

Clean Room Master

It's easy: Pasqualantonio Pingue is the CRM

Clean Room Keeper

Each qualified cleanroom user takes a turn as **Clean Room Keeper** (CRK). The CRK serves as a "facilities supervisor" and as an inspector. This person is responsible for maintaining the smooth operation of basic cleanroom services and for alerting the appropriate equipment masters, users, and the CRM of any irregularities. An example would be a water leak in the cleanroom or unusual consumption of gas. The CRK will also inform the CRM of any hazardous situations.

CRK List:

LOCATIONS

All Locations

Trash cans are distributed throughout the cleanroom. When these are full, or close to it, bring the bag out through the gowning area. **DO NOT PUT IT IN THE PASS-THROUGH!**

Location 1: Entryway

Inspect the tacky mats and the shoe-covers. Dispose of ripped and/or dirty shoe-covers. If the tacky mat has been used up (the easiest way to tell is when your feet don't stick to it or it is very dirty), pull up the old sheet carefully and dispose of it.

Location 2: Service Area

Check the pumping system and the oil level in the rotative pump of the spinner! Many cleanroom supplies, such as gloves, shoe-covers, tacky mats and trash bags are stored in this service area. Check the level of supplies and take new one from the storage area or notify it to the CRM. If the area becomes dirty, don't leave it to the next CRK to clean in a couple of days. Clean it!!!

Location 3: Photolithography Area

Inspect the area and empty the trash. Check the vacuum in the old evaporator and the gas flow in the mask aligner: if someone leaved it switched on, check the temperature of the Hg lamp and close it!

Location 4: Wet Bench Area

Check and see if there are any obvious leaks from DIH₂O or water. Check the chemicals in the hood: no neglected beakers should be there! Check the condition of the cabinet and the level of the waste disposal forms. If there are more than three full solvent waste containers, inform the CRM so he can make them disappear. Be sure to empty the trash in the area.

Location 5: Spinning Area

Empty the trash cans as necessary. Check the hot-plate: if someone leaved on, switch-off them! Check that the light of the profilometer and microscopes are switched-off. Change the tacky mat as necessary.

Location 6: Chemicals storage Area

Check the service area between the evaporator and the spinning room. Check the presence of Acetone and IPA in the solvent storage cabinet and the fridge temperature.

Location 7: Evaporator Area

Check the vacuum in the new-evaporator and in the RIE-PECVD systems and have a look to the rotative pumps. Empty the trash and change the tacky mat as necessary.

Location 8: e-beam lithography Area

Check equipment conditions. In particular, the UPS status, the chiller temperature and if the rotative pump results noisy.

FINALLY

At the end of the week, inform the next user of the impending assignment as a CRK. Make sure the person knows what is expected and the current status or condition of the cleanroom. You are responsible for ensuring your successor is informed and properly trained as a CRK, especially if they have never performed the function previously. To make life easier for yourself, you will want to notify the next person midway through your week. If they are unfamiliar with the responsibilities, they can join you on a couple of rounds to gain familiarity.

Updated Clean Room User List

<i>USER</i>	<i>Authorized to</i>
<i>Aji Anappara</i>	optical lithography, wet etching, thermal evaporator
<i>Franco Carillo</i>	e-beam & optical lithography, DC-RF sputtering, wet&dry etching, thermal evaporator
<i>Marco Cecchini</i>	e-beam & optical lithography, wet etching, thermal evaporator, AFM
<i>Giorgio De Simoni</i>	optical lithography, wet etching, thermal evaporator
<i>Wilfried Desrat</i>	e-beam & optical lithography, wet&dry etching, thermal evaporator
<i>César Pascual Garcia</i>	e-beam & optical lithography, wet etching, thermal evaporator
<i>Francesco Giazotto*</i>	optical lithography, DC-RF sputtering, wet etching, thermal evaporator
<i>Tonia Losco</i>	optical lithography, wet etching, thermal evaporator
<i>Stefano Luin</i>	optical lithography, wet etching, thermal evaporator
<i>Lucas Mahler</i>	e-beam & optical lithography, wet etching, thermal evaporator
<i>Cosimo Mauro</i>	optical lithography, wet etching, thermal evaporator
<i>Vincenzo Piazza*</i>	e-beam & optical lithography, wet etching, thermal evaporator
<i>Pasqualantonio Pingue*</i>	e-beam & optical lithography, wet etching, thermal evaporator, AFM
<i>Stefano Roddaro</i>	e-beam & optical lithography, wet etching, thermal evaporator
<i>Elia Strambini</i>	e-beam & optical lithography, wet&dry etching, thermal evaporator

* No in the CRK list.

Solvents

<i>Parameter</i>	<i>1,1,1-Trichloroethane</i>	<i>Acetone</i>	<i>Methanol</i>	<i>Isopropyl Alcohol</i>
Formula	CH ₃ CCl ₃	(CH ₃) ₂ CO	CH ₃ OH	CH ₃ CHOHCH ₃
Hazards				
Health	2 (moderate)	1 (slight)	3 (severe)	1 (slight)
Flammability	1 (slight)	3 (severe)	3 (severe)	3 (severe)
Reactivity	2 (moderate)	0 (none)	2 (moderate)	1 (slight)
Contact	2 (moderate)	1 (slight)	1 (slight)	1 (slight)
First Aid, if:				
Inhaled	Fresh Air, Respiration, Oxygen			
Swallowed	Give Milk or Water, Induce Vomiting	Induce Vomiting		
Eye	Flush with Water for 15 minutes; Get Medical Attention			
Contact				
Skin	Wash with Soap and Water for 15 min.	Flush with Water		
Contact				
Spill	Dike with spill pillows. Take up and place into container for later disposal. Flush area with water.			
Handling				
Other	When heated, emits HCL, chlorine and phosgene gas.			
Hazards				

Acids

<i>Parameter</i>	<i>Sulfuric</i>	<i>Nitric</i>	<i>Phosphoric</i>	<i>Hydrofluoric</i>
Formula	H ₂ SO ₄	HNO ₃	H ₃ PO ₄	HF
Hazards				
Health	3 (severe)	3 (severe)	2 (moderate)	4 (extreme)
Flammability	0 (none)	0 (none)	0 (none)	0 (none)
Reactivity	3 (severe)	3 (severe)	2 (moderate)	2 (moderate)
Contact	4 (extreme)	4 (extreme)	3 (severe)	4 (extreme)
First Aid, if:				
Inhaled	Fresh Air, Respiration, Oxygen. Seek Medical Attention.			
Swallowed	Give Milk or Water or Milk of Magnesia. DO NOT induce vomiting! Contact Physician.			
Eye Contact	Flush with Water for 15 minutes immediately. Get Medical Attention			
Skin Contact	Flush with plenty of water for 15 minutes. Remove contaminated clothing. Seek medical help.		Same as acids. Apply calcium gluconate.	
Spill Handling	Dike and absorb with spill pillows. Shovel pillows into container. Neutralize floor with soda ash or lime.			
Other Hazards	Produces toxic SO ₂ . Reacts violently with water.	Produces toxic NO.	Produces toxic PO	Do not use glass containers. Fumes are toxic.

Other Chemicals

<i>Parameter</i>	<i>Photoresist</i>	<i>Developer</i>	<i>Silica Film</i>	<i>Borofilm</i>	<i>Ammonia</i>	<i>Hydrogen Peroxide</i>
Formula or Components	2-ethoxyethyl acetate, n-butylacetate & Xylene	Alkaline Salt solution, other ingredients	Ethyl acetate, ethyl alcohol, methyl alcohol	Boric acid, butyl cellisolve, pelivvyl alcohol	NH ₃	H ₂ O ₂
Hazards						
Health	2 (moderate)	2 (moderate)	3 (severe)		3(severe)	2(moderate)
Flammability	1 (slight)	0 (none)	3 (severe)	3 (severe)	1(slight)	0 (none)
Reactivity	2 (moderate)	3 (severe)	2(moderate)	1 (slight)	2(moderate)	3(severe)
Contact	2 (moderate)	2 (moderate)	1 (slight)	1 (slight)	3(severe)	4(extreme)
First Aid, if:						
Fresh Air, Respiration, Oxygen						
Inhaled						
Swallowed	Contact Physician	Rinse out mouth. Do not induce vomiting.				Dilute with water, call physician
Eye Contact						
Skin Contact						
Spill Handling						
	Dike with spill pillows. Take up and place into container for later disposal. Flush area with water.				Carefully neutralize with dilute HCl	Keep combustibles away (wood, paper, etc) Excessive heat could unstable results.
Other Hazards	When heated, emits HCL, chlorine and phosgene gas.					