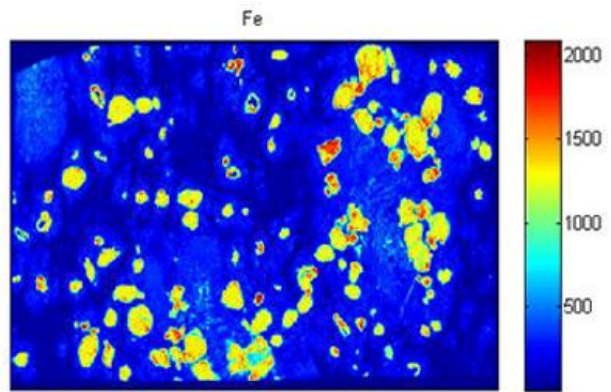


# GEOCHEMISTRY-MINERALOGY PLATFORM



## LABORATORY RULES



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# 1- Laboratories and technical staff

## Ground floor :

### **Microscope Room**

**010** : ICP-MS, ICP-AES room

**014** : P2 biological laboratory and Characterization \*

**016** : HP experimental laboratory

**Arago room**: SEM, AFM, Interferometer

**Clean room** : preparation for elemental major and trace and isotopic analysis – Hydrofluoric acid

**Annex room to clean room** : microwave digestion and Parr bombs

## 1st floor :

**104** : Chemical storage

**105** : Preparation Chemistry of solutions

**106** : Geochemical Analyses, titrators

**107** : Solid Mercury Analyses

**108** : Rare gas spectrometers

**109** : Rare gas spectrometers

**100** : Mineralogy prep

**110** : Chemistry Mineralogy

**138** : X-ray Diffraction

## 3<sup>rd</sup> floor :

**332** : Oven room and preparation under laminar flow hood

*\*X-ray Fluorescence, BET, FTIR / TGA, capillary electrophoresis, binocular microscope*

## **Permanent technical staff**

Sylvain Campillo – office 036 –	04 76 63 51 31 / 06 84 11 23 02
Simona Denti – bureau 102 -	04 76 82 51 87 / 06 76 59 66 04
Rachel Martin – office 349 –	04 76 51 40 78
Martine Lanson – office 349 –	04 76 51 40 78
Valérie Magnin – office 349 –	04 76 51 40 78 / 06 62 57 21 14
Sabine Sentenac – office 036 –	04 76 63 51 31 / 06 25 65 14 17
Delphine Tisserand – office 102 –	04 76 63 51 87 / 06 33 20 27 88

## **Health and safety assistants**

Julien Carcaillet – bureau 362 -	04 76 63 59 30
Rachel Martin – bureau 349 -	04 76 51 40 78
Sandrine Roussel – bureau 114 -	04 76 63 53 80
Isabelle Douste-Bacque – bureau 114 -	04 76 63 53 80

## 2- Steps to follow upon your arrival

Before working in the geochemistry and mineralogy laboratories, you must read this document and follow the rules described herein. You must sign and return the last sheet to the technical staff. Activities that do not comply with the rules of this document may be stopped or suspended by the technical staff; if in doubt about your activities in the laboratory, contact your scientific advisor and/or the technical staff.

1) Go with your scientific advisor to the Human Resources department (see ISTerre's intranet, heading Steps> new entrants: the first steps on <https://isterre-intranet.osug.fr/spip.php?rubrique146>);

2) With one of the technical staff, follow these steps:

- ❖ **Create, display and archive your attendance sheet (Appendix 1),**
- ❖ Obtain a lab coat,
- ❖ Procure a laboratory notebook,
- ❖ Register on the Bookit reservation platform,
- ❖ Organise your initial safety training in the laboratories where you will be working and with the specific instruments that you will use (Appendix 2),
- ❖ Obtain a workspace in the laboratory in agreement with your scientific advisor.


## 3- Laboratories

### 3-1 Access

The platform's laboratories are split into two teams: Geochemistry and Mineralogy. You will find in this document that the rules may differ from one laboratory to another.

We thank you for respecting them.

In case of technical questions, the names and phone numbers of the competent people to contact are displayed on each laboratory door.

 **The technical staff are present from Monday to Friday from 8:30 am to 5:30 pm, excluding official holidays and personal vacations days. Working in the laboratory is authorized only from 8am-7pm range, and is contingent on obtaining the explicit authorization from your scientific advisor and/or the technical staff, taking into account:**

- ❖ Your degree of autonomy in the laboratory,

- ❖ Risk assessment and control,
- ❖ Your ability to notify the emergency services in the event of an accident (be careful if you are not French-speaking),
- ❖ The prohibition of isolated work.

Outside of the official work hours (08:00-19:00), access to the laboratories is forbidden, as well as on weekends and public holidays.

List of public holidays:

1st January

Easter Monday (date changes from year to year)

1st May, 08th May

Ascension Thursday (the date changes from year to year)

Whit Monday (the date changes from year to year)

14<sup>th</sup> July

15th August

1st November, 11th November

25th December

Please note that the ISTerre building is closed over the Christmas-New Year week (dates specified each year).

**The ISTerre building is under alarm from 8:30 pm to 7:00 am. For student trainees, your building access badges will be active from 08:00 to 20:00.**

In case you need access to the laboratories outside of the normal 8:00-19:00 hours, you and your scientific advisor must request special permission from the technical staff person with whom you work. The decision will be made by this technical manager, as well as the head of ISTerre. Your scientific advisor will be in charge of organizing your access to the building, thereby ensuring that your work runs smoothly until you leave the building.

## 3-2 Equipment and know-how

The equipment, the know-how of the platform, and their technical managers (Table 1) are available on this ISTerre website:

<https://www.isterre.fr/english/platforms-services-1235/geochemistry-mineralogy-platform/>

The other technical platforms available at the OSUG are listed on this OSUG site:

<https://www.osug.fr/l-institut/moyens-analytiques/>



## **Reservation of experimental apparatus and equipment**

To use a equipment or instrument, you must first have been trained by its technical manager who will have validated your autonomy on the tool.

Before reserving an instrument, discuss this with the technical manager. (Table 1).

The reservation can be made here: <https://app.clustermarket.com/login> (send an email to [simona.denti@univ-grenoble-alpes.fr](mailto:simona.denti@univ-grenoble-alpes.fr) or your registration).

Instrument usage costs are displayed in the laboratories.

Outils	Resp. technique
<b>Préparation d'échantillons</b>	
Digestions acides, HF	Sylvain Campillo, Sabine Sentenac
Digesteur micro-onde Ultrawave	Sylvain Campillo
Séparation isotopiques	Sabine Sentenac
Cutting, polishing	Valerie Magnin
Séparation de fractions argileuses	Rachel Martin
Centrifugeuses Minéralogie	Rachel Martin / Martine Lanson / Sabine Sentenac
Centrifugeuses Géochimie	Delphine Tisserand, Simona Denti
Centrifugeuses Géochimie salle blanche	Sylvain Campillo, Sabine Sentenac
Distillateur salle blanche	Sylvain Campillo, Sabine Sentenac
Broyeur à billes Minéralogie	Martine Lanson
Broyeur à billes Géochimie pulvérisette 7	Sylvain Campillo
Cryobroyeur Géochimie pulvérisette 23	Géraldine Sarret
Lyophilisateur Minéralogie	Martine Lanson
Lyophilisateur Géochimie	Delphine Tisserand
Boites à gants	Delphine Tisserand
Gaz (bouteilles Messer, Linde)	Valerie Magnin
Gaz (tank Air Product)	Sylvain Campillo
Système de production d'eau UP Géochimie	Delphine Tisserand, Simona Denti
Système de production d'eau UP Minéralogie	Martine Lanson
Système de production d'eau UP salle blanche	Sylvain Campillo, Sabine Sentenac
Equipements salle biologie	Simona Denti / Bastien Wild
<b>Synthèses et Interactions solide-solution</b>	
Synthèses colloïdales	Martine Lanson/ Sabine Sentenac
Réacteurs basse pression (Parr)	Martine Lanson
Purification	Martine Lanson
Réacteurs hydrothermaux - labo HP	Martine Lanson
Réacteurs hydrothermaux- halle expérimentale	German Montes Hernandez, Roland Hellmann, Laurent Truche, Benjamin Malvoisin
Interactions/Titreurs automatiques	Martine Lanson/Sabine Sentenac
Titration setups Géochimie	Martine Lanson/Sabine Sentenac
<b>Chimie analytique</b>	
ICP-AES	Simona Denti, Delphine Tisserand/Sabine Sentenac
ICP-MS	Sylvain Campillo
Chromatographie ionique	Simona Denti
Sulfures Volatils Acides (AVS)	Delphine Tisserand
Analyses de terrain	Delphine Tisserand
Prélèvements de terrain	Delphine Tisserand
UV-VIS Carry 500 Agilent	Delphine Tisserand / Martine Lanson / Sabine Sentenac
Carbone et azote dissous	Delphine Tisserand
Picarro ( $\delta^{12}\text{C}$ , $\delta^{13}\text{C}$ )	Sylvain Campillo
Hg dissous (total, gazeux)	Stephane Guedron
MeHg dissous (hydruration/ethylation)	Stephane Guedron
Hg solide	Stephane Guedron
Hg gazeux	Delphine Tisserand
<b>Caractérisations d'une phase solide</b>	
Analyse thermique ATG-DSC	Valérie Magnin
Sorption de gaz et propriétés texturales	Valérie Magnin
Diamètre hydrodynamique et potentiel Zeta	Alejandro Fernandez-Martinez
Spectromètre Raman RXN systems, Kaiser optical systems	German Montes Hernandez
Spectroscopie IRTF	Valérie Magnin
Diffraction de rayons X	Rachel Martin
MEB (et métalliseurs)	Rachel Martin
AFM	Alejandro Fernandez-Martinez
Interféromètre	Damien Daval
Micro-fluorescence X	Valérie Magnin

Table 1. List of the main tools and know-how of the platform and technical managers.

## 4- Safety in the laboratory

« L'homme et sa sécurité doivent constituer la première préoccupation de toute aventure technologique. » Albert EINSTEIN.

For any new experiment or analysis, it is mandatory to discuss this with the associated technical staff who will approve (or not) the planned experiment/analysis. In the event of a potential danger, the technical managers may, depending on each case, need to notify the Health and Safety assistants, and/or the UGA Safety Department, and/or the ISTerre administration. In all cases, you and your scientific advisor are responsible for your actions in the laboratory.

### 4-1 PROTECTIVE EQUIPMENTS (PE)

#### Individual (IPE)

- Wear a closed lab coat. Do not leave the laboratory with your lab coat on.
- Wear safety goggles, including people in the immediate vicinity.
- Wear gloves and change them every 20 minutes.
- Wear cuffs if necessary.
- Wear an FFF3 mask for all your weighing or powder preparations.
- Tie long hair.

#### Collective (CPE)

Concerns fume hoods, insulator, nano-particle fume hoods ...

- Use them if your work requires it.
- Always handle products that generate toxic vapors (acids, bases, solvents, etc.) under a fume hood.
- The fume hood sash should be lowered to the correct height when working, and completely lowered after use.



**NEVER switch off the fume hoods.**

### 4-2 HEALTH

- Consult the occupational medical doctor as soon as you arrive, and then once a year if possible,
- Complete your exhibition sheet at least once a year.



- How to react in case of an accident or related incident:
  - Emergency telephone numbers are listed in Appendix 3.  
Information is available on the intranet : <https://isterre-intranet.osug.fr/spip.php?rubrique189>).
  - Any incident/accident must be declared on the UGA register.: <https://registre-sst.univ-grenoble-alpes.fr/>. You must inform your scientific advisor, the laboratory managers and the health and safety assistants (isterre-ap@univ-grenoble-alpes.fr): Julien Carcaillet, Rachel MARTIN, Sandrine Roussel, Isabelle Douste-Bacque.

### 4-3 CHEMICALS AND GASES

You can know your risks regarding your exposure to chemicals by using the Fevar application.



**Store chemicals in their place, do not move chemicals from one laboratory to another.**



**The inventory of chemicals is available on a Google share sheet available on the PC in the laboratory in room 110:**

<https://docs.google.com/spreadsheets/d/1TkarPwaljczAohaV0XomHLhcCGuNaAykDBVncwe-O6k/edit#gid=1604748261>

- When you receive or finish a product, update this inventory.
  - If you need to order a product, you must consult its safety data sheet (SDS), which is available at these sites:
    - <http://www.sigmaldrich.com/france.html>,
    - [http://www.inrs.fr/htm/la\\_fiche\\_de\\_donnees\\_de\\_securite.html](http://www.inrs.fr/htm/la_fiche_de_donnees_de_securite.html)).
- You must include the SDS and the reference of the product, as well as the desired quantity, to the staff member who will place the order.
- A list of safety pictograms is available in appendix 4.

Order the smallest possible quantities of toxic, carcinogenic, mutagenic or toxic-for-reproduction (CMR) , and nano products. You will also have to organize their disposal (see chemical waste) as soon as they are no longer to be used in order to avoid unnecessary storage.

- Use of toxic and CMR products only under the supervision of a competent person. It is strictly forbidden for trainees and people on fixed-term contracts to handle CMR.
- When opening a product, write the opening date on the bottle or packaging.

### **Chemical storage:**

- Salts and non-toxic chemicals: They are mainly stored on the shelves of chemistry laboratories 105 (Geochemistry) and 110 (Mineralogy).
- Toxic chemicals: for safety reasons these chemicals, common to both groups, are stored under lock and key in "poison" cabinets located in room 104. Access is controlled by Delphine Tisserand.
- Acids, bases, solvents: a small quantity of these products is stored in room 104 (Geochemistry) and in laboratory 110 (Mineralogy). Most of the stock is kept in an 'upstream' storage area accessible only to researchers and technical staff of the Geochemistry & Mineralogy teams.

### **Special storage:**

- Storage at 4°C: toxic or CMR products stored at 4°C are only stored in the refrigerator in room 104, use double packaging (2 plastic bags). The other products (non-toxic and non-CMR) stored at 4°C are stored in the refrigerator in room 105.
- Store the Fe<sup>2+</sup> salts in the glove boxes in room 105.

### **NEVER store toxic products in glove boxes.**


- **Nanomaterial storage:** you should always effect storage with a « double barrier » principal
  - Liquid nanomaterials: in a bottle stored in a plastic bag,
  - Solid nanomaterials: in a minimum of 2 plastic bags.

### **Hydrofluoric acid**

If your experiments for elemental analysis require the use of hydrofluoric acid (HF), please contact first Sylvain Campillo and/or Sabine Sentenac.

- The use of HF is limited only into the clean room,
- The use of HF is forbidden to non-permanent staff. Only PhD's can use it after having obtained a medical authorization, a specific training realized by the PRC.CNRS organization, a training at the workstation and finally a waiver signed by the director of the laboratory,
- For other personnel, handling HF requires specific training with the cleanroom managers.  
See the specific charter dedicated to clean room and HF handling.

## GAS (contact Valérie Magnin (Mineralogy))

- ❖ If you use a gas, it is your responsibility to check the gas level regularly.
- ❖  **Do not change a gas cylinder unless you have been trained to do so by competent personnel.**
- ❖ Anticipate your needs (delivery only on Wednesdays, give your order 1 week before the desired delivery day).
- ❖ If a gas is no longer being used, close the valve of the gas cylinder (only for gas cylinders in laboratories)

## 4-4 CHEMICAL WASTES

Respect the organization of solid and liquid waste disposal system (see poster laboratory hallway 105). Several waste cans are available in laboratories 104, 110 and clean room.

Record as much information as possible about the cans and waste. Remember that only you know correctly what waste you are producing.

All the information concerning waste disposal and specific instructions for preparation and packaging can be found on the Isterre intranet under the heading "Waste management":

FR <https://isterre-intranet.osug.fr/spip.php?rubrique368>

EN <https://isterre-intranet.osug.fr/spip.php?rubrique370>

- **LIQUIDS** : use the specific receptacles and do not discard the solutions in the sink when they contain metals and/or other toxic or harmful products (nanomaterials, organics, acids, etc.). Important: respect the maximum filling height (see poster) and check the date of manufacture of the can (use 5 years and 2 years if halogenated products)
- **SOLIDS** : For any solid waste (soil, paper, gloves, Pasteur pipettes...) that have been contaminated by a toxic agent (metal or other product), specific waste bins are available (double packaging to be provided).
- **NANO Materials**
  - ❖ The 'double barrier' (two containers) system must be respected.
  - ❖ You have to make an inventory of your nanosolid waste (sample list and types) (paper inventory to stick on the bin and to send by mail to Sylvain Campillo).
  - ❖ Liquid nano-wastes should be deposited in a sepecific bin "Nanos".

**NEEDLES:** A special white receptable for needles is available in laboratory 105 (excluding needles for biological use).

- **GLASS** : Laboratory glassware bins are available in laboratory 105. Rinse the glassware with tap water before placing it in bin (except if toxic products or nanos).

If you have any questions about chemical wastes, please contact Sylvain Campillo.



## 4-5 HOW TO CONDUCT YOURSELF IN THE LABORATORY

- **TRAINING**

Before starting an experiment, you must have been trained on analytical or experimental tools, or on the handling of dangerous materials (nanoparticles, toxic...) by competent personnel.

- **RISKS.**

- ❖ Analyse the risks involved in your work and take the appropriate safety measures.
- ❖ If in doubt about the associated risks, ask a competent person: technical staff, researcher or health and safety assistants.

- **HYGIENE RULES**

- ❖ Do not touch collective objects (telephones, door handles, keypads...) with contaminated gloves.
- ❖ Clean work surfaces (benches, scales, etc.) and sinks after each use.
- ❖ Clean common equipment (scales, fume hoods, ovens...) after each use.
- ❖ Use the dishwasher (rooms 105 and 110), but only after removing marker ink from the glassware
- ❖ Participate in the collective cleaning sessions of the laboratory.
- ❖ Wash your hands before and after handling chemicals, and after removing gloves.
- ❖ Lab coat laundry cleaning is organized regularly. Don't forget to give your labcoat when the laundry announcement is made (contact Martine Lanson).

- **SAFETY**

- ❖ No food or drink in the laboratories.
- ❖ Always handle products and chemicals in such a way so as to avoid the formation of aerosols (nanoparticles).
- ❖ Never pipette directly into the mouth with glass pipettes.
- ❖ No dangerous handling near other handlers who do not have the same IPE as you.
- ❖ Do not use chipped glassware.

- ❖ Do not insert pipettes, etc. into standard solutions used for ICP analyses
- ❖ Observe laboratory working hours (8:00 - 19:00) and do not work alone.

- **GOOD PRACTICES**

- ❖ Anticipate and indicate the products or materials to be ordered: note the reference, the quantity, your name on your team's whiteboard (laboratory corridor 105 or laboratory 110) or send your request by email to the technical staff member you work with,
  - ❖ On receipt of your order, give the delivery note to the technical staff member who placed the order,
  - ❖ Systematically label your solutions and samples (NAME or initials, DATE, CONTENTS).
  - ❖ Store all your products and equipment after use (including field equipment).
  - ❖ Keep your laboratory notebook up to date.
  - ❖ Identify your workspace with an experience identification sheet (Appendix 5).
  - ❖ Do not clutter up the workbench or traffic areas.
  - ❖ Use only the equipment on which you have been trained (see Tools and know-how).
  - ❖ Report any malfunctioning equipment to the associated technical manager.
  - ❖ Do not enter a restricted area if you are not authorized to do so (XRD lab, mercury lab, etc.).
  - ❖ Do not move equipment or products from one laboratory to another without permission for the appropriate person in charge.
    - ❖ Note any borrowings from notebooks or tables in the laboratories.
    - ❖ Handle other person's samples, etc. with care to avoid contamination, breakage, etc.
    - ❖ Switch off equipment when not in use, such as heated magnetic stirrers, ovens, freeze-dryers etc...
    - ❖ Respect the waste disposal guidelines (cf. chemicals).



#### **4-6 BEFORE YOU LEAVE THE LABORATORY/ISTERRE**

- ❖ EMPTY your cupboards, SORT your samples (bench, hoods, refrigerators, freezers...) with your scientific advisor
  - ❖ Check with your scientific advisor if you need to relinquish your laboratory notebook (you can always make a copy).
  - ❖ A presentation of your work will be appreciated by the team before you leave!



#### **4-7 PUBLICATION RULES (see Appendix 6)**



## RETURN A SIGNED COPY TO THE TECHNICAL STAFF

I declare that I am aware of the general rules of hygiene and safety concerning the operation of the laboratories of the ISTerre Geochemistry-Mineralogy platform, which is located at 1381 rue de la Piscine in Saint Martin d'Hères (UGA). I hereby promise to respect the rules specified herein.

Date and location



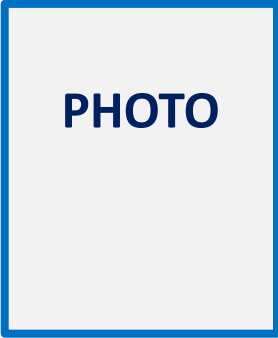


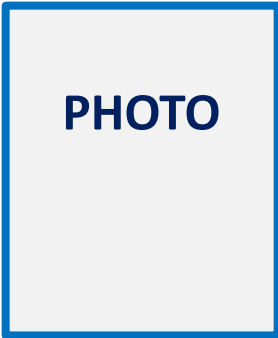
Student's name

Supervisor's name

Signature

Signature

## Appendix 1. Attendance sheet for new entrants

 Institut des Sciences de la Terre	
<b>Plateforme Géochimie-Minéralogie</b>	
<b>Nom:</b>	
<b>N° de téléphone:</b>	
<b>Permanent responsable :</b>	
<b>Statut :</b>	
<b>Sujet :</b>	
<b>Période de présence :</b>	
 Institut des Sciences de la Terre	
<b>Plateforme Géochimie-Minéralogie</b>	
<b>Nom:</b>	
<b>N° de téléphone :</b>	
<b>Permanent responsable :</b>	
<b>Statut :</b>	
<b>Sujet:</b>	
<b>Période de présence :</b>	

## Appendix 2. Safety training sheet

### SAFETY TRAINING TO THE LABORATORIES

<b>Trainer's first name and surname</b>	
<b>Surname and first name of the person trained</b>	
<b>Date of training</b>	

<b>Knowledge/Skills</b>	<b>Seen during the training</b>
Informations about web sites (Geochemistry-Mineralogy Platform + OSUG)	
Laboratory rules and commitment to respect it	
Functioning of the chemicals database on Google sheet and bookkit registration	
Emergency phone numbers (door room 105)	
Telephone numbers of technically competent persons (on each door)	
Identification of experiments and samples	
Working and handling schedule in the laboratory, no isolated work (beware of non-French speaking people if you need to contact emergency numbers).	
Steps to be taken for the application for the handling of toxic substances/CMR	
<u>Chemicals</u> : supply msds before ordering, be aware of the risks, handling and storage, protocol defined for CMR and toxic handling, return the product after use (no unnecessary storage).	
Unique refrigerator dedicated to the storage of toxic and CMR products to be stored at 4°C (room 104)	
<u>Protective equipment (PE)</u> : goggles, gowns, gloves (latex, long), masks, fume cupboards (always on, max height of glass), nano hood.	
Waste canister operation (handling under hood, maximum filling). Special feature of nanos waste: differentiate solid/liquid, respect the double protective barrier.	
Other types of bins: needles, glass etc...	





Safety cabinet, eyewash, shower	
Use of ultra-pure water	
Dishwashing protocol (rinsing, washing machine, drying, storage)	
O2 detectors, what to do in case of alarm	
Use of centrifuges	
Grinder use	
Freeze-dryer use	
Fire evacuation and intruder alarm	
Use of the $\mu$ -pipettes	
Demonstration of weighing with ioniser and nano hood	
Commitment to cleanliness in the laboratory: personal bench and common areas (scales, crockery, fridge).	
Orders: supplier, quantity, references, price, applicant	
User of the glove box: check O2 level, N2 level, SAS under vacuum, switch off vacuum pump + lighting after use, cleanliness in the box. No toxic gas in the glove box. Make an appointment with Laurent Truche for an interview before the 1st manipulation.	

Done at \_\_\_\_\_ the \_\_\_\_\_

Signatures : The trainer

Trained staff and its manager

## Appendix 3. Emergency and other numbers

Emergency numbers are displayed on the door of laboratory 105. If you need to contact them, you must be able to explain the accident and the location (this may be difficult for non-French speakers....). A defibrillator is available in the main entrance of ISTerre.

### EMERGENCY NUMBERS

<b>SAMU</b>	<b>15</b>
<b>POMPIERS</b>	<b>18</b>
<b>EUROPEAN EMERGENCY NB</b>	<b>112</b>
<b>POLICE</b>	<b>17</b>

### GEOGRAPHICAL COORDINATES

<b>Building</b>	<b>OSUG C - ISTerre Maison des Géosciences</b>
<b>Adress</b>	<b>1381 rue de la piscine 38610 GIERES</b>

### OTHER NUMBERS

<b>Anti-poison center</b>	<b>04 72 11 69 11</b>
<b>Campus guards</b>	<b>04 76 82 55 54</b>
<b>SOS Doctors</b>	<b>04 38 701 701</b>
<b>UGA Safety service</b>	<b>04 76 51 42 69</b>

## Appendix 4. Safety pictograms



Flammable



Comburant



Corrosive



Poison at low dose



Explosive



- Can cause cancer
- May affect fertility or fetal development
- May alter the functioning of certain organs
- May cause serious effects on the lungs.
- May cause respiratory allergies



- High dose poison
- Irritating
- May cause skin allergies
- May cause drowsiness or dizziness.



Gaz under pressure



Adverse effects on organisms of the aquatic environment



Compulsory respiratory protection



Compulsory eye protection



Lab coat required



Compulsory hand protection



First aid kit



Security shower



Rinsing the eyes

## Appendix 5. Experiment description sheet

Display this sheet at your benchtop or near the equipment you are using (oven, steamer etc...).



### Description expérience

**Nom du manipulateur:**

**N° de téléphone :**

**Informations sur l'expérience en cours :**

**Date :**



### Description expérience

**Nom du manipulateur:**

**N° de téléphone :**

**Informations sur l'expérience en cours :**

**Date :**

## Appendix 6. Publication rules

### Publications

- If major participation of the technical staff (large number of samples taken: summaries, preparations, analyses and/or field missions and/or writing/proofreading of the publication): you should include the technical staff in questions as co-authors.
- for minor participation of technical staff: you should thank them by name in the acknowledgements.
- Without participation of the technical staff: you should thank the platform as follows: "Sample preparation and /or Chemical analysis and/or Sample Characterization and/or Sample synthesis (cite the type of analysis, or other: ICP-AES, SEM etc...) have been performed at the geochemistry-mineralogy platform of ISTerre (UGA, Grenoble, France)".

The Acknowledgements part should in all cases have the sentence :

"The geochemistry-mineralogy platform of ISTerre (Grenoble, France) is partially funded by a grant from Labex OSUG@2020 (investissements d'avenir, ANR10-LABX56)".

For the following equipment, please state the following in the acknowledgements :

NanoZS: "The nanoZS was funded by the Equipex NanoID (ANR-10-EQPX-39)".

Titrande and FTIR: "Titrande and FTIR were funded by CPER "Montagne 4.0" and the regional platform "CEMBRO" (Changement Environnement et Biodiversité: Rétro-Observation et Observation)".

### Conferences (orals and posters)

The rule of association for technical staff and acknowledgements of the platform is the same as described above.

We ask you to send your publication, poster or presentation to: [Alejandro.fernandez-martinez@univ-grenoble-alpes.fr](mailto:Alejandro.fernandez-martinez@univ-grenoble-alpes.fr) et [benjamin.malvoisin@univ-grenoble-alpes.fr](mailto:benjamin.malvoisin@univ-grenoble-alpes.fr).