

Effective Date: April 28, 2010	Title RCA Clean Procedure	Originator: Paul Mak	Revision 01
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1. Purpose

- 1.1. This procedure describes the RCA or also called SC1/SC2 clean protocol on how to use and handle in the acid hood.

2. Scope

- 2.1. This procedure provides processing information on how to use RCA Clean in the acid hood. The use of this process procedure is for faculty, staff, and outside companies that need access and use of the shared equipment in the OPF laboratory. Internet connection is required to view process procedures.

3. Definitions

- 3.1. The RCA clean (or JTB clean) should be performed before any high temperature processing. Do not use RCA if metals are present on the wafers. If the last step was photoresist patterning, followed by a wet etch, the wafers should be stripped of photoresist prior to being RCA cleaned.

4. Responsibilities

- 4.1. It is the responsibility of the Laboratory Manager to ensure that any users of this process procedure have been trained and understand the use of the acid hood, the chemicals used for this hood and chemical safety protocol.

5. Equipment/Material

- 5.1. 817 Hood
- 5.2. DI Water
- 5.3. Nitrogen Gas
- 5.4. Squeegee
- 5.5. Clean room wipers 4x4 and 9x9
- 5.6. Chemical Apron
- 5.7. Chemical Gloves
- 5.8. Face Shield
- 5.9. Wafer Dippers and holders
- 5.10. Anti-Acid stainless steel Tweezers
- 5.11. Pyrex Glass Beakers
- 5.12. Graduated Cylinder
- 5.13. Two - Temperature Controlled Hot Plates
- 5.14. Hydrochloric Acid (HCl), CMOS
- 5.15. Hydrogen Peroxide 30% (H₂O₂), CMOS
- 5.16. Ammonium Hydroxide (HN₃OH), CMOS

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6. Procedure

Step No.	Description	Equipment	Conditions	Remarks
1 PPE (Personal Protective Equipment) Gowning Order				
1.1	Apron			
1.2	Face Shield			
1.3	Acid Gloves	Neoprene		
2 Acid Hood Protocols				
2.1	Turn ON DI water	817 Hood	18MOhm/cm2	Blue valve
2.2	Spray down deck	Spray Gun		
2.3	Squeegee the water towards the drain or exhaust vent holes	Squeegee		Squeegee located hanging on the left side
2.4	Select appropriate chemicals	Chemicals	If empty or near empty. Contact laboratory staff	Located either below the acid hood, chemical acid or flammable solvent cabinet
2.5	Select Appropriate Waste Container	Hazards Waste Container	If full contact laboratory staff, if staff available leave waste beaker with note and place in the back of the hood	Located either in the chemical acid or flammable solvent cabinet
2.6	Select Appropriate lab ware	Pyrex Beaker		Located below acid hood Label beaker or write on cleanroom wipe the chemical name, date, contact
2.7	Mixing chemicals		Within blue tape area	
2.8	Return chemicals after mixing			Return chemical back to original location
3 Chemical Process				
3.1	RCA 1 Adding DI H ₂ O and HN ₃ OH	Hood/ beaker/ graduated cylinder	5500ml DI H ₂ O 1100ml HN ₃ OH	Triple rinse graduated cylinder before measuring out HN ₃ OH.
3.2	RCA 2 Adding DI H ₂ O and HCl	Hood/beaker/ graduated cylinder	5500ml DI H ₂ O 1100ml HCl	Triple rinse graduated cylinder before measuring out HCl.
3.3	Set Hot Plate Temperature for RCA1 and RCA2	Hood/beaker/ Hot Plates	75°C	
3.4	RCA 1 and RCA 2	Hood/beaker/	65°C	Triple rinse graduated

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	Adding H ₂ O ₂	Hot Plates	1100ml H ₂ O ₂	cylinder before measuring out H ₂ O ₂ . At 65°C pour H ₂ O ₂ in RCA1
3.5	RCA 1 Clean	Hood/beaker/ Hot Plates	75°C for 5 min	
3.6	RCA 1 Rinse in DI H ₂ O	Hood/Rinse beaker	5 min	Flowing DI H ₂ O
3.7	RCA 2 Adding H ₂ O ₂	Hood/beaker/ Hot Plates	1100ml H ₂ O ₂	Triple rinse graduated cylinder after H ₂ O ₂ is poured
3.8	RCA 2 Clean	Hood/beaker/ Hot Plates	75°C for 5 min	
3.9	RCA 2 Rinse in DI H ₂ O	Hood/Rinse beaker	5 min	Flowing DI H ₂ O
3.10	Dry with N ₂	817 Hood	Blow dry both side on top of cleanroom wipe	

7. Record Retention

7.1. N/A

8. Reference Documents

9.1 N/A