

Health & Safety

Faculties of science and medicine



**UNIVERSITÉ
DE GENÈVE**

SANTÉ AU TRAVAIL,
ENVIRONNEMENT,
PRÉVENTION, SÉCURITÉ

Emergency Telephone Numbers

144 **Serious accident, intoxication**

118 **Fire**

117 **Security emergency**

1222 **Chemical incidents**

Useful contacts,
phone numbers and mail
addresses of the people from
STEPS team are available
on our website :

www.unige.ch/steps/Team.html

Other useful contacts are
available on our web site :

www.unige.ch/steps/Reseau.html

This document can
be read on-line at :

www.unige.ch/steps/Documentation.html

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1 General information

1.1 Why this brochure ?

This document was written in accordance with the workplace safety and accident prevention policy adopted by the Rectorate.

Its goal is to help all workers understand the actual risks to which they are exposed, to teach methods for effectively protecting themselves, and to prevent others from being exposed to risks.

Prevention not only requires knowledge of the details (workplace environment, ergonomics) and the risks associated with one's work, but also entails taking the recommended countermeasures seriously, even when inconvenient, to ensure a completely safe working environment.

1.2 Purpose of this brochure

- to promote a culture of prevention, and health and safety at work.
- to define an adequate level of safety in terms of accident and occupational disease prevention.
- to improve the relative level of knowledge of the potential risks specific to the workplace.
- to create a simple and practical tool to improve the reactions of people when faced with problematic situations.
- to set an example of our commitment to health and safety issues for those within and outside of the university.

1.3 General principles

This brochure is aimed at professionals, both experienced and in training, and assumes a mastery of their profession. Therefore, it does not attempt to be exhaustive. The repetition of known elements only serves to underline their importance. On the other hand, the omission of other elements does not necessarily mean that they are not important.

1.4 Responsibility and legal obligations

In matters of accident and occupational disease prevention, it is the responsibility of:

- the employer to ensure that the working conditions do not endanger the lives or health of their employees. In order to do this, necessary safety material and adequate procedures, will be made available by the employer.
- the employees to actively participate in the prevention of occupational hazard, to scrupulously follow the recommended safety procedures and, if necessary, to actively participate in the improvement of preventative measures.

1.5 The STEPS team (Santé au Travail, Environnement, Prévention, Sécurité)

As indicated by its name, STEPS is in charge of all aspects surrounding occupational health (Santé au Travail), environment (Environnement), accident prevention (Prévention) and safety (Sécurité).

Some of the missions of STEPS include:

- analysis of dangers and risks, along with appropriate and planned countermeasures to reduce them.
- creation of a network of correspondents to pass on and promote the adopted measures.
- counselling on issues related to workplace health and safety (Sécurité et Santé au Travail (SST)), management of special waste products and application of the cantonal directives regarding ecological issues at work.
- training of new personnel in the Faculties of Medicine and Sciences on issues of health and safety.
- establishment of safety regulations; development of procedures, directives, and forms in relation to safety, occupational health, and environmental protection.
- recruitment, and training of safety staff members who can intervene, for example, during building evacuations, in providing first aid or in firefighting.
- setting up of fire prevention and fire fighting programs.

- establishment of measures to address psychosocial risks in workplace.
- promotion of hygiene and health at work.
- assistance of staff members in exercising their rights when they are at odds with persons or administrations in power.
- protection and security.

Within the Faculty, a Safety engineer is entirely at your disposition to answer your questions or to assist you in matters of health and safety.

2 Hygiene and safety in the laboratory

2.1 Personal protection equipment (Equipements de Protection Individuelle (EPI)) :



depending on the dangers associated with the products used, or when working conditions demand, EPI must be made available to and used by each employee.



- **Wearing a labcoat:**

- ☞ a labcoat should be worn when manipulating, or in the presence of particularly dangerous substances.
- ☞ for reasons of hygiene, the wearing of labcoats is not authorized in places like the cafeteria, lecture halls or bathrooms.
- ☞ the labcoat should be washed regularly.



- **Protection of the eyes and face**

the wearing of safety goggles with lateral protection is obligatory when using biological products or dangerous chemicals.

- ☞ people with glasses can wear safety goggles with corrective lenses or goggles that fit over their corrective glasses.
- ☞ the usage of contact lenses is strongly ill-advised for all laboratory work, the risk of aggravating injuries can be considerable.

- **Certain activities may require the use of a faceshield.**



- **Protection of the respiratory tract:**

- ☞ a FFP2 type respiratory protective mask should be worn when exposed to any dust : toxic, irritating, allergenic, etc.
- ☞ medical/hygienic masks do not effectively protect the respiratory tract as they do not filter the air breathed in by the wearer, but only protect patients against possible projections from the mask wearer.



- **Auditory protection:**

earplugs or earmuffs should be worn in loud working environments (for example, during sonication, homogenization, ...).



- **Protection for the hands:**

☞ when experiments present the possibility of exposure of the skin to dangerous substances, protective gloves should be worn. The quality of the gloves should be adapted to the substance used (a chart listing the resistances of gloves can be consulted on the STEPS website).



☞ In order to limit the risk of contaminating others, gloves should never be worn outside of the laboratory.



- **The washing of hands:**

- ☞ one should carefully wash their hands :
- ☞ after handling dangerous materials or toxic substances
- ☞ after removing gloves
- ☞ before leaving the laboratory
- ☞ with cold water, if a contamination is suspected



- **Cryogenic liquids:**

- ☞ manipulations (liquid nitrogen, dry ice) present the risk of serious burns, gloves that protect against the cold should be worn.
- ☞ in case of the accidental contamination of gloves by any dangerous substance, the gloves should be washed or replaced immediately.



- **Eating and drinking:**

- ☞ it is forbidden to eat, drink or put on cosmetics in the laboratory and clinic.
- ☞ the storage of food items is authorized in areas free from dangerous substances or in refrigerators set aside for this purpose.

- **Pipetting:**

- ☞ it is forbidden to mouth pipet, pipetting devices should be used.

- **Preventing cuts and punctures:**



- ☞ recapping hypodermic needles is forbidden, except needles «porte-carpules».
- ☞ use disposable needles and scalpels as much as possible.
- ☞ for their disposal, needles, and all sharp objects, should be placed into boxes designed for this purpose.



- **Preventing falls and slips:**

- ☞ the floors should be kept clean at all times.
- ☞ spills of water, oils, powders or wastes should be cleaned or eliminated as soon as possible.
- ☞ employees should wear shoes appropriate for their activities.
- ☞ the corridors (laboratories, clinics, hallways and exterior walkways...) should be kept free and clear of furniture and objects.

- **Work spaces and storage:**

- ☞ order and cleanliness should be maintained in the stockrooms and places of work.
- ☞ working surfaces, benches and chemical hoods, should only be encumbered by the substances, apparatuses, and material currently being used.
- ☞ storage at height should be minimized.



2.2 Risks associated with working with chemical substances

2.2.1 Symbols of danger

From the 1st décembre of 2012, the United Nations Globally Harmonised System of Classification and Labelling of Chemicals (GHS) will be applied in Switzerland.

Therefore, new symbols of dangers, which are already being used from 2009, will totally replace the former ones :

Old symbols

New symbols



E - Explosif



SGHo1

Explosive



F+ - Extrêmement inflammable



F - Facilement inflammable



SGHo2

Flammable



O - Comburants



SGHo3

Oxidising



O - Comburants



F - Facilement inflammable



SGHo4

Gas under pressure

Old symbols

New symbols



C - Corrosifs



XI - Irritants



SGHo5

Corrosive



T+ - Très toxique



T - Toxique



SGHo6

Toxic



Xn - Nocif



SGHo7

Caution – used for less serious health hazards like skin irritation



T+ - Très toxique



T - Toxique



Xn - Nocif



SGHo8

Longer term health hazards such as carcinogenicity and respiratory sensitisation



N - Dangereux pour l'environnement



SGHo9

Dangerous to the environment

2.2.2 Storage & Transport

Storage

- reserve products should be stored in available ventilated closets.

Only the necessary amount of dangerous substances for a job should be found at one's working place.

- containers containing liquid substances should be stored in retention trays and separated according to their chemical incompatibilities (instructions for storage are found in [appendix 1](#)).
- in the CMU, flammable solvents in large quantities must be stored and decanted on drip trays in the flammable solvents depot, e.g. barrels of ethanol.
- flammable solvents should not be placed in a non-EX refrigerator (not protected against the risks of sparking).

Transport

- material originating from a laboratory must be transferred in buckets or on carts with high rims.
- the contents must never exceed the capacity of the container or spill over during transportation
- it is forbidden to take any material home.



2.2.3 Labeling products

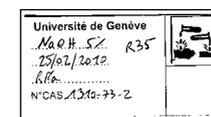
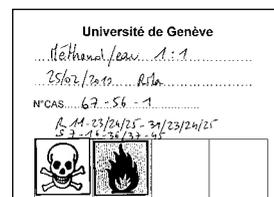


- whenever possible, products should be kept in their original labeled packaging.
- in the laboratory, all solutions, repackaged chemical products or waste to eliminate should be tagged with a label containing:
 - ☞ the name of the product/products mixed.
 - ☞ their concentration.

☞ CAS number (chemical abstract systematic).

☞ the pictograms of their corresponding hazards.

- tags are available for your use at the Biostock of the CMU and at the Pavillon des inflammables of ScII.



2.2.4 Material Safety Data Sheets (Les Fiches de Données de Sécurité (FDS))

- the FDS contains all of the data concerning the physico-chemical properties, the safety procedures, the toxicology and the ecological implications necessary to use a dangerous substance, as well as, their recommended usage.
- distributors are required to make them freely available, usually on-line through their website.
- consulting them allows one to determine the dangers associated with the usage of chemical products or the dangers present at a work site, to evaluate their risks for health and safety, and to establish the required procedures for protection.



- in matters of safety, the data printed on the FDS is the reference. It is advised that one consult the FDS before the first usage of the product.

2.2.5 The Risk and Safety statements (R & S)

- the R- and S-statements are present on the FDS. They indicate the risks associated, and the warning to be respected, when using a substance.
- they are presented in the form of a R a list of R or S issues, each one corresponding to a risk or a particular safety measure.

The list of R et S statements are found in [appendix 2](#).

- from the 1st of decembre 2012, both risk and safety phrases will be phased out in favor of Hazard Statements (H-Statements) and Precautionary Statements (P-Statements) (see [appendix 2](#)).

2.2.6 Substitution

Whenever possible, products that are hazardous and/or difficult to dispose of could be substituted by an alternative product.



2.3 The risks associated with working with biological material

2.3.1 2.2.1 The concept of biosafety



All of the information relating to biosafety is collected in “the concept of proper biosafety” at the faculty and is available to you via your Biosafety Officer or the safety engineer of your work site.

2.3.2 2.2.2 Biohazard levels

- concerns: genetically modified organisms (GMO) and pathogens

Biohazard classification levels :

level 1: recognized as not dangerous

level 2: not dangerous (for people in good health)

level 3: dangerous

level 4: deadly

Each research project working with live organisms must be registered; P₃ projects must be approved.

Example of microorganisms classification :

Class 1: non pathogenic (E. Coli K12, S. cerevesiae)

Class 2: moderately pathogenic
(strains of pathogenic E. Coli, Aspergillus Flavus, Virus Influenza)

Class 3: activities of moderate risks of causing severe or potentially life threatening illness (Bacillus Anthracis, HIV, Hepatitis C)

Class 4: activities of high risk : high risk of transmission through air and causing lethal infections (Lassa Virus, Ebola Virus)

2.3.3 Definition of safety measures by biohazard level



Good laboratory practices

Class 1 = P₁ (All laboratories)

- ☞ workplace kept clean and orderly
- ☞ no eating or drinking, mouth pipetting is forbidden
- ☞ gloves worn only in the laboratory
- ☞ hands washed before and after a manipulation
- ☞ knowing the organisms and substances used

Additional security measures for each biohazard level

Class 2 = P₂

- ☞ laboratory labeled with the “Biohazard” symbol
- ☞ doors and windows closed during manipulations
- ☞ labcoats worn only in the confined zones
- ☞ avoid needles, syringes and scalpels
- ☞ recapping needles is forbidden
- ☞ avoid, as far as possible, the creation of aerosols, centrifuges should be closed
- ☞ manipulations performed in a biosafety cabinet (laminar flow hood)

- ☞ disinfect regularly, and when finishing, disinfect the work area with an appropriate product (for instance ...) 70% Alcohol, Désoméd rapid AF, ...

- ☞ respect the rules of general laboratory safety

- ☞ if aerosols are present, work in a laminar flow hood with the proper filters

- ☞ all materials in contact with microorganisms should be disinfected or autoclaved before washing or eliminating

- ☞ a list of all authorized personnel including the project leader should be displayed on the door

- ☞ display emergency and accident procedures

- ☞ display decontamination procedures, frequency and person responsible

- ☞ have enough paper towels ready for clean up!

The biological emergency procedures for a P2 facility can be found in [appendix 3](#).

Class 3 = P3

- ☞ double airlock between the laboratory and the building

- ☞ all surfaces must be smooth and easily cleaned

- ☞ personnel must be visible through windows

- ☞ there must be a negative internal pressure (6 mm Hg) and the air must pass through an appropriate filter

- ☞ no direct connection to the outside

- ☞ take measures against insects and rodents

- ☞ all contaminated material must be autoclaved before leaving the facility

- ☞ only clothing made for the P3 facility can be worn and cannot leave the facility without first being autoclaved

- ☞ all documents/notes must be disinfected before leaving the facility

- ☞ living biological material must be placed in a sealed unbreakable container within a second container before leaving the facility

Class 4 = P4

- ☞ exceptional risk level, there is a P4 diagnostic laboratory at the HUG

2.3.4 Contamination Hazards

Possible contaminations from biological material :

Oral-respiratory tract

- ☞ mouth pipetting

- ☞ breathing of contaminated air

- ☞ using centrifuges without nose plugs, without a lid

- ☞ using vortexes, sonicators, blenders, mortars

- ☞ shaking a culture, aspirating, bubbling

- ☞ transferring liquids, decanting supernatants

- ☞ splatter while dispensing solutions

- ☞ drops of microbial suspension cultures on the work surface

- ☞ tubes broken or spilled

One should not flame-sterilize platinum inoculation loops

Skin

- ☞ self-innoculation by pricking oneself with a needle, a pipette, ...

- ☞ cuts from broken and contaminated glass

- ☞ infections through unprotected wounds or lesions

Eyes

- ☞ splatter, aerosols or pulverisations

In case of emergencies/accidents

- STAY CALM
- act according to the “Emergency plan” posted at the entrance to each laboratory (in [appendix 3](#)).
- limit exposure to contamination as much as possible.
- sound an alarm and block off the area.
- rapidly control the incident to limit the spreading of the contamination.
- quickly inform the project leader, the BioSafety Officer and the Safety Officer.
- a declaration of an accident or of a near-accident must be made for all biological incidents. The appropriate forms are available on-line on the procedures and directives page of UNIGE.



Accidents with exposure to blood or a biological liquid (AES)



- STAY CALM
- if from a puncture or cut :
 - ☞ wash with soap and water, then disinfect with e.g. chlorhexidine 0.5%.
- if from splatter into the nose or mouth :
 - ☞ rinse well with water, then apply e.g. an aqueous solution of chlorhexidine 0,1%.
- if from splatter into the eyes :
 - ☞ rinse well with water (eye shower), then apply e.g. collyre chlorhexidine 0.05%.
- identify the contaminant or the person who is the source of the sample :
 - ☞ if known, quickly ask (with their permission) for their serology status.
 - ☞ if unknown, always keep the causal agent (needle, syringe, liquid) for an eventual serological examination.
- immediately consult the HUG Emergency clinic or the ophtalmology clinic.
- refer to the internal directive, available on-line on the procedures and directives page of UNIGE.
- all AES accidents must be recorded on an appropriate form, available on-line on the procedures and directives page of UNIGE.

2.3.5 Some disinfectants

Disinfectant	Dosage	Contact time	Field of application	Activity
Javel 14%	2%	min. 15 minutes	Inactivation of liquid culture medium	B, MB, V, VE, F
Aseptoman	pur	30 secondes	Hand disinfection	B, MB, VE, F
Desomed rapid Af	pur	1 minute	Quick disinfection	B, MB, V, VE, F
Biguamed Perfect	3%	1 minute	Surface disinfection	B, MB, V, VE, F
Desomedan ID	3%	30 minutes	Surface disinfection	B, MB, V, VE, F
Ethanol fin (0.2% cétone)	70%	15 minutes	Hand disinfection	B, MB, VE

All these materials are available at the CMU “Biostock”.



2.4 Risks associated with working with radioactive material

2.4.1 Controlled areas

- the authorized activity limit for each laboratory is isotope specific.
- in general, the authorized limit for the different laboratories is a multiple of the authorized limit for an average laboratory (LA).
 - ☞ Normal lab : < LA (no need for authorization)
 - ☞ C Lab : < 100 LA
 - ☞ B Lab : < 10'000 LA
- below the exemption limit (LE), a radioisotope is no longer considered radioactive.

2.4.2 Protective measures against ionizing radiation

- **Must be known before starting the work :**

What are the properties of the radioisotope ?

- ☞ type of radiation ($\alpha, \beta, \gamma, \chi$)
 - ☞ energy
 - ☞ period (half-life)
 - ☞ volatility
- before beginning any manipulation with a radioisotope, each collaborator must contact the departmental/entity radioprotection expert (whose name is written on the door of a C lab) to be informed of the risks present and to define the appropriate safety precautions.
 - minimize the time of exposure.
 - ☞ practice the manipulations at the bench without radiation
 - ☞ be well organized and plan the manipulations
 - ☞ frequently remove radioactive waste from the laboratory

- ☞ use radioisotopes when needed, but without rushing
- ☞ store stocks in their proper place

- **The less time one spends in a radiation zone, the weaker the dose received.**

$$\text{Dose} = \text{radiation intensity} \times \text{time}$$

- **Stay as far as possible from the radiation source**

☞ for most types of radiation γ and χ , the radiation intensity decreases with the inverse square of the distance from the source

- **A small increase in the distance from the source can translate into a non-negligible reduction in exposure.**

For example, a doubling of the distance between the source and the user, will result in the quartering of the exposure over the same amount of time.

$$\text{Radiation intensity} = \text{Constant} \times 1/\text{distance}^2$$

- **Place a shield around the radiation source.**

☞ β plexiglass 1.5 cm, wood, light metal, water (^3H , 3mm in air!)
(warning: with ^{32}P , don't use a lead shield as it leads to the production of gamma rays !)

☞ γ , χ lead shields

- the efficacy of the shielding should be evaluated with the help of a detector (which should be present in a C lab)

Don't forget to protect yourself against the radiation from laboratory waste

- **Substitute with other non-radiological techniques.**

☞ it is not necessary to use radiation if other techniques are available

☞ when no other methods are available, try to use the least penetrating or least energetic radioisotope



- **Working areas**

☞ only use radioisotopes in delimited areas, set aside for this purpose

☞ working areas should be chosen by taking into account isolation and the ease with which they can be cleaned and decontaminated

☞ the cabinet / benches / refrigerators should be clearly marked with the radiation hazard symbol (available from your Safety officer)

☞ extra stocks of absorbant paper, as well as Count-off™ should be kept readily available

☞ limit the quantities of radioisotope used and stored



- **Manipulating radioisotopes**

☞ label all containers of radiation, source or waste, with a radioactive hazard symbol and indicate the type of radiation, its activity and the date

☞ wear appropriate safety equipment, labcoat, disposable gloves and safety goggles (protect the lens of the eye !). Use shields

☞ for transporting and storing, use correctly shielded containers

☞ while performing a manipulation, leave the detector on. Check for contamination frequently (especially on your hands !)

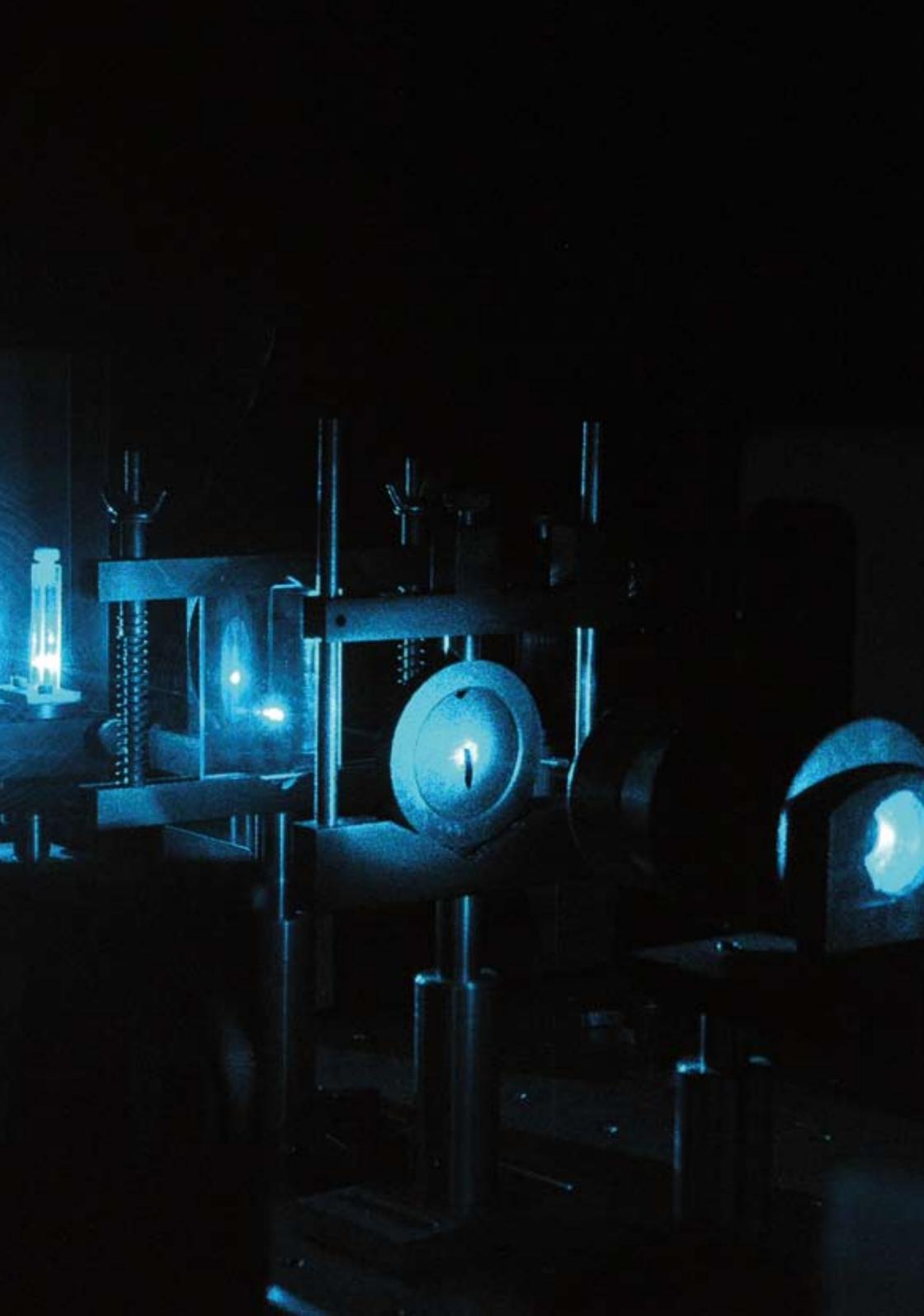
☞ check for contamination of the working area before and after the manipulation (once again, pay special attention to your clothes and hands)

☞ all contaminated surfaces and equipment should be thoroughly cleaned with Count-off™



Watch out for risks of incorporation!





2.5 Risks associated with machines and electrical equipment

2.5.1 Connections and systems under pressure

- take special care with connections and attachments (even temporary).
- systematically check all water and gas connector tubings.
- use the correct tubing for pressurized gas, including compressed air.
- use the correct glassware when working with high pressures or vacuums.

2.5.2 Risks associated with compressed gases



- transport cylinders (greater than 10 liters) with an appropriate cart.
- attach the cylinders to an anchor point mounted at 3/4 the height of the cylinder.
- never close the cylinder valve with a clamp or key.
- all defective cylinders should be sent back to the distributor immediately.
- the main valve should be closed when the cylinder is not in use.
- storage of extra cylinders should be placed in an appropriate locked place and identified with the safety symbol (available from the safety officer).

2.5.3 Connections

In connecting machines and performing the diverse manipulations in the laboratory, it is imperative that the following points are respected:

- never modify or make mechanical repairs to high pressure systems.
- moderately tighten nuts with a wrench (never with pliers).
- after setting up a piece of equipment, check for leaks with an appropriate liquid.
- at the pressure gauge, never join the connectors with teflon tape or tow as the gauge is made and calibrated to guarantee a tight connection without other elements.
- pay attention to possible reactions between gasses and certain materials or substances (ex: the reaction between fats and oxygen or acetylene; never lubricate!).

2.5.4 Machines with moving parts

- protect all moving parts from incidental contact.
- carefully balance centrifuges, never leave the area until the centrifuge reaches its run speed and never open the door before it comes to a complete stop.
- watch out for long hair, beards, necklaces, jewelry, sleeves and ties.

2.5.5 Machines for heat generation

- all electric heating units must be equipped with a protector against overheating.
- never leave a naked flame (e.g., like bunsen burners, torches, candles, etc.) unattended.
- do not put items in the sterilizing dishwasher that have been rinsed with solvents.
- turn off the gas when you have finished working.
- check the expiration dates on tubing for gas (notably for the bunsen burner).

2.5.6 Sources of electromagnetic rays

- carefully follow the safety recommendations in the operation manuals when using lamps for generating UV, IR, RX, microwave, laser, and electric arcs (graphite ovens).

Strictly follow the safety instructions when using IR lamps, RX, microwaves, electric arc (graphite oven).

- ultra-violet sources
 - ☞ display a warning sign
 - ☞ wear goggles or face protection
 - ☞ wear long sleeves
 - ☞ in a laminar flow hood, ensure that the UV lamp is automatically switched off when the light is turned on
- lasers

Laser installations with beams that are accessible must be marked. The marking must include at least:

- ☞ a warning sign
- ☞ information about the class of laser
- ☞ a description plate and identification of the laser

- General safety measures regarding the use of lasers are:

Class	Organizational measures	Technical measures
1	-	-
2	Do not look directly into the beam. Do not direct the beam onto others.	-
3A	Precautions for Class 2 (see above) Do not operate the laser at eye level. warn people working nearby the optical instruments. Prevent unauthorized use.	Warning signs. No reflective objects in proximity to the laser. Minimize the length and possible directions of the beam.
3B et 4	Precautions for Class 3A (see above) Authorized use only in a controlled area (including door that closes automatically and «laser on» display panel above the door). Engaging of the laser is only possible when all the people in the area wear appropriate protective equipment, and when unauthorized admittance is prevented.	Non-admissible beaming (depending on the type of laser) must not reach anyone. Safety glasses required.



2.5.7 Electrical equipment

- unplug the unit before performing any operations on the unit other than its normal functions (changing a fuse, a bulb, cleaning the electrical switch...).
- make sure all plugs are in good shape and conform to the requirements of the working environment (resistance to oil, water, etc.), do not place them near water.
- if in doubt about the quality of the installation (heating up of plugs or wires, a defective ground connection, etc..) call the appropriate technical assistant responsible for your entity.
- label and remove from use all defective or broken electrical equipment. If possible, take steps to prevent others from accidentally using it.

2.5.8 Power tools

- in the workshop, the machines (lathe, milling machine, circular saw, grinder, drill) should only be used by personnel with the proper training. The same applies for soldering tools.
- hand tools should be used with caution; pointy and sharp tools should not be placed in pockets.

2.6 Health protection during pregnancy



☞ if you are pregnant or planning to become pregnant and you work in a laboratory, think about having your work environment evaluated by a safety ingeneer.

☞ completely confidentially, the safety ingeneer will provide you all the available informations concerning workplace health and safety and can advise you on protective measures you can take.

☞ pregnant or breastfeeding women should limit all exposure to any substances characterized with the following warning labels, as they are considered particularly dangerous to mother and child:

R 40 possible risks of irreversible effects

R 45 may cause cancer

R 49 may cause cancer by inhalation

R 61 may cause harm to the unborn child

☞ during the pregnancy, any exposure to X-Ray must be avoided.

☞ pregnant women and breastfeeding mothers can work with group 2 micro-organisms only if it's proven that they are of no risk for the mother and the baby's health.

☞ pregnant women and breastfeeding mothers may use the infirmary to rest or breastfeed.

2.7 Isolated workers

in general, it is forbidden to perform particularly dangerous activities alone (using dangerous substances, or running heavy machinery,...), except in particular cases where a specific procedure was planned.

2.8 Waste management

Everyone must strictly follow the rules for the collection and elimination of special waste posted in the buildings and which can be consulted on the STEPS website.

Contact for the faculty of sciences:

dechets-speciaux-sciences@unige.ch
Extension 96297

Contact for the faculty of medicine:

dechets-speciaux-medecine@unige.ch
Extension 96297

The rules for the elimination of special waste is in [appendix 4](#).



ELIMINATION DES DÉCHETS

Déchets chimiques
Consigne générale: Les déchets chimiques sont classés en fonction de leur dangerosité. Ils sont regroupés en fonction de leur dangerosité.

- Solvants organiques neutres (GHS 02)**
- Solvants organiques acides ou basiques**
- Solides non chlorés et autres**
- Rejets photochimiques**
- Produits chimiques divers**

Déchets radioactifs
Consigne générale: Les déchets radioactifs sont classés en fonction de leur activité. Ils sont regroupés en fonction de leur activité.

Déchets tranchants ou piquants

Déchets carnés

Rejets aux eaux usées

Responsabilité

Contact: dechets-speciaux@medecine.unige.ch

UNIVERSITÉ DE GENÈVE [STEPS]



3 Emergencies

3.1 Medical emergencies

- **In case of emergency**

Call for help N° 144

Inform internal security N° 1222
(or 022 379 1222 from a fixed or portable phone)

Wait for the emergency crew



- **In case of need at the CMU:**

First aiders: the contact list is posted on the door of the infirmary, located on the first floor of CMU, room # 1035.

The key to that room may be requested at the reception desk («huis-siers»), located on the ground floor, right at the «rue Michel-Servet» entrance.

- **In case of need in the faculty of science:**

An infirmary, located on the ground level of sciences III, is available.

In case of need, you can call the first aiders (a specially programmed telephone is available at the entrance), or the key can be obtained from the building manager.

- **For medical treatments**

The medical clinique at the HUG (emergency entrance)

3.2 Chemical incidents



- limit your exposure
- quickly leave the area
- close the door / block access
(for ex.: in the hallway)
- call 1222
(or 022 379 1222 from a fixed or mobile phone)

- wait for the help to arrive
- all chemical incidents must be declared using a form that can be found on-line on STEPS website.

3.3 Radioactivity incident

- in case of a problem, you can ask for help by contacting the designated person for your lab, listed on the posting at the entrance of every C lab.
- in the absence of a contact person, call N°1222 (or 022 379 1222 from a fixed or mobile phone).
- wait for help to arrive.
- all radioactivity incidents must be declared using a form that can be found on-line on the procedures and directives page of the UniGe website.

The instructions “First measures to take in case of an accident” can be found in [appendix 5](#).



**Premières mesures
en cas d'accident**

S'éloigner de la zone contaminée en évitant de répandre la contamination

Se débarrasser des vêtements contaminés

Marquer la zone contaminée et en barrer l'accès

Avertir le responsable de la radioprotection

Avertir le piquet de sécurité

Avertir le médecin spécialiste en cas d'incorporation

Procéder à la décontamination selon les consignes

	Nom	Tél. interne	Tél. privé
Responsable de la radioprotection			
Remplaçant (Resp. de site)			
Chargé de sécurité faculté de médecine			
Médecin spécialiste	Urgences HUG Ambulance	- 144	
Sécurité interne		1222	

3.4 Instructions for evacuation

Why an evacuation ?

The decision to evacuate a building is made in cases of incidents, accidents or threats that put the people in the building in danger.

Workstations, storage facilities, and buildings should always be evacuated quickly and safely.

When the message of evacuation is broadcast by the public-address system, you are requested to leave the building following the evacuation instructions posted on all floors and meet up at your designated assembly location, where you will be informed about the situation. We recommend that all doors to offices and laboratories should be locked.

Once outside, for safety reasons you must stay away from the building to avoid exposure to possible flying debris and to allow free access for rescue teams.



Consignes d'évacuation

à la suite du signal d'alarme:



Suivez les instructions.



Vos voisins ont-ils compris le message, ont-ils besoin d'aide?



Rejoignez la sortie la plus proche.



N'utilisez pas les ascenseurs.



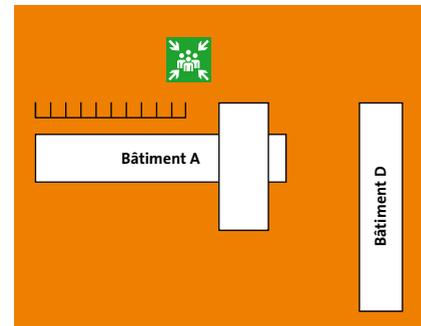
Ne revenez pas en arrière.



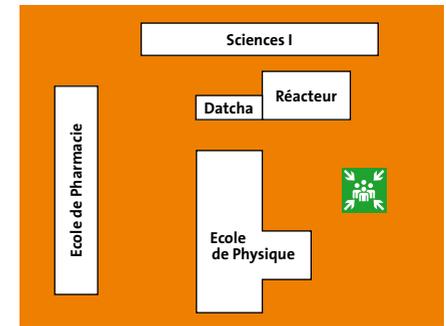
Rejoignez la place de rassemblement

STEPS - Santé au Travail, Environnement, Prévention, Sécurité

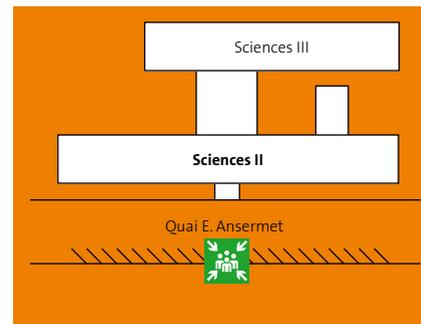
Assembly locations : Faculty of science



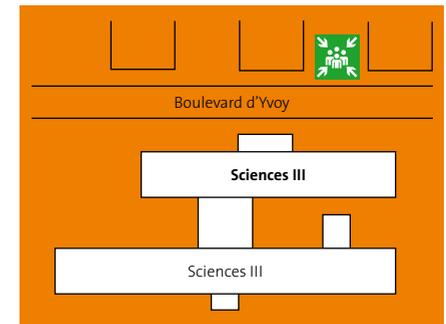
Batelle



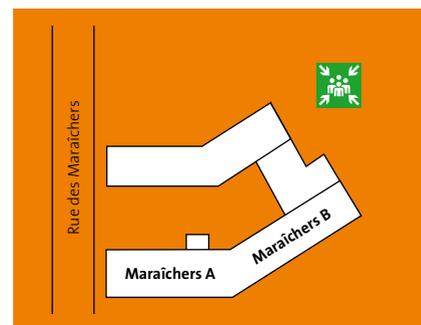
Sciences I, Datcha, Réacteur, Ecole de Physique, Pavillon des Isotopes and Pavillon Ansermet



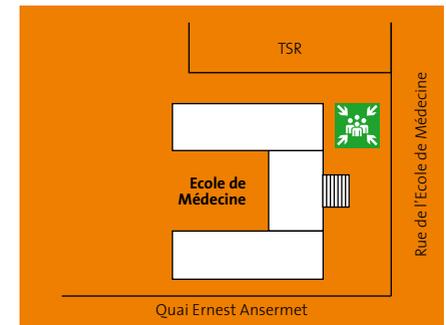
Sciences II



Sciences III



Maraichers



Ecole de Médecine

Evacuation : Faculty of medicine



CMU

Once outside, proceed to the assembly point at the center of the park located on the «Champel» side of the building (3rd floor). If you leave the building from the «Lombard» side (ground floor, 1st and 2nd floors) you must go round the building in order to reach the assembly point.



Fondation pour la recherche médicale

Proceed to the assembly point in front of the Paediatrics building across the Avenue de la Roseraie, at N°. 45.



SMD

Proceed to the assembly point located in the parking lot, next to the school.

The clinic staff is responsible for the proper evacuation of patients.

Mobility impaired persons that find themselves in the “Policlinique” area during an evacuation must be transferred to the Paediatrics building via the corridor on the first floor.

All staff members are responsible for urging patients and visitors to exit the building.

4 Security

Everyone is responsible for the security of the buildings

4.1 Undesirable persons



• Internal security

If you feel threatened by the presence of unrecognized persons in the building, you can call the internal university security.

Internal Tel: 1222 (or 022 379 1222 from a fixed or mobile phone)

• In case of emergency

In situations of imminent danger to your person or belongings, first call the police, then inform the internal security staff.

Tel: 117

Tel: 1222 (or 022 379 1222 from a fixed or mobile phone)

4.2 Theft

Persons are occasionally wandering in the buildings of the university to steal unattended valuable objects.

- do not leave your personal objects unattended in the cafeteria or library.
- in the research areas, do not hesitate to question strangers who you think do not belong.



- back-up precious computerized data on a separate system, sheltered from the possibility of theft.
- always lock your office door, even when just stepping out for a moment.
- protect university property as we are all responsible for it.
- lock up all valuable items.

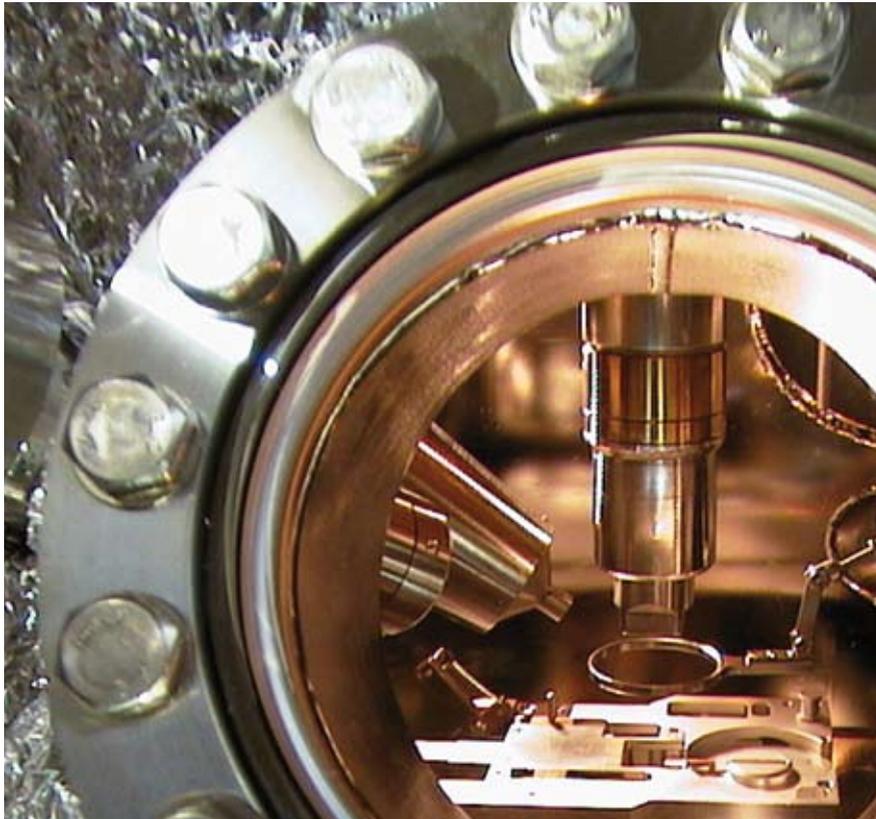
Report all suspicious behavior to the university security staff:

Internal Tel: 1222 (or 022 379 1222 from a fixed or mobile phone)

4.3 Access to the buildings

- when the building is closed, access to the building is limited to authorized persons only, possessing a valid legitimation card.
- the right of access is given individually.

By allowing other people to enter the building using your identification badge, you become responsible for all acts committed by these people during their visit.



5 Contacts : STEPS

Usefull contacts, phone numbers and mail adress of the people from STEPS are available on our website :

www.unige.ch/steps

Appendix 1: Instructions for chemical product storage



STOCKAGE DES SUBSTANCES DANGEREUSES EN ARMOIRES VENTILEES

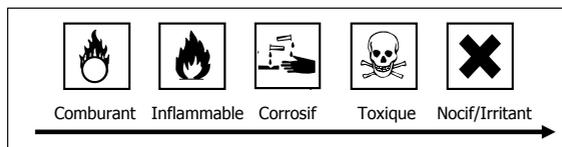
Consignes internes provisoires soumises et acceptées par l'OCIRT, mars 2003.

Précautions de base :

Stockez des substances dangereuses ou inflammables (liquides et solides) dans les armoires ventilées, signalisées, munies de bacs de rétention et fermées à clé.
Limitez la quantité de produits entreposés (évaluation des quantités lors de commandes).
Éliminez 1x par année les produits altérés ou superflus (déchets spéciaux).

Conditions d'entreposage :

Placez dans des bacs de rétention séparés les substances appartenant à des classes de risques différentes selon le tableau des incompatibilités des produits chimiques ci-dessous.
Si un produit comporte plusieurs risques la priorité est à prendre en considération selon l'ordre suivant :



Incompatibilité des produits chimiques :

	+	-	-	-	-	+
	-	+	-	-	-	-
	-	-	+	-	-	+
	-	-	-	+	-	-
	-	-	-	-	+	○
	+	-	+	-	○	+

source : www.cusstr.ch / produits chimiques / annexes

- + Peuvent être stockés ensemble.
- Ne doivent pas être stockées ensemble sauf si certaines dispositions particulières sont appliquées (faibles quantités).
- Ne doivent pas être stockés ensemble.

Acides et bases :

Les acides doivent être stockés séparément des bases.



Inflammables / Solvants :



Armoires ventilées de stockage de substances dangereuses (toutes classes de risques) :

Quantité maximum de solvant tolérée : 50 litres.

Entreposez les solvants sur les rayons inférieurs de l'armoire.

Les solvants en quantité plus importantes ou conditionnés en fûts métalliques d'un volume supérieur à 10 litres doivent être stockés et transvasés dans le local des inflammables du niveau 0.

Toxiques / Irritants / Nocifs :



Autant que possible, stockez séparément les « toxiques / irritants / nocifs » liquides des solides.

Oxydants / Réducteurs :

Séparez les oxydants des réducteurs (danger d'explosion), par exemple :

Oxydants :

Eau oxygénée
Eau de Javel
Acide nitrique
Permanganate de potassium
Chlorate de sodium
Bichromate de potassium

Réducteurs :

Charbon
Sulfite de sodium
Iodure de potassium
Thiosulfate de potassium
Carbure de calcium

Exemples de produits chimiques incompatibles :

SUBSTANCES	INCOMPATIBLES AVEC	DANGERS
Eau de Javel	Acides	Violent dégagement de chlore
Acide minéraux	Cyanures	Dégagement d'acide cyanhydrique gazeux
Hydroxyde de sodium	Aluminium, trichloréthylène	Explose ou s'enflamme au contact de l'air
Acide acétique	Oxydants puissants ; acide nitrique, eau oxygénée, ...	Réagit violemment
Acétone	Acide nitrique	Danger d'explosion
Eau oxygénée	Ammoniaque	Danger d'explosion

Substances radioactives :



Stockez les substances radioactives séparément des autres substances selon les consignes énoncées dans l'ordonnance sur la radioprotection du 22 juin 1994 (ORaP).

Voir : www.cusstr.ch / rayonnements ionisants / stockage.

Pour toute information complémentaire : www.cusstr.ch

Appendix 2: R and S Statements P and H Statements

R-Statements

Single R-Phrases

R1 to R20

- R 1 Explosive when dry
- R 2 Risk of explosion by shock, friction, fire or other sources of ignition
- R 3 Extreme risk of explosion by shock, friction, fire or other sources of ignition
- R 4 Forms very sensitive explosive metallic compounds
- R 5 Heating may cause an explosion.
- R 6 Explosive with or without contact with air
- R 7 May cause fire
- R 8 Contact with combustible material may cause fire
- R 9 Explosive when mixed with combustible material
- R 10 Flammable
- R 11 Highly flammable
- R 12 Extremely flammable
- R 14 Reacts violently with water
- R 15 Contact with water liberates highly flammable gases
- R 16 Explosive when mixed with oxidizing substances
- R 17 Spontaneously flammable in air
- R 18 Lors de l'utilisation, formation possible de mélange vapeur-air inflammable/explosif
- R 19 May form explosive peroxides
- R 20 Harmful by inhalation

R21 to R40

- R 21 Harmful in contact with skin
- R 22 Harmful if swallowed
- R 23 Toxic by inhalation
- R 24 Toxic in contact with skin
- R 25 Toxic if swallowed
- R 26 Very toxic by inhalation
- R 27 Very toxic in contact with skin
- R 28 Very toxic if swallowed
- R 29 Contact with water liberates toxic gases
- R 30 Can become highly flammable in use
- R 31 Contact with acids liberates toxic gas
- R 32 Contact with acids liberates Very toxic gas

- R 33 Danger of cumulative effects
- R 34 Causes burns
- R 35 Causes severe burns
- R 36 Irritating to eyes
- R 37 Irritating to respiratory system
- R 38 Irritating to skin
- R 39 Danger of very serious irreversible effects
- R 40 Suspected carcinogen - insufficient proof

R41 to R60

- R 41 Risk of serious damage to eyes
- R 42 May cause sensitization by inhalation
- R 43 May cause sensitization by skin contact
- R 44 Risk of explosion if heated under confinement
- R 45 May cause cancer
- R 46 May cause heritable genetic damage
- R 48 Danger of serious damage to health by prolonged exposure
- R 49 May cause cancer by inhalation.
- R 50 Very toxic to aquatic organisms
- R 51 Toxic to aquatic organisms
- R 52 Harmful to aquatic organisms
- R 53 May cause long-term adverse effects in the aquatic environment
- R 54 Toxic to flora
- R 55 Toxic to fauna
- R 56 Toxic to soil organisms
- R 57 Toxic to bees
- R 58 May cause long-term adverse effects in the environment
- R 59 Dangerous for the ozone layer
- R 60 May impair fertility

R61 to R68

- R 61 May cause harm to the unborn child
- R 62 Possible risk of impaired fertility
- R 63 Possible risk of harm to the unborn child
- R 64 May cause harm to breastfed babies
- R 65 Harmful: may cause damage to the lungs if swallowed
- R 66 Repeated exposure may cause dryness or cracking of the skin
- R 67 Inhalation of vapors can cause drowsiness or vertigo
- R 68 Possible irreversible effects

Multiple R-Statements

R 14/15	Reacts violently with water liberating highly flammable gases
R 15/29	Contact with water liberates toxic, highly flammable gas
R 20/21	Harmful by inhalation and in contact with skin
R 20/22	Harmful by inhalation and if swallowed
R 20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R 21/22	Harmful in contact with skin and if swallowed
R 23/24	Toxic by inhalation and in contact with skin
R 23/25	Toxic by inhalation and if swallowed
R 23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R 24/25	Toxic in contact with skin and if swallowed
R 26/27	Very toxic by inhalation and in contact with skin
R 26/28	Very toxic by inhalation and if swallowed
R 26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R 27/28	Very toxic in contact with skin and if swallowed
R 36/37	Irritating to eyes and respiratory system
R 36/38	Irritating to eyes and skin
R 36/37/38	Irritating to eyes, respiratory system and skin
R 37/38	Irritating to respiratory system and skin
R 39/23	Toxic: danger of very serious irreversible effects through inhalation
R 39/24	Toxic: danger of very serious irreversible effects in contact with skin
R 39/25	Toxic: danger of very serious irreversible effects if swallowed
R 39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R 39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R 39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R 39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R 39/26	Very toxic: danger of very serious irreversible effects through inhalation
R 39/27	Very toxic: danger of very serious irreversible effects in contact with skin
R 39/28	Very toxic: danger of very serious irreversible effects if swallowed
R 39/26/27	Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R 39/26/28	Very toxic: danger of very serious irreversible effects through inhalation and if swallowed
R 39/27/28	Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R 39/26/27/28	Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R 42/43	May cause sensitization by inhalation and skin contact
R 48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
R 48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin
R 48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R 48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R 48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R 48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R 48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R 48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R 48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin
R 48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R 48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R 48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R 48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R 48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R 50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R 52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R 68/20	Harmful: possibility of irreversible effects by inhalation
R 68/21	Harmful: possibility of irreversible effects through contact with the skin
R 68/22	Harmful: possibility of irreversible effects if swallowed
R 68/20/21	Harmful: possibility of irreversible effects by inhalation and through contact with the skin
R 68/20/22	Harmful: possibility of irreversible effects by inhalation and by swallowing
R 68/21/22	Harmful: possibility of irreversible effects through contact with the skin and by swallowing
R 68/20/21/22	Harmful: possibility of irreversible effects by inhalation, contact with the skin and by swallowing

S-Statements

Safety statements, advise of prudence

Single S-Phrases

S1 to S20

S 1	Keep locked up
S 2	Keep out of the reach of children
S 3	Keep in a cool place
S 4	Keep away from living quarters
S 5	Keep contents under ... (appropriate liquid to be specified by the manufacturer)
S 6	Keep under ... (inert gas to be specified by the manufacturer)
S 7	Keep container tightly closed
S 8	Keep container dry
S 9	Keep container in a well-ventilated place
S 12	Do not keep container sealed

- S 13 Keep away from food, drink and animal feeding stuffs
- S 14 Keep away from ... (incompatible materials to be indicated by the manufacturer)
- S 15 Keep away from heat
- S 16 Keep away from sources of ignition - No smoking
- S 17 Keep away from combustible material
- S 18 Handle and open container with care
- S 20 Ne When using do not eat or drink

S21 to S40

- S 21 When using do not smoke
- S 22 Do not breathe dust
- S 23 Do not breathe gas/fumes/vapor/spray (appropriate wording to be specified by the manufacturer)
- S 24 Avoid contact with skin
- S 25 Avoid contact with eyes
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S 27 Take off immediately all contaminated clothing
- S 28 After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer)
- S 29 Do not empty into drains
- S 30 Never add water to this product
- S 33 Take precautionary measures against static discharges
- S 35 This material and its container must be disposed of in a safe way
- S 36 Wear suitable protective clothing
- S 37 Wear suitable gloves
- S 38 In case of insufficient ventilation, wear suitable respiratory equipment
- S 39 Wear eye/face protection
- S 40 To clean the floor and all objects contaminated by this material, use ... (to be specified by the manufacturer)

S41 à S60

- S 41 In case of fire and/or explosion, do not breathe fumes
- S 42 During fumigation/spraying, wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer)
- S 43 In case of fire, use ... (indicate in the space the precise type of fire-fighting equipment. If water increases the risk, add - Never use water)
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
- S 46 If swallowed, seek medical advice immediately and show this container or label
- S 47 Keep at temperature not exceeding ...°C (to be specified by the manufacturer)
- S 48 Keep wetted with ... (appropriate material to be specified by the manufacturer)
- S 49 Keep only in the original container
- S 50 Do not mix with ... (to be specified by the manufacturer)
- S 51 Use only in well-ventilated areas
- S 52 Not recommended for interior use on large surface areas

- S 53 Avoid exposure - obtain special instructions before use
- S 56 Dispose of this material and its container at hazardous or special waste collection point
- S 57 Use appropriate container to avoid environmental contamination
- S 59 Refer to manufacturer/supplier for information on recovery/recycling
- S 60 This material and its container must be disposed of as hazardous waste

S61 to S62

- S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets
- S 62 If swallowed do not induce vomiting; seek medical advice immediately and show this container or label.

Multiple S-Statements

- S 1/2 Keep locked up and out of reach of children
- S 3/7 Keep container tightly closed in a cool place
- S 3/9/14 Keep in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer)
- S 3/9/14/49 Keep only in the original container in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer)
- S 3/9/49 Keep only in the original container in a cool, well-ventilated place
- S 3/14 Keep in a cool place away from ... (incompatible materials to be indicated by the manufacturer)
- S 7/8 Keep container tightly closed and dry
- S 7/9 Keep container tightly closed and in a well-ventilated place
- S 7/47 Keep container tightly closed and at temperature not exceeding ...°C (to be indicated by the manufacturer)
- S 20/21 When using do not eat, drink or smoke
- S 24/25 Avoid contact with skin and eyes
- S 27/28 After contact with the skin, immediately remove all soiled or splattered clothing and wash immediately and thoroughly with(products specified by the manufacturer)
- S 29/35 Do not empty into drains, dispose of this material and its container according to precautions of usage
- S 29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
- S 36/37 Wear suitable protective clothing and gloves
- S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection
- S 36/39 Wear suitable protective clothing and eye/face protection
- S 37/39 Wear suitable gloves and eye/face protection
- S 47/49 Keep only in the original container at temperature not exceeding ...°C (to be specified by the manufacturer)

Hazard statements (H-Statements)

Hazard Statement for Physical Hazards

H200	Unstable explosive
H201	Explosive; mass explosive
H202	Explosive; severe projection hazard
H203	Explosive; fire, blast or projection hazard
H204	Fire or projection hazard
H205	May mass explode in fire
H220	Extremely flammable gas
H221	Flammable gas
H222	Extremely flammable aerosol
H223	Flammable aerosol
H224	Extremely flammable liquid and vapour
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H227	Combustible liquid
H228	Flammable solid
H240	Heating may cause an explosion
H241	Heating may cause a fire or explosion
H242	Heating may cause a fireSelf-reactive
H250	Catches fire spontaneously if exposed to air
H251	Self-heating; may catch fire
H252	Self-heating; in large quantities; may catch fire
H260	In contact with water releases flammable gases which may ignite spontaneously
H261	In contact with water releases flammable gas
H270	May cause or intensify fire
H271	May cause fire or explosion
H272	May intensify fire
H280	Contains gas under pressure; may explode if heated
H281	Contains refrigerated gas; may cause cryogenic burns or injury
H290	May be corrosive to metals

Hazard Statement for Health Hazards

H300	Fatal if swallowed
H301	Toxic if swallowed
H302	Harmful if swallowed
H303	May be harmful if swallowed
H304	May be fatal if swallowed and enters airways
H305	May be harmful if swallowed and enters airways
H310	Fatal in contact with skin
H311	Toxic in contact with skin
H312	Harmful in contact with skin
H313	May be harmful in contact with skin

H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H316	Causes mild skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H320	Causes eye irritation
H330	Fatal if inhaled
H331	Toxic if inhaled
H332	Harmful if inhaled
H333	May be harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H341	Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H350	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H351	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H360	May damage fertility or the unborn child (state specific effect if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H361	Suspected of damaging fertility or the unborn child (state specific effect if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H362	May cause harm to breast-fed children
H370	Causes damage to organs (or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H371	May cause damage to organs (or state all organs affected, if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H372	Causes damage to organs (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
H373	May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

Hazard Statement for Environmental Hazards

H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

Precautionary Statements (P-Statements)

General precautionary statements

- P101 If medical advice is needed, have product container or label at hand
- P102 Keep out of reach of children
- P103 Read label before use

Prevention precautionary statements

- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking
- P211 Do not spray on an open flame or other ignition source
- P220 Keep/Store away from clothing/.../combustible materials
- P221 Take any precaution to avoid mixing with combustibles
- P222 Do not allow contact with air
- P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire
- P230 Keep wetted with ...
- P231 Handle under inert gas
- P23 Protect from moisture
- P233 Keep container tightly closed
- P234 Keep only in original container
- P235 Keep cool
- P240 Ground/bond container and receiving equipment
- P241 Use explosion-proof electrical/ventilating/light/.../equipment
- P242 Use only non-sparking tools
- P243 Take precautionary measures against static discharge
- P244 Keep reduction valves free from grease and oil
- P250 Do not subject to grinding/shock/.../friction
- P251 Pressurized container – Do not pierce or burn, even after use
- P260 Do not breathe dust/fume/gas/mist/vapours/spray
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray
- P262 Do not get in eyes, on skin, or on clothing
- P263 Avoid contact during pregnancy/while nursing
- P264 Wash ... thoroughly after handling
- P270 Do not eat, drink or smoke when using this product
- P271 Use only outdoors or in a well-ventilated area
- P272 Contaminated work clothing should not be allowed out of the workplace
- P273 Avoid release to the environment
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P281 Use personal protective equipment as required
- P282 Wear cold insulating gloves/face shield/eye protection
- P283 Wear fire/flame resistant/retardant clothing
- P284 Wear respiratory protection

- P285 In case of inadequate ventilation wear respiratory protection
- P231+232 Handle under inert gas. Protect from moisture
- P235+410 Keep cool. Protect from sunlight

Response precautionary statements

- P301 IF SWALLOWED:
- P302 IF ON SKIN:
- P303 IF ON SKIN (or hair):
- P304 IF INHALED:
- P305 IF IN EYES:
- P306 IF ON CLOTHING:
- P307 IF exposed:
- P308 IF exposed or concerned:
- P309 IF exposed or you feel unwell:
- P310 Immediately call a POISON CENTER or doctor/physician
- P311 Call a POISON CENTER or doctor/physician
- P312 Call a POISON CENTER or doctor/physician if you feel unwell
- P313 Get medical advice/attention
- P314 Get Medical advice/attention if you feel unwell
- P315 Get immediate medical advice/attention
- P320 Specific treatment is urgent (see ... on this label)
- P321 Specific treatment (see ... on this label)
- P322 Specific measures (see ... on this label)
- P330 Rinse mouth
- P331 Do NOT induce vomiting
- P332 If skin irritation occurs:
- P333 If skin irritation or a rash occurs:
- P334 Immerse in cool water/wrap in wet bandages
- P335 Brush off loose particles from skin
- P336 Thaw frosted parts with lukewarm water. Do not rub affected areas
- P337 If eye irritation persists:
- P338 Remove contact lenses if present and easy to do. continue rinsing
- P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P341 If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
- P342 If experiencing respiratory symptoms:
- P350 Gently wash with soap and water
- P351 Rinse continuously with water for several minutes
- P352 Wash with soap and water
- P353 Rinse skin with water/shower
- P360 Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
- P361 Remove/Take off immediately all contaminated clothing

P362	Take off contaminated clothing and wash before reuse
P363	Wash contaminated clothing before reuse
P370	In case of fire:
P371	In case of major fire and large quantities:
P372	Explosion risk in case of fire
P373	DO NOT fight fire when fire reaches explosives
P374	Fight fire with normal precautions from a reasonable distance
P375	Fight fire remotely due to the risk of explosion
P376	Stop leak if safe to do so
P377	Leaking gas fire – do not extinguish unless leak can be stopped safely
P378	Use ... for extinction
P380	Evacuate area
P381	Eliminate all ignition sources if safe to do so
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P301+312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301+330+331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302+334	IF ON SKIN: Immerse in cool water/wrap in wet bandages
P302+350	IF ON SKIN: Gently wash with soap and water
P302+352	IF ON SKIN: Wash with soap and water
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+312	IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304+341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+351+338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P306+360	IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
P307+311	IF exposed: Call a POISON CENTER or doctor/physician
P308+313	IF exposed or concerned: Get medical advice/attention
P309+311	IF exposed or you feel unwell: Call a POISON CENTER or doctor/physician
P332+313	If skin irritation occurs: Get medical advice/attention
P333+313	If skin irritation or a rash occurs: Get medical advice/attention
P335+334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
P337+313	Get medical advice/attention
P342+311	Call a POISON CENTER or doctor/physician
P370+376	In case of fire: Stop leak if safe to do so
P370+378	In case of fire: Use ... for extinction
P370+380	In case of fire: Evacuate area
P370+380+375	In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion
P371+380+375	In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion

Storage precautionary statements

P401	Store ...
P402	Store in a dry place
P403	Store in a well ventilated place
P404	Store in a closed container
P405	Store locked up
P406	Store in a corrosive resistant/... container with a resistant inner liner
P407	Maintain air gap between stacks/pallets
P410	Protect from sunlight
P411	Store at temperatures not exceeding ... °C/... °F
P412	Do not expose to temperatures exceeding 50 °C/122 °F
P420	Store away from other materials
P422	Store contents under ...
P402+404	Store in a dry place. Store in a closed container
P403+233	Store in a well ventilated place. Keep container tightly closed
P403+235	Store in a well ventilated place. Keep cool
P410+403	Protect from sunlight. Store in a well ventilated place
P410+412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F
P411+235	Store at temperatures not exceeding ... °C/... °F. Keep cool

Disposal precautionary statements

P501	Dispose of contents/container to ...
------	--------------------------------------

Appendix 3:

Biological incident - procedure for risk Group 2 agents



PLAN D'URGENCE PROCEDURE EN CAS D'INCIDENT DE LABORATOIRE P2

RENVERSEMENT DE MATERIEL INFECTIEUX SANS LIBERATION D'AEROSOLS		RENVERSEMENT DE MATERIEL INFECTIEUX AVEC LIBERATION D'AEROSOLS		
1. DONNER L'ALARME	- Responsable de la sécurité biologique - Responsable de projet - Chargé de sécurité - Informer la sécurité interne	Tel. selon liste affichée Tel. Int. 1222 Tel. 022 379 1222	1. QUITTER LA ZONE PRESENTANT UN DANGER <u>Faire sortir immédiatement toutes les personnes de la zone présentant un danger.</u> ↳ Les collaborateurs potentiellement contaminés doivent si possible être contaminés immédiatement ; à défaut, ils doivent se tenir dans un local séparé pour éviter toute propagation supplémentaire des organismes.	
	↳ Qui appelle ?	2. DONNER L'ALARME		
	↳ Où le matériel infectieux a-t-il été renversé ?			- Responsable de la sécurité biologique - Responsable de projet - Chargé de sécurité - Informer la sécurité interne
	↳ Qu'est-ce qui a été renversé ?			Tel. selon liste affichée Tel. Int. 1222 Tel. 022 379 1222
2. SECURISER	↳ Combien de personnes sont touchées ?	↳ Qui appelle ?	↳ Où a eu lieu l'accident ?	
	↳ Les collaborateurs doivent, si possible, ne pas quitter la zone touchée.	↳ Où a eu lieu l'accident ?	↳ Qu'est-ce qui a été disséminé ?	
	↳ Pour remédier de manière optimale à l'incident, il est important de: - conserver son calme. - délimiter la zone contaminée. - désinfecter et décontaminer avec un désinfectant conformément à la procédure de décontamination. ↳ Déconsignation du laboratoire.	↳ Combien de personnes sont touchées ?	3. SECURISER	↳ Fermer le local et couper la ventilation, attendre 60 min.
3. MESURES	↳ Déclaration de l'incident et des éventuelles blessures suivant les procédures internes.	↳ Décontaminer les personnes.		↳ Désinfecter les locaux selon les instructions de la personne responsable de la sécurité conformément à la procédure de décontamination.
		↳ Désinfecter les appareils et autres équipements contaminés.		↳ Décontaminer le local avec l'accord du responsable de la sécurité conformément à la procédure de décontamination.
		↳ Déconsigner le local avec l'accord du responsable de la sécurité biologique.	3. MESURES	
		↳ Déclaration de l'incident et des éventuelles blessures suivant les procédures internes.		

BLESSURES		EAU (avec propagation d'organismes)		
1. DONNER L'ALARME	- Responsable de projet - Responsable de la sécurité biologique	Tel. selon liste affichée 144 Tel. Int. 1222 Tel. 022 379 1222	1. DONNER L'ALARME	
	URGENCES N° d'appel des services sanitaires d'urgence - Chargé de sécurité - Informer la sécurité interne			- Responsable de la sécurité biologique - Responsable de projet - Chargé de sécurité - Informer la sécurité interne
	↳ Qui appelle ?	↳ Qui appelle ?		↳ Que s'est-il passé ?
	↳ Où sont les blessés ?	↳ Quelle quantité d'eau s'est déversée ?		2. SECURISER
↳ Que s'est-il passé ?	↳ Protéger le matériel et les appareils.	↳ Faire couper l'eau au niveau des conduites principales (DCTI).		
↳ Combien de personnes sont touchées ?	↳ Nettoyer et décontaminer les surfaces.	↳ Décontaminer les installations d'évacuation des eaux usées.		
2. MESURES	↳ Dispenser les premiers soins.			
	↳ Enlever les gants et éventuellement la tenue de laboratoire.			
	↳ Se laver les mains et laver les endroits où la peau a été blessée.			
	↳ Désinfecter avec un produit de désinfection pour les mains (Aseptom ou Khanoï à 70%)			
↳ Déclaration de l'accident selon la procédure interne.				

IMPORTANT

Ces consignes de sécurité doivent être connues AVANT qu'un événement ne se produise.

Jim steps août 07



Appendix 4:

Instruction for waste disposal



General guidelines

Chemical wastes are collected separately. Containers should not be filled more than 3/4 full.

They should be labeled with a «Déchets spéciaux» tag and disposed of at the special waste disposal location.



Chemical waste

- **Neutral aqueous solutions (pH 6-8)**

Diluted aqueous solutions (neutral pH or weakly acidic) containing chemical substances toxic for humans or for the environment are placed in plastic containers.

- **Acidic or basic aqueous solutions**

Acidic or basic aqueous solutions (pH < 6,5 or > 9,0) are collected separately.

- **Photo development waste**

All waste from photo development waste products should be collected in red plastic containers or other prewashed containers/bottles.

- **Non-chlorinated or chlorinated solvents**

Solvents are separated from aqueous solutions and non-chlorinated solvents (alcohols, xylene, ether, acetone, etc.) are separated from chlorinated solvents (chloroform, methylene chloride, etc.).

Chlorinated solvents of volumes greater than 1L are treated separately.

- **Miscellaneous chemical products**

Solutions of a diverse chemical composition are collected separately.

- ☞ bottles of solvents, acids, bases and other reactives
- ☞ powder containers and solid substances
- ☞ test tubes containing liquids
- ☞ laboratory glassware and contaminated material, Hg thermometers...
- ☞ heavy metals (in elementary forms, salts and solutions...)
- ☞ contaminated material, gloves, paper, EtBr agarose, paper towels
- ☞ labeled substances and unknown substances ...





Radioactive waste

• General guidelines

Wastes are collected **separately according to isotopes**.
Organic solvents are separated from aqueous solutions.
Solids are separated from liquids.



Each item must be labeled with a yellow “Déchets radioactifs” tag on which should be written:

- ☞ isotope
- ☞ activity (approximate) in MBq (1 mCi = 37 MBq)
- ☞ activity in LE number (N x LE)
- ☞ physical properties, pH
- ☞ indications of mixed risks, microbiological, toxicity, etc.
- ☞ origin : laboratory, name, date
- ☞ user autorisation number



- waste should be placed at the general collection location by the users to limit the amount stored in the laboratories.
- in exceptional cases of mixed radioisotopes, these should be stored separately, with indications of the activity of each isotope.
- solid waste : Plastic buckets with hermetically closed lids
- liquid waste : Blue plastic containers or recycled containers that have been prewashed.



Disposal of needles and sharps

- sharp, pointy or edged waste (needles, scalpels, etc.), even when contaminated with blood or other biological liquid, should be placed in a yellow box.
- these boxes must be closed, labeled with a «Déchets spéciaux» tag, and then:



- at the CMU, at the Fondation pour la Recherche Médicale and at the faculty of sciences: they are to be disposed of at the special waste location
- at the SMD: they are taken away following a specific organization

Animal waste



- cadavers and biologically inactive laboratory animal tissues (P1), with no danger for humans or environment, should be disposed of in animal waste collection location.
- animal waste is to be disposed, unwrapped, in the freezer designated for this purpose.
- used transport packaging is to be disposed of in the container designated for this purpose.

Pouring down the drain

- do not pour any hazardous waste down the drain.
- each user should take note of the dangerous properties of the substances that they manipulate and, until their eliminations, is expected to take all steps necessary to protect their safety and the safety of the environment.

RESPONSABILITE PERSONNELLE !



Elimination des déchets

Laboratoires P1

Déchets solides

- ▶ Les déchets solides doivent être collectés dans la poubelle de laboratoire.
- ▶ Les sacs remplis doivent être déposés à l'extérieur du local.



Cultures liquides et surnageants

- ▶ Les déchets liquides doivent être inactivés au moyen de l'eau de Javel ou d'un autre désinfectant approprié.
- ▶ Respecter un temps de contact de 15 minutes au minimum.
- ▶ Eliminer le contenu dans l'évier.



Déchets tranchants ou piquants

- ▶ Les déchets tranchants ou piquants doivent être placés dans des boîtes jaunes "sharps".
- ▶ Les boîtes jaunes, fermées et munies d'une étiquette "Déchets spéciaux", doivent être déposées dans le local des déchets spéciaux.



Déchets valorisables

- ▶ L'aluminium, le papier, les cartons, le verre et le sagex sont collectés séparément.
- ▶ Ces déchets seront remis dans le lieu de collecte du bâtiment.



Contact

dechets-speciaux@sciences.unige.ch

Elimination des déchets



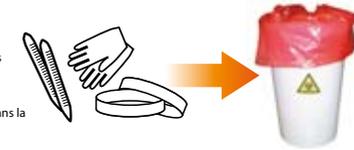
Laboratoires P2

Consigne générale

Tous les déchets contaminés doivent être inactivés dans le bâtiment avant leur élimination.

Déchets solides

- ▶ Les déchets solides contaminés doivent être collectés dans une poubelle pour déchets P2.
- ▶ Les sacs remplis doivent être autoclavés.
- ▶ Les déchets solides non-contaminés sont collectés dans la poubelle de laboratoire.
- ▶ Le sac remplis sont déposés à l'extérieur du local.



Déchets liquides

- ▶ Les déchets liquides doivent être inactivés au moyen de l'eau de Javel ou d'un autre désinfectant approprié.
- ▶ Respecter un temps de contact de 15 minutes au minimum.
- ▶ Eliminer le contenu dans l'évier.



Déchets tranchants ou piquants

- ▶ Les déchets coupants ou piquants doivent être placés dans des boîtes jaunes "sharps".
- ▶ Les boîtes jaunes, fermées, doivent être autoclavées.
- ▶ Les boîtes jaunes, fermées et munies d'une étiquette "Déchets spéciaux", sont déposées dans le local des déchets spéciaux.



Déchets de verre

- ▶ Les déchets de verre doivent être placés dans les seaux prévus à cet effet.
- ▶ Ces seaux, fermés, doivent être autoclavés.
- ▶ Ces seaux, munis d'une étiquette "Déchets spéciaux", sont déposés dans le local des déchets spéciaux.



Contact

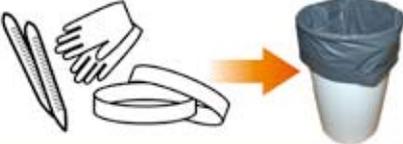
dechets-speciaux@sciences.unige.ch

ELIMINATION DES DÉCHETS

Salle de culture P1

Déchets solides

- ▶ Les déchets solides doivent être collectés dans la poubelle de laboratoire.
- ▶ Les sacs remplis doivent être déposés à l'extérieur du local.



Déchets liquides

- ▶ Les déchets liquides doivent être collectés dans des fioles à vide contenant de l'eau de Javel.
- ▶ Respecter un temps de contact de 15 minutes au minimum.
- ▶ Eliminer le contenu dans l'évier.



Déchets tranchants ou piquants

- ▶ Les déchets tranchants ou piquants doivent être placés dans des boîtes jaunes "sharps".
- ▶ Les boîtes jaunes, fermées et munies d'une étiquette "Déchets spéciaux", doivent être déposées dans le local des déchets spéciaux.



Déchets valorisables

- ▶ L'aluminium, le papier, les cartons, le verre et le sagex doivent être collectés séparément.
- ▶ Ces déchets doivent être remis dans le lieu de collecte du bâtiment.



Contact
dechets-speciaux@medecine.unige.ch



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ELIMINATION DES DÉCHETS

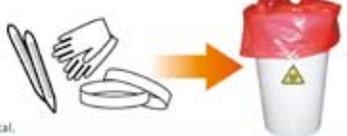


Laboratoires P2

Consigne générale
Tous les déchets contaminés doivent être **inactivés** dans le bâtiment avant leur élimination.

Déchets solides

- ▶ Les déchets solides contaminés doivent être collectés dans une poubelle pour déchets P2. Les sacs remplis doivent être autoclavés.
- ▶ Les déchets solides **non-contaminés** doivent être collectés dans la poubelle de laboratoire. Les sacs remplis doivent être déposés à l'extérieur du local.



Déchets liquides

- ▶ Les déchets liquides doivent être collectés dans des fioles à vide contenant de l'eau de Javel.
- ▶ Respecter un temps de contact de 15 minutes au minimum.
- ▶ Eliminer le contenu dans l'évier.



Déchets tranchants ou piquants

- ▶ Les déchets coupants ou piquants doivent être inactivés par immersion dans l'eau de Javel immédiatement après leur utilisation.
- ▶ Ces déchets doivent être placés dans des boîtes jaunes "sharps".
- ▶ Les boîtes jaunes, fermées et munies d'une étiquette "Déchets spéciaux", sont déposées dans le local des déchets spéciaux.



Déchets de verre

- ▶ Les déchets de verre doivent être inactivés par immersion dans l'eau de Javel immédiatement après leur utilisation.
- ▶ Ces déchets doivent être placés dans les seaux prévus à cet effet.
- ▶ Ces seaux, munis d'une étiquette "Déchets spéciaux", doivent être déposés dans le local des déchets spéciaux.



Contact
dechets-speciaux@medecine.unige.ch



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Appendix 5:

Radiation incident - Emergency procedure



Premières mesures en cas d'accident

S'éloigner de la zone contaminée en évitant de répandre la contamination

Se débarrasser des vêtements contaminés

Marquer la zone contaminée et en **barrer** l'accès

Avertir le responsable de la radioprotection

Avertir le piquet de sécurité

Avertir le médecin spécialiste en cas d'incorporation

Procéder à la décontamination selon les consignes

	Nom	Tél. interne	Tél. privé
Responsable de la radioprotection			
Remplaçant (Resp. de site)			
Chargé de sécurité faculté de médecine			
Médecin spécialiste	Urgences HUG Ambulance	- 144	
Sécurité interne		1222	