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## OPERATING INSTRUCTIONS

According to Betriebsicherheitsverordnung

UNIVERSITÄT  
DUISBURG  
ESSEN

*Offen im Denken*  
Faculty of Chemistry

Institute: AAC

Work place: AAC Labs

Activity: Laboratory work

### EQUIPMENT

#### Bruker amaZon DIP

### DANGERS FOR HUMANS AND ENVIRONMENT



- There is a risk of electric shock if 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 installed correctly.
- 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



#### – Assembling and disassembling:

- During installation and uninstallation, there must be no voltage on the instrument, 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 before.
- When installing the DIP on the ion source, improper alignment of the DIP can lead to pinching in the finger area.
- The device must be grounded before applying a voltage. Any interruption in the protective conductor inside or outside the instrument or grounding may constitute a danger to the user.
- The push rod can reach a temperature of 400 ° C, which causes burns. Therefore, it must be cooled 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, no gas pressure must be present.
- All connections to and from the device must be used correctly. Only original wires and cables from the manufacturer should be used.

– **Functions and handling of the device:**

- When working it must be ensured that improper handling when retracting 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 must not be touched under any circumstances, there is a risk of injury or poisoning by dangerous substances.
- Never open the spray chamber during operation. (See associated MS)
- High temperatures of the ionization chamber can be dangerous, so you must not touch the heating elements in the vicinity of the ionization chamber directly after the measurement, you have to wait until they have cooled down.
- Before using the push rod it should be sufficiently cooled down, otherwise it may cause burns.
- The sample crucibles should only be used with the appropriate holder and tweezers, especially when measuring toxic or dangerous substances.
- The weighing of the samples in the sample crucibles should be done under exhaustion.

– **Use of chemicals, gases and gas cylinders:**

- Users must wear gloves and safety goggles to prevent ingestion of chemicals.
- The sample crucible contains the chemicals that are being analyzed. There are health risks posed by possible toxicity of solutions, samples, buffers and biologically hazardous aerosols of biological samples as well as their degradation and decomposition products.
- Gas cylinders are generally explosive, even when the gases inside themselves are not explosive.
- Gas cylinders are under high pressure. In order to avoid accidents, the safety precautions and instructions of the gas supplier must be observed. Keep gas cylinders away from the laboratory, if possible. It is best to place them outside, but never expose the gas cylinders to direct sunlight. The environment must be well ventilated. Use rigid pipes, not hoses, to transport

the gas to the lab. The ambient temperature of the gas cylinder must not be higher than 40 ° C. Flammable materials must be stored 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 closure of the gas supply, otherwise there is a risk of spalling. In addition, escaping nitrogen can have a suffocating effect.
- When using oxygen, avoid open ignition sources. In addition, attention must be paid to a sufficient grounding. Oxygen connections must never be greased. At very high oxygen concentration in the air, there is a risk of spontaneous combustion of some substances.
- 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.