

	<b>SAFE WORK PROCEDURE:</b>	Doc No		SWP-COE-16		
		Last Rev/Date		00	13 Apr 2010	
	Gas Cylinder changing	Current Rev/Date		00	13 Apr 2010	
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1. **Application to:**

All personnel working on the Nitrogen/ Argon/Helium Gas Cylinder changing.

2. **Pre-requisite for Operation of the Gas Cylinder changing process:**

- 2.1. Must have attended the operation and safety training.
- 2.2. Must be fully understand the activity based risk assessment
- 2.3. Must be physically fit.
- 2.4. Must be fully qualified to operate the process by him/her self.

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

- 3.1. Cylinder Topple
- 3.2. High pressure gas release, Deafening

4. **Personal Protection Required:**

- 4.1. Gloves
- 4.2. Safety Boots

5. **Procedures:**

**5.1. Operating the Gas Cylinder changing process**

5.1.1. Put on the PPE as per section 4 before start work with Gas Cylinder changing process.

**5.1.2. Colleting new Gas Cylinder**

- 5.1.2.a Using Gas cylinder trolley and load the new gas cylinder from gas storage area.
- 5.1.2.b Check the pathway for any debris that might cause obstruction when using Gas cylinder trolley.
- 5.1.2.c Position the trolley near to the Gas cylinder before resting on its flat bed.
- 5.1.2.d The Cap cover of the Gas cylinder valve must NOT be removed (Cap is for the protection of the Gas cylinder control valve during transportation)
- 5.1.2.e Tilt the cylinder slightly toward you & slowly roll it onto the flat bed platform of the trolley.
- 5.1.2.f Tie the chain to the gas cylinder with cylinder trolley.
- 5.1.2.g Transport to designated place with trolley.
- 5.1.2.h Note down (or) record the required gas pressure at regulator for your process.

**5.1.3. Changing new Gas Cylinder**

- 5.1.3.a Make sure to close the old/used gas cylinder valve.
- 5.1.3.b Make sure to close the regulator of the old/used gas cylinder.
- 5.1.3.c Release the old/used gas cylinder from regulator.
- 5.1.3.d Exchange the old/used gas cylinder with new cylinder.
- 5.1.3.e Tie the chain to the old/used gas cylinder with cylinder trolley.

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5.1.3.f Engage the new gas cylinder to the regulator using white tape onto the hose thread to get well sealed to the connection.

5.1.3.g Slowly opens the new gas cylinder valve to see the gas pressure at regulator . Check the gas leak. If it is so, then fix it.

5.1.3.h Slowly opens the regulator up to your required process gas pressure. Check the gas leak. If it is so, then fix it.

#### **5.1.4. Returning Old Gas Cylinder**

5.1.4.a Using Gas cylinder trolley and send the old gas cylinder to Empty gas storage area.

5.1.4.b Tilt the cylinder slightly toward you & slowly roll it from the flat bed platform of the trolley to the Empty gas storage area.

5.1.4.c Tie the chain to the Empty gas cylinder at Empty gas storage area.

#### **5.2 Maintenance of the Gas cylinder changing**

5.2.1 No maintenance needed, except occasionally oiling of the trolley wheels.

#### **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