
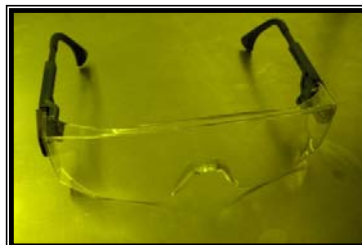
 NUS National University of Singapore  CIBA Faculty of Science, Dept of Physic ,Centre of Ion Beam Applications		Procedure No:	CIBA/CSMS/05
Title: CIBA Safety Multiple Choice Online Quiz For External Collaborators' User/ Clean room User		Rev No: Issue Date:	0005 16 July 2009
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Prepared by: Malar	Revised & Amended by: Raman	Approved by: A/Prof Jeroen van Kan	Review Date: 01 April 2015

1. Which of the following safety goggles should be worn when the UV exposure machine is switched on?

a. Safety Chemical Splash Goggle



b. UV Safety Goggle



c. Chemical splash face shield




2. Where should I dispose waste chemicals?

- a. The sink in the fume hood
- b. Specific bottles (placed in secondary tray) in the cabinet under the fume hood.
- c. The sink beside the plating machine

3. Which lights should be switched on when people working with UV photo resist?

- a. White light
- b. Yellow light
- c. Both white and yellow lights
- d. No light

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4. How should an item (e.g sample holder/beaker/chemical bottle) be cleaned before it is brought into the clean room?

- Wipe it with water until no dust left on it
- Wipe it with Isopropanol Alcohol (IPA) until no dust left on it
- Wipe with acetone until no dust left on it
- Bring it in directly without any treatment

5. When using the hot embossing machine, users should:

- check if the sample holding cup is in correct position before applying pressure
- ensure the window is closed before applying the pressure
- Neither "a" nor 'b'
- 'a' and 'b'

6. When using the plating machine, users should:



- dilute spilled & dried electrolyte with DI water, wait for a few minutes and remove the dissolved electrolyte
- clean the "Titanium" plate after plating a sample
- avoid electrolyte spillage
- All of above

7. When using the oxygen plasma cleaning machine, users should

- avoid cleaning the quartz plate after use
- avoid putting any liquid into the chamber
- vacuum it after using
- keep the pump on after using
- a & b
- b & c
- All

8. When using the spin-coater, can I put liquid in the pump shaft? What should be the size of the sample?

- Yes, because it will evaporate eventually.
 - No, the liquid will destroy the spin-coater.
 - The sample should be larger than the O-ring.
 - The sample should be smaller than the O-ring.
- ii & iv
 - i & iii
 - ii & iii
 - i & iv

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9. What should I do with my sample before I leave the clean room?

- a. Leave them on the table
- b. Label & keep the UV sensitive sample properly.
- c. Store properly on open shelf which is safely shielded from white light
- d. b & c
- e. a & c

10. Before switching on ultra violet (UV) light, what should you do?



- i. Gain permission from peers/co-workers before switching on UV exposure.
 - ii. Use suitable safety goggles.
 - iii. Put up a signage at the air shower entrance to warn peers or co-workers.
 - iv. Make sure the safety goggles are available in the clean room.
- a. i, iii & iv
 - b. i, ii & iv
 - c. i, ii, iii
 - d. all of the above

11. Regarding fume hood safety, which is (are) wrong?

- a. Do NOT pour chemicals into the drainpipe directly.
- b. Do NOT break glass apparatus.
- c. Keep the work station clean and tidy.
- d. Store chemicals in fume hood.
- e. Gain permission from peers/co-workers before switching on the white light.

12. How to prepare waste chemical bottles?

- i. Recycle the used IPA bottle providing there is no IPA residual in the bottle
 - ii. Label it properly with "chemical name" and "date"
 - iii. Place it on the fume hood bench
 - iv. Place it on the secondary tray in the cabinet under the fume hood.
- a. i, ii, iv
 - b. i, ii, iii
 - c. All of the above.
 - d. None of the above.

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13. How to deal with waste chemicals/materials?

- i. Dispose used paper and plastics etc into the waste bin.
- ii. Dispose sharp materials such as glass, needles etc into the special bins.
- iii. Dispose used chemicals into labeled waste chemical bottles.
- iv. Dispose all liquid chemicals into sink.

- a. i, ii, iii
- b. ii, iii, iv
- c. ii, iii, iv
- d. i, iii, iv

14 What to do when there is a fire/accident?



- i. Call extension 1616
- ii. Take off your clean-room suit and leave
- iii. Be a hero
- iv. Leave through the emergency door
- v. Get the fire extinguisher nearby and put out the fire if it is controllable (small fire like a trash can size).

- a. i, iv & v
- b. i, ii, iii
- c. i, ii, iv
- d. all of above

15. Before you leave the clean room, what should be checked?

- i. Check whether the DI water pump is switched off.
- ii. Check whether the nitrogen gas inlet for the spin coater is closed.
- iii. Check whether the cabinet doors are closed.
- iv. Switch off the light in clean room.

- a. i, iii & iv
- b. i, ii & iv
- c. All of above

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16 Who are the qualified clean room users?


- i. Anyone who passed the general safety online tests
 - ii. Anyone who carefully read the Material Safety Data Sheet (MSDS) for the chemicals used for the experiment.
 - iii. Anyone who read the CIBA safety manual (COMPREHENSIVE SAFETY MANAGEMENT SYSTEM (CSMS))
- a. ii, iii
 - b. i, iii
 - c. none of the above
 - d. All of the above

17. What is prohibited in the clean room?

- i. Pencil
 - ii. Ball pen
 - iii. Whiteboard Marker pen
 - iv. Special blue clean room paper
 - v. Normal A4 paper
 - vi. Notebook
- a. i, iii, iv
 - b. ii, iii, v
 - c. i, iii, v, vi
 - d. all of above

18. If any new chemicals were to be brought for use, the user should:

- i. Discuss with the Academic staff (PI) who is in charge of the clean room
 - ii. Store the new chemicals properly, file the Material Safety Data Sheet (MSDS) into the MSDS folder (Yellow one) and send the softcopy of the MSDS to the laboratory safety officer
 - iii. Use it without telling any one
 - iv. Update the Chemical Inventory list
- a. i, ii, iii
 - b. i, ii, iv
 - c. i, iii, iv
 - d. All of above



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19. The power of the 248 nm wavelength UV exposure machine should be kept on for

- a. 0 minute after the lamp is switched off.
- b. 10 minutes after the lamp is switched off
- c. 60 minutes after the lamp is switched off
- d. No need to switch off, it should remain at stand-by mode.

20. The lamp of the 248 nm wavelength UV exposure machine can be restarted:

- a. immediately after it is switched off
- b. at least 10 minutes after it is switched off
- c. 1 day after the lamp is switched off
- d. No need to switch off, it should remain at stand-by mode.

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*Please email your answers to phyrenmq@nus.edu.sg

Answers:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20.