

	SAFE WORK PROCEDURE:	Doc No		SWP-COE-19		
		Last Rev/Date		00	22 Apr 2010	
	Hydrogen Pallet Handling	Current Rev/Date		00	22 Apr 2010	
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1. **Application to:**

All personnel working on the Hydrogen pallet transporting/ changing.

(Hydrogen Pallet = 4 x 6.4 m³ cylinders of Hydrogen contained in metal framed shelf/carrier with 2 fixed & 2 swivel wheels)

2. **Pre-requisite for Operation of the ELF Tank (Transporting/changing) process:**

2.1. Must have attended the operation and safety training.

2.2. Must be fully understood the activity based risk assessment.

2.3. Must be physically fit.

2.4. Must work two person (Buddy system) and must be fully qualified to operate the process by him/her self.

3. **Hazards that may be present:**

3.1. Pallet Topple, body parts injury

3.2. Severe fire and explosion hazards

4. **Personal Protection Required:**

4.1. Gloves

4.2. Safety Boots

5. **Procedures:**

5.1. **Hydrogen Pallet transporting process**

5.1.1. Put on PPE before starting work.

5.1.2. Transporting of the Hydrogen pallet

5.1.3 Switch off the main pallet manual valve and all the supply valves of the 4 gas cylinders for the depleted pallet.

5.1.4 Purge out any remaining gas in the line

5.1.5 Using a wrench, dismantle the connecting line from the depleted Hydrogen pallet

5.1.6 Check the pathway for any debris that might cause obstruction when transporting out the depleted Hydrogen pallet

5.1.7 Together with a qualified buddy, push the empty pallet to the storage area and push a full Hydrogen pallet back to the Hydrogen shed

5.1.8 Connect the full Hydrogen pallet back to the Hydrogen gas panel.

5.1.9 Using the purge Nitrogen gas, purge the line for 30 times.

5.1.10 Using the active gas, being Hydrogen, purge the line for another 20 times.

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- 5.1.11 Open all the cylinders valves
- 5.1.12 Turn on the pallet main valve
- 5.1.13 Turn on the valve on the panel to allow the Hydrogen gas to enter the system
- 5.1.14 Press the button for the system (either left or right) to be 'Ready'

5.2 Maintenance of the Hydrogen pallet

- 5.2.1 Physical checking of the movement of the wheels as well as the connecting gas pipes for leaks.
- 5.2.2 Conduct Hydrostatic testing of the gas cylinders every 5 years by the gas supplier.

5.3 Specific Processes

- 5.3.1 There is NO specific process

6. Communication Frequency:

The Lab Supervisor shall arrange for this Safe Work Procedure to be communicated every once a year and as & when required.

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Approved by: A/Prof Chor Eng Fong