

January 7, 2021

Administrative Office of NanoLSI

Management of specialty gas stored in the gas cylinder storage on the 2nd floor of the Nano Life Science Institute Building

[Management]

The gas cylinder storage on the 2nd floor of the New Nano Life Science Institute Building is provided with two liquid nitrogen cylinders to supply nitrogen gas to the building's piping. At present, each laboratory using liquid nitrogen must carry portable liquid nitrogen containers to the Cryogenic Laboratory and draw out the liquid nitrogen.

The Cryogenic Laboratory is located away from the laboratories and it takes a fair amount of time to go there. Therefore, we determined to prepare two liquid nitrogen containers (self-pressurizing containers called Selfer) in the gas cylinder storage on the 2nd floor of the Nano Life Science Institute Building so that each laboratory can promptly take liquid nitrogen from the storage.

Since replenishment work with liquid nitrogen poses a risk of oxygen deficiency due to leaked nitrogen, parties concerned shall obtain advance guidance without fail before taking liquid nitrogen out of the storage.

[How to use]

1. The available time for use shall be the same as the office hours (8:30 to 17:00) to ensure safety.
2. The key for the gas cylinder storage shall be stored in the Office to ensure safety.

3. The charges for the use of liquid nitrogen shall be paid by each laboratory.

If liquid nitrogen is used for the maintenance of common equipment (such as TEM and SEM) for the WPI project, the charges shall be paid by the WPI project.

4. When liquid nitrogen is required, enter a request form in the budget support system in advance.

5. Fill out the liquid nitrogen log book at NanoLSI Office on the 4th floor of the Nano Life Science Institute Building, and borrow the key for the gas cylinder storage.

6. Prepare a portable liquid nitrogen container in advance, and transfer liquid nitrogen into the container in the gas cylinder storage. When transferring, make sure to keep both doors open.

7. Upon completion of the transfer, lock the door of the gas cylinder storage and return the key to the Office on the 4th floor.

[Precautions]

Liquid nitrogen is liquefied nitrogen produced by liquefying and purifying air. The boiling point of liquid nitrogen is extremely low, at -196°C , and it must be stored in dedicated containers. Since it is odorless, colorless and transparent with a specific gravity nearly the same as air, oxygen deficiency may result when evaporated nitrogen fills the room.

Since liquid nitrogen also causes frostbite in addition to oxygen deficiency, extreme care must be exercised during its handling.

1. Must read thoroughly a [“High pressure gas safety training” text book](#).

2. When replenishing liquid nitrogen from the gas cylinder storage in the Nano Life Science Institute Building, make sure to obtain advance guidance (Senior Technical

Staff).

3. When liquid nitrogen is required out of office hours or on weekends or holidays, use the liquid nitrogen stored in the Cryogenic Laboratory.