

EXPERIMENT RISK ANALYSIS FORM

If you have any questions, please contact the Safety Group via expsaf@esrf.fr.

The risk analysis must be sent to the Safety Group 2 weeks before the start of your experiment (expsaf@esrf.fr). Late reception of the risk analysis will result in the cancellation of your experiment.

Experimental number:	Beamline:
Main Proposer:	
Title of the experiment:	

1 EXPERIMENT: Identification of modifications made to the proposal

Have modifications been made to the proposal description? <input checked="" type="radio"/> Yes <input type="radio"/> No				
The Safety Group must immediately be informed of every modification that differ from the original proposal and this at least one month before the start of the experiment (expsaf@esrf.fr). Only minor changes can be made and will be subject to approval.				
Does the modification relate to the sample? <input checked="" type="radio"/> Yes <input type="radio"/> No				
(If yes, describe the name, composition and hazard(s) below):				
<input type="checkbox"/> Radioactive	<input type="checkbox"/> Contaminant	<input type="checkbox"/> Corrosive	<input type="checkbox"/> Oxidising	<input type="checkbox"/> CMR
		<input type="checkbox"/> Flammable	<input type="checkbox"/> Toxic	
<input type="checkbox"/> Explosive	<input type="checkbox"/> Biological	<input type="checkbox"/> Gas under Pressure	<input type="checkbox"/> Highly reactive or unstable	<input type="checkbox"/> Sensitive to air
Does the modification involve equipment? <input checked="" type="radio"/> Yes <input type="radio"/> No				
<input type="checkbox"/> Furnace	<input type="checkbox"/> Magnet	<input type="checkbox"/> Cryostat	<input type="checkbox"/> Cryogenic gas stream	<input type="checkbox"/> Ultrasounds
<input type="checkbox"/> Refrigerator	<input type="checkbox"/> Laser	<input type="checkbox"/> High pressure	<input type="checkbox"/> LED, UV, IR lamp	<input type="checkbox"/> Others:
	Class			
Does the modification concern the experimental conditions? <input checked="" type="radio"/> Yes <input type="radio"/> No				
(If yes, describe which) :				

2 Experiment Risk analysis (mandatory)

Risk analysis: The goal is to identify potential safety hazards. For chemical hazard, be specific (e.g., flammability, corrosiveness, reactivity/explosion, acute toxicity or carcinogenicity). List hazard phrases (CLP/1272/2008/EC) and occupational limit values. For biological substances, indicate the risk group, describe the potential pathogenicity, or any sensitising or toxic effect on human health, gene transfer, environmental impact and possible contamination.

Safety equipment: Specify any equipment required for safe research or experiments. The Safety Group or laboratory support staff upon approval will provide some safety equipment (gloves, disinfectants, spill kits). Indicate what you will bring with you and what should be provided by the ESRF.

Users accessing the experimental hutch and laboratories must bring their own lab coats, safety glasses and closed shoes.

2.1 Identification of hazards associated with equipment used at the ESRF and accompanying preventive measures

Your equipment must comply with standards and be in correct operating condition.

Equipment used (Yes or No)	Hazards	Preventive measures and protective equipment
Gas, liquid and vapour pressure vessels (e.g. autoclave, high pressure cell, vacuum chamber, compressor...): <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Projection of fragments or liquid <input type="checkbox"/> Gas/vapour leak <input type="checkbox"/> Burns <input type="checkbox"/> Whipping of hoses <input type="checkbox"/> Implosion <input type="checkbox"/> Other	

Equipment used (Yes or No)	Hazards	Preventive measures and protective equipment
Furnace <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Release of toxic vapours <input type="checkbox"/> Thermal burns <input type="checkbox"/> Fire <input type="checkbox"/> Electrical <input type="checkbox"/> Others	
Cryostat <input type="radio"/> Yes <input type="radio"/> No and/ or Cryomagnet <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Cryogenic burns <input type="checkbox"/> Quenching (sudden vaporisation of refrigerated liquid gas with possibility of asphyxiation) <input type="checkbox"/> Electrical <input type="checkbox"/> Asphyxiation <input type="checkbox"/> Harmful effects on human health <input type="checkbox"/> Sudden attraction of metallic objects <input type="checkbox"/> Others	

Equipment used (Yes or No)	Hazards	Preventive measures and protective equipment
Ultrasounds <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Hearing effects <input type="checkbox"/> Other	
Other equipment generating magnetic field and/or electromagnetic waves? (induction heater, TIG welding station...) <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Electrical <input type="checkbox"/> Exposure to non-ionising radiation <input type="checkbox"/> Harmful effects on human health <input type="checkbox"/> Sudden attraction of metallic objects <input type="checkbox"/> Other	
Electrochemical cells / battery <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Chemical risk <input type="checkbox"/> Electrical <input type="checkbox"/> Other	Please describe all chemicals used in section 2.2

Equipment used (Yes or No)	Hazards	Preventive measures and protective equipment
Laser <input type="radio"/> Yes <input type="radio"/> No	<p>For non-ESRF lasers: Users are <u>required</u> to bring laser safety goggles corresponding to the class and wavelength of the laser used. They must be in perfect condition and present in sufficient number. No loan of goggles will be allowed. Please include your alignment procedure. Mandatory signs according to the regulations.</p>	
	Laser class : <input type="checkbox"/> Accidental eye and skin exposure <input type="checkbox"/> Electrical <input type="checkbox"/> Fire <input type="checkbox"/> Others	Wavelength (nm): Power (mW):
LED, IR, UV, Hg lamps or fibres <input type="radio"/> Yes <input type="radio"/> No	<p>For non-ESRF lamps or fibres: users are required to bring their own PPE, which must comply with the regulations</p>	
	<input type="checkbox"/> Accidental eye and skin exposure <input type="checkbox"/> Contact burns <input type="checkbox"/> Electrical <input type="checkbox"/> Others	

Equipment used (Yes or No)	Hazards	Preventive measures and protective equipment
Micro blower torch <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Burns <input type="checkbox"/> Fire <input type="checkbox"/> Others	
Heating ribbon <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/> Electrical <input type="checkbox"/> Burns	
Other equipment <input type="radio"/> Yes <input type="radio"/> No	<input type="checkbox"/>	

2.2 Identification of chemicals, gases and biologic compounds to be used at the ESRF (mandatory)

➤ List all references and compounds used at the ESRF :

Name	CAS Number	Quantity (mg or ml)	Concentration M/Litre	Use	Codes of Hazard phrases

➤ List all gases to be used at the ESRF:




For all gases, please contact your Local Contact (at least 8 weeks in advance) to define the gas sizes and concentrations. ESRF Staff will ensure the availability of the cylinders and the follow-up of the order.





Type of gas	% Gas and diluent	Size (S01, S05, M10, M20, L50)	Number of cylinders	Continuous flow	Gas flow rate (m ³ /hour)
				<input type="checkbox"/> Yes <input type="checkbox"/> No	
				<input type="checkbox"/> Yes <input type="checkbox"/> No	
				<input type="checkbox"/> Yes <input type="checkbox"/> No	
				<input type="checkbox"/> Yes <input type="checkbox"/> No	
				<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments :


2.3 Identification of hazards associated with chemical and biological products and accompanying preventive measures (mandatory)

Describe the specific requirements for handling and storing hazardous chemicals, gases or biological substances in the laboratory, particularly for highly reactive/unstable, highly flammable and corrosive materials. Describe the transport and secondary containment requirements between laboratories and experimental stations or between buildings.

Classification of chemical / gas	Name(s)	Hazards	Describe preventive measures and protective equipment
 Explosive (unstable) <input type="radio"/> Yes <input type="radio"/> No		<input type="checkbox"/> Explosion (dispersion in the air, incompatibilities, presence of static electricity, impacts, possible friction...) <input type="checkbox"/> Spillage	
 Flammable <input type="radio"/> Yes <input type="radio"/> No		<input type="checkbox"/> Projection <input type="checkbox"/> Fire <input type="checkbox"/> Spillage <input type="checkbox"/> Explosion	
 Oxidising <input type="radio"/> Yes <input type="radio"/> No		<input type="checkbox"/> Fire <input type="checkbox"/> Explosion	

Classification of chemical / gas	Name(s)	Hazards	Describe preventive measures and protective equipment
 <p>Corrosive <input type="radio"/> Yes <input type="radio"/> No</p>		<input type="checkbox"/> Skin or eye burns <input type="checkbox"/> Attack of materials	
 <p>Toxic <input type="radio"/> Yes <input checked="" type="radio"/> No</p>		<input type="checkbox"/> Chronic or acute intoxication	
 <p>CMR Carcinogen, Mutagen, Reprotoxic Toxic for human <input type="radio"/> Yes <input type="radio"/> No</p>		<input type="checkbox"/> Serious effects on human health (cause cancer, modifies DNA, harms fertility, harm to foetus) <input type="checkbox"/> Skin and respiratory sensitisation <input type="checkbox"/> Specific Target Organ <input type="checkbox"/> Systemic Toxicity (single and/or repeated exposure)	
 <p>Harmful, Irritating <input type="radio"/> Yes <input type="radio"/> No</p>		<input type="checkbox"/> Eyes and skin irritations	

2.4 Identification of hazards associated with gases and accompanying preventive measures (mandatory)

Gas classification	Name(s)	Hazards	Describe preventive measures and protective equipment
 <p>Compressed gas</p> <p><input type="radio"/> Yes <input type="radio"/> No</p>		<input type="checkbox"/> Explosion (due to heat or following a fall) <input type="checkbox"/> Asphyxiation	

3 Step by step description of the experiment (mandatory)

In this section, you must indicate, stage by stage, all the steps of your experiment (preparation, set-up and testing) that you will carry out on site.

For each step you must specify:

1. which of the previously-mentioned equipment/products will be used,
2. the conditions in which the equipment/products will be used (temperature, pressure),
3. the particular risks of the stage,
4. feedback on previous use (incidents which already occurred involving this type of equipment or installation).

The associated preventive measures will appear in the table above (sections 2.1, 2.3 and 2.4).

Pictures may be provided as they are useful to facilitate understanding.

Indicate where on site the handling of toxic, flammable/pyrophoric, corrosive, reactive/unstable, nanomaterials or biological substances will be carried out (check the suitability of the location with your Local Contact).

Identify decontamination measures required during of the experiment.

To be completed by the users:

4 In the event of an emergency

Should a problem occur with your samples, equipment, chemicals, processes... during the preparation of your experiment or while it is taking place, indicate what interventions you propose:

To be completed by the users:

IN CASE OF AN ACCIDENT OR INCIDENT AT THE ESRF, PLEASE DIAL 10 FROM A NORMAL TELEPHONE OR PICK UP A RED PHONE. DO NOT HANG UP UNTIL THE PERSON ON THE PHONE TELLS YOU TO DO SO.

IN CASE OF AN EVACUATION, PLEASE SECURE YOUR EXPERIMENT AND THE BEAMLINE BY CLOSING ALL GAS CYLINDERS BEFORE LEAVING AND COMPLY WITH THE SAFETY MESSAGE BROADCASTED OVER THE LOUDSPEAKERS IN THE EXPERIMENTAL HALL.

5 Waste management (complete if necessary)

If biological and chemical waste is generated, please follow the ESRF waste management rules (contact your Local Contact or the Safety Group (expsaf@esrf.fr)).

Describe (if necessary) the specific disposal procedures and estimate the nature and quantities of waste:

AT THE END OF YOUR EXPERIMENT, PLEASE LEAVE THE BEAMLINE (CONTROL CABINE, EXPERIMENTAL HUTCH, LAB) CLEAN.

6 Transport and Receipt of samples and equipment

Package and label your samples in accordance with your carrier's requirements and any other regulatory requirements. **It is Mandatory to consult your Transport Safety Advisor, or contact a certified carrier for the transportation of Dangerous Goods (DHL, FedEx...).**

Ensure you have included your name, your approved sample list and appropriate Safety Data Sheets (SDS).

Describe the specific precautions to be implemented for the reception and storage of these samples:

7 Documents which must accompany the file

Documents and images may be inserted here :

- Pictures (jpg) of the installations and equipment which belong to you
- Compliance certificates for the equipment or documents which prove compliance (lasers, furnace...),
- Documents proving the tests which are carried out (high pressure cells (except Paris-Edinburg and diamond), home-made equipment),
- Training certificate (laser...)...

8 Safety Group Comments

Safety comments :

***I certify the accuracy of this declaration and its attachments and accept the safety recommendations added to this document.
I agree to respect the ESRF safety regulations.***

Local Contact

Date: _____

Signature: _____

Main Proposer

Date: _____

Signature: _____