1. INTRODUCTION

There are many liquid nitrogen users in the Department of Physics. As such, it was deemed necessary for the Safety Committee to provide the handling guidelines.

2. SCOPE

These guidelines apply to all Physics students, staff and visitors working in laboratories and workshop.

3. OBJECTIVE

The goal of these SOP is to provide guidelines to researchers, staff, students, and visitors included, in the correct liquid nitrogen handling procedures.

4. RESPONSIBILITY

a) It is the responsibility of the PI to discuss this SOP with all the lab members.

b) It is the responsibility of the lab users to be familiarized with the procedure.

5. STANDARD HANDLING PROCEDURE

Liquid nitrogen present hazards like frostbite and in serious cases, burns. Therefore it is absolute necessary to don the correct PPE when handling it.

5.1 Personal Protective Equipment (PPE)

a. Lab coat which must come with long sleeves that can be tucked into the gloves.

b. Use only gloves that are meant for handling liquid nitrogen.

c. Full face mask must be worn.

d. Handler must wear covered shoes.
5.2 Equipment

a. Liquid nitrogen must be stored only in the approved Dewar flask.

b. Periodically check the liquid nitrogen dispensing mechanism to ensure that it has not rusted.

c. Dispensing mechanism of the Dewar flask must have a release valve.

d. Visually ascertain that the release valve and ensure that it is still in working condition, test it if there is a test release button.

5.3 Handling and Transport

a. Please refer to Physics SOP on Transport of Chemicals, Compressed Gases and Cryogenic Liquids in Department of Physics, PhyTptCG0 01.

b. The above-mentioned PPE must be worn at all times when collecting or dispensing liquid nitrogen.

g. When dispensing liquid nitrogen in enclosed area, be aware that the nitrogen gas that escaped to the atmosphere could engulf the room and cause asphyxiation.

h. Forceps must be used to handle any material that has been immersed in liquid nitrogen.

5.4 Training

a. Staff, student and visitors handling liquid nitrogen should familiarize themselves with the procedure.

b. PI must ensure that new students and staff are guided by experienced liquid nitrogen users from their lab.

c. Users are strongly advised to attend OSHE’s Chemical Safety Training.

REFERENCES
NUS Laboratory Chemical Safety Manual