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OPERATING INSTRUCTIONS

According to Betriebs-sicherheitsverordnung

UNIVERSITÄT
DUISBURG
ESSEN

Offen im Denken
Faculty of Chemistry

Institute: AAC

Work place: AAC Labs

Activity: Laboratory work

EQUIPMENT

Bruker amaZon Ion Trap

DANGERS FOR HUMANS AND ENVIRONMENT



- There is a risk of electric shock if voltage is applied during assembly or disassembly. Bei fehlendem oder unterbrochenem Schutzleiter besteht die Gefahr eines Stromschlages.
- Danger of crushing if not properly installed.
- Due to the high weight of 110 kg special requirements for the workbench.
- Move only with 4 people.

PROTECTIVE MEASURES AND RULES OF CONDUCT



To ensure safe use of the device, it is important that the protective conductor (the green / yellow cable) of the mains connection is connected to an electrical ground. Any interruption in the protective conductor inside or outside the instrument or grounding may be a danger to the user.

Position the device in a clean environment that is free of dust, smoke, vibration and sunlight. Also, do not place it next to heating and cooling elements and pipes. Place the device on a flat surface that can carry the weight of 110 kg of the device. The device requires about 3 m² of space for a reliable installation.

Modifications, replacement of parts or repairs may only be carried out by Bruker Service Personnel or similarly trained and authorized personnel, the same applies to maintenance work on the device and its electrical components.

If there is any suspicion that the electrical protection status of the device is impaired, turn off the device, unplug the power cord, and secure it against unauthorized use.

Only use fuses of the required amperage, voltage and characteristics.

The instrument must be disconnected from the power source before it is opened.

The liquid drain on the bottom of the spray chamber should always be connected to the waste bottle of the instrument.

All connections to and from the device must be properly connected using only manufacturer approved cables.

For safety reasons, the size of the room in which the machine is operated must be at least 20 m² and the height at least 2.5 m.

Only pumps with a rated value of less than 1200 VA and leakage current below 1.0 mA can be connected to the designated port. Other pumps must be connected directly to the mains supply.

Only distributed devices with a consumption of less than 300 VA and leakage current below 0.35 mA can be connected to the designated connection.

Sharp objects, especially splintered glass, could pose a danger. The borosilicate capillaries may shatter during injection, so it is recommended to work with gloves. The needle is very sharp and should not be touched under any circumstances.

The sample chamber must not be opened before the sample flow has been shut down. There is a risk of health, fire and the risk of contamination of the ambient air.

Never open the spray chamber during operation. High temperatures of the ionization chamber (200 ° C) can be a hazard, do not touch the heating elements near the ionization chamber immediately after the measurement, but wait until they have cooled down.

High voltages are generated in the ionization chamber. Turn them off before interacting with the chamber. If other alternatives to conventional glass capillaries are used, there is contact with the high voltage. To avoid this, always use approved parts.

To clean the glass capillary, pull it out straight and vertically. Pressure from the side can destroy it.

Do not place objects in front of the ventilation inlet and outlet on the front and rear of the unit.

To check the proper functioning of the ventilation filter, check the ventilation filter below the front cover every three months.

Protective goggles and lab coats must be worn during sample preparation and work on the device.

Handle covers with care and do not damage them.

There is a risk of bruising, pinching and burns while the sample is being injected. Therefore, never touch the DIP during operation.

Einige der injizierten Chemikalien landen im Gasauslass statt im Instrument. Deswegen sollte das Auslasssystem mit einem Abzug/Schnüffelleitung verbunden sein.

Handle all liquids with care, including the pump oil used as it may contain traces of samples and solvents.

Wear gloves when changing the pump oil. Never add pump oil or change it while the pump is in operation.

The oil tank lid, the pump and the pump oil can be hot. Make sure these components are cooled down before touching them.

The gas outlet of the vacuum system and the spray chamber contain the chemicals that are being analyzed. Health risks due to the toxicity of solutions, samples, buffers and pump liquid vapor as well as biologically hazardous aerosols of biological samples should be considered. Vent all outlets of the instrument to an area from where the gas can not circulate back into the room. Do not vent to the laboratory.

Since non-atomized liquid collects on the bottom of the spray chamber, the drain of the spray chamber must be connected to a waste bottle. The contents of the waste bottle must be treated following the rules of the Ordinance on Hazardous Substances.

Isopropanol is used to clean the spray chamber. Wear appropriate protective clothing. Allow the chamber to cool before cleaning.

In the determination of chlorine, methane is used. Methane is extremely flammable and can form explosive mixtures with air.

Store containers / bottles in well-ventilated locations. Keep them away from sources of ignition. Keep the temperature below 50 ° C.

Take preventive measures against static charges.

The gas supply should always be closed when not in use.

Use only methane cylinders with volumes less than 2L and pressures less than 200 bar.

The outlet pressure should be limited to 4 bar with a pressure regulator.

Every 3 months, the gas pipes must be checked for leaks. In this case, the pressure gauge must be able to detect pressures below 1 bar.

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.