

Safety Instructions

Working with Hazardous Agents in a Research Lab

1. Occupational safety regulations ("Occupational Safety and Health Regulations regarding Work with Hazardous Agents in a Laboratory 2011, clause #4 : "General Safety and Health Measures in a Laboratory") state that **"a laboratory owner will take the following safety measures"**, sub-clause #1: **"No person will work alone in a laboratory while procedures utilizing hazardous agents are taking place"**.
2. Definitions:
 - 2.1. Irregular hours -
 - 2.1.1. All hours during weekdays beginning at 17:00 up until 07:00 the following day
 - 2.1.2. On Fridays, Saturdays and statutory holidays
 - 2.2. An approved employee for lone work – An employee/graduate student personally approved for working alone with hazardous agents, in accordance to the instructions' stages listed herein in clause #3.4.
 - 2.3. "A Shadow" – An employee/graduate student who has been granted personal approval to track and be knowledgeable regarding the details of the lone work with hazardous agents to be performed in the lab, in accordance to the instructions' stages listed herein in clause #3.4.
 - 2.3.1. The "shadow" must be an employee/ graduate student in the research group of the approved employee for lone work with hazardous agents in the lab or must be knowledgeable regarding the emergency systems where the lone work will be performed.
 - 2.4. Principal Investigator (PI) – A faculty member in charge of an experimental research laboratory. Only the PI is authorized to approve lone work with hazardous agents in his/her lab (see "Declaration for Approval of Lone Work in a Research Lab with Hazardous Agents").
 - 2.5. Infrastructure Hub – An area equipped with versatile shared interdepartmental research equipment used by employees/graduate and outside customers.

3. As a policy, **the Technion does not permit lone work in general as well as on irregular hours** in laboratories and in operational facilities whenever hazardous agents are involved (clause 2.1).

3.1 A hazardous agents list with which the Technion management comprehensively permit lone work under any circumstances:

3.1.1	Pathogens in BSL2 and BSL 2+ laboratories	
3.1.2	Viruses (see exceptions is clause 3.5.2)	
3.1.3	Disease-causing agents, including prions, toxins and fungi	
3.1.4	Pyrophoric substances	
3.1.5	Alkaline metals	
3.1.6	Explosives	
3.1.7	HF acids	
3.1.8	Piranha	
3.1.9	Picric acid	
3.1.10	A "live" electricity facility/equipment: a low-voltage power supply - 50V-1,000V; a high-voltage power supply - >1,000V	
3.1.11	Operating heavy equipment, such as lathes, milling machines, disc cutters etc.	
3.1.12	Working at heights	
3.1.13	Working in enclosed spaces	
3.1.14	Working with live flames	See 4.5.5
3.1.15	Working with flammable / combustion-augmenting / toxic compressed gases	See 4.5.4
3.1.16	Working with LPG (Liquified Petroleum Gas, Cooking gas)	
3.1.17	Working with liquid nitrogen	See 4.5.3
3.1.18	Working with engines	
3.1.19	Working with 3B and/or 4-Class open laser systems	See 4.5.2

4. However, since the unique nature of research in the Technion, necessitates **in certain exceptional cases** execution of lone research work with hazardous agents in a laboratory, **the Technion will authorize lone work with hazardous agents subject to adherence to the following conditions:**

4.1 **Justification** - Working alone in a research laboratory with hazardous agents can not be postponed due to the inherent nature of the work / the experiment and its consequences, including work in the infrastructure center.

4.2 The **PI** must apply his/her written consent for the lone work and its details (see "Declaration for Approval of Lone Work in a Research Lab with Hazardous Agents") and document the consent in the laboratory's safety file.

4.3 Notify the **Security** of the exact location/s the employee/graduate student will perform the work during irregular hours, including making sure Security has access to the working site if needed.

4.4 Appointing "**a shadow**" who will be in constant mobile communication with the lone employee:

4.4.1 The lone employee must explain to the "shadow" the nature of the work performed and its approximated duration.

4.4.2 The lone worker must contact the "shadow" upon entrance into the laboratory.

4.4.3 The "shadow" must call the lone employee hourly.

4.4.4 In case the lone employee does not answer the shadow's phone call within 15 minutes - the "shadow" will notify Security. Security will arrive at site.

4.4.5 **Security: 04-829-2222**

4.4.6 The lone worker must notify the "shadow" when the work is completed.

4.5 Types of work for which one may receive authorization for working alone in a research laboratory:

	Type of Work	Justification
4.5.1	Working with lab animals	Animal maintenance / ongoing experiments only
4.5.2	Working with viral vectors: lentivirus, retrovirus, adeno-associated virus, AAV	Ongoing experiments only
4.5.3	Working with liquid nitrogen	Equipment / cells maintenance

4.5.4	Working with flammable / combustion-augmenting / toxic compressed gases	Ongoing experiments relying on compressed gas systems' equipment
		Requires certification that the compressed gas system and detectors are intact
4.5.5	Working with 3B and/or 4-Class open laser systems	Ongoing experiments
		Necessitates instruction and certification by the laser safety officer
4.5.6	Working with live flames	Ongoing experiments only
		Requires safe Bunsen burners
4.5.7	Working in an infrastructure hub	Allocation of an irregular time slot / an ongoing experiment
		Necessitates instruction and certification for working with the equipment in the infrastructure hub

Please contact the [Safety Unit](#) in any query or work description not mentioned in this document.

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Declaration of PI for Approval of Lone Work in a Research Lab with Hazardous Agents

I hereby declare that I authorize the herein stated employee/graduate to perform research with hazardous agents while being alone in my research lab, in accordance with the mandatory all Technion safety instructions and to the data listed herein:

Name of PI: _____

Name of employee/graduate: _____

Name of "shadow": _____

Faculty: _____

Building: _____ **floor:** _____ **room(s) :** _____

General description of the work:

Risk factors:

Date of planned activity: _____

Date of authorization by PI: _____

Date of employee/graduate designated safety instruction: _____

Signature of PI: _____

Signature of employee/graduate: _____

Date: _____