

Health and safety in soil laboratory

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Health and Safety in the lab

Why does it matter?

Safe working protects :

- You
- Other lab workers
- Cleaners
- Visitors
- Your work



https://www.cartoonstock.com/directory/l/laboratory_accidents.asp

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Health and Safety in the lab

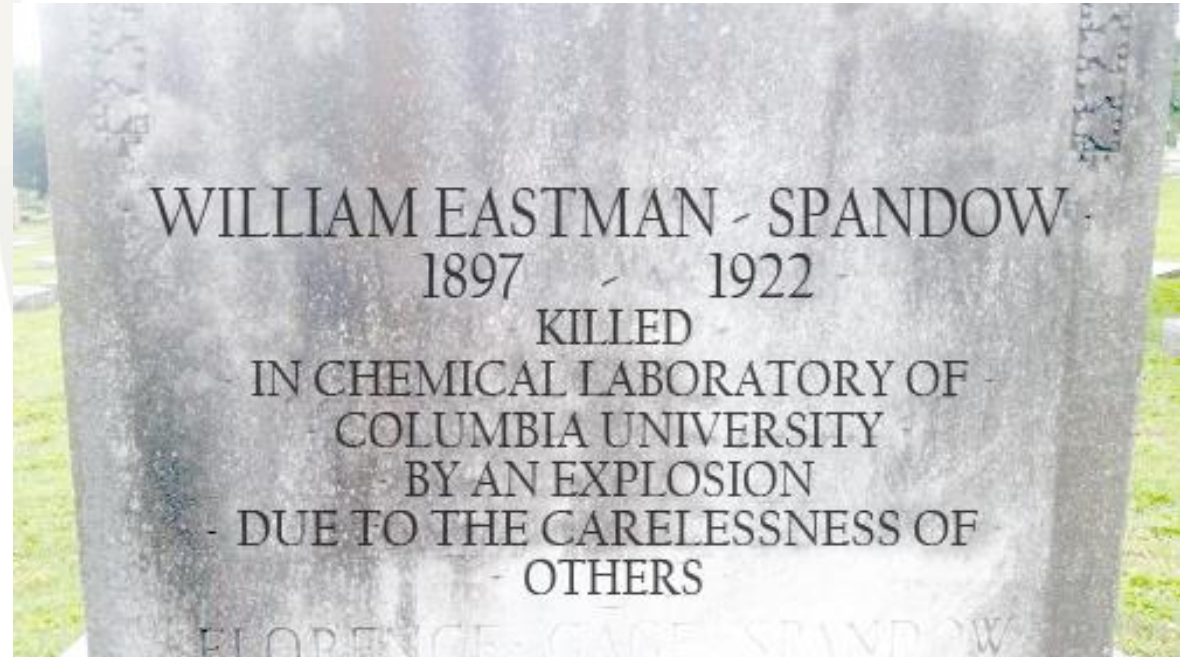
Why does it matter?

Safe working protects :

- You
- Other lab workers
- Cleaners
- Visitors
- Your work

Who is responsible ?

- Every one



1922 Lab Explosion

<https://www.labsafety.org/1922-lab-explosion-with-clues-for-today>

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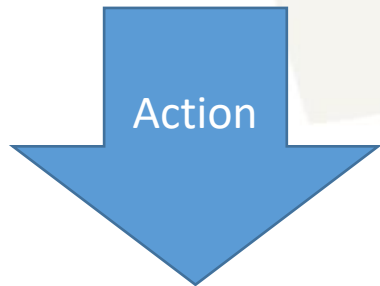


What is Health and Safety?

the laws, rules, and principles that are intended to keep people safe from injury or disease at work and in public places (cf. Cambridge dictionary)

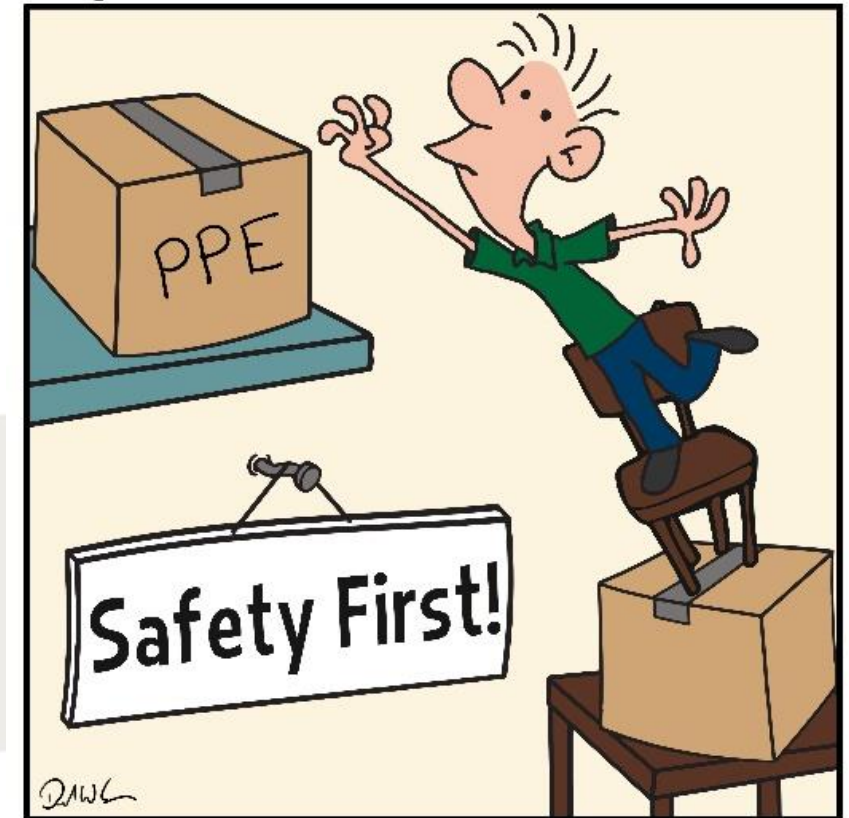
Hazard and Risk -- What's the difference?

A *hazard* is **any source of potential damage or harm** to an individual's health or life under certain conditions.



Risk is **the chance or probability of a person being harmed or experiencing** an adverse health effect if exposed to a hazard.

Enlightened EH&S



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Risks can be reduced by taking measures to minimize or control the hazard.

1. Recognize the Hazards

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2. Assess the Risks of the Hazards

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3. Minimize or control the Risks of the Hazards

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1. Recognize the Hazards
2. Assess the Risks of the Hazards
3. Minimize or control the Risks of the Hazards
4. Prepare for Emergencies from Uncontrolled

Risks can be reduced by taking measures to minimize or control the hazard.

1. Recognize the Hazards

1. Recognize the Hazards



Know what hazards are present in your lab.

What are the general hazards in a laboratory?

- Fire
- Breakage of glassware
- Spillages
- Pressure equipment and gas cylinders
- Extremes of heat cold
- Chemical hazards
- Biological hazards
- Radiation

And many more!!!!

1. Recognize the Hazards : Hazard Classes

Know the signs and meaning

Think safety

- Environmental Hazards
- Health Hazards
- Physical Hazards

GHS Hazard Pictograms Globally Harmonized System

 Health Hazard Carcinogen Mutagenicity Reproductive Toxicity Respiratory Sensitizer Target Organ Toxicity Aspiration Toxicity	 Flammable Flammables Pyrophorics Self-Heating Emits Flammable Gas Self-Reactives Organic Peroxides	 Harmful Irritant (skin & eye) Skin Sensitizer Acute Toxicity (harmful) Narcotic Effects Respiratory Tract Irritant Hazardous to Ozone Layer (Non-Mandatory)
 Compressed Gas Gases Under Pressure	 Corrosive Skin Corrosion/Burns Eye Damage Corrosive to Metals	 Explosive Explosives Self-Reactives Organic Peroxides
 Environmental Aquatic Toxicity	 Toxic Acute Toxicity (fatal or toxic)	 Oxidizing Oxidizers

1. Recognize the Hazards

Match the pictogram to the hazard



Risks can be reduced by taking measures to minimize or control the hazard.

1. Recognize the Hazards

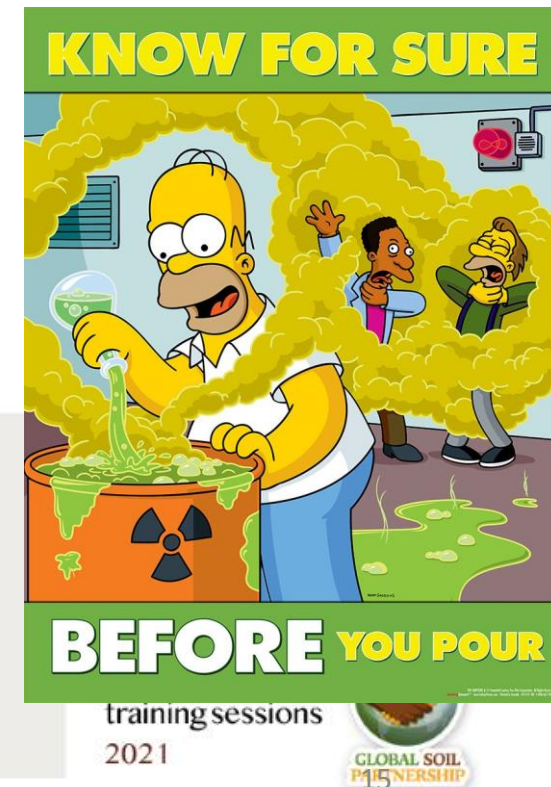
2. Assess the Risks of the Hazards

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- *Risk assessment* : the process of estimating the probability of harm from a hazard, by considering the process or the laboratory procedure that will be used with the hazard.

Risk assessment = severity of the hazard x probability of exposure to the hazard

When ? Before, during and after an Experiment.



2. Assess the Risks of the Hazards

How to do a Risk Assessment?

Quantifying laboratory risk assessment

You can not manage what you don't measure

Types of risk assessment

1- Qualitative Risk Assessments

the assessor will use their personal judgement to identify hazards around the workplace, assess risks and plan control measures.

2- Quantitative Risk Assessments

Assessors use risk matrix

Types of risk assessment in laboratory:

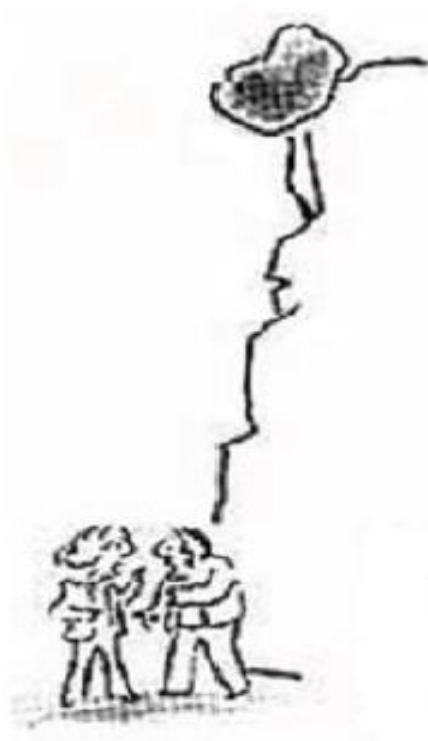
- Quality risk assessment (quality of data)
- Environmental risk assessment
- Health and safety risk assessment
- Economic risk assessment (equipment, and incomes of the laboratory)

Steps of Risk Assessment

Risk identification



Risk analysis



Risk treatment



Risk identification



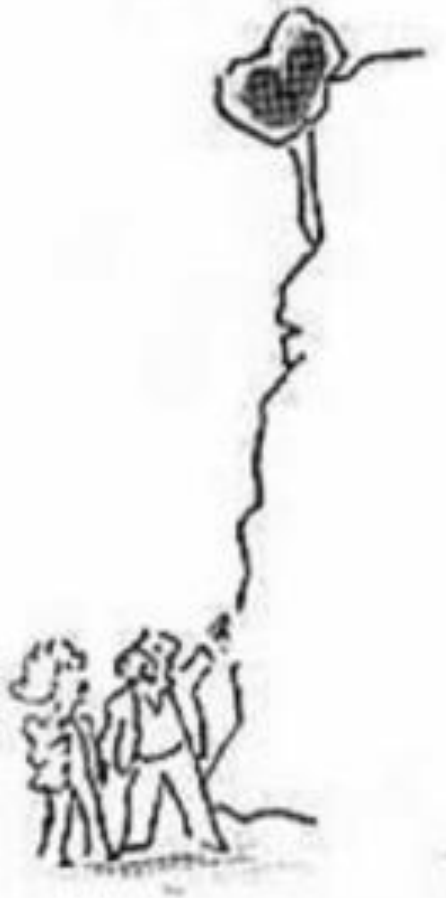
Risk Identification:

- Purpose: find, recognize and describe risks that might prevent an organization achieving its objectives.
- Relevant, appropriate and up-to-date information

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Risk identification



Risk analysis



Risk Analysis:

Risk Rating= severity \times likelihood \times Frequency

Or

Risk rating= severity \times likelihood

Risk Matrix

Quantitative Likelihood	consequences				
	Minor skills impact	Minor impact to capability	Unavailability of core skills affecting services	Unavailability of critical skills or personnel	Protracted unavailability of critical skills /people
Has occurred on an annual basis in this organization in the past or circumstances are in the train that will cause it to happen	Minor injury or first aid treatment	Injury requiring treatment by medical practitioner	Major injury/hospitalization	Single death and or multiple major injuries	Multiple deaths
Has occurred in the last few years in this organization or has occurred recently in other similar organizations or circumstances have occurred that will cause it to happen in the near few years	Insignificant 1	Negligible 2	Moderate 3	Extensive 4	Significant 5
Has occurred at least once in the history of this organization or is considered to have a 5% chance of occurring in the near few years					
Has never occurred in this organization but has occurred infrequently in other similar organizations or is considered to have a 1% chance of occurring in the next few years					
Is possible but has not occurred to date in any similar organization and is considered to have very much less than a 1% chance of occurring in the next few years					

Likelihood ↑

Has occurred on an annual basis in this organization in the past or circumstances are in the train that will cause it to happen

Has occurred in the last few years in this organization or has occurred recently in other similar organizations or circumstances have occurred that will cause it to happen in the near few years

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People

Minor skills impact

Minor impact to capability

Unavailability of core skills affecting services

Unavailability of critical skills or personnel

Protracted unavailability of critical skills /people

Minor injury or first aid treatment

Injury requiring treatment by medical practitioner

Major injury/hospitalization

Single death and or multiple major injuries

Multiple deaths

Insignificant 1

Negligible 2

Moderate 3

Extensive 4

Significant 5

Almost Certain 5

Likely 4

Possible 3

Unlikely 2

Rare 1

Measuring the Acceptability of the Risks

	Insignificant 1	Negligible 2	Moderate 3	Extensive 4	Significant 5
Almost Certain 5	5	10	15	20	25
Likely 4	4	8	12	16	20
Possible 3	3	6	9	12	15
Unlikely 2	2	4	6	8	10
Rare 1	1	2	3	4	5

	Acceptable
	Medium
	High

Examples of risky activities in the lab (the photo is fake)



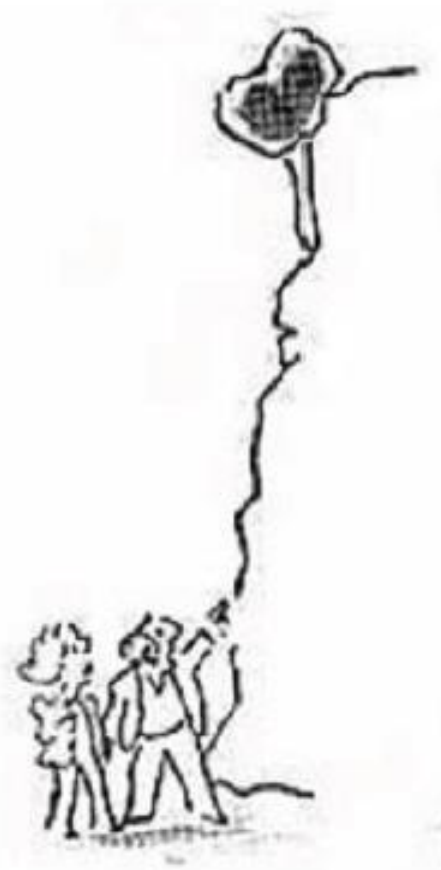
	Insignificant 1	Negligible 2	Moderate 3	Extensive 4	Significant 5
Almost Certain 5					
Likely 4					
Possible 3					
Unlikely 2			6		
Rare 1					

Measuring the Acceptability of the Risks

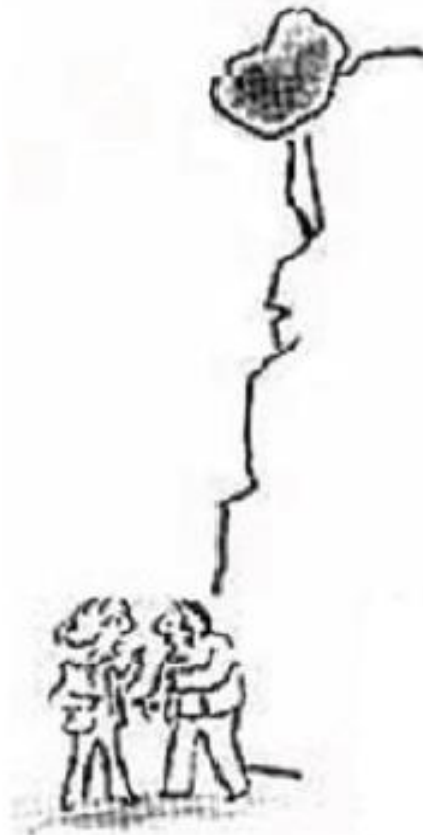
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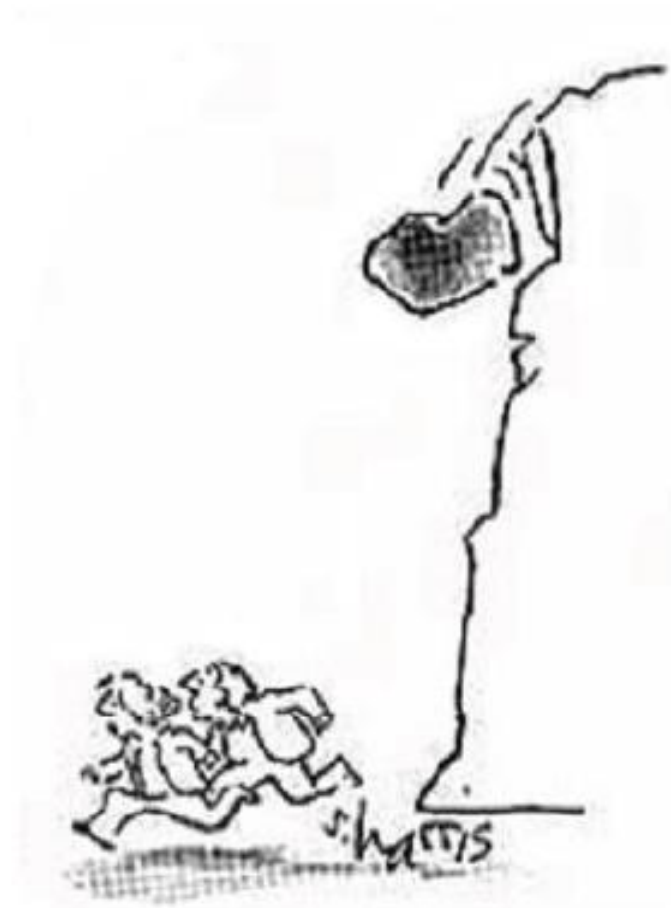
Risk identification



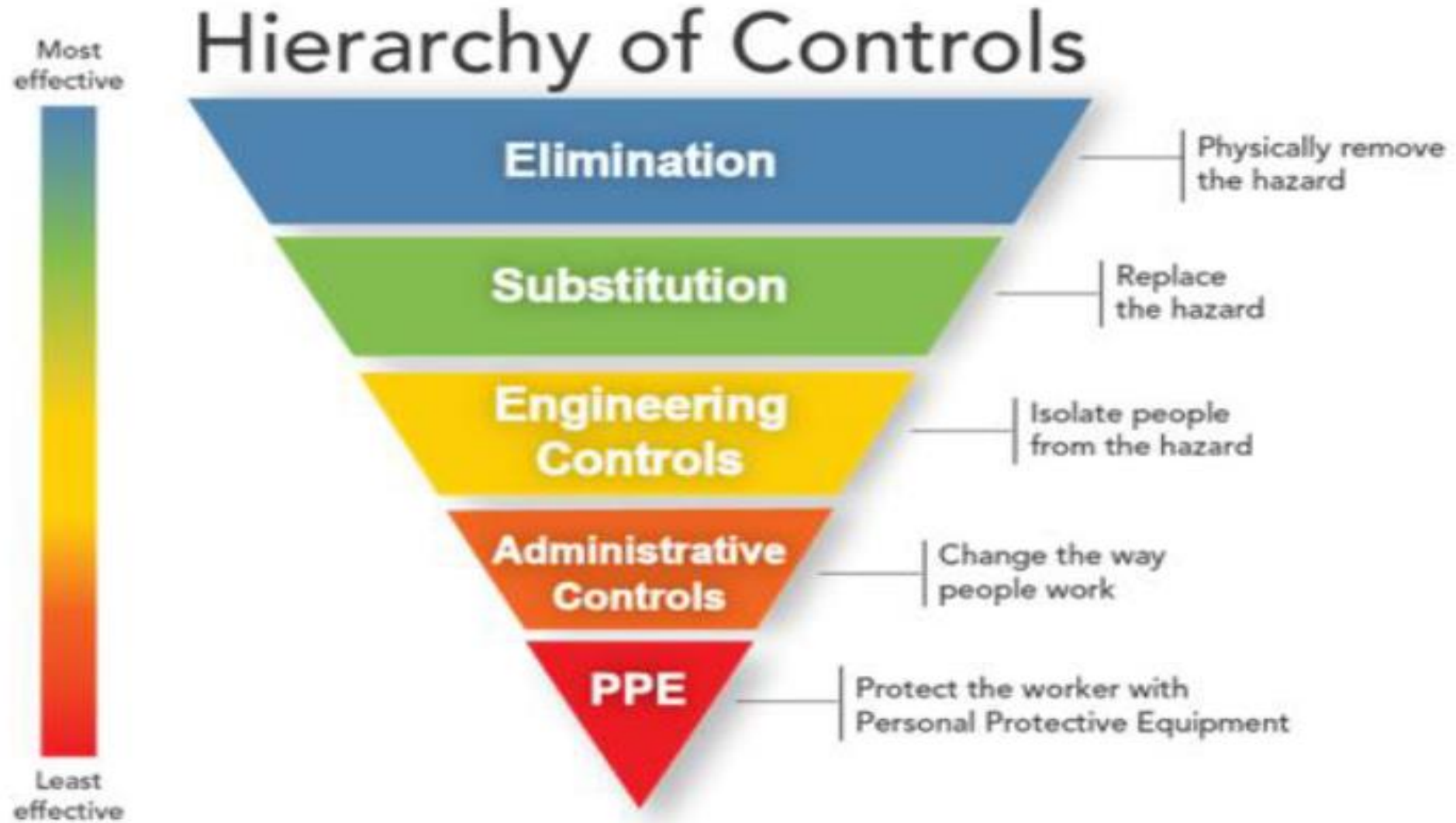
Risk analysis



Risk treatment



Risk treatment



Examples of Risk Treatment : control or minimize



Elimination



Substitution
Administrative Control



Examples of Risk Treatment : control or minimize



What risk treatment actions has been done in second photo?

Risk assessment template : Determine hazards and evaluate risks

What are the hazards?	Who might be harmed and how?	What are you already doing to control the risks?	What further action do you need to take to control the risks?	Who needs to carry out the action?	When is the action needed by?	Done

- Do it with your colleagues
- Agree it with your supervisor



Risks can be reduced by taking measures to minimize or control the hazard.

1. Recognize the Hazards
2. Assess the Risks of the Hazards
- 3. Minimize or control the Risks of the Hazards**

3. Minimize (or control) the risks of the hazards

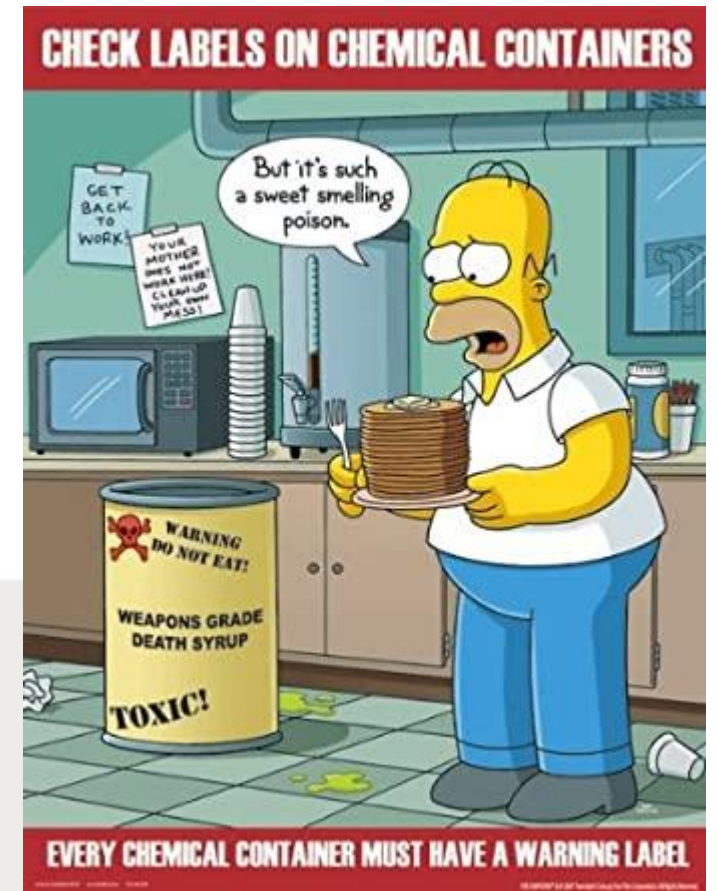
Use the safe practices



3. Minimize (or control) the risks of the hazards

Use the safe practices

- Know details and location of the vital laboratory information.
- Labeling : It is important to know as much about a chemical as possible.



3. Minimize (or control) the risks of the hazards

Protecting yourself and your colleagues



3. Minimize (or control) the risks of the hazards

Protecting yourself and your colleagues

- Proper use of safety equipment (ex:fumehood)
- Proper use of Personal Protective Equipment (PPE)



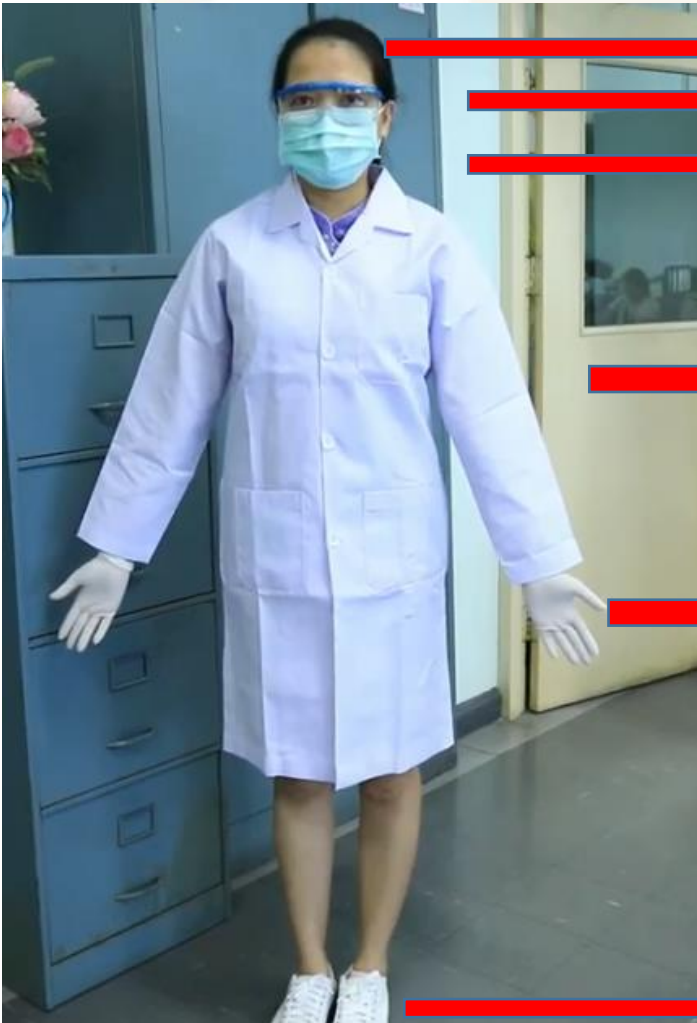
When using the safety device, remember to also use the proper personal protective equipment.

3. Minimize (or control) the risks of the hazards

Personal Protective Equipment (PPE)

3. Minimize (or control) the risks of the hazards

Personal Protective Equipment (PPE)



long hair must be tied back
eye protection
mask

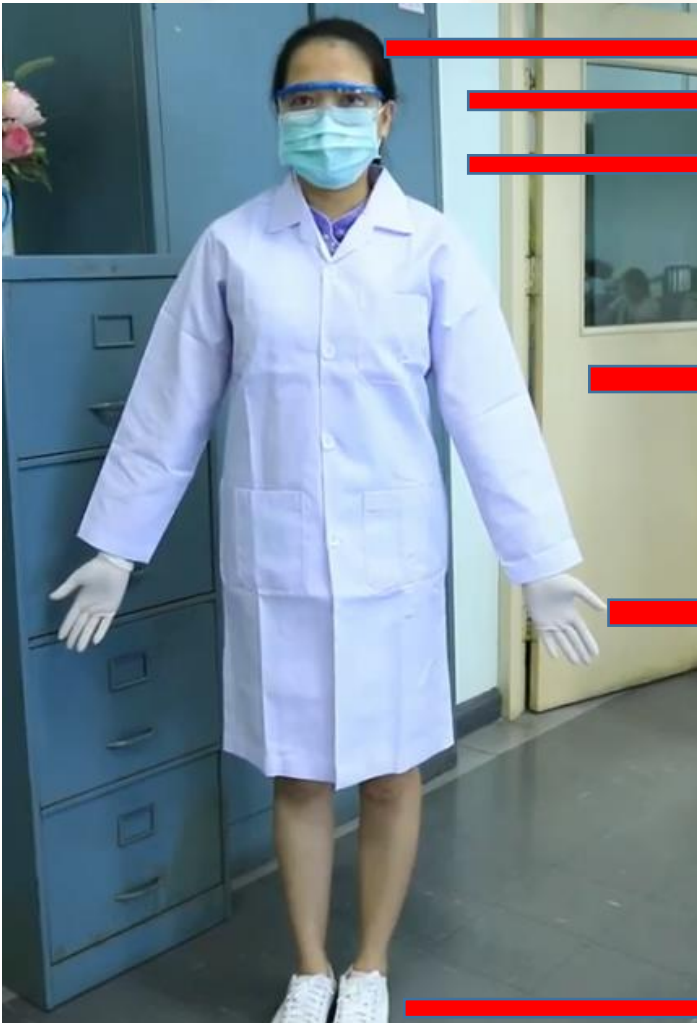
Lab coat, must be kept fastened

gloves

Closed shoes, Don't wear sandals or open shoes

3. Minimize (or control) the risks of the hazards

Personal Protective Equipment (PPE)



long hair must be tied back

eye protection

mask

Lab coat, must be kept fastened

gloves




Closed shoes, Don't wear sandals or open shoes

Wear the clothing and protective wear identified in your risk assessment

Knowing **“what to use and when to use”** is the key to properly protecting yourself.

3. Minimize (or control) the risks of the hazards

Personal Protective Equipment (PPE)

Glove material	Intended use	Advantages and disadvantages	Example Photos
Latex (natural rubber)	Incidental contact	<ul style="list-style-type: none"> • Good for biological and water-based materials. • Poor for organic solvents. • Little chemical protection. • Hard to detect puncture holes. • Can cause or trigger latex allergies 	
Nitrile	Incidental contact (disposable exam glove) Extended contact (thicker reusable glove)	<ul style="list-style-type: none"> • Excellent general use glove. Good for solvents, oils, greases, and some acids and bases. • Clear indication of tears and breaks. • Good alternative for those with latex allergies. 	
Polyvinyl chloride (PVC)	Specific use	<ul style="list-style-type: none"> • Good for acids, bases, oils, fats, peroxides, and amines. • Good resistance to abrasions. • Poor for most organic solvents. 	

Example : gloves

There are many different types of protective glove

Use the correct ones for the job you will be doing :
CHEMICAL COMPATIBILITY

Remove your gloves **before using instruments, telephone, and leaving the laboratory**

3. Minimize (or control) the risks of the hazards

Safety Equipment

- Fume hoods

Use Properly:

- keep sashes down
- don't store flammable liquids, equipment in hood
- limit traffic behind you



3. Minimize (or control) the risks of the hazards

Safety Equipment

- Fume hoods
- Canopy and snorkel fume extraction



It is important to know when this equipment is to be used and how to properly use it.

3. Minimize (or control) the risks of the hazards

Safety Equipment



Chemical Storage

- Ensure that all chemicals are stored according to compatibility. Acids are incompatible with bases, flammable solvents, oxidizers
- Water reactive materials should be stored separately
- All chemical products must be dated when opened

3. Minimize (or control) the risks of the hazards

Safety Equipment



Chemical Storage

- The storage area and cabinets should be labeled to identify the hazardous nature of the products stored within.
- Food containers **MUST NEVER BE USED** for chemical storage.

Spark from pressure gauge caused University of Hawaii explosion: Postdoc, who lost an arm in the incident, was using a gauge not specified for work with flammable



<https://cen.acs.org/articles/94/web/2016/04/Spark-pressu>

3. Minimize (or control) the risks of the hazards

Signs and labeling



- Signs are a way of communicating important information. It is a way to heighten awareness about hazards that exist.



- The label should describe what the content is and also any precautions.



Escherichia coli

Precautions:

Must use Eye protection, lab coat, gloves
Only use under BSC

3. Minimize (or control) the risks of the hazards

Know the properties of chemicals and biological agents before you use or transport them

- Toxicity
- Flammability
- Reactivity/Incompatibilities
- Corrosive
- Unstable
- Radioactive
-

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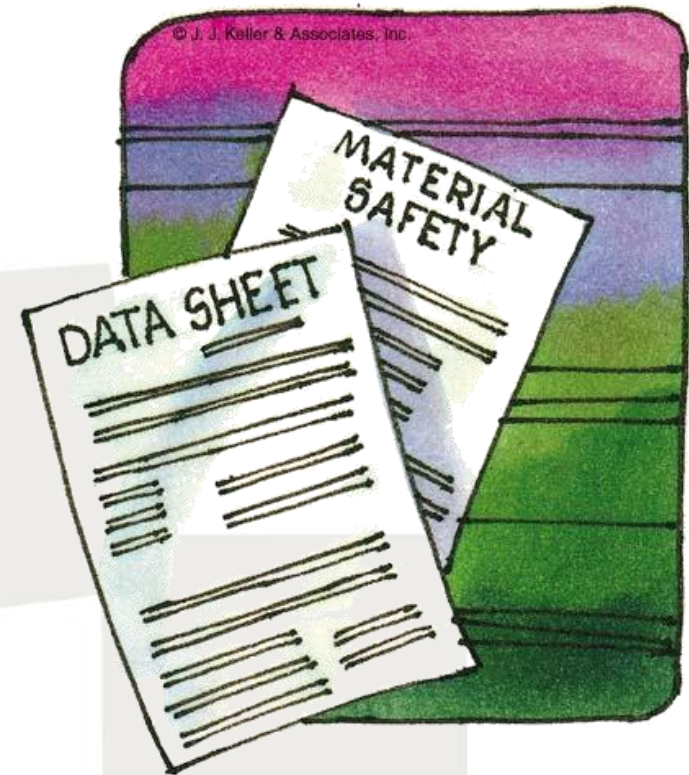
Where you find this information ?

3. Minimize (or control) the risks of the hazards

MSDS: Material Safety Data Sheets

MSDS provide you with the following :

- Chemical and Physical properties
- Toxicity Information
- Computability/Incompatibility
- Appropriate spill and fire response
- **Information needed for first aid**
- ...



3. Minimize (or control) the risks of the hazards

Example: MSDS for potassium Dichromate

Sigma-Aldrich www.sigmaaldrich.com

SAFETY DATA SHEET Version 8.0
according to Regulation (EC) No. 1907/2006 Revision Date 14.07.2021
GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA Print Date 17.08.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
 Product name : Potassium dichromate solution
 Product Number : 24-4520
 Brand : Katayama
 REACH No. :


1.2 Relevant identified uses of the substance or mixture and uses advised against
 Identified uses : Scientific research and development

1.3 Details of the supplier of the safety data sheet
 Company : Sigma-Aldrich Pte Ltd
 (Co. Registration No. 199403788W)
 1 Science Park Road
 #02-14 The Capricorn, S'pore Sci. PkII
 SINGAPORE 117528
 SINGAPORE
 Telephone : +65 6779-1200
 Fax : +65 6779-1822

1.4 Emergency telephone
 Emergency Phone # : 1-800-262-8200


SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
 Germ cell mutagenicity (Category 1B), H340
 Carcinogenicity (Category 1B), H350
 Reproductive toxicity (Category 1B), H360FD
 Long-term (chronic) aquatic hazard (Category 3), H412
 For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
Labeling according Regulation (EC) No 1272/2008
 Pictogram 
 Signal word : Danger

Katayama- 24-4520 Page 1 of 11

The life science business of Merck operates as MilliporeSigma in the US and Canada




Hazard statement(s)
 H340 May cause genetic defects.
 H350 May cause cancer.
 H360FD May damage fertility. May damage the unborn child.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.
 P405 Store locked up.

Supplemental Hazard Statements none

Contains: potassium dichromate. May produce an allergic reaction. Restricted to professional users.

Reduced Labeling (<= 125 ml)
 Pictogram 

Signal word Danger

Hazard statement(s)
 H340 May cause genetic defects.
 H350 May cause cancer.
 H412 Harmful to aquatic life with long lasting effects.
 H360FD May damage fertility. May damage the unborn child.

Precautionary statement(s)
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 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.
 P405 Store locked up.

Supplemental Hazard Statements none

2.3 Other hazards
 This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures
 Formula : Cr₂K₂O₇
 Molecular weight : 294.18 g/mol

Component	Classification	Concentration
potassium dichromate	Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)	>= 0.3 - < 1 %
CAS-No.	7778-50-9	Ox. Sol. 2; Acute Tox. 3;
EC-No.	231-906-6	Acute Tox. 2; Acute Tox. 4;
Index-No.	024-002-00-6	Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1;
Registration number	01-2119454792-32-XXXX	Skin Sens. 1; Muta. 1B; Carc. 1B; Repr. 1B; STOT SE 3; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H301, H330, H312, H314, H318, H334, H317, H340, H350, H360FD, H335, H372, H400, H410
		Concentration limits: >= 5 %: STOT SE 3, H335;
		M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Katayama- 24-4520

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3. Minimize (or control) the risks of the hazards

Waste Management



Hazardous and biohazardous waste has special guidelines for proper disposal. It is important to properly dispose of waste to ensure human and environmental health.

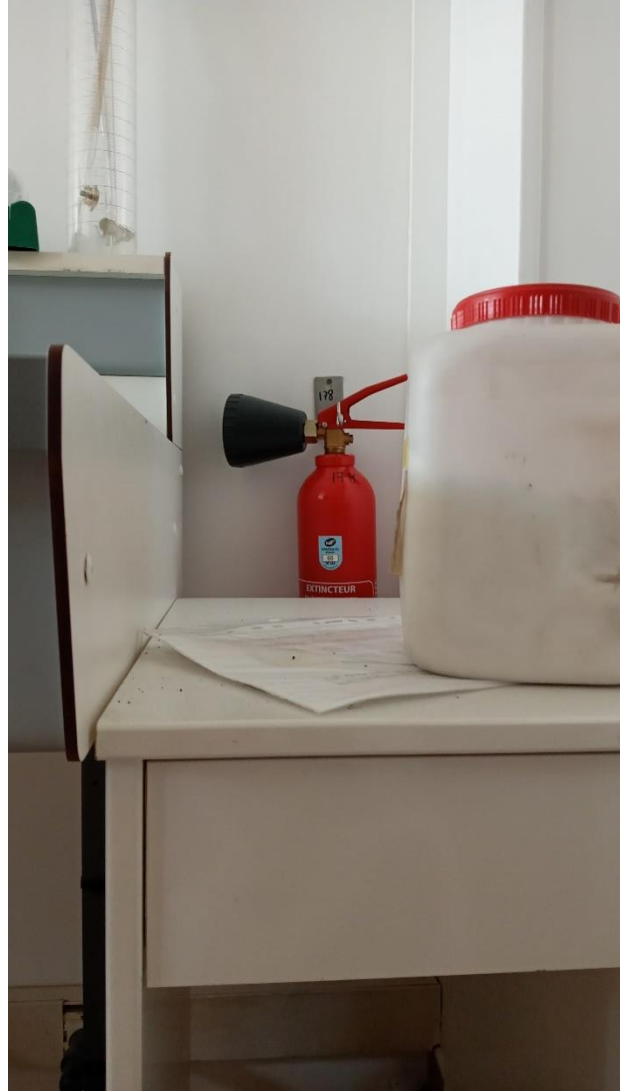
Waste can be classified as either hazardous or biohazardous.

How to Properly Dispose of Chemical Waste			
<p>Aqueous Waste (<40% Organic Chemicals)</p>  <ol style="list-style-type: none"> Acidic (pH < 4) Neutral (pH ~4-10) Basic (pH > 10) 	<p>Organic (>40% Organic Chemicals)</p>  <ol style="list-style-type: none"> Non-chlorinated (e.g. THF, ethyl acetate, hexanes, toluene, methanol, etc.) Chlorinated (e.g. DCM, chloroform, chlorobenzene, etc.) Chemicals in a commercial bottle <u>Undamaged bottle:</u> Dispose in original bottle (no label necessary) <u>Damaged bottle:</u> Arrange disposal with Chem Stores 	<p>Solid Waste</p> <ol style="list-style-type: none"> Lightly Contaminated <ul style="list-style-type: none"> No visible loose powders Collect in unlabeled green pails Empty into the solid waste drums on the 7th floor <p><u>Examples:</u> Gloves, Kimwipes, paper towels, empty vials/centrifuge tubes, etc.</p> Chemical <ul style="list-style-type: none"> Loose powders Heavily contaminated solid materials <p><u>Examples:</u> Used filter paper, unwanted samples, heavily contaminated gloves/kimwipes/paper towels, etc.</p> Silica gel <ul style="list-style-type: none"> Dispose in separate container May not be combined with other types of chemical wastes Chemicals in a commercial bottle <u>Undamaged bottle:</u> Dispose in original bottle (no label necessary) <u>Damaged bottle:</u> Place in secondary container with a waste label 	<p>Special Cases</p> <ol style="list-style-type: none"> Sharps (e.g. needles, razor blades, etc.) Inorganic Oxidizing <ul style="list-style-type: none"> Place in a container with a disposal label <p><u>Examples:</u> Peroxides, chromates, etc.</p> Violently Reactive <ul style="list-style-type: none"> Contact Ken Greaves and Mike Dymarski <p><u>Examples:</u> LAH, nBu-Li, HF, Piranha, etc.</p> Mercury Thermometers <ul style="list-style-type: none"> Labeled separate puncture resistant container Any uranium, thorium or mercury containing compounds <ul style="list-style-type: none"> Contact Ken Greaves and Mike Dymarski
<p>A Note on Labeling:</p> <ul style="list-style-type: none"> Indicate the content in the disposal container Write out all chemical names If the content is a mixture of chemicals, indicate the major components and list the most hazardous component[s] 			

This document was created by Green Chemistry Initiative (GCI) in partnership with Environmental Health and Safety (EHS).

Dispose of all waste (hazardous, chemical and biological waste) properly and according to instructions

What's Wrong With This Picture?



What's Wrong With This Picture?



Fake picture and situation

What's Wrong With This Picture?



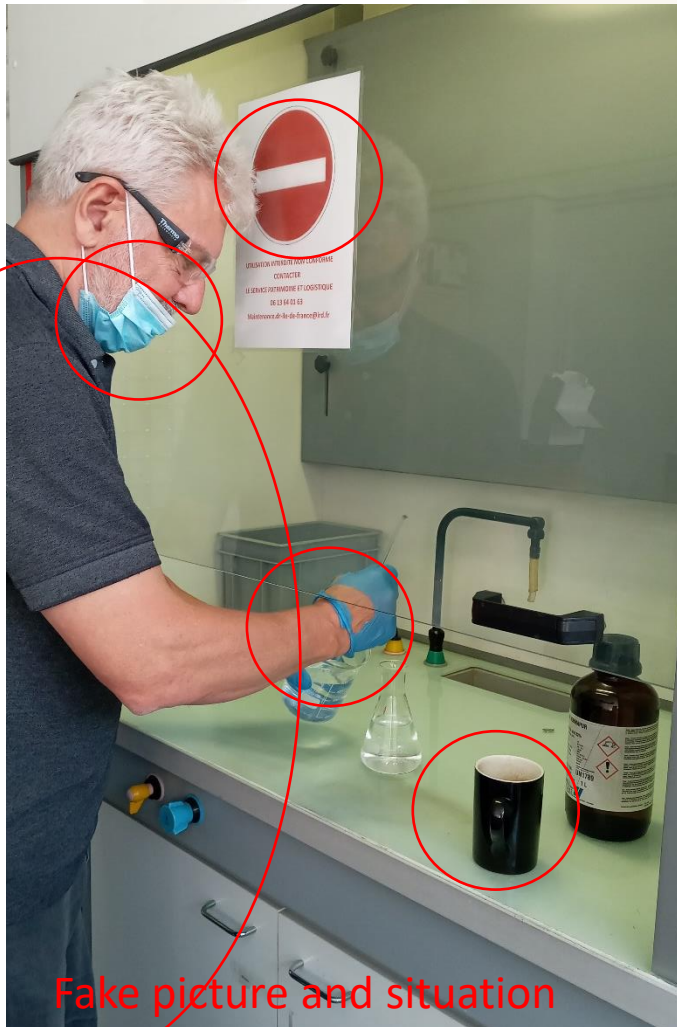
Fake picture and situation

What's Wrong With This Picture?



Fake picture and situation

What's Wrong With This Picture?



Fake picture and situation

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3. Minimize (or control) the risks of the hazards

Laboratory hygiene

- Keep your workplace tidy
- Clear up waste, deal with washing up and put things away as you finish with them
- Make sure everything is safe before you leave things unattended

A Cluttered Lab is a Dangerous Lab! Keep your lab clean!



<https://lab-training.com/2015/12/05/laboratory-accidents-prevention-your-top-priority/>

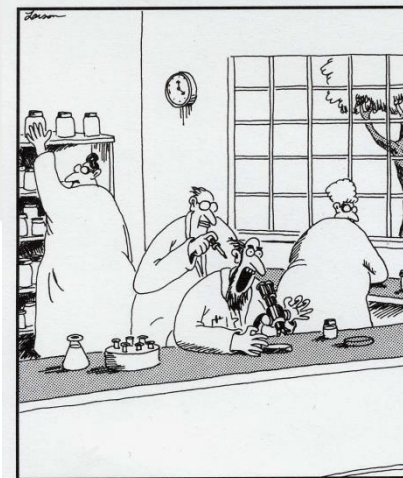


<https://www.greelane.com/fr/science-technologie-math%C3%A9matiques/science/important-lab-safety-rules-608156/>

3. Minimize (or control) the risks of the hazards

Laboratory hygiene

- Never eat, drink or smoke in a laboratory
- Never apply cosmetics
- Never touch your face, mouth or eyes
- Never suck pens or chew pencils
- Never use cell phones and/or earbuds/headphones
- Never Engage in practical jokes



Professor Glickman, the lab practical joker, deftly places a single drop of hydrochloric acid on the back of Professor Bingham's neck.



The favourite practical joke amongst Big Bang theorists.

Risks can be reduced by taking measures to minimize or control the hazard.

1. Recognize the Hazards
2. Assess the Risks of the Hazards
3. Minimize the Risks of the Hazards
4. Prepare for Emergencies from Uncontrolled Hazards

4. Prepare for Emergencies from Uncontrolled Hazards

What to do???

The best measure to take in order to protect yourself and your colleagues is to be prepared. There should be Standard Operating Procedures (SOP) for this type of situation in your lab.

- Recommended Safety Equipment
- Exits and Emergency Drills
- Emergency Response



4. Prepare for Emergencies from Uncontrolled Hazards

In case of an emergency...



Know the locations of:

- fire extinguisher
- fire blanket
- body shower
- eyewash station
- first aid kit



Know Your Surroundings

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4. Prepare for Emergencies from Uncontrolled Hazards

Special Considerations

- Fires
- Spills
- Gas cylinders
- Electrical equipment





4. Prepare for Emergencies from Uncontrolled

Hazards : Fire

1. Avoiding Fires

Flammable substances :

- Use minimum quantity
- Store in special storage cabinet
- Use temperature-controlled heating sources



KNOW HOW TO USE A FIRE EXTINGUISHER
FOLLOW THE ***P*A*S*S** WORD
***PULL *AIM *SQUEEZE *SWEEP**



4. Prepare for Emergencies from Uncontrolled

Hazards : Fire

1. Avoiding Fires

Flammable substances :

- Use minimum quantity
- Store in special storage cabinet
- Use temperature-controlled heating sources

2. Fire Safety

Make sure that you know what to do :

- If you have a fire
- If you hear a fire alarm
- A member of staff must attend fire training annually



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3. Emergency Response

- If your clothing catches on fire, drop and roll to put out the flames
- Immediately notify your supervisor of the incident and report it



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4. Prepare for Emergencies from Uncontrolled Hazards

Report it!!!



When an accident occurs, it must be recorded **in the lab register**. The main purpose of the register is to track an exposure in case of future illness/injury, and report it to your supervisor.

Last, not Least.....

Create a Laboratory Safety Manual

Lab Safety

Never wear open-toed shoes in the lab.

Always discard any broken glass in the broken glass container.

Never leave garbage in around the classroom. Always clean it up.

No food or drinks in the lab.

If chemicals get in your eyes, use the eyewash station to clean them.

Always wear safety goggles when working in the lab.

Always wear safety gloves when working in the lab.

goggles
gloves
lab coat
shoes

Writing a clear and concise policy regarding all lab rules and best practices

New staff members read the manual and ask that they sign it

Thank you

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"They hate it when you carry the testtubes that way."

GLOSOLAN
training sessions
2021



Exercices for Quantifying Risk Assessment in the Laboratory (All the photos are fake)

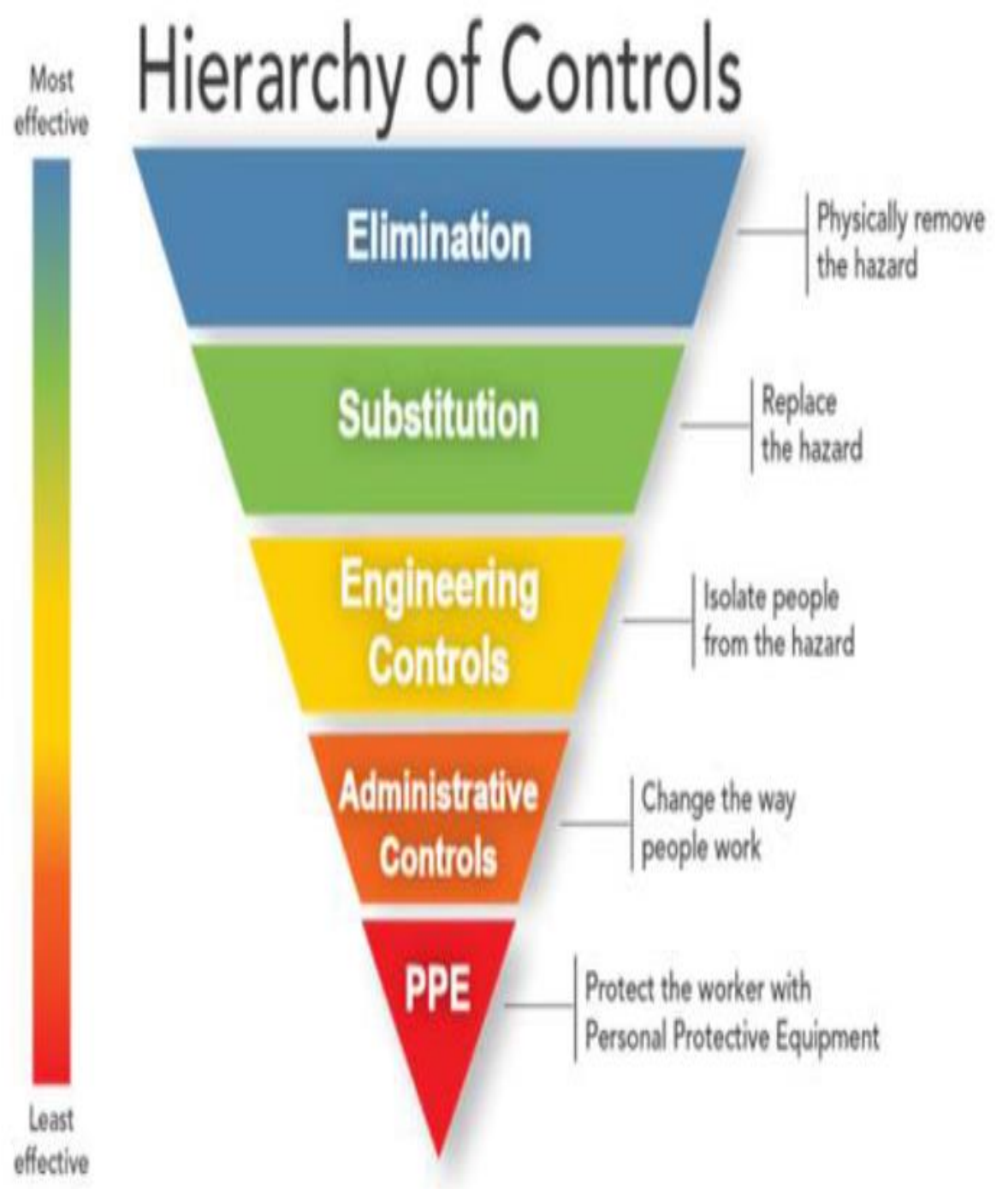




Quantitative Likelihood
Has occurred on an annual basis in this organization in the past or circumstances are in the train that will cause it to happen
Has occurred in the last few years in this organization or has occurred recently in other similar organizations or circumstances have occurred that will cause it to happen in the near few years
Has occurred at least once in the history of this organization or is considered to have a 5% chance of occurring in the near few years
Has never occurred in this organization but has occurred infrequently in other similar organizations or is considered to have a 1% chance of occurring in the next few years
Is possible but has not occurred to date in any similar organization and is considered to have very much less than a 1% chance of occurring in the next few years

		consequences				
People		Minor skills impact	Minor impact to capability	Unavailability of core skills affecting services	Unavailability of critical skills or personnel	Protracted unavailability of critical skills /people
		Minor injury or first aid treatment	Injury requiring treatment by medical practitioner	Major injury/hospitalization	Single death or multiple major injuries	Multiple deaths
		Insignificant 1	Negligible 2	Moderate 3	Extensive 4	Significant 5
Likelihood	Almost Certain 5					
	Likely 4					
	Possible 3					
	Unlikely 2					
	Rare 1					

	Insignificant 1	Negligible 2	Moderate 3	Extensive 4	Significant 5
Almost Certain 5	5	10	15	20	25
Likely 4	4	8	12	16	20
Possible 3	3	6	9	12	15
Unlikely 2	2	4	6	8	10
Rare 1	1	2	3	4	5

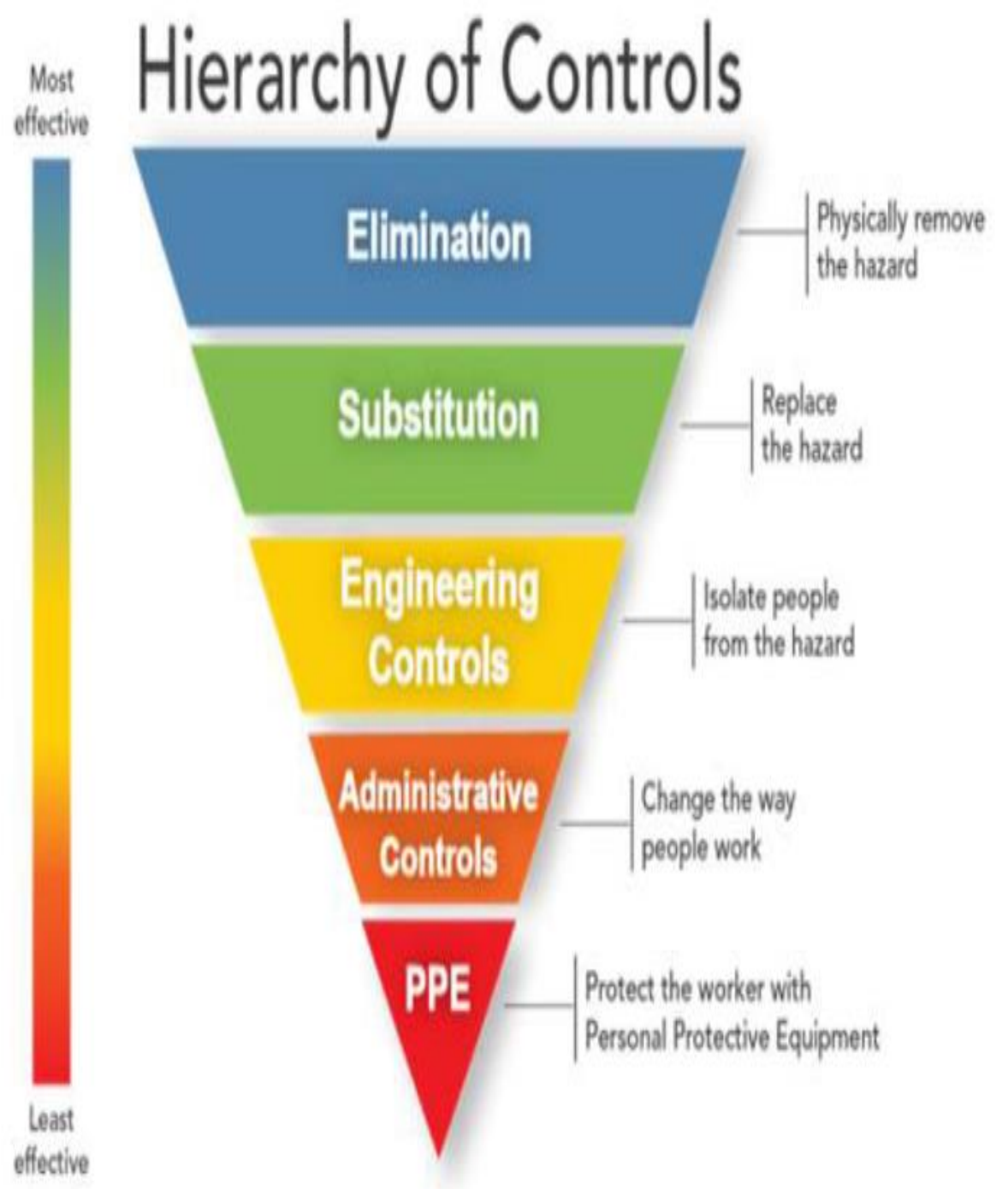




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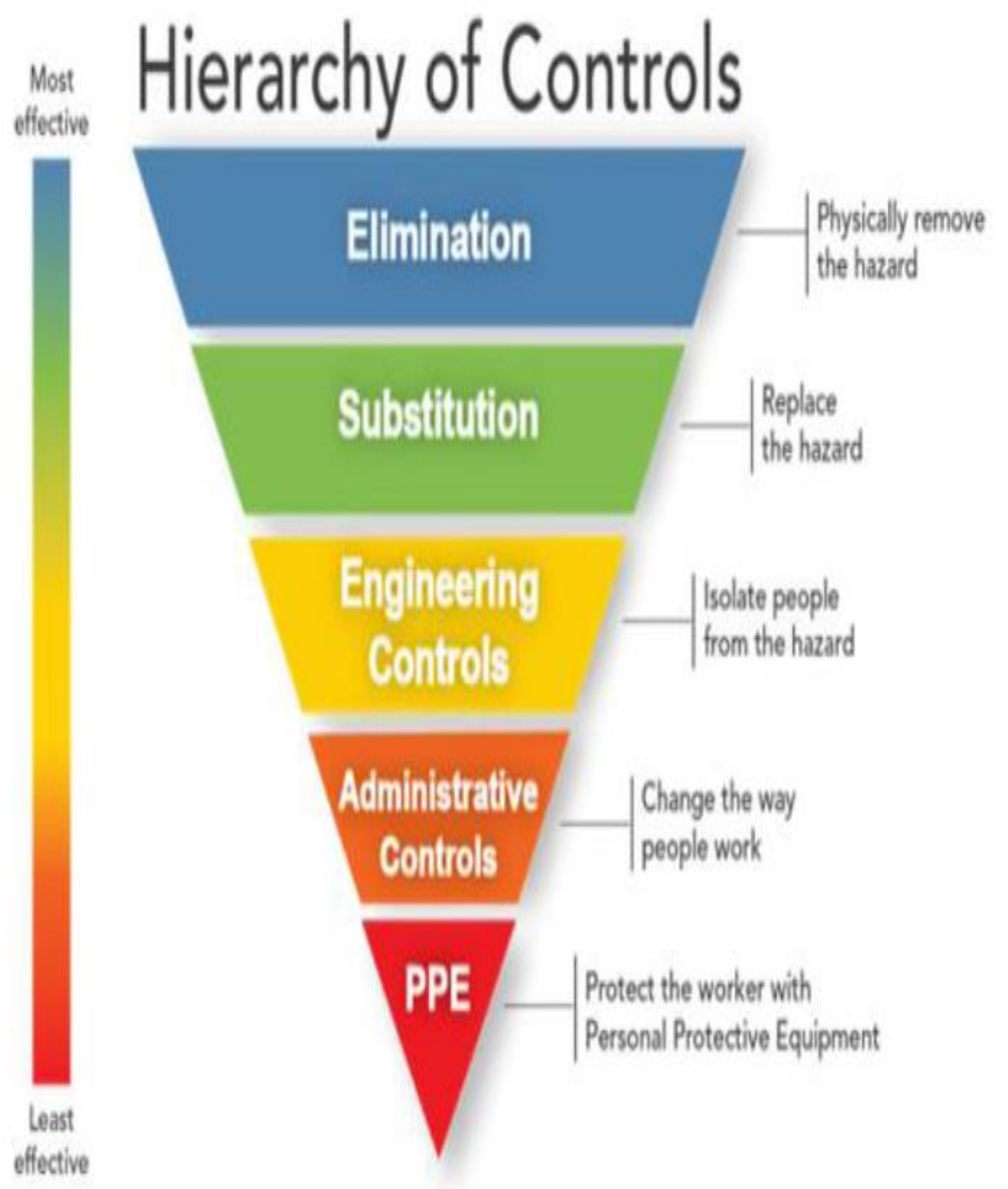


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What's Wrong With This Picture?

What are the hazards?	Who might be harmed and how?	What are you already doing to control the risks?	What further action do you need to take to control the risks?	Who needs to carry out the action?	When is the action needed by?	Done
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Fake picture and situation



Food and Agriculture
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PARTNERSHIP