**General glove box instructions:**

**General rules/advices**:

* If you are not sure about some operations or procedures, please *consult your local contact* or the person who gave you the training for the glove box. It is not allowed to use the glovebox without an on-site training by beamline staff.
* The antechamber must be properly evacuated before opening it from the inside of the glove box.
* Before starting the evacuation procedure, double-check if you have loaded all the tools, you might need to work inside the glove box. If you do not have some tools or do not know where to find them, please, contact the beamline staff. Avoiding unnecessary use of the antechamber lowers the risk of contaminating the glove box atmosphere since such things typically happen if you are in a rush or not careful.
* Please use the plastic boxes to place your stuff inside the antechamber to keep things nice and tidy.
* Sealed vials/bottles have a risk of exploding during evacuation. As a result, vials/bottles should be placed inside a plastic bag to contain possible pieces and content in case of breakage. The risk of explosion can be significantly reduced by using snap-cap vials instead of screw-caps.
* If a vial/bottle was sealed under an inert atmosphere, you can place this in the glove box without opening the vial/bottle prior to the evacuation procedure.
* It is not allowed to store something in the glovebox. After finishing your work all chemicals and samples have to be removed.
* Please note, if you have just booked the glovebox, it is not allowed to use the fumehood or other places in the lab. Please discuss your needs with the beamline staff in advance.
* Please make sure, that all substances which are handled in the glovebox are all the time properly labeled with the exact chemical composition.
* During usage of the glovebox, you have to write the following things into the glovebox logbook:
	+ Date
	+ Full name
	+ ppm values for H2O and O2
	+ Exact chemical composition of your samples which you are treating
	+ The tasks which you have performed in the glovebox
* If there is any problem with the glovebox, like a leakage, etc., get immediately in contact with your local contact or other P02.1 beamline staff

**Light**:

* The light switch is found on the right-top side of the front window of the glove box.
* Additionally, LED lighting is installed, which can be turned on/off and controlled (brightness and “temperature”) with a white controller inside the glove box.
* Please remember to turn off both lights after you are done with your work inside the glove box.

**Small antechamber**:

* The antechamber is manipulated manually, you have to start the pump via touch screen:

**<Manipulations>** 🡺 **<Vacuum chambers…>** in section **<Mini chamber>** press **<Vacuum>**.

* Chamber has to be evacuated and filled a minimum 3 times (better 4-6).
* Slowly turn the valve to **<vacuum>** position till you reach -1 bar on the manometer, hold there for a few seconds and flush the chamber with gas by turning the valve to **<filling up>** position.
* Flushing should be slow to avoid turbulences from fast gas infusion in the antechamber.
* After you are done with pumping/flushing process and your items have been transferred to the inside of the glove box, please pump the changer to -0.5 bar and turn off the pump:

 **<Manipulations>** 🡺 **<Vacuum chambers…>** in section **<Mini chamber>** press **<Stop>**

**Main antechamber (Large antechamber):**

* Chamber is manipulated through touch-sensitive screen:

**<Manipulations>** 🡺 **<Vacuum chambers…>** in section **<Main chamber>** press **<Vacuum chamber cycles>** or **<Vacuum>/<Gas filling>**

* Before opening the antechamber on the inside of the glovebox, the <**Vacuum chamber cycles>** must be run at least once. It is recommended to do it twice. One run takes around 6-8 min.
* Manual operation is not recommended but can be used if necessary. For this, you should pump the chamber with **<Vacuum>** till -1 bar and flush with Ar gas **<Gas filling>** at least 3 times.
* After you are done with pumping/flushing process and your items have been transferred inside the glove box, please pump the antechamber to -0.5 bar and turn off the pump.

**<Manipulations>** 🡺 **<Vacuum chambers…>** in section **<Main chamber>** press **<Vacuum>**

**Working in the glove box**:

* To work in the glove box, you *must* wear a lab coat with long sleeves and gloves.
* Inside the glove you have to wear another pair of gloves for the protection of glove box gloves.
* You should change the gloves inside glove box regularly (separate set for each chemical or sample).
* Inside the glove box, please use the Al foil to cover the table and work on it. It helps to keep possible spills or waste localized.
* You can collect the waste in the PP waste bags placed on the stand and remove them after you are done with your work. In case the waste is active (it can smoke/ smell / decompose exothermally) it has to be carefully deactivated inside the fume hood. Spare PP waste bags can be found on the shelf.
* If some dust/powder/pieces get over foil, please collect them with a brush and shovel. Those can be found on the left side on the shelf.
* Solvents are not allowed to be used in the glove box. An exception might be the use of small quantities of “dry” (no H2O) solvents for battery research. However, this has to be discussed with your local contact / the person who gave you the introduction.

**After completed work in the glove box**:

* If you are done with using the chamber, please, evacuate it to -0.5 bar.
* Please, take foil and waste to the fume hood to let it oxidize/deactivate naturally on-air or use water to accelerate the process (but only if this is safe to do).
* In case of possible sparks or flames, please remove all solvent from the fume hood before starting deactivation.