

SOP Transport of Liquid Nitrogen and Dry Ice in Elevators

BASICS

NEVER transport liquid nitrogen (LN₂) in any quantity as well as dry ice (> 5 kg) in the elevator when accompanied by persons.

HAZARDS



Liquid nitrogen (LN₂) and dry ice represent an **asphyxiation risk**.

Evaporation of 1 liter of LN₂ produces 700 liters (0.7 m³) of gas. Nitrogen boils under atmospheric pressure at a temperature of -196 °C.

1 kg of dry ice produces 500 liters (0.5 m³) of CO₂ gas. Dry ice sublimates relatively slowly under atmospheric pressure.



Gaseous nitrogen and CO₂ are heavier than air and displace oxygen from enclosed spaces.

LN₂ and dry ice also can cause severe frostbite.

PROTECTIVE MEASURES AND RULES OF CONDUCT



For transporting smaller containers, use the staircase.

If no goods elevator is available and transportation via staircase is not possible, proceed as follows:

The transport may be carried out with a passenger elevator, whereby it must be ensured that nobody uses the elevator at the same time.

In order to meet this requirement, the transport must always be carried out **by two persons**.

One of them puts the container in the elevator and places a warning sign "NO ENTRY" between the container and the elevator door. The elevator is then sent un-manned to the destination floor.

The other one is waiting on the destination floor and takes the container and the warning sign upon arrival out of the elevator.

PREREQUISITES FOR THE TRANSPORT

Only instructed personnel should transport liquid nitrogen and dry ice (>5 kg). Contact your supervisor or the [local safety officers](#).

Compressed gas containers have an overpressure valve and are periodically checked by a certified inspection body.

Mobile containers must be tilt-proof.

Never use household thermos jugs.

Warning signs can be borrowed from the [house staff](#) and must be returned immediately after transport.