No.: 0016-R02e 2018-04-10

OPERATING INSTRUCTIONS

According to Betriebssicherheitsverordnung



Institute: AAC Work place: AAC Labs Activity: Laboratory work

EQUIPMENT

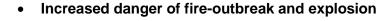
Liquid Nitrogen Transport Dewars

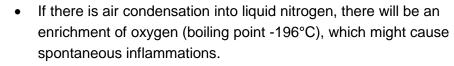
DANGERS FOR HUMANS AND ENVIRNOMENT





 Skin contact with liquid nitrogen (-198°C) can cause cold burns / frostbites.







- Danger of bursting by pressure rise
- Transportation and storage of liquid nitrogen in containers not intended for liquid nitrogen without pressure equalization may lead to burst at room temperature. At reduced temperatures synthetic containers sustain brittle fractures.
- · Danger of suffocation and lack of oxygen
- During the refilling process the nitrogen concentration can increase unnoticed in not well ventilated rooms and then acute suffocation is possible.
- (1 I liquid nitrogen corresponds to 700 I gaseous nitrogen).

PROTECTIVE MEASURES AND RULES OF CONDUCT







- Always wear lab coat, protective goggles and cold protective gloves. Possibly wear face shield as splash guard. Notice liquid nitrogen might run into shoes and gloves!
- While using liquid nitrogen only use cold-resistant material.
- Transport of filled Dewar only without pressure and with loosely mounted plug.
- Don't store liquid nitrogen in open vessels for a long time.
- Ventilate the room with filled Dewar sufficiently.
- Only collect liquid nitrogen in pairs



Only use the freight elevator to transport the liquid nitrogen.
Never transport persons and filled dewars together in the elevator. The key for the freight elevator is located at Maria's and Sven's office.

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.

BEHAVIOUR 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.