CENTRE DE RECHERCHE DES CORDELIERS

LA PRÉVENTION DES RISQUES PROFESSIONNELS C'EST QUOI? C'EST POUR QUI?

WHAT IS OCCUPATIONAL RISK AND SAFETY PREVENTION? WHO IS IT FOR?

ACCUEIL DES NOUVEAUX ENTRANTS / WELCOME OF NEWCOMERS

30 NOVEMBRE 2022

Marie-Noëlle Navas
Chargée de prévention du Centre de Recherche des Cordeliers – Unité 1138

Université Paris Cité

Inserm
La science pour la santé
From science to health

SORBONNE UNIVERSITÉ

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BIOMEDICAL RESEARCH IS EXCITING……

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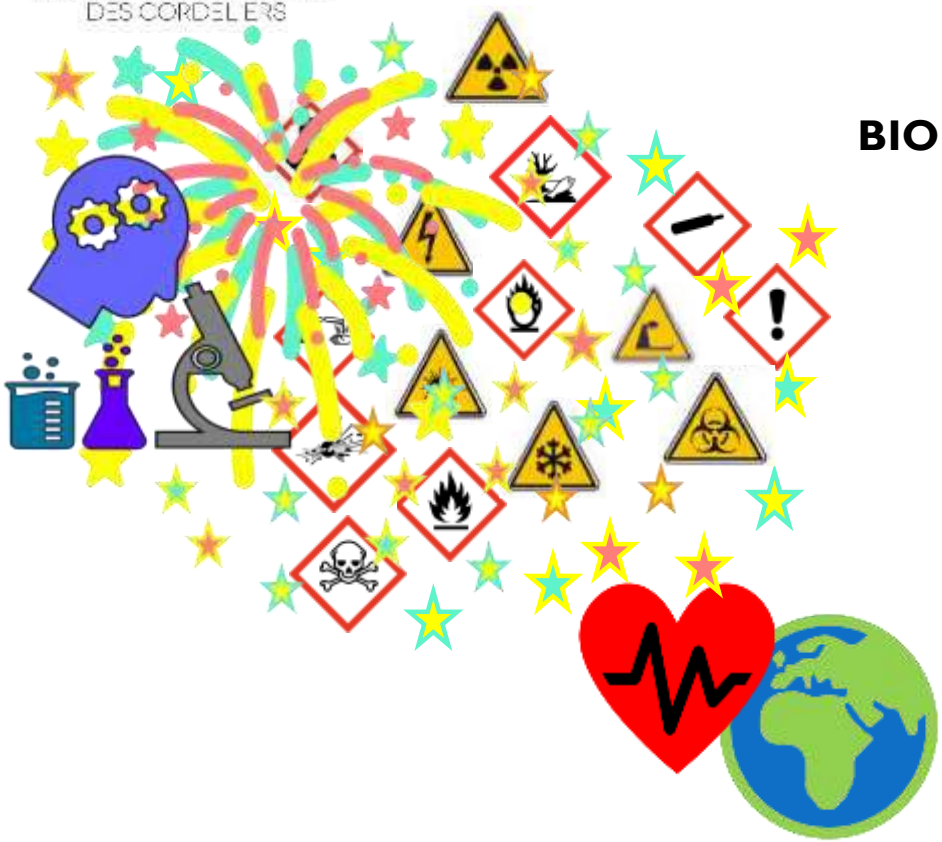

BIOMEDICAL RESEARCH IS EXCITING……

…BUT RISKY TOO FOR HEALTH AND ENVIRONMENT

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AIMS OF OCCUPATIONAL RISK AND SAFETY PREVENTION???

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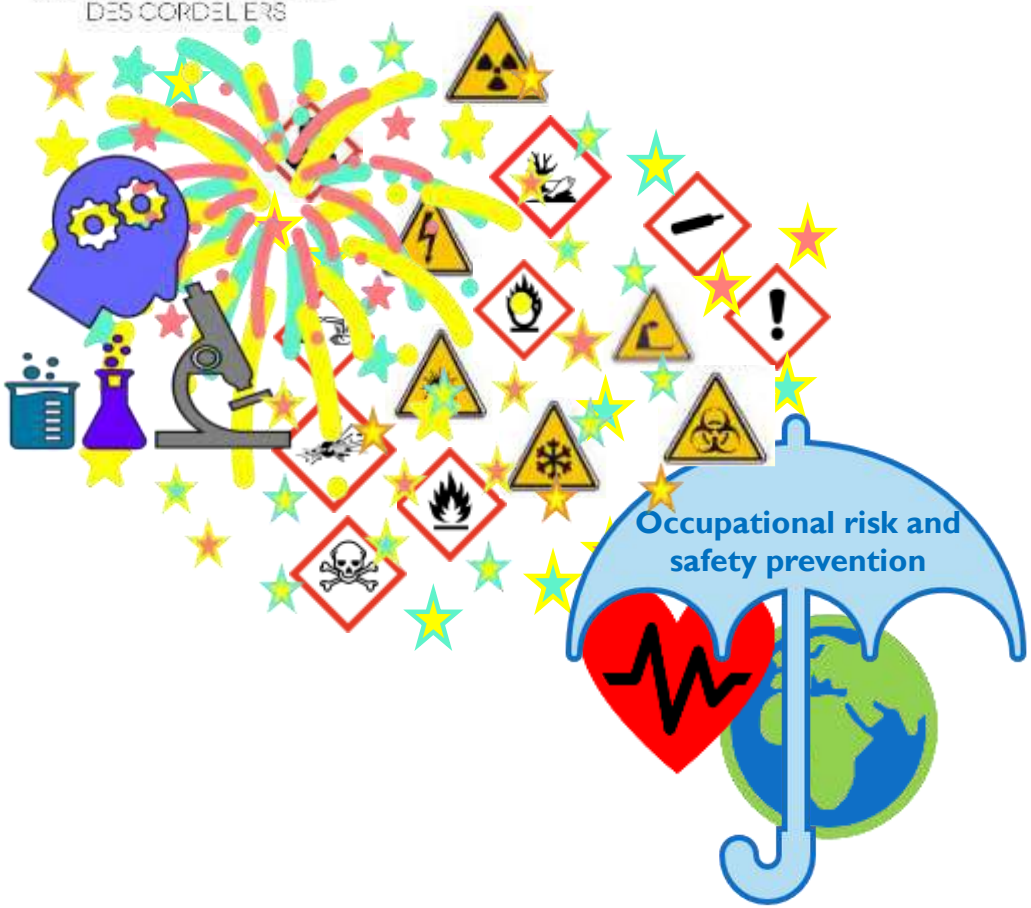
AIMS OF OCCUPATIONAL RISK AND SAFETY PREVENTION:



- To limit and to control risks to prevent incident and accident

- To provide safe working conditions

- To protect workers and the environment

- To inform, train and educate workers

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WHERE DOES OCCUPATIONAL RISK AND SAFETY PREVENTION COME FROM?

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WHERE DOES OCCUPATIONAL RISK AND SAFETY PREVENTION COME FROM?

- Feedback on incidents and accidents

- Medical follow-up of agents

- Analysis of causes of occupational disease

- Product dosage studies to determine the effect on health and the environment

- Since 1947: l'INRS = National Research and Safety Institute for the Prevention of Occupational Accidents and Diseases

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FOR WHO IS OCCUPATIONAL RISK AND SAFETY PREVENTION ??

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FOR WHO IS OCCUPATIONAL RISK AND SAFETY PREVENTION ??

FOR ANYBODY WORKING IN CRC

Whatever the university, the employer whatever the type of contract

Art. L4122-1 French Labor Code:

Everyone is responsible for

- their own safety and health

- the safety and health of the other people concerned

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ORGANISATION OF OCCUPATIONAL RISK AND SAFETY PREVENTION IN CRC AND KEY PLAYERS

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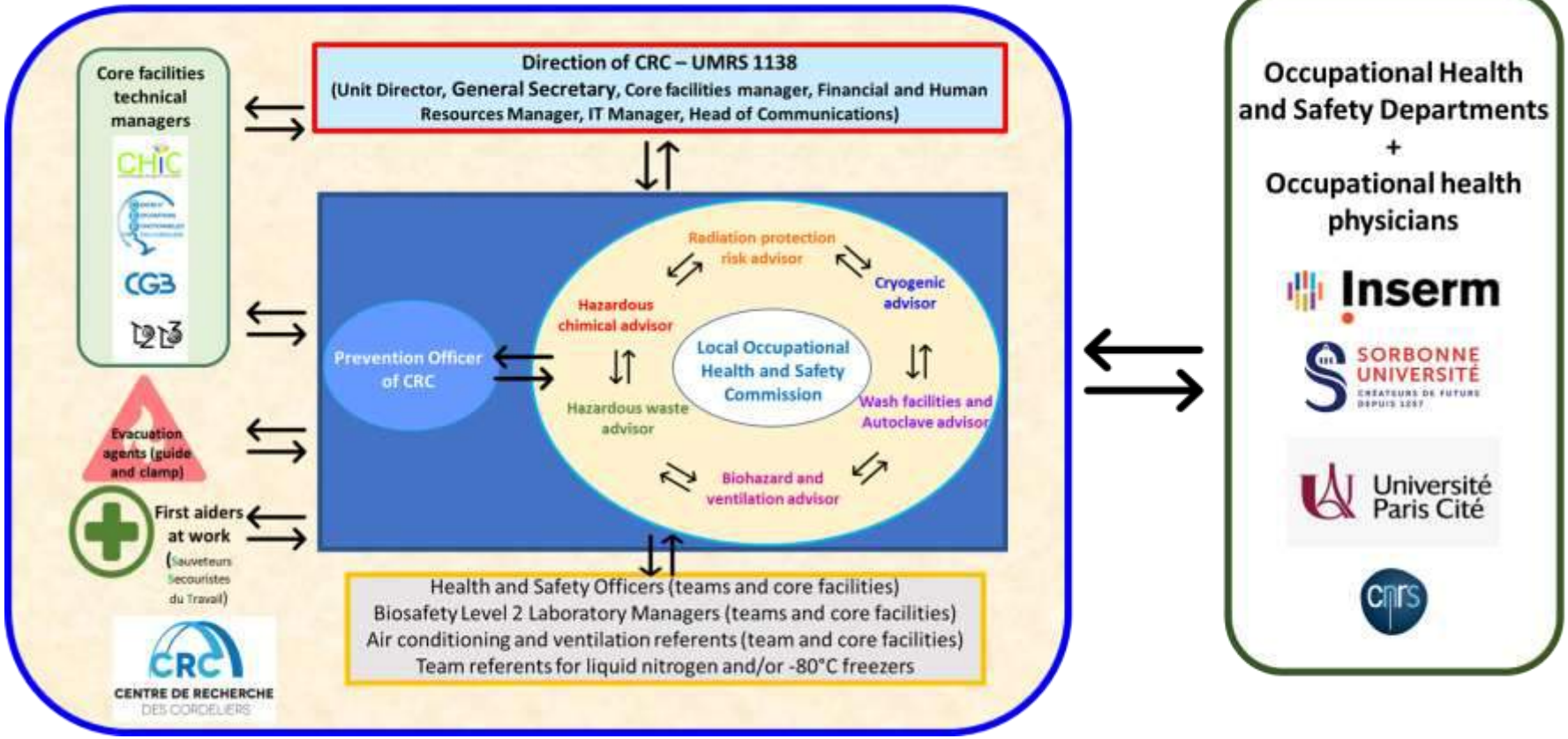
ORGANISATION OF OCCUPATIONAL RISK AND SAFETY PREVENTION



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FIRST LINE HEALTH AND SAFETY OFFICERS (HSO)

TEAM HSO

LYDIE CHEVAL
Team: 3- Renal physiology and tubulopathies

AUDREY ASSELIN
Team: 5-Molecular OralPathophysiology

SOPHIA LOIODICE

SOPHIE TAN
Team: 8-Metabolic Diseases, Diabetes and co-morbidities

SYLVIE LACHKAR
Team: 11- Métabolisme, Cancer et Immunité

JEAN-EMMANUEL HUGONNET
Team: 12-Bacterial structures involved in modulation of antibiotic resistance

NATHALIE JOSSEAUME
Team: 13-Inflammation, Complement and Cancer

LUCIE LAFONTAINE
Team: :15-Laboratory of Integrative Cancer Immunology

MAXIME LECERF
Team: 16-Immunopathology and therapeutic immuno-intervention

ALICIA TORRIGLIA
Team: 17- Physiopathology of ocular diseases: therapeutic innovations

AURELIE BROUSSE
Team: 19- Drug resistance in hematological malignancies

AKILA IDDIR
Team: 24- Oncogenic functions of β-catenin signaling in the

ISABELLE GALY-FAUROUX
Team: 25-Proliferation, Stress, and Liver Physiopathology

CLAIRE MULOT
Team: 26-Personalized medicine, pharmacogenomics, therapeutic optimization

SAMANTHA SCHAEFFER
Team: 28-Functional Genomics of Solid Tumors

CRC CORE FACILTIES HSO

GEORGES ZADIGUE
Core facility: CEF

CECILE GODARD
Core facilities: CEF-CGB-CHIC-L2 and L3

HERMINE KAKANAKOU
Core facility: CGB

FLORIANE ARBARETAZ
Core facility: CHIC

DELPHINE LE CORRE
Core facility: L2 Containment Laboratory

AUDREY DIDELOT

MAXIME LECERF
Core facility: L3 Containment Laboratory

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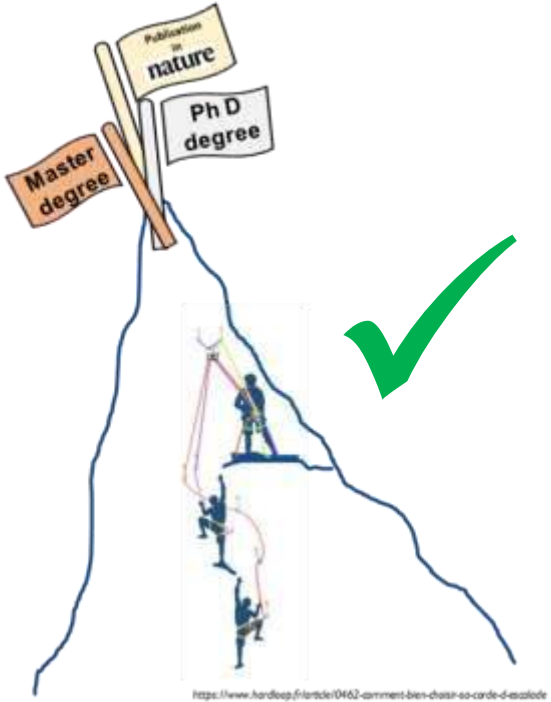
FIRST LINE HEALTH AND SAFETY OFFICERS (HSO)

DO NOT SEE HSO AS POLICEMEN WHO PREVENT YOU PERFORMING EXPERIMENTS

BUT RATHER AS KIND GUIDES WHO HELP YOU REACH YOUR GOALS



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OCCUPATIONAL RISKS AT CRC

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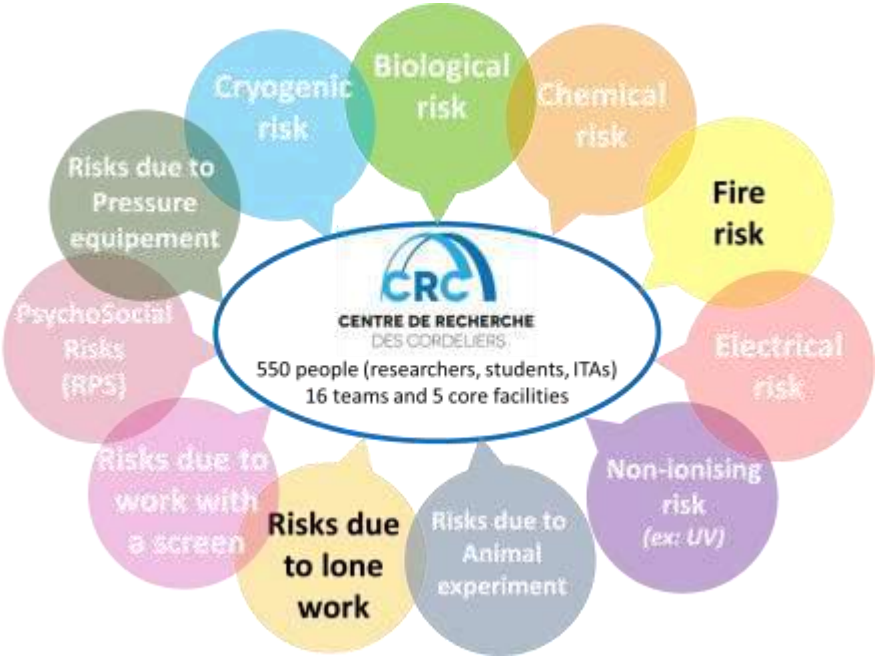
OCCUPATIONAL RISKS AT CRC

Many different risks



To get more information

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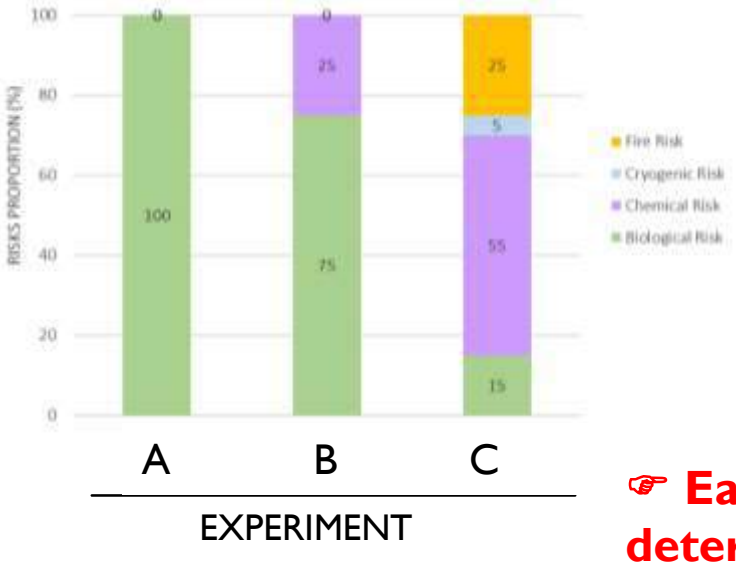
ADAPTING PREVENTION TO EACH EXPERIMENT

Depending on experiments, you may be exposed to a single hazard or a combination of hazards.



Protections required:

A: Adapted to biological hazard

B: Mainly adapted to biological hazard
but also including protection adapted to chemical hasard

C: Mainly adapted to Chemical hazard
but also including protection adapted to Fire hazard > Biological hasard > Cryogenic hazard

☞ **Each experiment requires a risk analysis to determine what measures to apply to protect oneself and to handle waste**

☞ **Ask your HSO for advice**

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PREPARATION OF AN EXPERIMENT

Two mantras to remember:

"Anticipation is a key to a safe and successful experience"

"Stress is a source of error and accident"

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PREPARATION OF AN EXPERIMENT

Reading a protocol should raise many questions about the precautions to be taken to protect oneself, colleagues and the environment:

- **What are the risks associated with each step of my protocol?**
- **What collective or individual protection measures should I put in place?**
- **What collective protective equipment (CPE) should I use?**
- **What personal protective equipment (PPE) should I wear?**
- **Should I work in a containment laboratory? In a core facility laboratory?**
- **Do I need to reserve a containment, an apparatus, etc…?**
- **Do I know how to use the equipment? Do I need to be trained?**
- **Will I encounter an isolated worker situation? If so, what are the procedures to ensure my safety?**
- **Are all the reagents and consumables I need available in the laboratory?**
- **Do I know how to manage the biological and chemical waste I will produce during my protocol?**
- **Etc…**

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PREPARATION OF AN EXPERIMENT

Reading a protocol should rai… about the precautions to be taken to protect oneself, colleagues ar…

A newcomer:

"Stop! I have already worked in a laboratory elsewhere and I know all about this!"

HSO:

"Of course you know! But each research center is different and has its own specific rules to achieve a prevention goal depending on many criteria (size, buildings, location...). "

- …protocol?
- …place?
- …l?
- …the
- Are … laboratory?
- Do I know how to mana… produce during my protocol?
- …te I will
- **Etc…**

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MAIN RULES OF OCCUPATIONAL RISK AND SAFETY PREVENTION IN CRC: “HOT POINTS”

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REGLEMENTARY FORMATION AND INFORMATION

- All new entrants must receive job hazard awareness training

+

Laboratory risk awareness training offered by Sorbonne University
Two sessions / year

- All newcomers should be welcomed by their HSO for a tour of the laboratory, with emphasis on hazards, prevention, and reminders of emergency procedures.

- Others reglementary trainings: animal experiments, use of pressure experiment (autoclave), use of laboratory containment: talk about this with you HSO

- Even if not reglementary: trainings to use equipment

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OCCUPATIONAL HEALTH AND SAFETY TRACEABILITY

1. The Health and Safety Register

- Held by the HSO
- Available and accessible to all at all times
- Recording of observations, incidents, accidents and suggestions for improving hygiene and safety
- At CRC, the model used is that of INSERM

- Once or twice a year, records are sent to supervisory authorities for analyses.

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OCCUPATIONAL HEALTH AND SAFETY TRACEABILITY

2. INDIVIDUAL EXPOSURE SHEETS

- **Is authoritative in the case of an occupational disease**
- One sheet per type of exposure: hazardous chemicals, laser,…
- The form varies according to the employer
- Collected once a year
- Signed by the staff member, the unit director and the employer
- Is an accurate record of exposures, their frequency and of the means of protection used

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LABORATORY SAFE PRACTICE

No time to go into everything here, but….

What is the laboratory good practice # 1?

READ ME PLEASE!!

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KEY LABORATORY GOOD PRACTICE:

1= PERSONAL PROTECTIVE EQUIPMENT:THE LABCOAT

Lab coat is mandatory in the lab!

But forbidden in the office or in the dining room

Do not wash your lab coat at home.

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KEY LABORATORY GOOD PRACTICE:

1= PERSONAL PROTECTIVE EQUIPMENT: FULL BASIC EQUIPMENT

Lab coat is mandatory in the lab!

To complete with:

- Gloves suitable for hazards
- To change regularly, or if soiled

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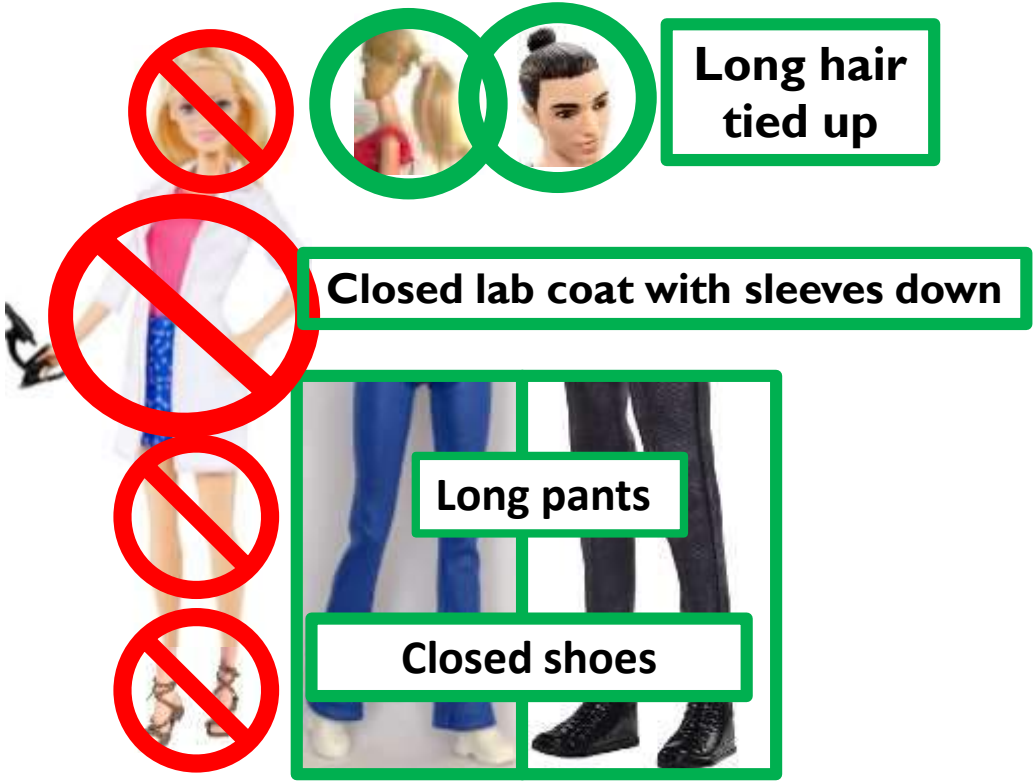
KEY LABORATORY GOOD PRACTICE

PERSONAL PROTECTIVE EQUIPMENT AND SUITABLE CLOTHING



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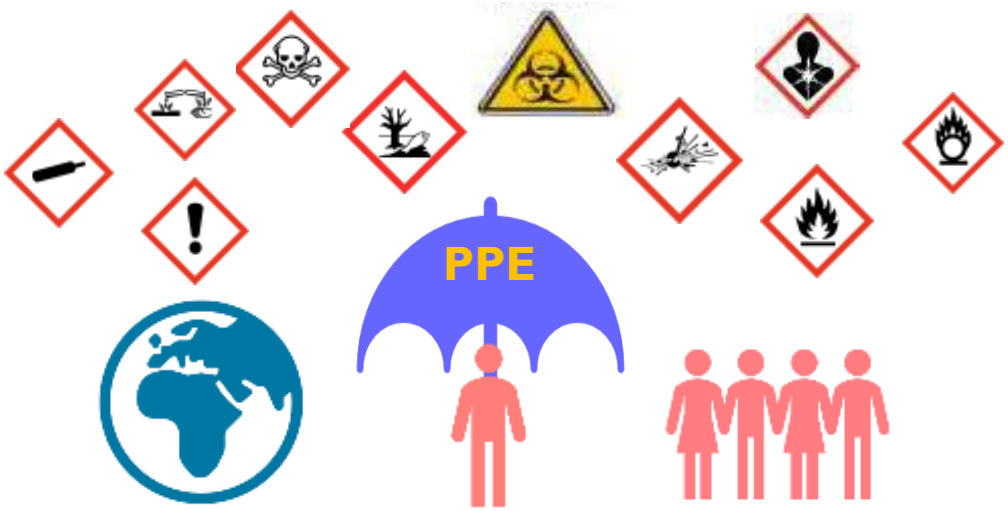
KEY LABORATORY GOOD PRACTICE

1= PERSONAL PROTECTIVE EQUIPMENT (PPE)

IN FACT: REAL # 1= COLLECTIVE PROTECTIVE EQUIPEMENT (CPE)

WHY? PPE: protection of the **handler** from a hazard vectors



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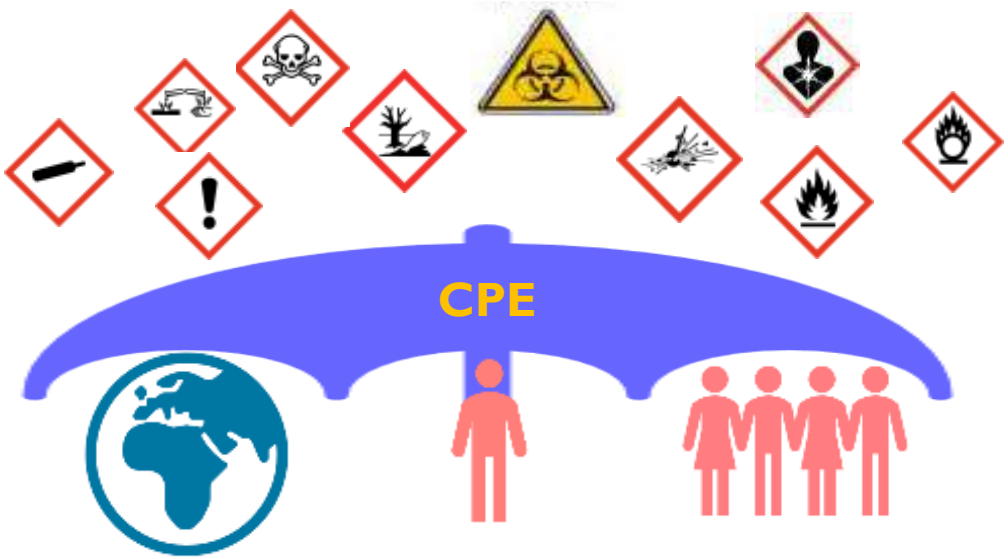
KEY LABORATORY GOOD PRACTICE

1= PERSONAL PROTECTIVE EQUIPMENT (PPE)

IN FACT: REAL # 1= COLLECTIVE PROTECTIVE EQUIPEMENT (CPE)

WHY? PPE: protection of the **handler** from a hazard vectors
CPE: protection of the **handler** + **her / his environment** from a hazard vector.



Except in special situations, PPE should be considered as a complement to CPE and not a substitute for it.

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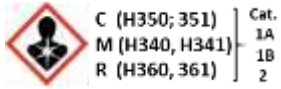
KEY LABORATORY GOOD PRACTICE

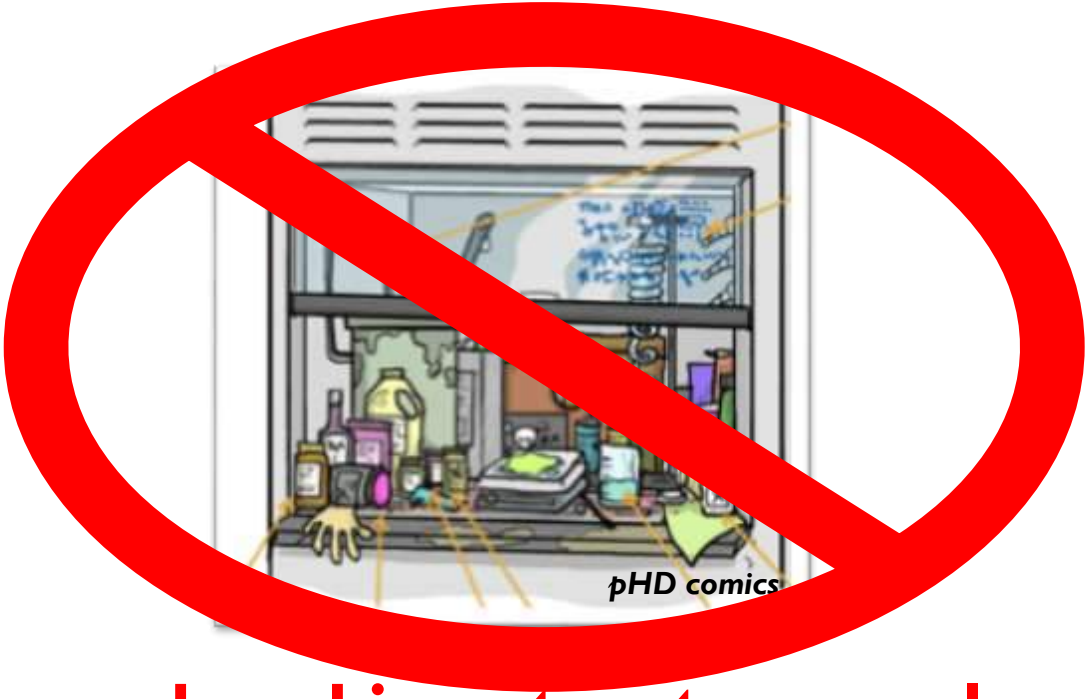
COLLECTIVE PROTECTIVE EQUIPEMENT (CPE): CHEMICAL HAZARDS

Fume hood, Sorbonne
(norme NF EN 14175)

Universal protection against chemicals
Must be used for:
- Products that can release chemical, toxic or annoying vapours (acid, solvent, etc.)

- Carcinogenic, Mutagenic and Reprotoxic products (CMR).





Fume hood is not a storage place

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KEY LABORATORY GOOD PRACTICE

COLLECTIVE PROTECTIVE EQUIPEMENT (CPE): CHEMICAL HAZARDS

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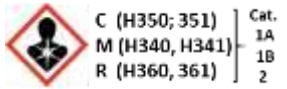

Chemical hood

(norme NF X 15–211)

Only handle products for which the filter is suitable: see the list displayed on the device

Incompatible with handling CMR products

Chemical storage cabinets

Specific according to the risks presented by the stored chemicals

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KEY LABORATORY GOOD PRACTICE

COLLECTIVE PROTECTIVE EQUIPEMENT (CPE): BIOLOGICAL HAZARDS

TYPE II MICROBIOLOGICAL SAFETY CABINETS (MSC II)

(norme norme NF EN 12-469)

Movable glass down when in use

Protection of the experimenter and handling
Suitable for handling Category 1 and 2 pathogens.

Vertical or horizontal laminar flow hood

Non-movable glass

Protection of the handling
but not of the handler or his environment.
Not to be used for handling pathogenic microorganisms. Not to be confused with a MSC.

THESE EQUIPMENTS DOES NOT PROTECT AGAINST CHEMICAL HAZARDS

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KEY LABORATORY GOOD PRACTICE

FOOD, HYGIENE AND AWARENESS IN THE LAB

In the lab, it is forbidden

To eat, drink, smoke, or make-up

To store food in fridges where chemicals and biologicals are stored

To identify a product by smelling it

To wear headphones

In the lab, it is mandatory

To wash your hands before and after each experiment

To disinfect/clean before and after each handling
Example: Weighing

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KEY LABORATORY GOOD PRACTICE

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In the lab, it is mandatory

To wash your hands before and after each experiment

To disinfect/clean before and after each handling
Example: Weighing

To keep the lab tidy

To warn of the end of a product's stock

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KEY LABORATORY GOOD PRACTICE

SAFETY IN THE LAB

It's forbidden to work on electrical installations even to reset a circuit breaker

No power strips allowed

Do not clutter the corridors, stairs or emergency exits

Know the procedures to be followed in the event of fire or accident and the associated means of rescue and fight.

Fire Shower

Leave safety equipment accessible (fire extinguishers, showers, etc.)

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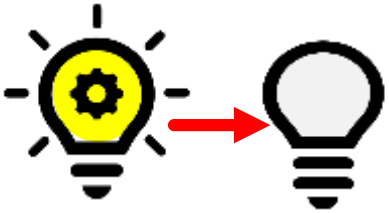
KEY LABORATORY GOOD PRACTICE

SECURITY AND ENERGY SAVINGS

Before leaving the laboratory, close doors and windows

Do not use electric heaters in winter



Turn off the light when leaving a room

Turn off devices when not in use

Turn off computers when leaving the lab at the end of the day

Feel free to share your ideas on how to save energy

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WASTE MANAGEMENT:AN OVERVIEW

Liquid waste

No sink discharge

canisters for collection of chemical waste: the colour of the label differs according to chemical families and their risks

canister for collection of non chemical inactivated biological waste

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KEY LABORATORY GOOD PRACTICE

WASTE MANAGEMENT:AN OVERVIEW

Liquid waste

No sink discharge

canisters for collection of chemical waste

canister for collection of non chemical inactivated biological waste

Soiled glassware is not dishwasher safe

Procedure to apply

1. Rinse glassware and collect the rinse liquid in the appropriate container
2. Rinsed glassware is dishwasher safe

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KEY LABORATORY GOOD PRACTICE

WASTE MANAGEMENT:AN OVERVIEW

Liquid waste

no sink discharge

canisters for collection of chemical waste

canister for collection of non chemical inactivated biological waste

Solid waste

non-hazardous waste

Chemical waste

Glass +/- chemicals

Biological waste

DIFFERENT WASTE DISPOSAL SYSTEM

YOU MUST KNOW WHAT YOU ARE HANDLING

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WASTE MANAGEMENT IN CRC

Depending on the type of waste, different contracts or agreements:

- household waste: Mairie de Paris
- hazardous waste: contract set up by Sorbonne University
- waste recycling: contract set up by Sorbonne University: implementation planned for December 2022

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WASTE MANAGEMENT IN CRC

COLLECTION POINTS ON THE CAMPUS DES CORDELIERS

Every Tuesday and Friday from 10 to 11 a.m.

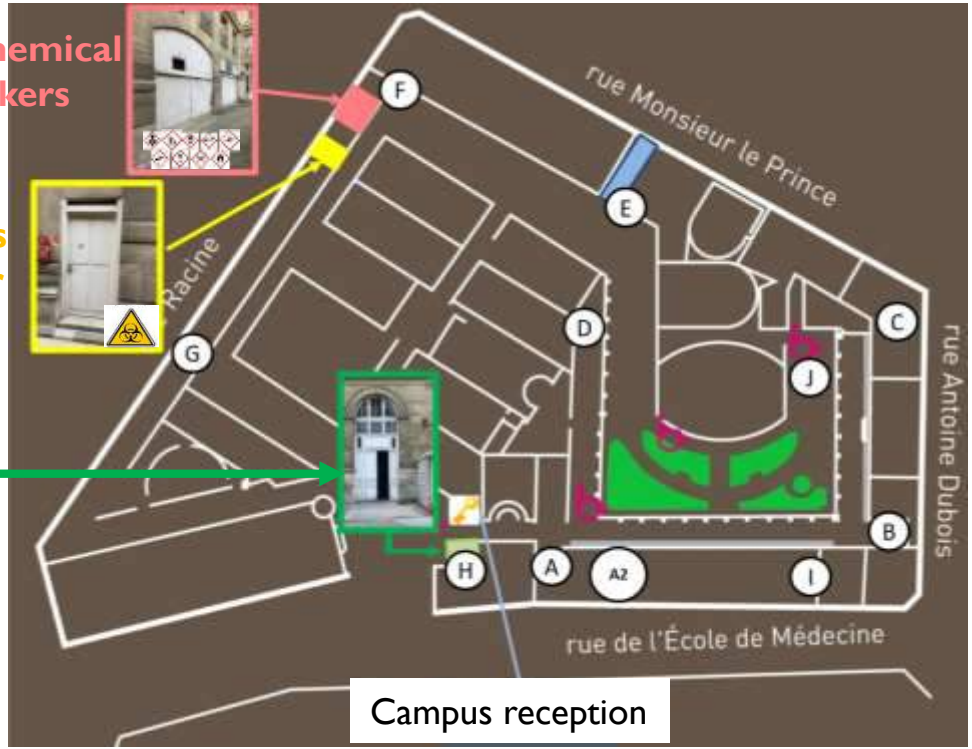
Hazardous chemical waste bunkers

Biohazardous waste bunker

Every day of the week from 9 a.m. to 1p.m.
Ask for keys at the campus reception

Garbage room

Food glass recycling



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WASTE MANAGEMENT IN CRC

NON-HAZARDOUS WASTE

- Household rubbish
- Plastic and paper packaging of consumables
- Absorbent paper not soiled with chemicals or biologicals
- THAT'S ALL!!

But also

<u>Even if not soiled with hazardous products</u>

- chemical products
- biological products
- sharp / cutting products
- soiled or unsoiled glass
- ink cartridges
- light bulbs
- batteries

Psychological impact on cleaning staff and garbage collectors of the city of Paris (threat to stop collecting waste)

ANYTHING THAT IS HAZARDOUS TO PEOPLE OR THE ENVIRONMENT

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WASTE MANAGEMENT IN CRC

NON-HAZARDOUS WASTE

empty tip boxes → Collection in the laboratories and then in a dedicated container located in the hazardous chemical waste bunker

food glass → Bin in the garbage room accessible between 9 am and 1 pm (ask for keys at the campus reception)

waste sorting → New procedures coming soon

non-hazardous waste bulky → Dumpster order twice a year

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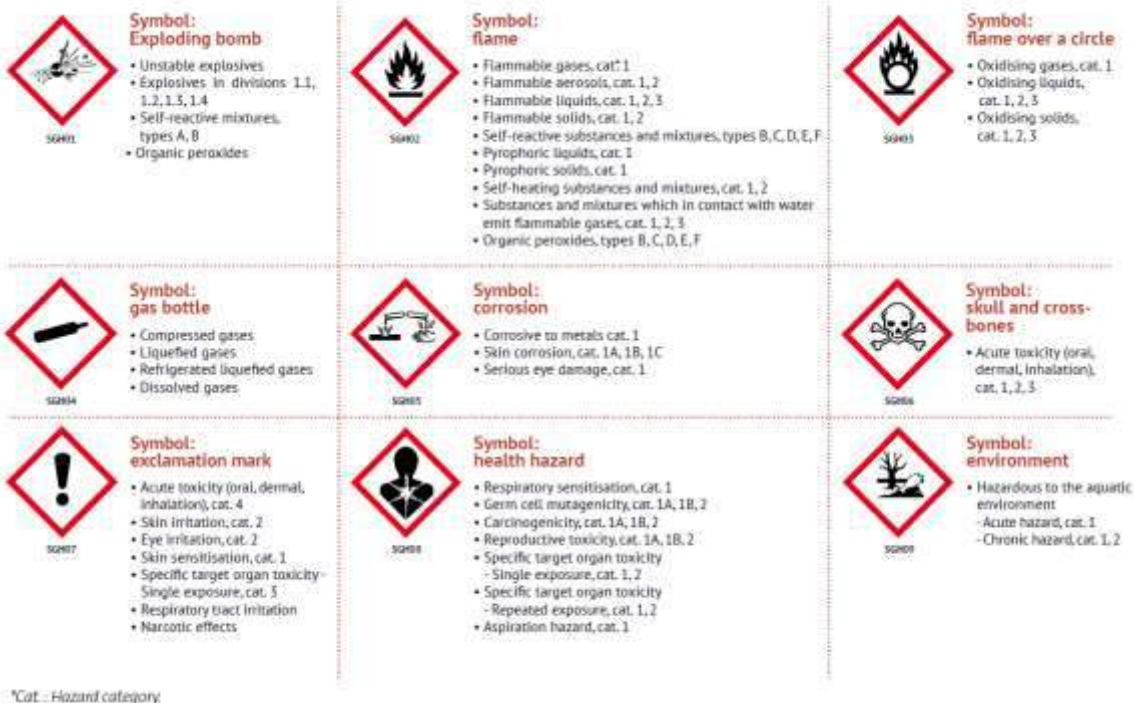
WASTE MANAGEMENT IN CRC

CHEMICAL HAZARDOUS WASTE

How to identify them?

- To know the hazard symbols



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CHEMICAL HAZARDOUS WASTE

How to identify them?

- To know the hazard symbols
- To know how to read a label

Example of a label according to CLP

Warning: not all hazards are represented by a pictogram

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WASTE MANAGEMENT IN CRC

CHEMICAL HAZARDOUS WASTE

How to identify them?

- To know the hazard symbols
- To know how to read a label
- To read the safety data sheet


Sigma-Aldrich

SAFETY DATA SHEET

Acetone

16 sections

SECTION 13: Disposal considerations

SECTION 14: Transport information

Waste resulting from the use of a hazardous chemical = hazardous chemical because it retains its hazardous characteristics

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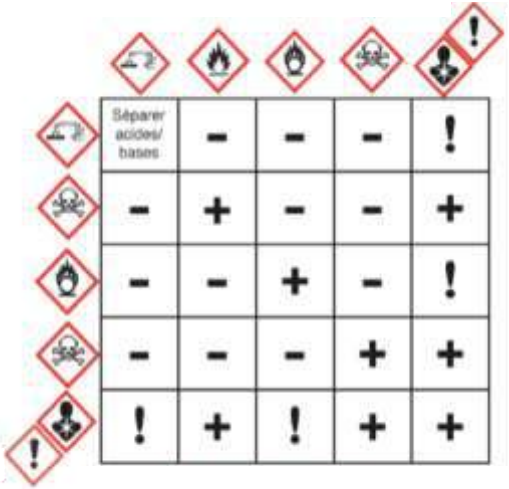
CHEMICAL HAZARDOUS WASTE

Waste resulting from the use of a hazardous chemical = hazardous chemical because it retains its hazardous characteristics

Acide + Base → incompatible storage



+ compatible storage
- incompatible storage
! compatible under certain conditions

A question? A doubt?

Ask your HSO!!

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WASTE MANAGEMENT IN CRC

CHEMICAL HAZARDOUS WASTE: CONTAINERS FOR LIQUID WASTE

Specific effluent

- Toxic organic liquids Liquids (ETB, formamide), CMR ...
- Cyanides in solution
- Toxic inorganic solutions (heavy metal solutions...)

Canister with blue label

if CMR

Carcinogenic, **M**utagenic and toxic to **R**eproduction substances

pH < 5

- Mineral acids (hydrochloric, sulphuric, nitric acid, etc.)
- Organic acids (acetic acid, formic acid, citric acid, organic liquid with an acidic pH, etc.)

Canister with yellow label

Separate nitric and hydrofluoric acid from other acids

pH > 9

- mineral bases (soda, potash, etc.)
- organic bases (developer...)

Canister with green label

Halogenated or non-halogenated organic liquids

- (Trichloroethane, ...)
- Solvents (acetone, heptane, hexane, alcohol...)
- (developers, photographic fixers, oils...)

Canister with red label

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CHEMICAL HAZARDOUS WASTE:

CONTAINERS FOR LIQUID WASTE: 3 rules to remember

I. The colour of the label differs according to chemical families and their risks

II. One container = one type of risk

III. Indicate the name of the product risk on the container to avoid hazardous mix

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WASTE MANAGEMENT IN CRC

CHEMICAL HAZARDOUS WASTE: CONTAINERS FOR SOLID WASTE

Materials soiled with NON-CMR products

Glassware:
Pipettes, broken glass (beakers...), glass bottles

→ 30 l or 60 l blue drum with white lid

Soiled consumables:
(gloves, tips, plastic pipettes, absorbent paper, etc.)

→ 5, 10 or 30 l buckets

Empty plastic or metal Reagent bottles

→ Chemical waste bunker where they will be weighed and stored in pallet boxes pending removal

Materials soiled with CMR products or CMR products

= **C**arcinogenic, **M**utagenic and toxic to **R**eproduction substances

→ 30 or 60 l round blue drum with black lid

→ 5, 10 or 30 l buckets

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WASTE MANAGEMENT IN CRC

CHEMICAL HAZARDOUS WASTE: CONTAINERS FOR SOLID WASTE

Out-of-date or used products in bottles

Securibac and addition of vermiculite to wedge the products

Ask HSO how to list the products

FOR ANY QUESTION: ASK YOUR HSO

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WASTE MANAGEMENT IN CRC

BIOLOGICAL HAZARDOUS WASTE

- Named DASRI (Déchets d'Activités de Soins à Risques Infectieux = waste from Healthcare Activities with Infectious Risks)

- What are they?
  A. Solid, liquid, pungent/sharp.
  B. Putrescibles of human, animal or vegetable plant origin.
  C. Pathogenic for humans (groups 2 to 4)
  D. and/or for the environment (GMO* groups 1 to 4).

  * GMO = genetically modified organism

- C and D must be inactivated before leaving the premises and being picked up by the carrier EXCEPT those that have been in contact with CMR products.

- What types of inactivation?
  - Chemical inactivation with bleach to be used at a specific final concentration (0.43% active chlorine)
  - Thermal inactivation with an autoclave

Depending on the type of inactivation, the container is different.

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WASTE MANAGEMENT IN CRC

BIOCHEMICAL HAZARDOUS WASTE: CONTAINERS FOR LIQUID WASTE

Canister for collection of non chemical inactivated biological waste:

- autoclave-inactivated biological waste
- non pathogenic for humans : group 1. Ex:
  - non-GMO murine cell culture medium
  - non-GMO primate cell line downgraded to biosafety level 1

pH > 9

Canister for collection of chemical inactivated biological waste, inactivation with bleach (base):

- all GMO from group 1 to 4
- and / or all pathogenic for humans (group 2 to 4) . Ex:
  - human cell lines with a biosafety level 2
  - murine cells with a pathogenic from group 2

Never put waste decontaminated with bleach in an autoclave: risk of corrosion.
Depending on model 15000 € < cost of an autoclave < 80 000 €.

Canister for collection of biological that has been in contact with CMRs

Carcinogenic, **M**utagenic and toxic to **R**eproduction substances

CENTRE DE RECHERCHE DES CORDELIERS

WASTE MANAGEMENT IN CRC

BIOCHEMICAL HAZARDOUS WASTE: CONTAINERS FOR SOLID WASTE

Sharp waste
(scalpel, needle...)

Needle boxes and mini-collectors (0,25, 3 or 5 liters)

Perforating Waste
(plastic pipettes, tips...)

30, 50 or 60 l plastic drums

Non-perforating waste
(gloves, absorbent paper, cell culture vessels...)

Cardboard bin with 50 l plastic bag

plastic bag 50 litres

Waste soiled with CMR products, like trypan blue used to count live cells
NO INACTIVATION

30 or 60 l round blue drum with black lid

5, 10 or 30 l buckets

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WASTE MANAGEMENT IN CRC

OTHER HAZARDOUS WASTE

Batteries →

Ink/toner cartridge →

Bulbs, neon, led →

New contract from January 2023

D3E

Déchets d'Equipements Electriques et Electroniques

= **waste electrical and electronic equipment**

Not soiled or contaminated by chemicals or biologicals →

Dumpster order according to need

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OFF-HOURS WORK AND ISOLATED WORK

Definitions:

OFF-HOURS WORK:

- Work outside normal working hours (7am - 7pm Monday to Friday), at weekends, on public holidays
- must remain exceptional
- always be accompanied by at least one other person

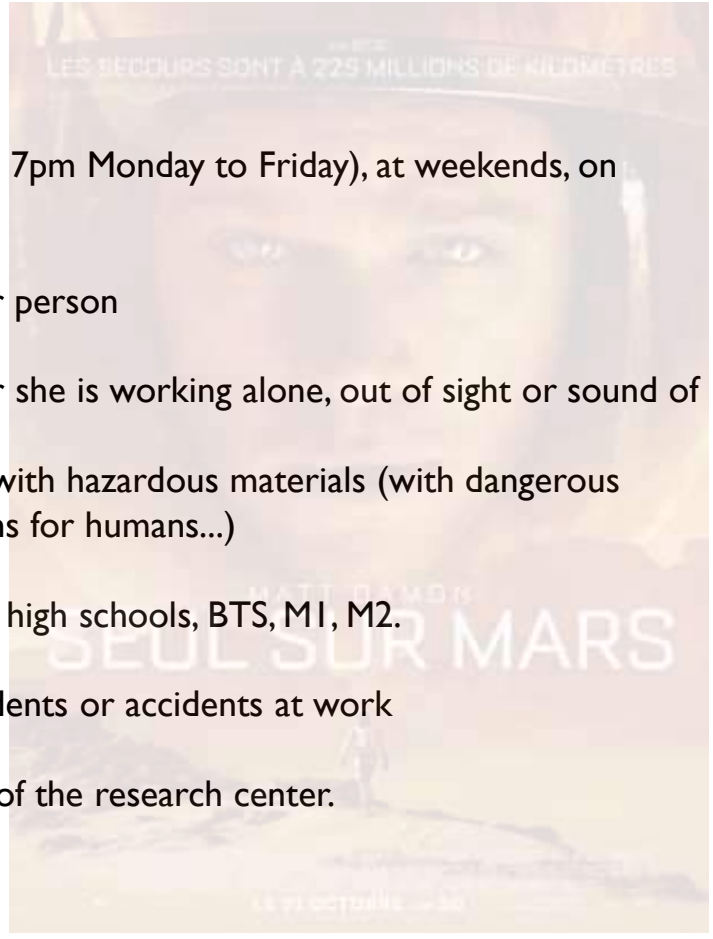
ISOLATED WORK:

- A worker is considered isolated when he or she is working alone, out of sight or sound of any assistance
- Isolated work is forbidden for experiments with hazardous materials (with dangerous chemical products, pathogenic microorganisms for humans...)

BOTH are prohibited for trainees at secondary schools, high schools, BTS, M1, M2.

BOTH are considered to be aggravating factors for incidents or accidents at work

BOTH require a written agreement of the director of the research center.



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OFF-HOURS WORK AND ISOLATED WORK

Procedure at the CRC

- It is compulsory to have followed a laboratory risk awareness training course (e.g. Neo)
- Notify the HSO who will apply for permission from the CRC Direction
- Signal your presence by filling the campus Attendance Book in Off-Hours, located next to the reception of the Campus des Cordeliers,
- Indicate your time of departure in the Attendance Book before leaving the Campus,

- Use, whenever possible, an alarm device for isolated workers (DATI or PTI) to be requested from the Campus des Cordeliers reception desk
- Ask the HSO for internal laboratory procedures (whatsapp group...)

CENTRE DE RECHERCHE DES CORDELIERS

OFF-HOURS WORK AND ISOLATED WORK

Procedures at the CRC

These procedures are not designed to control you, but for your safety

In an emergency:

- to know you are there,
- to allow help to find you,
- to allow to check you are OK

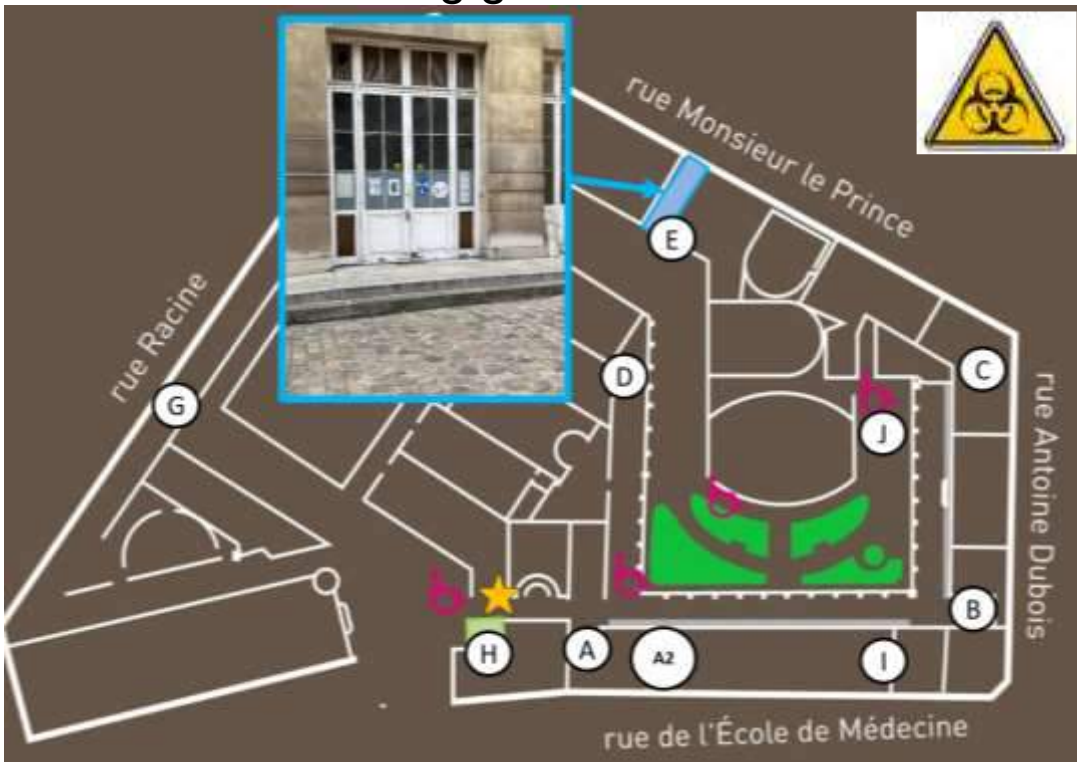
Working alone:

Always tell your colleagues where you are going to work and give regular updates

CENTRE DE RECHERCHE
DES CORDELIERS

LIQUID NITROGEN ROOM

LOCATION: E Building, ground floor



Its purpose =
Storage in liquid nitrogen of GMO and non-GMO cell lines at biological levels 1 and 2

No experience in the nitrogen room

No waste (cryotubes, paper, gloves...) in the nitrogen room: everything must be brought back to the laboratories

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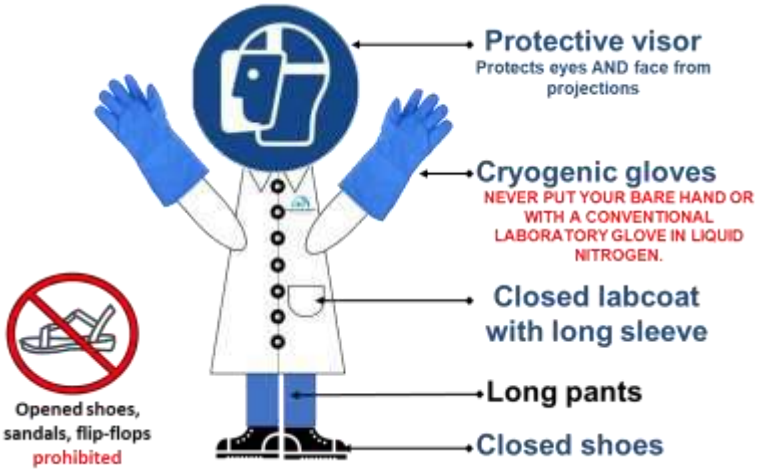
DES CORDELIERS

LIQUID NITROGEN ROOM

Hazards of using liquid nitrogen

Personal Protection Equipment



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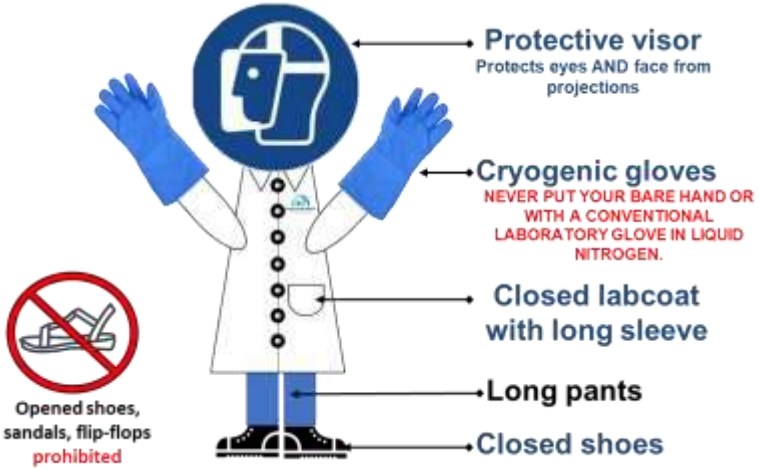
LIQUID NITROGEN ROOM

Hazards of using liquid nitrogen

Personal Protection Equipment



LEAVE THE ROOM DOOR OPEN TO PROMOTE VENTILATION

NEVER STORE LIQUID NITROGEN IN A ISOTHERMAL BOTTLE HERMETICALLY CLOSED

(risk of explosion: at room temperature, 1 L of liquid nitrogen = 680 L of gas)

FOR SAFETY REASONS, IT IS MANDATORY TO ALWAYS COME AT TWO IN THE NITROGEN ROOM

DO NOT TAKE THE LIFT IN THE PRESENCE OF A FILLED LIQUID NITROGEN CONTAINER.

CENTRE DE RECHERCHE DES CORDELIERS

TRANSPORTING BIOLOGICAL PRODUCTS INSIDE THE CAMPUS

The roads on the Cordeliers Campus are considered as public roads.

⇒ The transport of biological products (samples, cell lines, GMOs, rodents) between buildings is subject to the TDG (Transport of Dangerous Goods) regulations.

⇒ Aim: To prevent risks for people, goods and the environment

⇒ **Application of the triple packaging rule**

⇒ **Generalization of the triple packaging rule throughout the site** to avoid any risk of dissemination

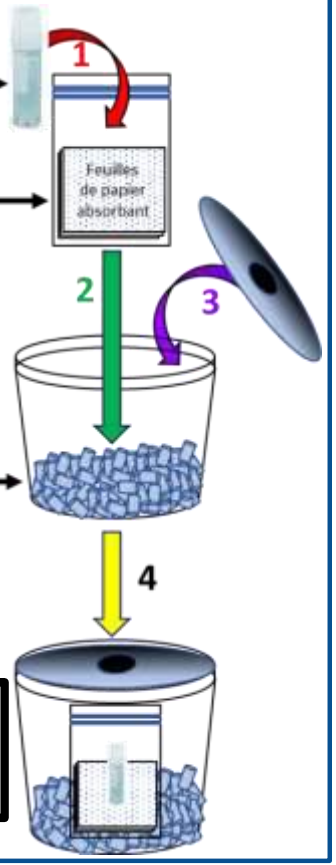
LIQUID NITROGEN ROOM ⇔ LABORATORY

Tight primary packaging containing the biological material = tube…

...inserted in a sample bag containing absorbent paper and closed = secondary packaging

The whole set is placed in an ice bucket with its lid closed = tertiary package

⚠ Always put the ice between the secondary and tertiary packaging



Triple packaging for transporting the sample from the nitrogen liquid room to the laboratory

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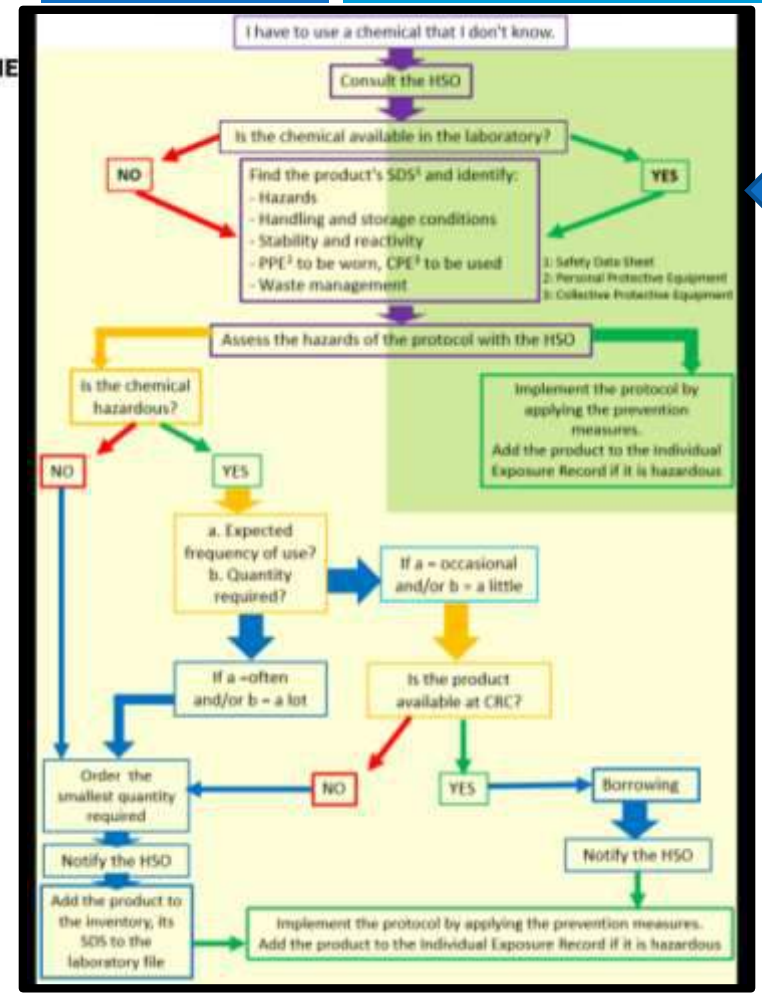

ORDERING A NEW CHEMICAL PRODUCT

Read the procedure and apply it

✓ Always consult the HSO before purchasing

✓ Always check the hazards associated with the products

✓ Identify PPE and CPE needed, and check the waste management

✓ Buy the smallest amount of product needed

✓ Add the product to the laboratory inventory

✓ Include the product in your personal exposure sheet for hazardous chemicals

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PROCEDURE FOR ORDERING A NEW CHEMICAL PRODUCT

…And if you are transferring a chemical (powder or liquid) to another container / bottle, always state on a label:

- the name of the product
- its cas number
- the associated hazard pictogram(s)
- the date of the transfer

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NON-REGULATORY HEALTH AND SAFETY TRAINING

We need occupational first aiders. If you are interested,

or if you need training in handling compressed gas cylinders and liquid nitrogen,

…or training to obtain electrical clearance

…or a "gestures and postures" training course"

….or any other health and safety training, contact me:
marie-noelle.brunelle-navas@Sorbonne-universite.fr

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AND TO FINISH

Two seminars in early 2023:

- **5th January: Seminar on Psychosocial Risks and Sexual and Sexist Violence**

  by Emmanuelle Le Quellec, Director of Competence Development, and Elizabeth Fredj, Head of the Career Paths and Managers Department, at Sorbonne University.

- **19th January: Seminar on chemical risk**

  by Véronique Lagarde, Prevention Advisor of the Inserm Paris - IDF Centre-Est Regional Directorate

CENTRE DE RECHERCHE
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Thank you for your attention!!

I wish you every success at the CRC and do not hesitate to contact me :

Marie-Noëlle Navas, staircase B 2nd 1/2 floor
marie-noelle.brunelle-navas@sorbonne-universite.fr

https://www.istockphoto.com/fr/photos/securit%C3%A9-incendie6

I now give the floor to Fabrice Ferrani,
the Single Security Officer of the Cordeliers Campus,
who will tell you about fire safety