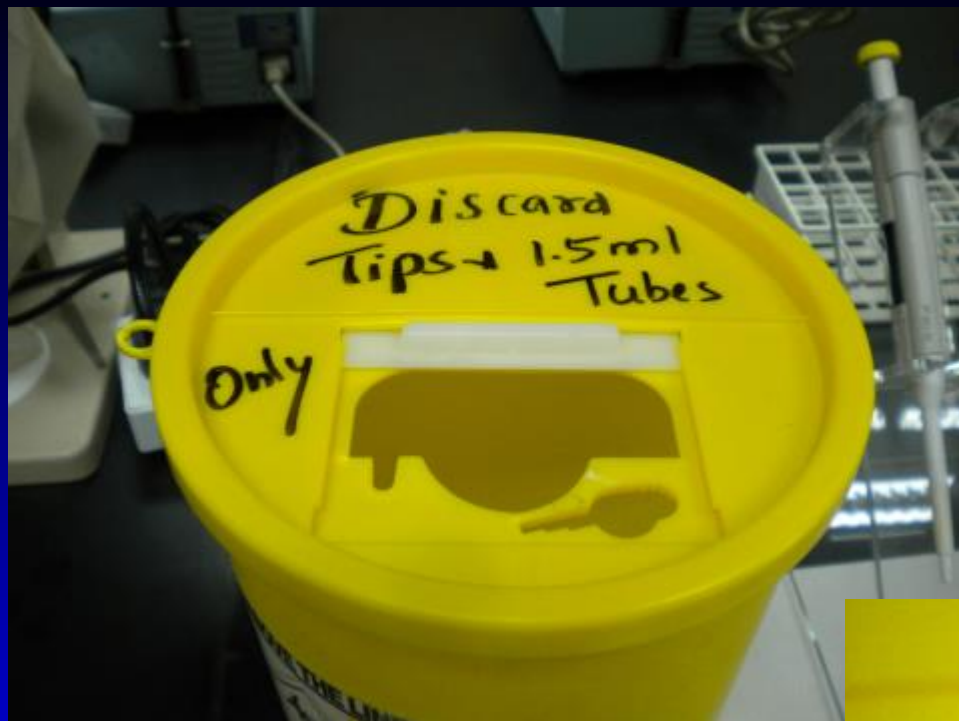






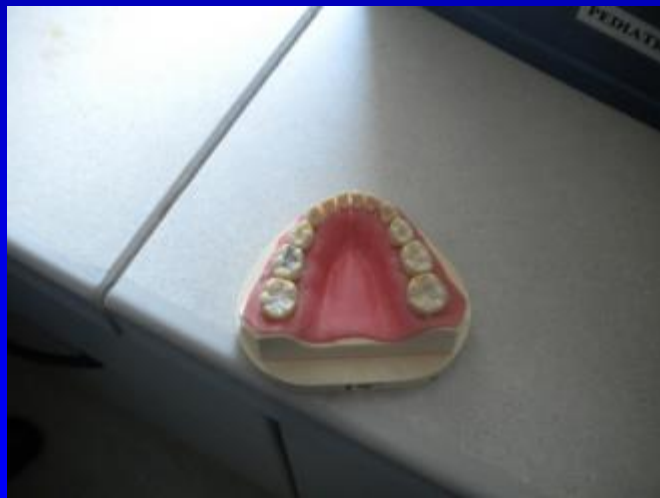






























Observations

1. Essential safety equipment is available:

First Aid kits

Spills kits

Eyewash stations

Safety showers

Fire blankets

PPE available and being used

Warning / Caution Signage

Sinks

Soap

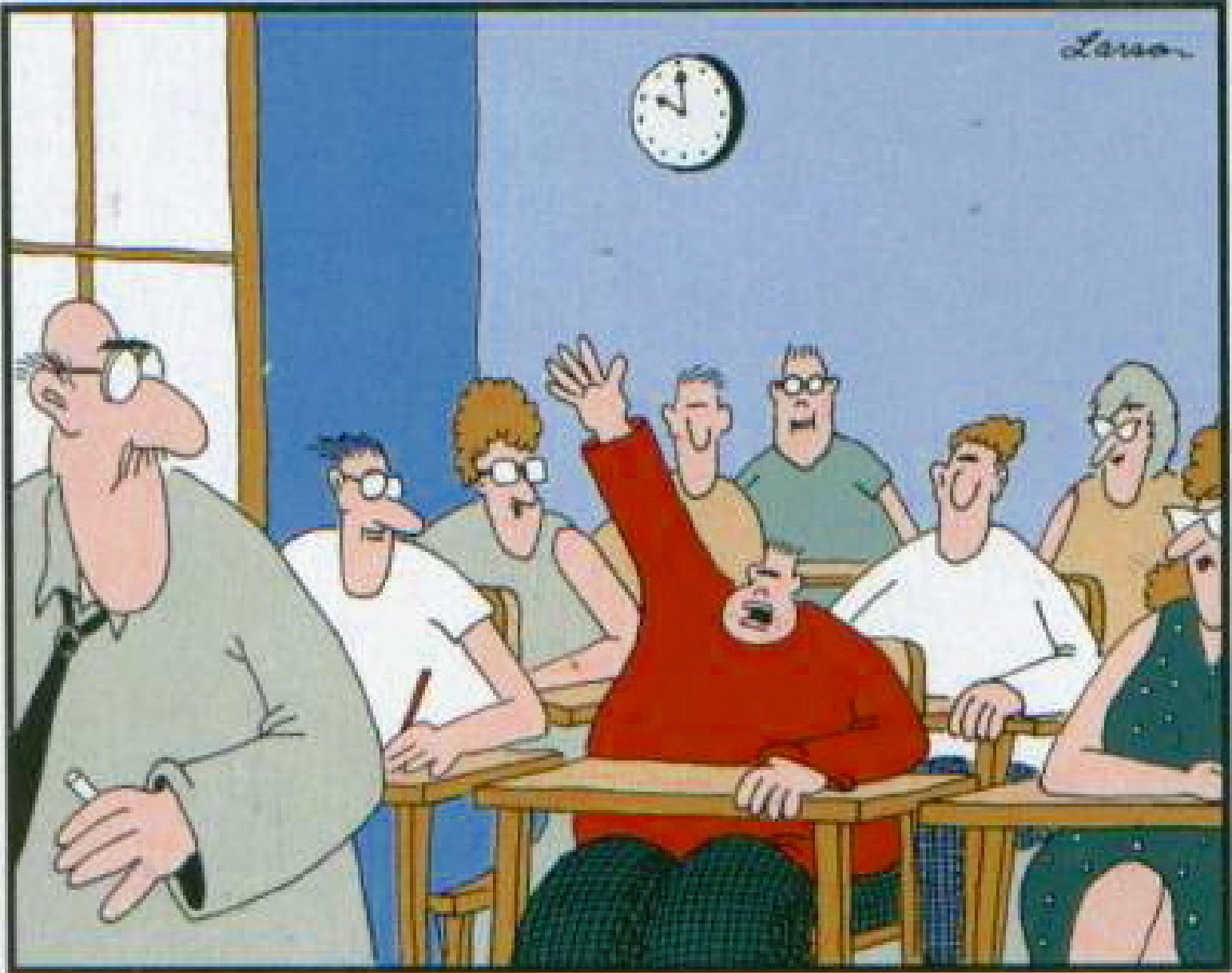
Alcohol hand rub

Pressurized containers secured

Observations (continued)

- 2. Waste management practices generally good with a few gaps. Hazardous chemical require some additional labeling**
- 3. Staff responsive to health and safety questions related**
- 4. MSDS available in most but not all areas**
- 5. SOPS/Policies available in some but not all areas**

Larson



Mr. Krišniūnas, may I be excused for break?

My brain is full!!

Day 2 Physicals (Assessments):

Faculty of Pharmacy

Faculty of Medicine

Objectives: Review Health and Safety and Waste Management Practices relative to training that was provided last year



Which safety team are you on??











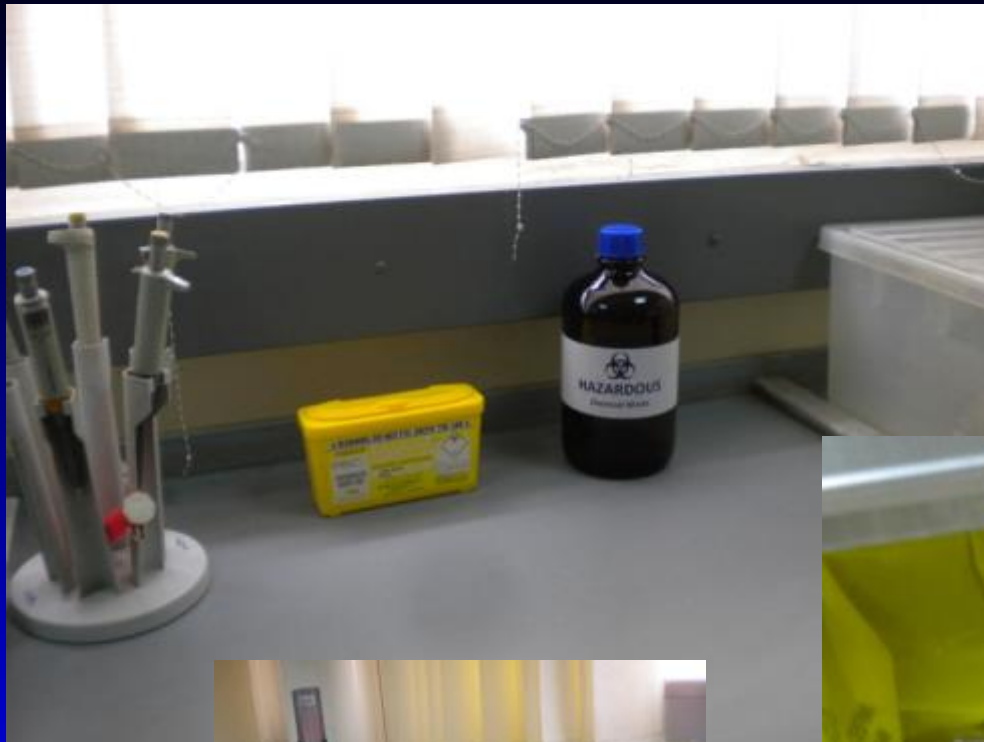


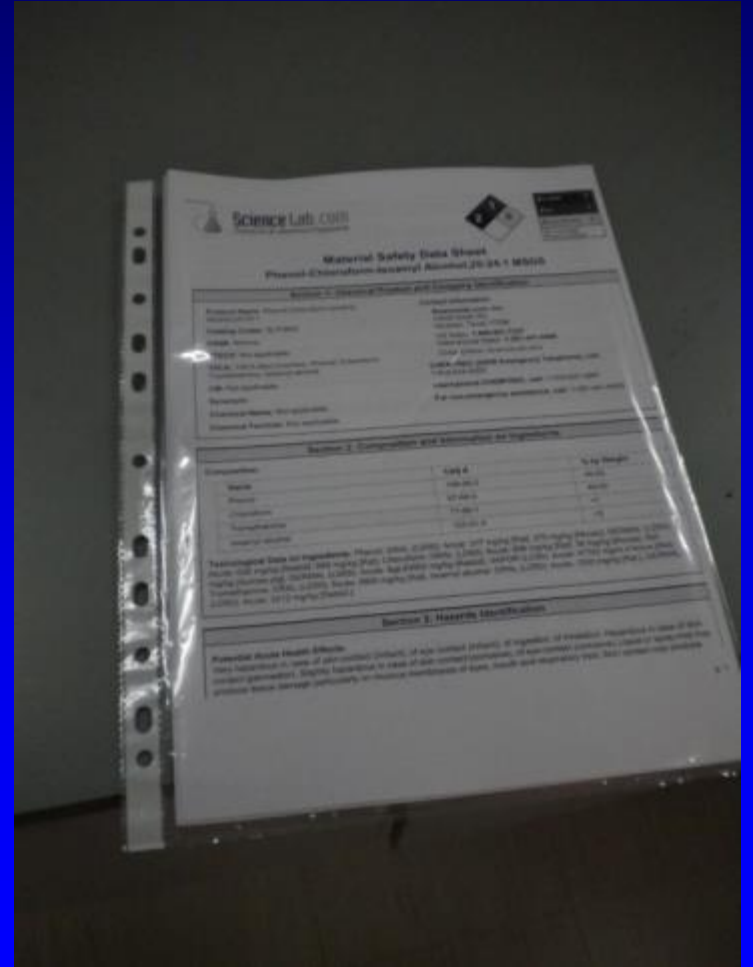


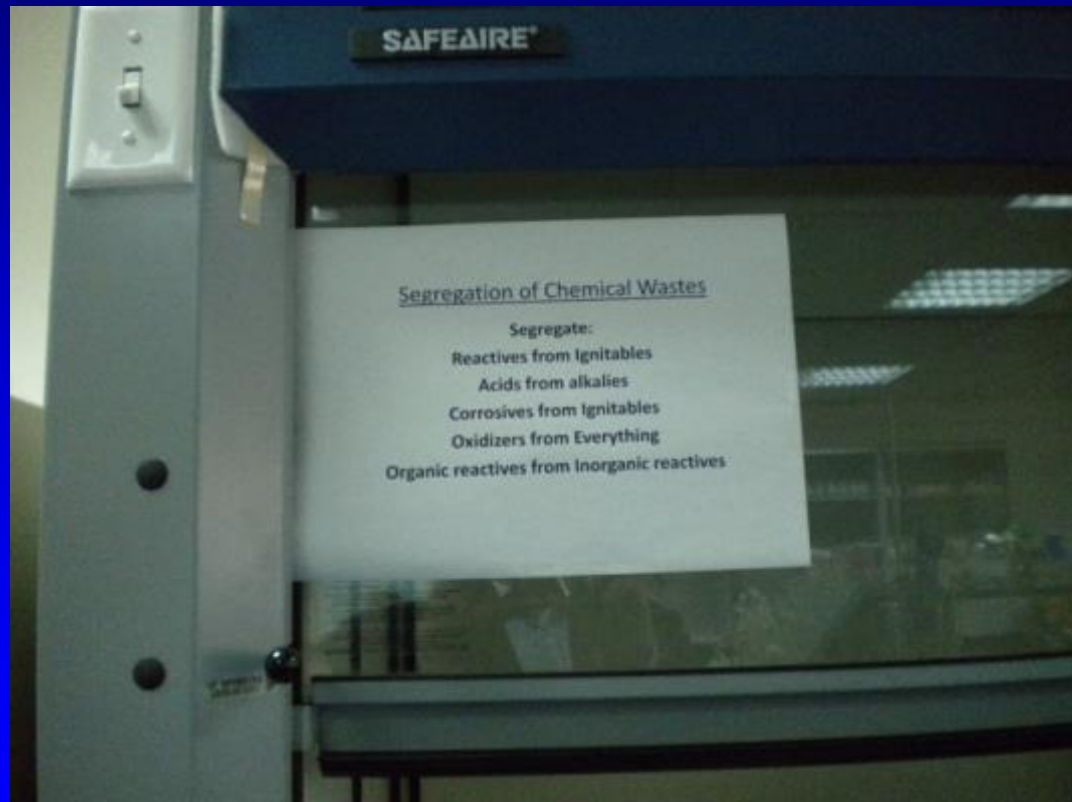


Improperly discarded barrelor
studio prop?????









LABORATORY SAFETY

PERFORMING EXPERIMENTS

Always wear your lab coat and safety goggles when performing experiments. Do not eat or drink in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

GLASS TUBING

Always wear your lab coat and safety goggles when using glass tubing. Do not use glass tubing that is cracked or chipped. Do not use glass tubing that is broken or bent. Do not use glass tubing that is broken or bent.

HEATING SUBSTANCES

Always wear your lab coat and safety goggles when heating substances. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

TRANSFERING LIQUIDS

Always wear your lab coat and safety goggles when transferring liquids. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

BLENDING

Always wear your lab coat and safety goggles when blending substances. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

FORMING SPILLS

Always wear your lab coat and safety goggles when forming spills. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

WOUND TREATMENT

Always wear your lab coat and safety goggles when receiving first aid. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

SAFETY RULES

Do not perform unauthorized experiments.
 Never work in the lab alone.
 Report all accidents immediately to your teacher.
 If severe accidents are fatal, call a local hospital.
 When chemical spills happen, clean them up immediately.
 Wear a chemical resistant apron.
 Wear chemical resistant gloves.
 Tie back long hair.
 Do not wear loose clothes.
 Do not wear jewelry.
 Do not wear sandals.
 Do not wear contact lenses.
 No food or beverages.
 No gum chewing.
 Do not touch equipment unnecessarily.
 Know the location of the exits, safety showers, eye wash, fire blankets, fire extinguishers and fire alarm.
 No smoking.
 Keep aisles clear.
 Call your teacher when you need help.

LABORATORY DRESS

Always wear your lab coat and safety goggles when in the laboratory. Do not wear loose clothes. Do not wear jewelry. Do not wear sandals. Do not wear contact lenses. Do not wear contact lenses.

Eye Protection

Always wear your lab coat and safety goggles when in the laboratory. Do not wear loose clothes. Do not wear jewelry. Do not wear sandals. Do not wear contact lenses. Do not wear contact lenses.

FORMING SPILLS

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WOUND TREATMENT

Always wear your lab coat and safety goggles when receiving first aid. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

Eye Wash

Always wear your lab coat and safety goggles when in the laboratory. Do not wear loose clothes. Do not wear jewelry. Do not wear sandals. Do not wear contact lenses. Do not wear contact lenses.

SAFETY SHOWERS

Always wear your lab coat and safety goggles when in the laboratory. Do not wear loose clothes. Do not wear jewelry. Do not wear sandals. Do not wear contact lenses. Do not wear contact lenses.

CRACKED CONTAINERS

Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

HAZARDOUS EQUIPMENT AND CHEMICALS

Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

NEVER REACTIVE OFFICE GLASS

Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

TYPES OF FIRE EXTINGUISHERS

Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

HOW BLIND?

Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

HOW TO HANDLE LABORATORY GLASS

Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

FORMING SPILLS

Always wear your lab coat and safety goggles when forming spills. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

HAZARDOUS EQUIPMENT AND CHEMICALS

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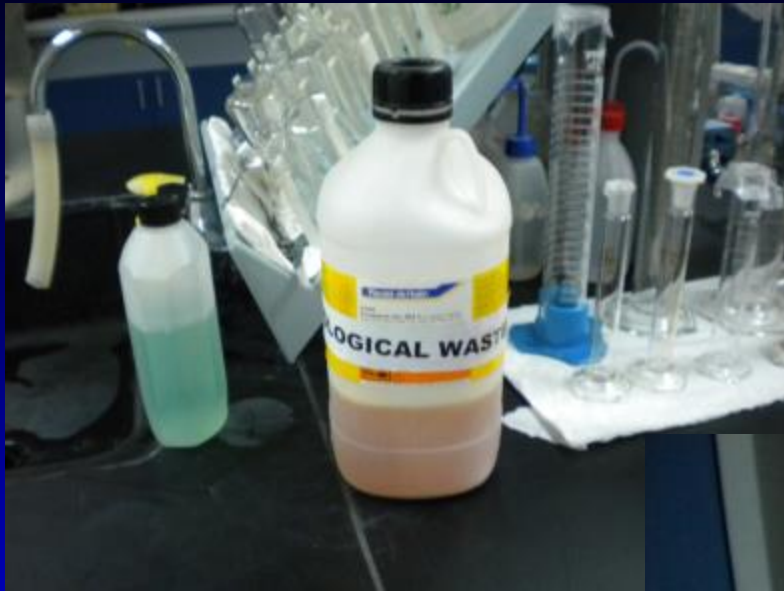
FLAMMABLE LIQUIDS

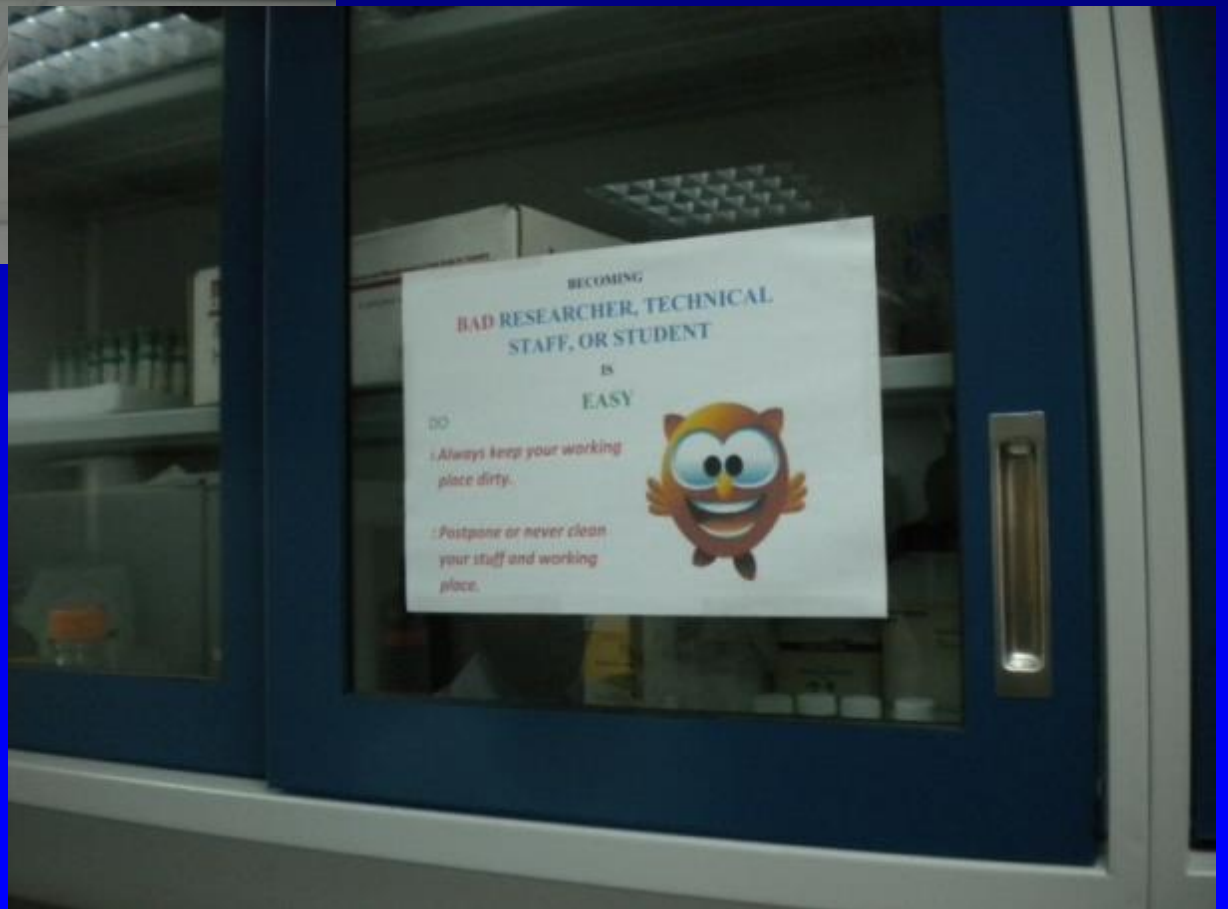
Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.

EXTINGUISHING A FIRE

Always wear your lab coat and safety goggles when in the laboratory. Do not use glassware with cracked or chipped glass. Do not use glassware with broken stoppers. Do not use glassware with broken stoppers.











Non-hazardous glass waste DL Liquid hazardous waste Con. Liquid hazardous waste Battery waste Radiochemical waste

Are You Segregating Medical Wastes Correctly?

Segregation of medical wastes at source is the first step of proper medical waste management. Color-coded containers and bags are used for different medical waste streams. Kuwait University Health Sciences Center follows the World Health Organization color code for medical waste containerization. Make sure you are putting the right waste stream in the right container and/or bag!

YELLOW	RED	CLEAR	BROWN	NON SPECIFIC
<ul style="list-style-type: none"> Biological Waste Sharps with biological contaminants Dental Amalgam 	<ul style="list-style-type: none"> Autoclavable Waste 	<ul style="list-style-type: none"> Specimen Transport 	<ul style="list-style-type: none"> Chemical Waste Pharmaceutical Waste (including Cytostatic) Sharps with chemical and/or pharmaceutical contaminants ONLY 	<ul style="list-style-type: none"> Glassware and Plasticware (non-contaminated ONLY) Radioactive Waste Battery/Electronic Waste











Carnegie Mellon University Health and Safety Newsletter

Wednesday, May 4, 2011

Proper Lab Shoes

Yep, ladies and gentlemen, it's time for the annual reminder of what is proper footwear for use in laboratory.

Remember: no open-toed shoes are permitted in the lab. This will ensure your feet are protected from stray hazardous materials spills.

I know that it is very warm in the summer and sandals provide much-needed comfort. You can wear them outside all you want, but if you do, be sure to keep a pair of closed-toed shoes at your desk to change into when you enter the lab.



*Of course women
don't work
as hard as men...*

**THEY GET
IT RIGHT
FIRST TIME!**

© 1999







FACULTY OF MEDICINE
DEPARTMENT OF ANATOMY
LABORATORY SAFETY AND WASTE MANAGEMENT GENERAL GUIDELINES

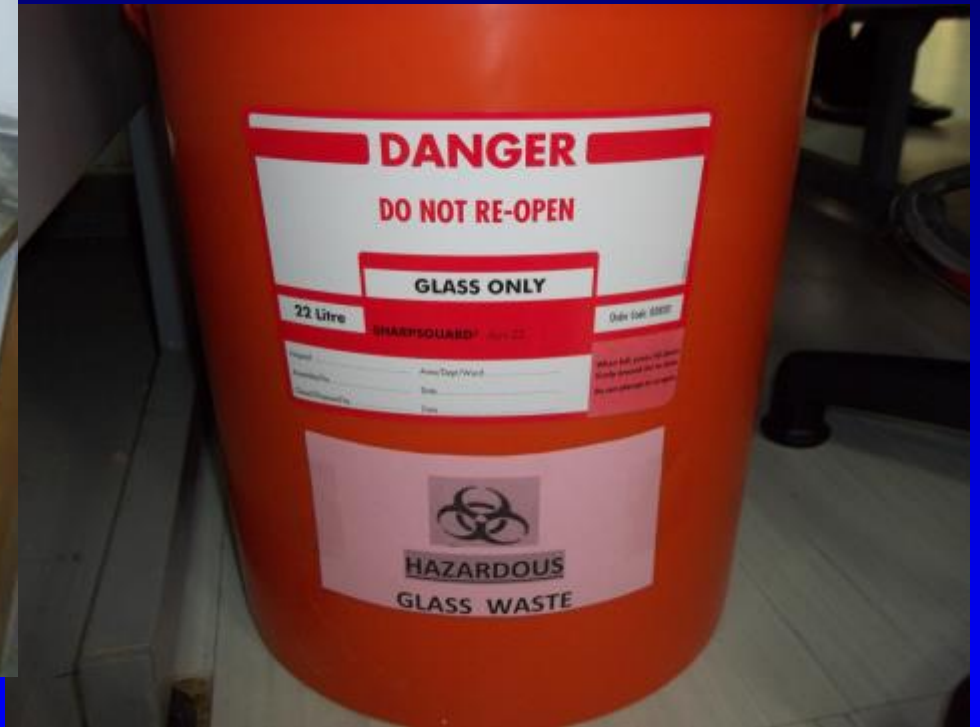
PLEASE FOLLOW THE INSTRUCTIONS FOR YOUR SAFETY AND FOR THE SAFETY OF OTHERS.

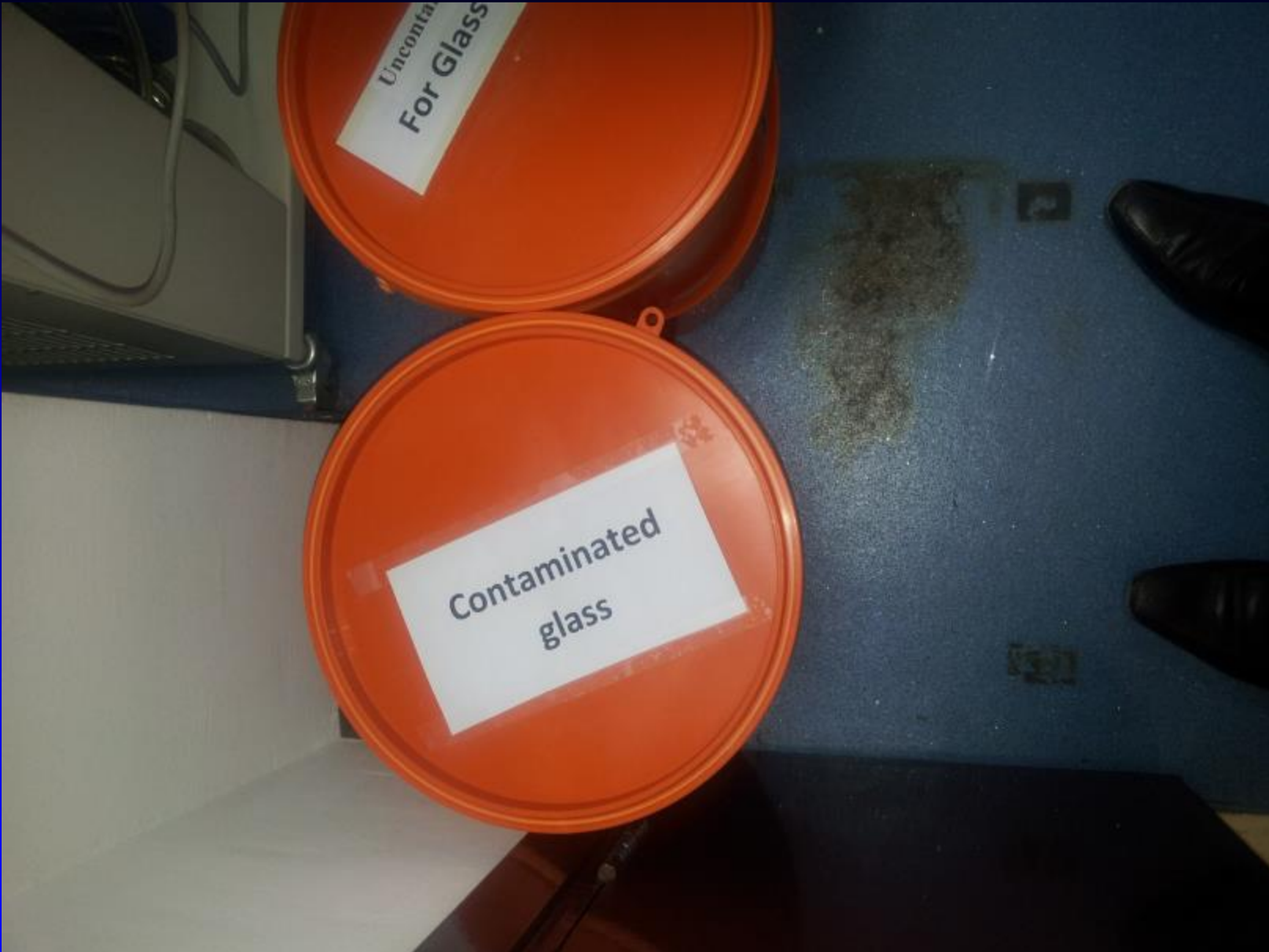
LABORATORY SAFETY

1. MUST WEAR SHOES IN THE LAB IRRESPECTIVE OF THE GENDER.
2. USE TROLLEY TO TRANSPORT CHEMICALS (USUALLY HEAVY AND LIQUID CHEMICALS).
3. KEEP THE SOLID AND LIQUID CHEMICALS SEPARATELY.
4. EXPIRED CHEMICALS SHOULD BE CONSIDERED AS WASTE AND SHOULD BE DISPOSED OFF.
5. VOLATILE CHEMICALS SHOULD BE USED UNDER THE HOOD.
6. KEEP THE LAB NEAT AND CLEAN.
7. HANDLE LIQUID NITROGEN CAREFULLY, USE GOGLES IF NECESSARY.
8. PICRIC ACID SHOULD BE HYDRATED TIME TO TIME.

WASTE MANAGEMENT

1. LIQUID CHEMICAL WASTES SHOULD BE COLLECTED IN THE AMBER COLOURED BOTTLES PROVIDED AND SHOULD BE LABELLED.
2. ANIMALS TISSUE WASTE (AFTER PROCESSING) CAN BE PUT IN THE YELLOW BUCKET LABELLED AS "BIOLOGICAL WASTE" KEPT IN THE COLD ROOM.
3. ANIMAL CARCUS SHOULD BE DISPOSED IN THE FREEZER PROVIDED FOR THE SAME PURPOSE, IN THE ANIMAL RESOURCE CENTRE.
4. GLOVES, CONTAMINATED TISSUE PAPER (TISSUE USED TO WIPE CHEMICALS OR BIOLOGICAL WASTE) USED PLATES, PLASTIC TUBES, DISPOSIBLE PETRI DISHES, etc CAN BE PUT IN THE YELLOW BAG PROVIDED IN EACH LAB, WHICH WILL BE EMPTIED EVERY AFTERNOON.
5. GLASS WASTE IS TO BE PUT IN THE RED BUCKET LABELLED "GLASS ONLY" PROVIDED IN EACH LAB.
6. SHARPS LIKE PIPETTE TIPS, GLASS PIPETTES etc. SHOULD BE PUT IN THE BIG YELLOW CONTAINER LABELLED "CONTAMINATED SHARPS ONLY" PROVIDED IN EACH LAB.
7. OTHER SHARPS LIKE NEEDLES, MICROTOME BLADES etc CAN BE PUT IN THE SMALL YELLOW CONTAINER LABELLED "CONTAMINATED SHARPS ONLY" PROVIDED IN EACH LAB.
8. TEST TUBE CONTAINING BLOOD WASTE, TISSUE CULTURE FLASKS etc. SHOULD BE PUT IN THE RED AUTOCLAVE BAGS PROVIDED.





Uncontaminated
For Glass

Contaminated
glass

FIRE EXTINGUISHERS

The way to use each of these



مطفآت الحريق

وتطريقة استعمال كل نوع

WATER EXTINGUISHER

1. PULL OUT SAFETY PIN.
2. DIRECT NOZZLE AND AIM AT BASE OF FIRE.
3. SQUEEZE HANDLE TO DISCHARGE.



مطفأة المياه
طريقة الاستعمال
1- ازالة صمام الامان
2- توجيه فوهة الحريق الى قاعدة النار
3- الضغط على المقبض للتفريغ

استخدمه لمراتق الاخشاب والورق والاصح
لا تستخدمه لمراتق المتاجة من الكهرمان
والموائيل القابلة للاشتعال.
USE FOR PAPER, WOOD, FABRICS ETC. NOT FOR ELECTRICALS.

FOAM EXTINGUISHER

1. REMOVE SAFETY CAP.
2. DIRECT NOZZLE AT THE BASE OF FIRE.
3. SQUEEZE HANDLE TO DISCHARGE.



مطفأة الرغوي
طريقة الاستعمال
1- ازالة صمام الامان
2- توجيه الفوهة الى قاعدة الحريق
3- الضغط على المقبض للتفريغ

تستخدم للموائيل القابلة للاشتعال والزيوت
لا تستخدمه لمراتق المتاجة من الكهرمان
USE FOR FLAMMABLE LIQUIDS & OILS. NOT FOR ELECTRICALS.

POWDER EXTINGUISHER

1. PULL OUT SAFETY PIN.
2. DIRECT NOZZLE AT THE BASE OF FIRE.
3. SQUEEZE HANDLE TO DISCHARGE.



مطفأة البودرة
طريقة الاستعمال
1- ازالة صمام الامان
2- توجيه فوهة الحريق الى قاعدة النار
3- الضغط على المقبض للتفريغ

استخدمه لكافة انواع الاطمان والموائيل القابلة
للاشتعال والغازات
USE FOR ALL RISKS INCLUDING FLAMMABLE LIQUIDS AND GASES.

CARBON DIOXIDE EXTINGUISHER

1. PULL OUT SAFETY PIN.
2. DIRECT NOZZLE AT THE BASE OF FIRE.
3. SQUEEZE HANDLE TO DISCHARGE.



مطفأة ثاني اكسيد الكربون
طريقة الاستعمال
1- ازالة صمام الامان
2- توجيه الفوهة الى قاعدة الحريق
3- الضغط على المقبض للتفريغ

تستخدمه لمراتق المتاجة من الكهرمان
والموائيل القابلة للاشتعال
USE FOR ELECTRICAL AND FLAMMABLE LIQUIDS/FIRES.

مع تعليمات قسم السلامة
ادارة الامن والسلامة

Suwayt University
Safety & Security Dept.

رقم الهاتف	البريد الالكتروني
1502	24942520
1754	24942700
2557	24931952
3003	25421274
4105	

جامعة السويط
ادارة الامن والسلامة

رقم الهاتف	البريد الالكتروني
1502	24942520
1754	24942700
2557	24931952
3003	25421274
4105	

GUIDELINES FOR WASTE DISPOSAL

1. *Dispose all sharps (pipette tips, needles) into yellow waste containers.*
2. *Any hazardous chemical waste e.g. diethyl ether or dichloromethane along with plasma remaining in the tubes after extraction should be disposed in brown bottles provided for the purpose. Collect the waste in small brown bottles and discard it into big brown bottle or white container for disposal of hazardous chemicals at the end of the week or whenever the small bottle gets filled.*
3. *Waste from HPLC and LC/MS/MS system should be collected in brown bottles which should be emptied into white container for disposal of hazardous chemicals each week end or whenever filled.*
4. *Dispose all contaminated waste e.g. eppendorf tubes, extraction tubes, gloves, contaminated tissue paper, bags used for transportation of patient samples etc. into bins having red bags.*
5. *Dispose non-contaminated waste into bins having blue bags.*
6. *Dispose all broken glass into the waste container reserved for this purpose..*

S.NO

1	Am
2	Am
3	IB
4	IB
5	Sa
6	Sa
7	Fa
8	Pr
9	Ja
10	M
11	M
12	T



LABORATORY BIOHAZARD PROTOCOLS

Containers



Orange Container

- For **glass** and contaminated glass only
- Properly filled **label** (Name/date/Dept.)
- **Full** indicator
- Once full seal, label and send for pick up



Yellow Container(s)

- For **sharps** and contaminated sharps only (needles, tips, broken hard plastic)
- Properly filled **label** (Name/date/Dept.)
- Don't fill beyond **full indicator**
- Once full seal by closing port all the way, label and send for pick up

Plastic Bags



Red Bag

- Must be used for all types of **Pathological Medical Waste** of human or animal contaminants
- Not for glass and sharps disposal
- Full bags must be tied or taped closed before disposal



Yellow Bags

- Body fluids contaminated (gloves worn, wipes or swabs and any wound dressings)
- Not for glass and sharps disposal
- Full bags must be tied or taped closed before disposal

Sealed containers/bags are collected at the end of the corridor (emergency exit end) in a large yellow container for scheduled daily pickups @ 3pm.

- > liquid medical/biohazardous wastes (blood, culture aspirate) that have to be disinfected before it can be discharged to the sanitary sewer system. To disinfect your waste, add a sufficient amount of household bleach to the biohazardous liquid so as to create a 10% concentration of bleach
- > All stock powder chemicals must be stored in the chemical cabinet
- > Flammable, photo-reactive, corrosive and irritant bulk liquid chemicals must be kept in the cabinet under the sink

Emergency contacts

Kuwait general emergency	112
Emergency waste collection (Mr. Abrattani)	99 82 94 25
Pathology Dept. Chief technician (Mrs. Leela)	29 83 62 44



Guidelines For Waste Management

Highly Infectious Waste

Highly infectious waste

- Microbiological Wastes
- Pathological waste

tissue, except skin.

- Animal waste:

All animal carcasses, body parts, and any bedding material from animals known to be infected with, or that have been inoculated with human pathogenic microorganisms infectious to humans.



Infectious Waste

infectious waste

- Human blood and blood products
- Human Body Fluids
- Contaminated Gloves
- Guaze/Dressings



• For Biohazards (highly infectious)

- Red Wheelie Bin
- Red Bags

Note : Red bags should be placed inside the Red Bin



• For Non-sharps infectious wastes :

- Yellow Wheelie Bin
- Yellow bag

Note : Yellow bags should be placed inside the Yellow Bin



For contaminated glass waste

Note : should not be kept uncovered



For non-contaminated Glass waste

Sharp Waste



- Yellow rigid container

For Sharp infectious wastes
e.g. : Needles, syringes, Pasteur pipettes and Lancets













1 THINK
SAFETY
FIRST



2 KNOW
EMERGENCY
RESPONSES



3 KNOW WHAT
YOU'RE
WORKING WITH



4 USE THE
SMALLEST
POSSIBLE
AMOUNT

5 FOLLOW ALL
SAFETY
PROCEDURES

6 REPORT
DANGEROUS
ACTIVITIES OR
SITUATIONS

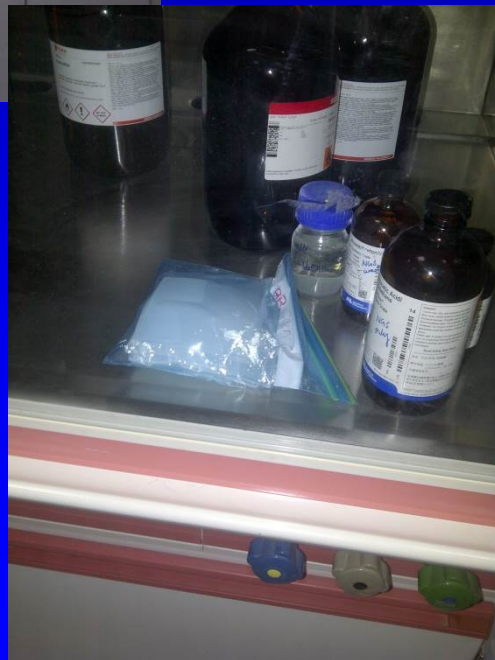
7 STORE AND HANDLE
HAZARDOUS
MATERIALS SAFELY

8 IF YOU DON'T
KNOW ...ASK

LAB SAFETY TIPS

WORKING
WITH
HAZARDOUS
MATERIALS





BR Gold Gel





Observations

1. Essential safety equipment is available:

First Aid kits

Spills kits

Eyewash stations

Safety showers

Fire blankets

PPE available and being used

Warning / Caution Signage

Sinks

Soap

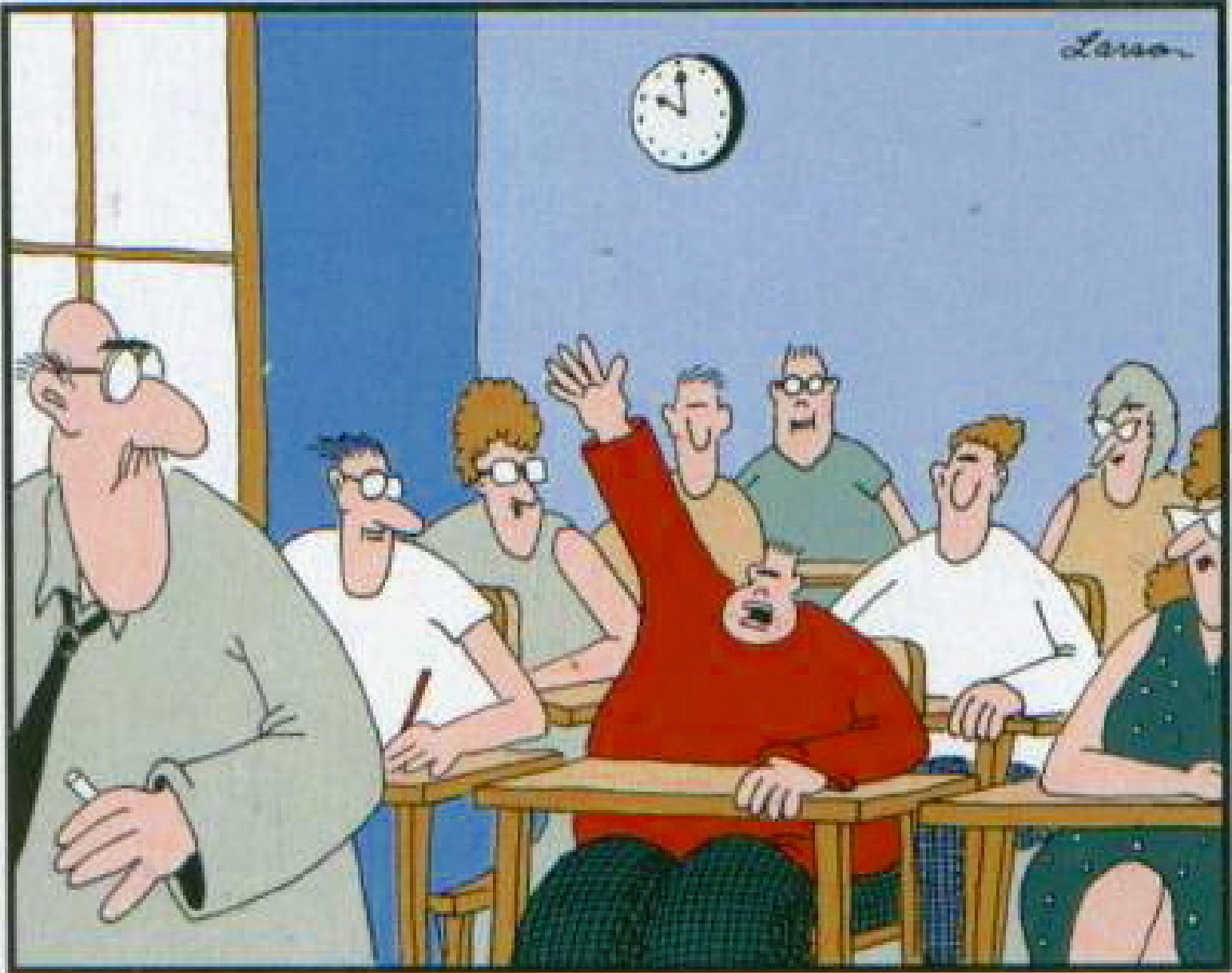
Alcohol hand rub

Pressurized containers secured

Observations (continued)

- 2. Waste management practices generally good with a few gaps. Hazardous chemical require some additional labeling and storage modifications**
- 4. Range of labels and posters relative to management of healthcare waste streams**
- 5. Staff responsive to health and safety questions related**
- 6. MSDS available in most but not all areas**
- 7. Safety Policies posted in some areas but not all**
- 8. Storage of chemical supplies is difficult in some areas dues to space limitations**

Larson



Mr. Krišniūnas, may I be excused for break?

My brain is full!!

Additional Information / Clarifications / Recommendations.....

Ethidium bromide

Ethidium Bromide (EtBr), commonly used in research laboratories as a stain for the visualization of nucleic acids in electrophoresis gels, is a toxic chemical and a potent mutagen. When used in nucleic acid staining, ethidium bromide fluoresces a red-orange to pink color under ultraviolet light and with increased fluorescence when bound to double-stranded DNA. While it is not specifically regulated as a hazardous waste, the mutagenic properties may present health hazards and disposal concerns if it is not managed properly in the laboratory.



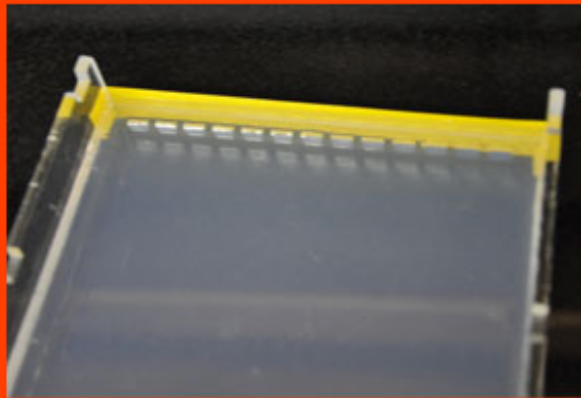
Preparing Agarose solution



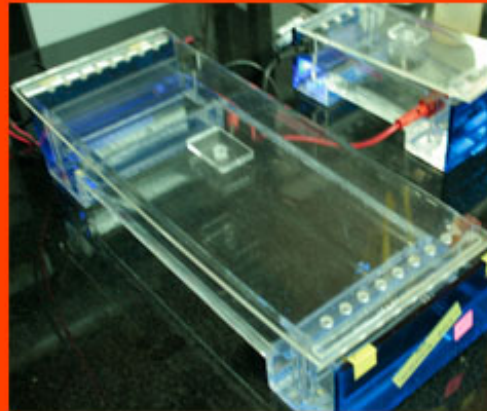
Ethidium Bromide + Agarose soln.



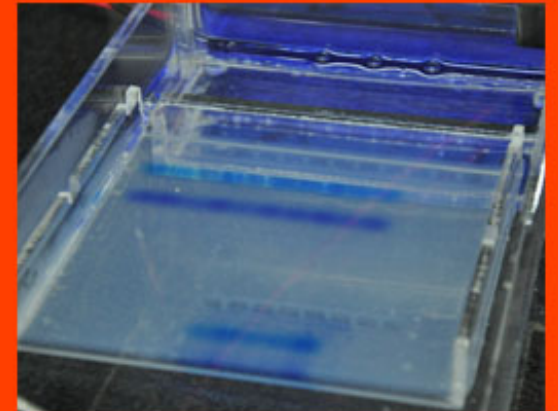
Setting the gel



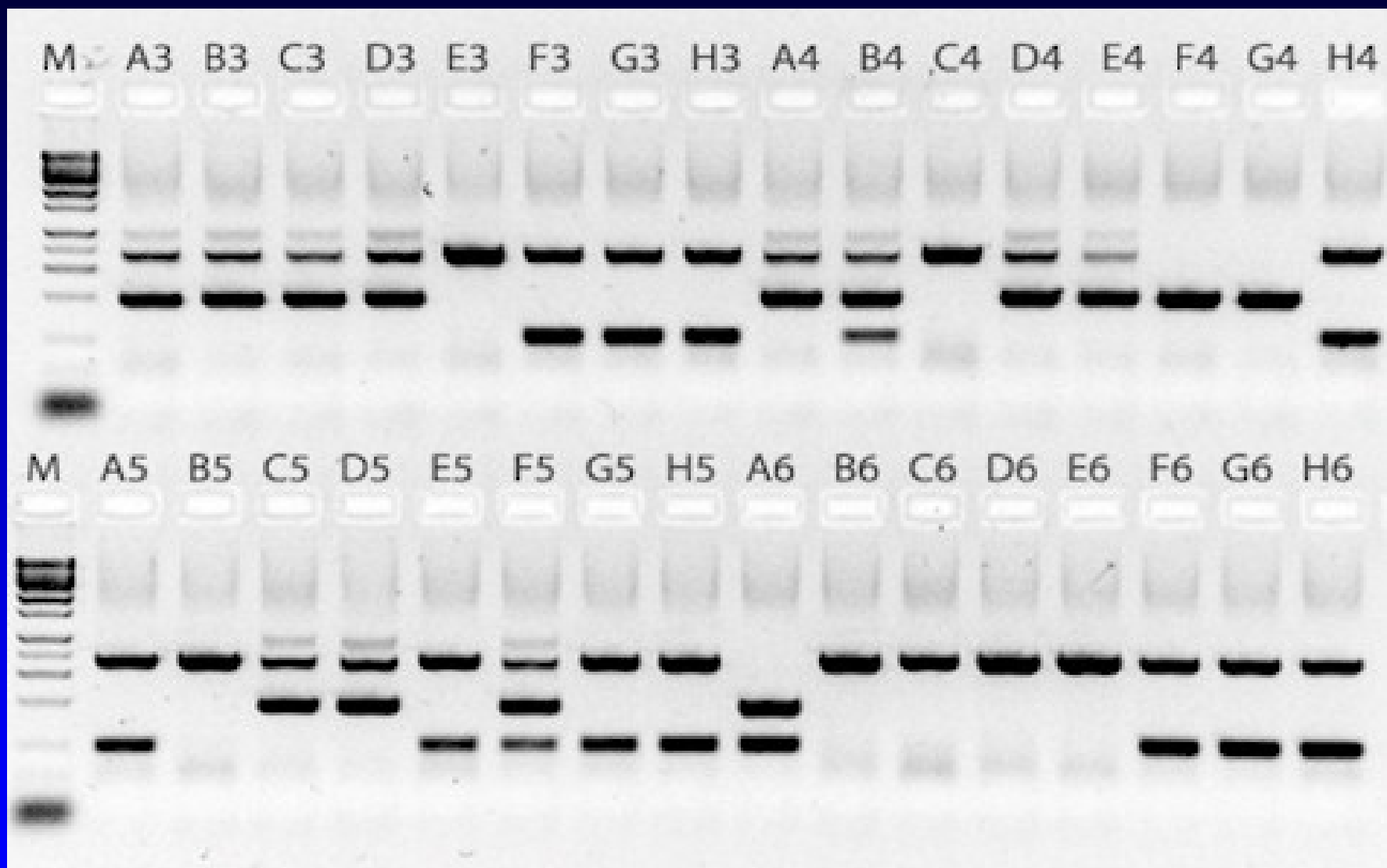
Gel (after half an hour)



The Equipment



The Gel, after electrophoresing



Solutions with a concentration of AT LEAST (\geq) 0.1%

Any waste solution of 0.1% (e.g. 1mg/ml) or higher is Special Waste (including: unwanted 5mg/ml or 10mg/ml stock solutions).

Solutions with a concentration of less than ($<$) 0.1%

Waste solutions of less than 1mg/ml (including: e.g. working solutions of 5 μ g/ml or 10 μ g/ml or staining solutions of 20 μ g/ml) are not Special Waste however, they are potentially still a Health & Safety risk. This type of waste solution must be decontaminated prior to disposal to drain.

Gels with a concentration of less than ($<$) 0.1%

Normal gels contain far less than 0.1% (1mg/ml) Ethidium Bromide and are therefore not Special Waste. Due to a small but potential Health & Safety risk, these gels must be disposed of via the Clinical Waste stream.

Gels...



Liquids

Fisher Scientific, Schleicher and Schuell, or VWR.



Ethidium Bromide Destaining Tea Bags



How do you get information about hazardous chemicals?

You can get information two ways:

from the product label,

from the product material safety data sheet.



MSDS

What is on the product label?

- The manufacturer,
- The name of the product,
- a hazard warning,
- a list of hazardous ingredients



What is a material safety data sheet?

Material safety data sheets or “MSDSs” are information sheets on products that:

- tells what chemicals are in the product,
- what the hazards of the chemicals are,
- how to protect yourself from the hazards.

A large, 3D graphic of the letters 'MSDS' in a bold, sans-serif font. The letters are colored with a gradient from yellow at the top to orange at the bottom, and have a dark shadow underneath, giving them a three-dimensional appearance. The graphic is positioned on the right side of the slide, partially overlapping the list of points.

Material Safety Data Sheet

MATERIAL SAFETY DATA SHEET

Trade Name: ACETONE

Chemical Family: Acetone

Formula: C₃H₆O

Manufacturer:

Supplier:

Emergency Phone #'s

Transportation EMG. Phone #'s CANUTEC

HAZARDOUS INGREDIENTS

ACETONE: 99% CAS # 67-64-1

Exposure limits, PPM: OSHA-PEL 750, ACGIH-TLV 750

LD50 Orla rat 9750 MG/KG, Skin rabbit 20 G/KG, LC50 rat 16000 PPM

PHYSICAL DATA

Appearance & Odor: Clear colorless liquid, sweet odor

Vapor pressure: MM HG/20 DEG. c :184

Vapor density: (AIR 1) 2.0

Solubility in water: 100%

Specific gravity: (Water = 1) 0.79

FIRE AND EXPLOSION DATA

Flashpoint & Method: 0% F (TCC)

Flammable Limits: LFL 2.0, UFL 13.0

Extinguishing Media: water spray, dry chemical, CO₂, alcohol foam

Special equip. & procedures: Self contained breathing apparatus & complete protective clothing. Acetone is extremely flammable, any source of ignition will ignite it. Vapor is extremely explosive.

REACTIVITY DATA

Conditions Contributing to Instability: Heat, Sparks & Open Flame

Incompatible Substances: Acids, Oxidizing materials, Alkalis, Amines, Potassium T-Butoxide, Alkanolamines, Ammonia, Aldehydes, Chlorinated compounds.

Hazardous Decomposition Products: Carbon Monoxide, Carbon Dioxide

Hazardous Polymerization: will not occur.

MATERIAL SAFETY DATA SHEET

HEALTH HAZARDS DATA

NOTE: Health studies have shown that exposure to chemicals pose potential risks which may vary from person to person. Exposure to liquids, vapors, mists or fumes should be minimized.

PRINCIPAL HEALTH HAZARDS

Skin contact: contact will dry skin, irritate skin, dermatitis

Eye contact: irritation and may burn eye

Ingestion: large quantities causes headaches, nausea, vomiting. Can also cause liver and kidney damage.

Inhalation: may cause headaches, nausea, vomiting, dizziness, other central nervous system effects, (i.e. convulsions)

FIRST AID PROCEDURES

Skin: Avoid direct contact with this chemical, wash with soap and water, seek medical attention if a rash persists.

Eyes: Flush with warm water for 20 minutes, obtain medical attention immediately.

Ingestion: If conscious, **immediately induce vomiting** by giving 2 glasses of water and sticking a finger down the throat. Get medical attention immediately.

Inhalation: Remove to fresh air. Give A/R if not breathing, get immediate medical attention.

PREVENTATIVE MEASURES

Skin: Wear impervious gloves (butyl rubber), coveralls and safety footwear.

Eyes: Chemical proof goggles or full face respirator if vapors cause eye discomfort.

Ingestion: Wash thoroughly before consuming food stuffs.

Inhalation: Use only in well ventilated areas or use NIOSH approved respiratory protection with organic vapor cartridges.

CONTROL MEASURES AND PRECAUTIONS

Keep container tightly closed. **DO NOT** consume food, drink or tobacco in work or material storage areas. **Flame or any source of ignition is to be kept away from this product.** Use caution and personal cleanliness to avoid skin and eye contact. Avoid breathing vapors.

SPILL, LEAK AND DISPOSAL METHODS

**** Review Fire and Explosion Hazards and Safety Precautions before proceeding with cleanup.** Restrict access to area. Remove all sources of ignition and ventilate area. Absorb spill with an absorbent material such as vermiculite or

MSDSs – what information do they have?

Names of hazardous chemicals in a product,

Acetone

Physical and chemical properties of the product,

Flammable & highly volatile

Physical hazards of working with the product,

Burns

Health hazards of working with the product (including signs and symptoms of overexposures),

Headaches, eye irritation

Material safety data sheets (continued)

The main way the chemical enters the body, Inhalation

The legal limit allowed in the air 750 ppm

If the chemical is a carcinogen No

Precautions for safe use of the hazardous chemical,

Use with adequate ventilation, keep away from open flame

Material safety data sheets (continued)

Exposure control methods,
including personal protective
equipment,

Wear respirator,
rubber gloves

Emergency and first aid
procedures,

Eyes: flush with
water for 15 minutes

The date the MSDS was prepared
or revised,

1996

Name, address and phone number
of the person responsible for the
information in the MSDS.

John Doe
1234 Maple
St.
Anywhere,
USA



INCIDENT REPORT

PART I: PERSON INVOLVED

Name: Supervisor:

Faculty/Department: Occupation: Staff Student
 Visitor Other

Incident Location: Incident Date & Time: AM / PM
(e.g. FOD 1-37) (e.g. 20/09/2012) (e.g. 09:20 AM)

1. Describe what happened. In your description, include answers to the following:
- ✓ What were you doing before the incident occurred?
 - ✓ What were the conditions of your work area?
 - ✓ Was that a routine operation? (YES/NO)
 - ✓ How did you respond?
 - ✓ Describe any equipment, machinery, or instruments in use at the time of the incident and their potential contribution to the incident.

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2. Were you adequately trained prior to engaging in this operation? YES NO
3. Was the use of PPE necessary during the given operation? YES NO
4. Did you wear your PPE? YES NO
5. Are there any specific safety rules which apply to this procedure? YES NO
6. Were they followed? YES NO
7. Are they adequate? YES NO

8. What do you perceive to be the causal factors behind this incident?
- Inadequate management oversight Lack of appropriate safety policy
- Proper equipment not used or not supplied Inadequate training
- Lack of PPE Poor work environment
- Other

9. Was there any property loss or damage? YES NO
- If YES, explain.
-
-

10. Did you sustain any injuries? YES NO
11. Were they treated? If YES, attach your medical report. YES NO

KU HSC Incident Reports

9/2012 – 3/2013

=3

1. Broken sewage drain in lab
2. AC Duct issue in 331 (2 reports)
3. Heating mantle short/fire

http://www.hsc.edu.kw/vpo/Health_Safety_and_Environment/Incident%20Report%20V2.pdf

Containers of Hazardous Chemical Waste

- Label containers with the following info:
- Date you begin collection
- Name of chemical waste when possible i.e., “Waste methanol, Waste acetone”
- Laboratory Location:

415/FOM

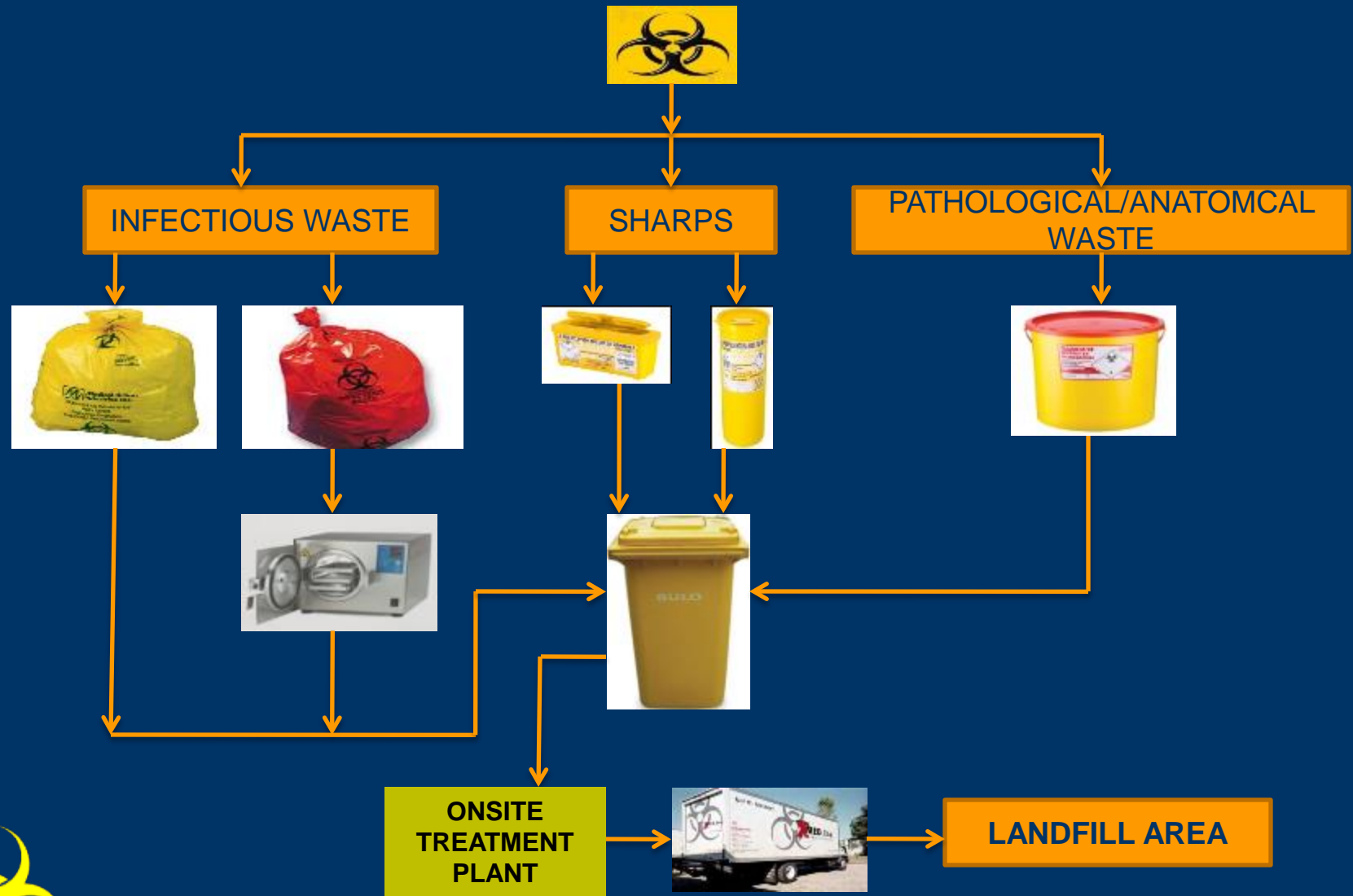


Secondary containment

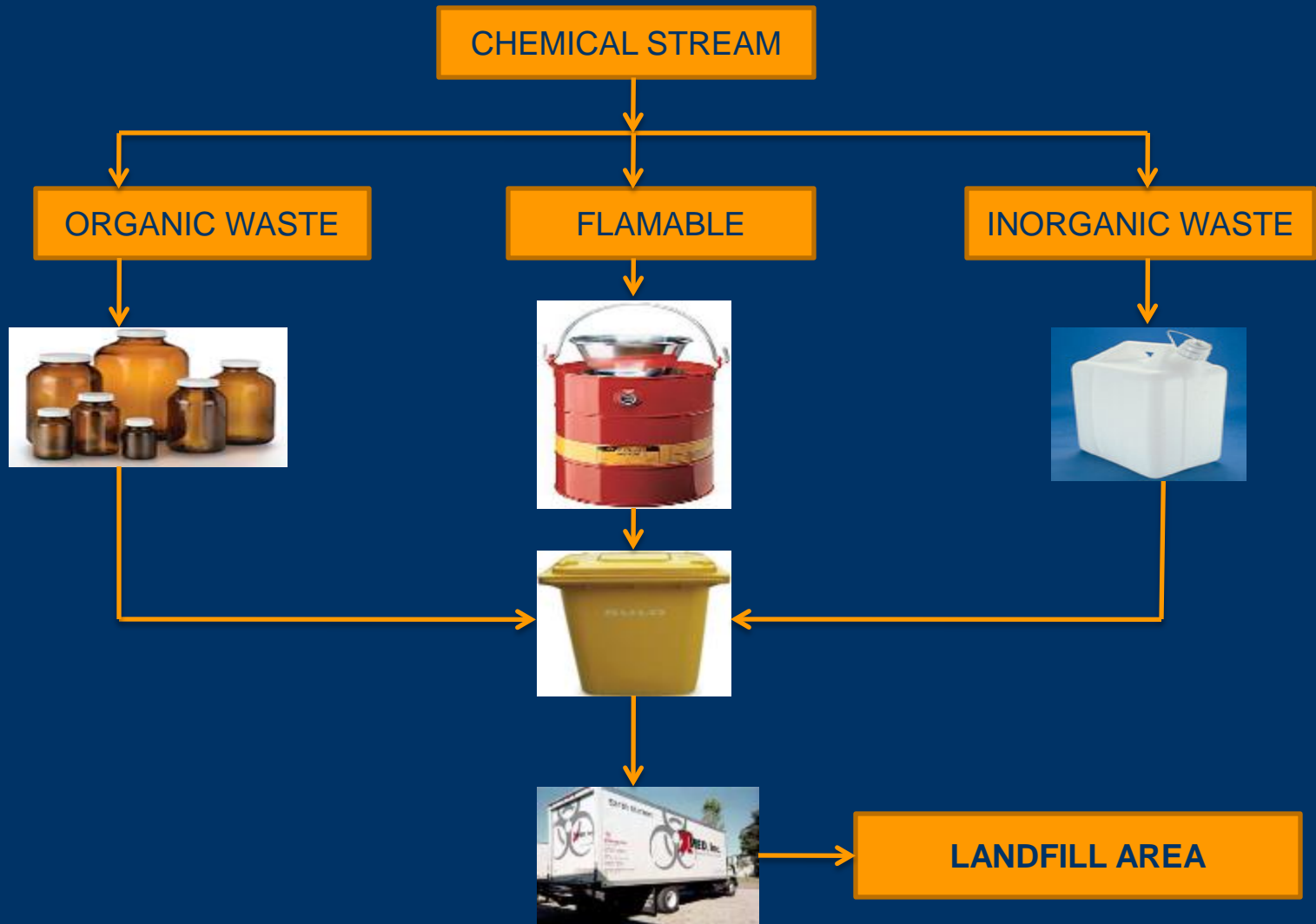


	Acids, inorganic	Acids, oxidizing	Acids, organic	Alkalis (bases)	Oxidizers	Poisons, inorganic	Poisons, organic	Water- reactives	Organic solvents
Acids, inorganic			X	X		X	X	X	X
Acids, oxidizing			X	X		X	X	X	X
Acids, organic	X	X		X	X	X	X	X	
Alkalis (bases)	X	X	X				X	X	X
Oxidizers			X				X	X	X
Poisons, inorganic	X	X	X				X	X	X
Poisons, organic	X	X	X	X	X	X			
Water- reactives	X	X	X	X	X	X			
Organic solvents	X	X		X	X	X			

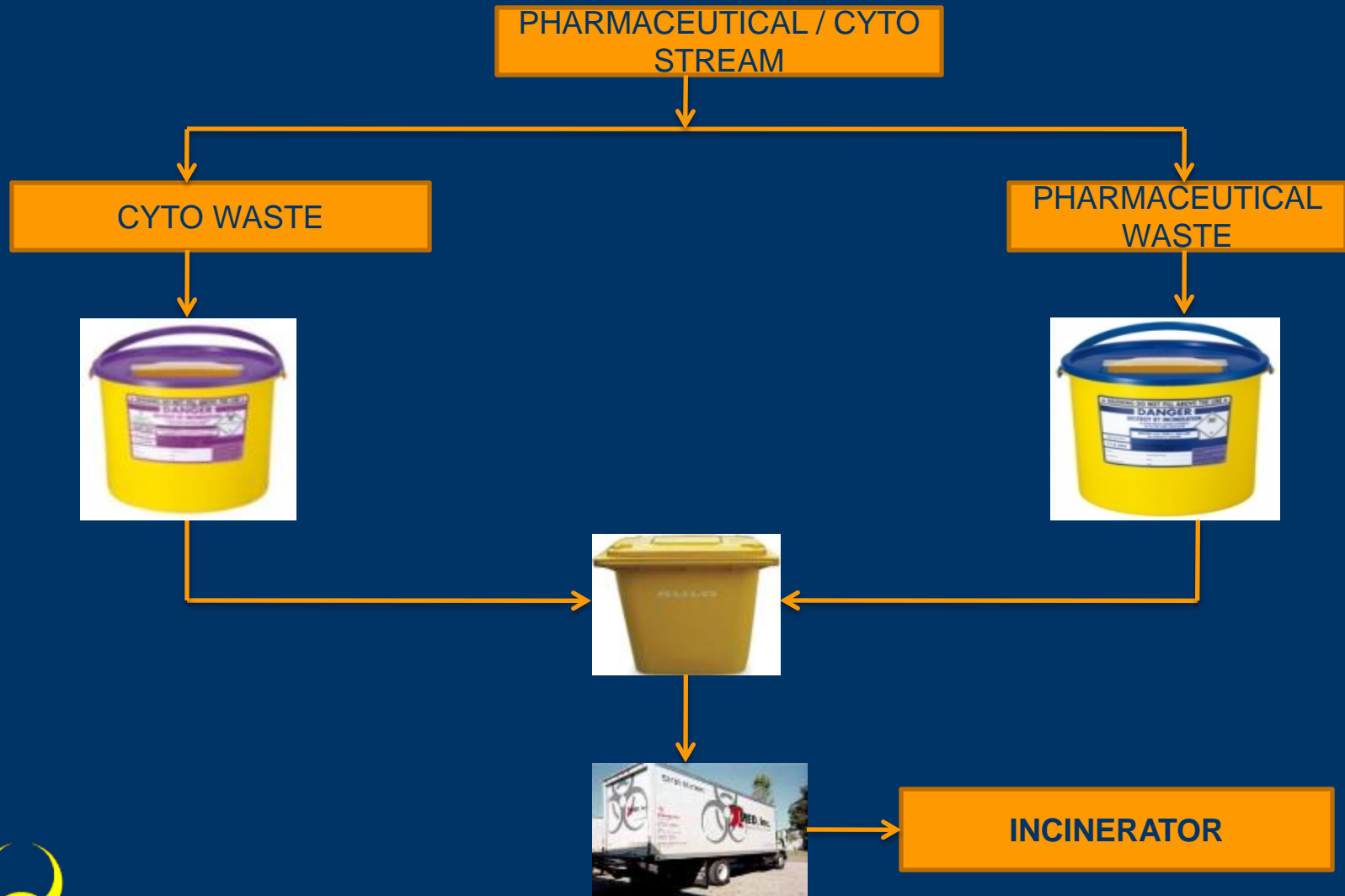
Hazardous Healthcare / Medical Waste Flowchart



Chemical Waste Flowchart



Pharmaceutical - Cyto Waste Flowchart



Battery / Broken Glass Waste Flowchart



LANDFILL AREA



Final Observations

Need for general and specific safety policies/ procedures in each area

Modify some of the waste management training posters (for more uniformity)

Complete use of legacy containers (additional confusion for waste management)

Chemical inventory list in each lab /located with MSDS

Remind staff of the importance of incident reporting



Thank-you!

