 Department of Physics Safety & Health Guidelines	Procedure No:	PhyTptCG001
	Title: Transport of Chemicals, Compressed Gases and Cryogenic Liquids in Department of Physics.	Revision No: Issue Date:
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Prepared By	Approved By	Reviewed Date
Teo Hoon Hwee	Physics Safety Committee	15/10/2021

1.0 OBJECTIVE

The purpose of this procedure is to provide guidance on the safe transportation of chemicals, compressed gases and cryogenic liquids in the Department of Physics.

2.0 SCOPE

This SOP is applicable all staff, students and visitors working in the Department of Physics.

3.0 RESPONSIBILITIES

3.1 Principal Investigators (PIs) / Lab Coordinators

The PIs / Lab Coordinators, with assistance from the Safety Leads, are responsible in ensuring that his entire lab members, visitors included, have been properly instructed in this procedure.


3.2 Personnel Involved in Transporting

3.21 Have successfully completed the faculty safety induction training.

3.22 Adhere to the proper transporting procedure.

3.23 Wear appropriate PPE.

3.24 Responsible for reporting incidents/accidents to their supervisor/safety committee/OSHE AIMS.
<https://staffportal.nus.edu.sg/staffportal/portal/safety-security-and-sustainability.html>

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4.0 DEFINITION

Chemicals include waste chemicals. Compressed gases refer to gases in cylinders under pressure. Cryogenic liquids include the commonly used liquid nitrogen.

5.0 PROCEDURES


Transport of Chemicals, Compressed Gases and Cryogenic Liquids

5.1 General Transport Procedures

- 5.11 Transport via a less used route and during off-peak hours to minimize exposure of hazards to public.
- 5.12 When transporting the above via the **elevator** from one level to another, use the 'two-man buddy' system. One will push the trolley into the unmanned lift from the source level and the other will wait at the destination level to receive the trolley. There must be a very clear display of the 'No Entry' sign on the trolley to prevent people from entering the elevator from in-between floors.
- 5.13 For the precautions pertaining to chemical, compressed gas and cryogenic liquid see the respective specifics below.

5.2 Chemical Specific

- 5.2a Waste bottles should be properly labelled. Use the waste labels provided by OSHE and/or waste company. Use GHS labels to indicate hazards present.
- 5.2b Write legibly and state clearly the chemical composition of the waste and the start date of use of the waste bottle.

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5.2c Risk assessment should cover the transportation of waste chemicals.

5.2d Consult the safety data sheet of the chemicals on the safety and health precautions to be taken if necessary.

5.2e There shall be safety coordinator to coordinate laboratory safety (include waste chemicals collection, transportation and disposal in a laboratory if there is more than one user operating in that laboratory).

5.2f Incompatible chemicals and wastes must not be mixed in the same container.

5.2g When carrying chemicals bottles **by hand**, use safety bottle carriers.

5.2h When carrying more than one bottle, **trolley/cart** must be used. The bottles must be upright and placed in secondary containers in case of spill. Ensure that the secondary containers are well secured to the trolley.

5.2i Secondary containers must be large enough to capture waste in case of spill.


5.2j Do not overload the trolley.

5.2k Adhere to the General Transport Procedures above.

5.3 Compressed Air Specific

5.31 Regulators should not be attached to the gas cylinder during transportation.

5.32 Ensure that gas cylinder valve is closed and cap is mounted before moving them.

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5.33 Trolleys must always be used to move gas cylinders from one location to another.

5.34 Adhere to the General Transport Procedures above.

5.4 Cryogenic Liquid Specific

5.41 Cryogenic liquids must be transported in proper containers.

5.42 Containers and systems containing cryogenic liquids should be equipped with pressure relief valves.

5.43 Personnel involved in transporting must wear proper PPE. Put on proper safety glasses, cryogen thermal gloves, covered shoes and a laboratory coat.

5.44 Adhere to the General Transport Procedures above.

6.0 REFERENCE

OSHE ALERT. 12 July