



The use of compressed or hazardous gases has to be declared via DOOR in the “DECLARATION OF SUBSTANCES AND EXPERIMENTAL APPARATUS”. Gas systems must be inspected and approved by the relevant safety managers of DESY FS-TI group. Any gas system must be built and operated according to the DESY Safety Regulations.

We recommend an early registration and close coordination with your local contact and FS-TI group, especially when hazardous gases (flammable, corrosive, toxic or oxidizing) are used. For larger setups or special hazards, we will ask you to upload a safety concept, describing your setup and its operation in detail, including possible hazards and safety measures foreseen.

If necessary, FS-TI must provide safety installations such as gas warn systems or ventilation. Please be aware, that longer delivery times or preparation time have to be expected for safety devices.

- Technical gases will be supplied by the DESY Gases group MEA6 upon request. Take into account that special gases, mixtures or very expensive gases may have a long delivery time up to 12 weeks. Please request early.
- Gas order: Qualified persons (e.g. beamline engineers/beamline staff, who are trained in the use of gases) ask the Technical Hall Service (who typically has the role “Gasabrufberechtigter”) to order the gases required by the user. The gases may only be ordered by “Gasabrufberechtigte”. After delivery, the qualified person who triggered the gas order, will be named on the delivery label as the customer. Starting with the transfer from the delivery box to its destined gas cabinet, the customer named on the label is responsible for the safe handling and the proper use of the gases. They instruct the user in operating the DESY gas systems and use of gases.
- Gases may be brought along by the user, if unavailable at DESY. These gases have to be declared and you need a permission of DESY. (Observe special regulations for transport of hazardous substances).
- Request gas order via your Local Contact well in advance.
- Use as little amount of gases as necessary.
- Compressed gas cylinders may only be used in the FS experiment halls in the fire-retardant gas cabinets (T90) provided for this purpose for the duration of their use. Gas cylinders can be stored temporarily in the DESY gas group warehouse, but only after consultation with MEA6. Storage in the FS area is prohibited!
- Pressure reducers and other fittings must be brought along by the user, this also applies for gas mixing systems, tubing, valves etc. to be used at the beamline. If minicans® or lecturebottles® will be used, you have to provide the adaptors as well. Brought along pressure reducers and fittings etc. must comply with the DESY requirements and



European standards which are valid for Germany. They have to be technically in order and tested. Pressure reducers must have metal bellows and **standard bottle connections in accordance with DIN477**. If aggressive gases will be used, only corrosive-resistant pressure reducers and fittings may be used.

- Pressure reducing valves must have Swagelok® 6 mm tube fittings on the outlet side.
- Pressure reducers for hazardous gases must be equipped with a pressure relief valve that adapts to a 6mm Swagelok® fitting.
- Pressure regulators that are connected to a vacuum system or that are to be evacuated to clean the gas system must be suitable for vacuum.
- FS-TI group provides gas cabinets and stainless steel tubing, starting from the pressure reducer inside the gas cabinet to the beamline.
- The gas tubes must not be used for aggressive gases. Only specially marked lines may be used for this purpose, but only after special agreement.
- The gas tubes should be flushed with inert gas after use. DESY does not guarantee the cleanliness of the lines. If necessary, users must clean the lines themselves by flushing or evacuating according to the requirements.
- Any other gas pipe (stainless steel), usually ends at the experimental station with a 6 mm Swagelok® screw fitting.
- For hazardous gases, only metal gas lines must be used at the experimental station.
- Gas lines, connections, valves etc. must be marked with the respective gas type.
- Gas systems may only be set up, commissioned and operated by qualified and experienced persons. For large setups, a flow chart and an operating instruction must be available.
- All gas systems must be checked for leaks before start of operation. The test has to be documented.
- If necessary, the operating data of gas systems must also be regularly monitored and documented. Detailed safety measures will be given during the safety inspection.
- Photon Science division uses only Swagelok® fittings with metric threads. Swagelok® QC4 quick couplings are common at many experimental stations.