



Elettra Sincrotrone Trieste

Users Safety Management

January 30, 2024

Premise

With this presentation we want to show you, in short, how we are managing **users safety now** and how we want to do so in the **near future**.

We have to manage two different flows of safety information

USERS



**Proposal Safety
Information**



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**Beamline or
laboratory
safety
information and
regulations**



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NOW



Proposal Safety Information

Now we receive safety information mainly via a **Safety Form**.

The Safety Form is available on our Virtual Unified Office (VUO) and users **must send it to us at least one week before** the start of the experiment.

This form **contains information on the quality and safety of the substances used** during the experiment **but it is very concise** and may not always be able to provide all the safety information we need (e.g. storing, packaging, emergency response in case of accident, etc.)

Further exchanges of information between the beamline coordinator and the user may be necessary before starting the measurements.



View SafetyInfo

Sample(s) and chemical substance(s) to be used in this experiment

Substance	Silicon molybdenum
Chemical formula	Si/Mo
Physical state	Multilayer
Other physical state	
Size (in mm ³)	400
Mass (in mg)	2000
Surface area (in mm ²)	
Space group (if known)	
Unit cell dimensions at	T: a= b= c= alpha= beta= gamma=
Sample container (capillary, flat plate, pressure cell, etc.)	cell

Safety aspects

Volume of cylinder to be used (in cm ³)	
Pressure of gas in cylinder (in mbar)	
Risk in sample, preparation or equipment	No
Radioactive	No
Corrosive	No
Contaminant	No
A biological hazard	No
Toxic	No
Oxidising	No
Combustive	No
Cancerogenic/mutagenic/teratogen	No
Inflammable	No
Explosive	No
Exhaust disposal conditions	
Sample disposal: After the experiment the sample will be	Removed by user

Validation status Not certified

Reserved to the Safety Officer

Safety status

Safety comment

Unattended Operation of the Beamline is not Permitted

Beamline or laboratory safety information and regulations

Radiation Protection and Safety

On line training.

Elettra and FERMI users are required to perform the Radiation Protection and Safety training available on line in the [Virtual Unified Office \(VUO\)](#). If you are already registered, please login-in, check the "Downloads" section and follow the instructions. Users who will not follow the on-line training, will be asked to perform them upon arrival at the Research Centre.

Manuals.

Before your arrival at Elettra, you are kindly invited also to download and read the [Users' Radiation Protection Manuals](#) and the [Emergency Management information](#).

Contacts.

For any further information, please do not hesitate to contact:

- the [Radiation Protection Service](#)
- the [Prevention and Safety Service](#)



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SOON

From simple Proposal Safety Information to a **Risk Assessment of Users Proposals**

In order **to identify a process that guarantees health and safety** of anyone who comes to interact, directly or indirectly, with a particular experiment, **the following considerations must be taken into account:**

- The current **Safety Forms** are sheets **identifying only the risks of the substances used for an experiment;**
- **The simple classification of the risk** of a substance **is not sufficient** to evaluate the risk of an experiment;
- **The risk of an experiment is also associated with other factors** such as **quantitative** of the substances, the **type of treatment** necessary to carry out the measurements, the **physical state of the sample**, the **specific conditions** of the beamline/laboratory, etc..

Risk Assessment of Users Proposals

Our goal is to have:

For every proposal



A specific risk assessment



A specific protocol to apply

Please note: **the technical feasibility assessment does not correspond to a risk assessment of the experiment.**



Risk Assessment of Users Proposals

The risk assessment of a proposal will be done by a **team of specialist** Protection and safety expert

Biology expert

Chemistry expert



Biochemistry expert

Radiation protection expert

Risk Assessment of Users Proposals

The team of specialists will have to consider the following aspects:

- **Substance description**: this information will emerge from the **proposal description** and a **new safety form**, more complete and specific than the one we are using
- **Substance safety aspects**: this information will be deduced from the **Safety Data Sheet**, when available, and from the **new safety form**

The team will **have to consider the different substances involved** (e.g. biological sample, chemical sample, etc.) and carry out an **initial risk classification** as better specified below

Risk Assessment of Users Proposals

They will identify **4** different **risk levels**:

- Very Low (**GREEN**) -> (e.g. BSL1)
Authorised without prescription
- Low/Medium (**YELLOW**) -> (e.g. BSL2)
Authorised by applying a standard protocol
- Medium/High (**RED**) -> (e.g. BSL3)
Authorised by applying a specific protocol
- Not manageable (**BLACK**)-> **No technical assessment and no scientific evaluation** (e.g. radioactive sample, BSL4 sample)

Beamline or laboratory safety information and regulations

- A **risk assessment** will be made for each beamlines or laboratory
- A **safety manual** will be created for each beamline or laboratory (it will contain safety instructions for users and for all those who work there, in any capacity)
- A **safety course** will be created for each beamline or laboratory, to be attended online (with final test)
- A **field training** will be given by the beamline coordinator before the measure starting (with registration of this activity on our VUO)

**Thank you very much
for your attention!**