

Nr: 0030-R02e
2018-03-09

Operating Instructions

According to the Betriebs-sicherheitsver-
ordnung

UNIVERSITÄT
DUISBURG
ESSEN
Offen im Denken

Faculty of Chemistry

Institute: AAC

Work place: AAC Labs

Activity: Laboratory work

EQUIPMENT

(amazon) DIP

DANGERS FOR HUMANS AND ENVIRONMENT



- There is a risk of electric shock when voltage is applied during assembly or disassembly.
- If the protective conductor is missing or interrupted, there is a risk of electric shock.
- Danger of crushing if not properly installed.
- Risk of burns due to the push rod (max 400 ° C), allow to cool down before disassembling the DIP.

PROTECTIVE MEASURES AND RULES OF CONDUCT



– Installation and uninstallation:

- During installation and uninstallation, there must be no voltage on the device, otherwise there is a risk of electric shock. In addition, for this reason, the voltage on the device to be installed (amazon) should also be removed beforehand.
- When installing the DIP on the ion source, improper retention of the DIP can lead to pinching of your fingers.
- The device must be grounded before applying a voltage. Any interruption in the protective conductor inside or outside the instrument or interruption of the earth protection material may pose a danger to the user.
- The push rod can reach a temperature of 400° C, which causes burns. Therefore, this must cool down before uninstalling.
- When disassembling, always hold the device with one hand to prevent it from falling. It is recommended to carry out the dismantling in pairs.
- During installation and uninstallation, there must be no gas pressure.
- All connections to and from the device must be used in the correct way. Only wires and cables built by the manufacturer should be used.

– Functions and handling of the device:

- When working, it must be ensured that improper handling during insertion of the push rod can lead to jamming and crushing. Therefore, the push rod must not be touched during operation.
 - Sharp objects, especially splintering glass, can be dangerous.
 - The needle of the syringe is very sharp and should not be touched under any circumstances, it poses a particular danger when measuring toxic or dangerous substances.
 - Never open the spray chamber during operation (see accompanying MS).
 - High temperatures of the ionization chamber can be dangerous. Therefore, you should not touch the heating elements near the ionization chamber directly after the measurement. It is only to wait until these have cooled.
 - It should be sufficiently cooled before using the push rod, otherwise it may burn.
 - The sample crucibles are to be used only with the associated holder and tweezers, especially when measuring toxic or dangerous substances, special care must be taken.
 - The weighing of the samples in the sample crucible should be done under suction.
- **Use of chemicals, gases and gas bottles:**
- Users must wear gloves and goggles to prevent the absorption of chemicals.
 - The sample crucible contains the chemicals that are being analyzed. There are health risks due to chemical toxicity of solutions, samples, buffers and biologically hazardous aerosols of biological samples and their degradation / decomposition products.
 - Gas cylinders pose a risk of explosion.
 - Gas cylinders are under high pressure. In order to avoid accidents, the safety precautions and instructions of the gas supplier must be complied with. Keep gas cylinders away from the lab, it is best to place them outside, but never expose the gas bottles to direct sunlight. The environment must be well ventilated. Use pipes to transport the gas to the laboratory. The ambient temperature of the gas cylinder must not be higher than 40° C. Flammable objects must be kept at least 2 meters away from the gas bottle. Secure gas cylinders with cylinder clamps or chains so that they can not fall over.

- When using nitrogen, ensure adequate ventilation of the workplace. Ensure a firm and proper connection of the gas supply, otherwise there is a risk of spalling.
- When using oxygen, avoid open ignition sources. In addition, attention must be paid to a sufficient grounding.
- The pressure regulator will be damaged if pressure above the manufacturer's instructions is used. Set the pressure of the admitted gas to the maximum allowed pressure.

RESPONSE TO MALFUNCTIONS



Shut down device immediately, faults must be reported to:

- Maria Madani, if not present O. Schmitz, M. Sulkowski, F.Uteschil, S. Meckelmann.

BEHAVIOR IN CASE OF ACCIDENT / FIRST AID



- Keep calm.
- Call first responders.
- Emergency call: 0112
- Report accident.

MAINTENANCE / DISPOSAL

- Maintenance only by authorized, competent persons.
- Switch off the device and disconnect it from the mains.
- Regular inspection of wearing parts.