



## WORK INSTRUCTION FOR TRANSPORT AND HANDLING OF LIQUID NITROGEN



Liquid nitrogen has a temperature of  $-196\text{ }^{\circ}\text{C}$  and can cause severe frostbite on skin contact. When nitrogen evaporates in tight spaces (elevators, rooms with minimal ventilation) a lack of oxygen can occur. 1 liter of liquid nitrogen expands to 706L when it changes to gaseous form and displaces air. It is therefore important to take precautions when transporting and using liquid nitrogen.

### Hazard statements

H281 Contains refrigerated gas; may cause cryogenic burns or injury

**Other hazards:** Evening at high concentrations. Symptoms may include paralysis/unconsciousness. Suffocation can occur without warning.

### Precautionary statements

P282 Wear cold insulating gloves and either face shield or eye protection

P336+P315 Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention

P403 Store in a well-ventilated place

### Purchasing

Contact your lab manager in your research group. Liquid nitrogen is purchased from Nippon gasses and filled into suitable containers.

The tank to be filled with liquid nitrogen is placed either on the 1st floor of the A/B block or on the 1st floor of the goods delivery in the BIO block. The tanks must be placed on a trolley for easy transport to the van that delivers the liquid nitrogen.

### Handling

#### Transportation

The container with liquid nitrogen must always be sent alone in the lift due to the risk of suffocation that may arise. The container must be marked with the sign "LIQUID NITROGEN TRAVEL ALONE IN



THE ELEVATOR". There should be two people to pick up a container filled with liquid nitrogen so that the container can be sent alone in a lift with one person downstairs and one upstairs. Wait for the elevator to return empty.

If containers are to be transported outside the house, they must be secured with straps on the wheel set and the wheels must be lockable. Liquid nitrogen should only be transported by vehicle with separate cargo space and driver's compartment. Ensure adequate ventilation before entering the cargo compartment of a truck carrying dry ice.

Only use suitable cryo tanks for liquid nitrogen.

#### **Filling with liquid nitrogen**

- There should be two people transferring liquid nitrogen from the transport tank to the cryo container for storing cells. Suitable protective equipment must be used. Make sure that this is only done in a well-ventilated room.

#### **Freezing samples/snap freezing**

- Only use suitable cryo-tubes for freezing samples in liquid nitrogen.

#### **Protective equipment**

- Wear a laboratory coat, possibly a leather apron, a face shield, gloves that protect against the cold and tight footwear with the trousers pulled over the shoes.
- Avoid rolled up trousers where liquid nitrogen can collect and cause frostbite.

#### **First aid measures**

If you get liquid nitrogen on bare skin, you should not rub the wound, but use lukewarm water for at least 15 minutes. Always consult a doctor for deeper frostbite or tissue damage.

Emergency telephone number: 113

Legevakten: 116117

**All accidents and near misses must be reported via UiBhjelp. Click on register breach for reporting HSE non-conformities.**



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