BAY AREA AIR QUALITY MANAGEMENT DISTRICT

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DATA FORM F
Semiconductor Fabrication Area

New ☐ Modified ☐ Retro ☐
(for office use only)

Form F is for the following equipment used in the manufacture of semiconductors or related solid state devices: Solvent Stations, Wet Chemical Stations, Siliconizing Reactors, Chemical Vapor Deposition, Diffusion Furnaces and Photoresist Lines. One Form F should be completed for all such equipment in each Fabrication Area. SEE PAGE 2 FOR INSTRUCTIONS.

1. Company Name ______________________ Plant No: ________
   If Unknown, leave blank)
2. Name or Description of Fabrication Area ______________________
3. Effective Date ______________ Source No. S-________
4. Equipment Type (Check one or more and complete corresponding parts below):
   - ☐ Solvent Stations (Part A)
   - ☐ Wet Chemical Stations (Part B)
   - ☐ Siliconizing Reactors (Part C)
   - ☐ Chemical Vapor Deposition (Part D)
   - ☐ Diffusion Furnaces (Part E)
   - ☐ Photoresist Lines (Part F)
   - ☐ Exempt Sources (Part G)
5. Typical Use ________ hours/day _____ days/week ______ weeks/year
6. Typical % of total annual usage: Dec-Feb ____% Mar-May ____% Jun-Aug ____% Sep-Nov ____%

Part A - Solvent Stations

7. Aggregate Holding Capacity ______gal Number of solvent station hoods ________
8. Do all solvent containing reservoirs, sinks, and containers have covers? ☐ ☐
   With regard to air pollutant flow, what abatement devices and/or emission points are *immediately* downstream?
9. Abatement Devices A______ A______ A______ Emission Points P______ P______ P______

Part B - Wet Chemical Stations

10. Aggregate Holding Capacity ______gal Number of Wet Station Hoods ________
    With regard to air pollutant flow, what abatement devices and/or emission points are *immediately* downstream?
11. Abatement Devices A______ A______ A______ Emission Points P______ P______ P______

Part C - Siliconizing Reactors

12. Number of Reactors ____________
    With regard to air pollutant flow, what abatement devices and/or emission points are *immediately* downstream
13. Abatement Devices A______ A______ A______ Emission Points P______ P______ P______

Part D - Chemical Vapor Deposition (excluding vacuum and low pressure CVD)

14. Number of Chambers ____________
    With regard to air pollutant flow, what abatement devices and/or emission points are *immediately* downstream
15. Abatement Devices A______ A______ A______ Emission Points P______ P______ P______

Part E - Diffusion, Oxidizing, Alloying and/or Annealing Furnaces

16. Number of Chambers __________
    With regard to air pollutant flow, what abatement devices and/or emission points are *immediately* downstream
17. Abatement Devices A______ A______ A______ Emission Points P______ P______ P______

Part F - Photoresist

18. Number of Negative: Applicators ________ Developers ________

With regard to air pollutant flow, what abatement devices and/or emission points are *immediately* downstream?

19. Abatement Devices A_____ A_____ A_____ Emission Points P_____ P_____ P_____

20. Number of Positive: Applicators ________ Developers ________

With regard to air pollutant flow, what abatement devices and/or emission points are *immediately* downstream?

21. Abatement Devices A_____ A_____ A_____ Emission Points P_____ P_____ P_____

Part G - Exempt Equipment - Indicate quantities for the following operations

22. Ion implantation chambers ________
23 Vacuum deposition chambers ________
24 Sputtering chambers ________
25. Lapping and polishing machines ________
26. Plasma etching or ashing chambers ________

Person completing this form:	Date:

Complete and attach Chemical Usage Summary, Page 3 below

INSTRUCTIONS FOR COMPLETING FORM F

- Complete Data Form P for each Fabrication Area
- Complete and attach Data Form U for each Fabrication Area
- See BAAQMD Regulation 3 for equipment definitions

Number	Instructions
2	Name and/or describe the fabrication area. The effective date is either the date each fabrication area will commence operations, if new, or the date of the most recently installed piece of equipment, if currently operating.
4	Check as many parts as are applicable to each fabrication and complete each part.
7,10	Aggregate holding capacity is the total quantity (#7) solvent or (#10) other chemicals normally being held in all sinks. Number of hoods is the total number of ventilating hoods that exhaust the stations.
14	Exclude vacuum and low pressure CVD.
18,20	*Note*: In multitrack equipment, each separate track counts as one applicator or developer. In integrated equipment, where the applicator and developer are combined in one machine, count each applicator and each developer.

Plant No.____
Source No.________

Usage Information

Note usage of each material. Annual throughput, for each material, = usage in pure form + usage as constituent of other mixture.

	Material Code	Annual Usage 1000 gal/yr
Acetone	455	
Butyl Acetate	48	
Chlorofluorocarbons (e.g. freon)	211	
Ethyl Acetate	104	
Ethylene Glycol	131	
Hexamethyldisilazane (HMDS)	508	
Isopropyl Alcohol (IPA)	157	
Methanol	179	
Methyl Ethyl Ketone (MEK)	169	
Methylene Chloride	396	

Photoresist Maskant (negative)	Complete Photoresist Operations table. See following page.
Photoresist Developer (negative)	
Photoresist Maskant (positive)	
Photoresist Developer (positive)	

Trichloroethane (TCA)	294	
Trichloroethylene (TCE)	295	
Toluene	293	
Xylene (Xylol)	307	
Other Organics (precursor)		
Other Organics (nonprecursor)		

Acetic Acid	454	
Ammonium Hydroxide	471	
Anhydrous Ammonia	22	
Aqueous Ammonia	22	
Aqua Regia	507	
Hydrochloric Acid (liq)	149	
Hydrofluoric Acid (HF)	150	
Nitric Acid	191	
Phenol	214	
Sulfuric Acid	146	
Stripper (specify trade name)		
Others		

		Annual Usage liters/yr (excluding carrier gas)
Arsine	483	
Boron Nitride	483	
Boron Tribromide	483	
Boron Trichloride	483	
Other Boron-containing gases	483	
Phosphine	483	
Silane	483	
Other Dopant gases (specify)	483	

Photoresist Operations

Instructions

Check appropriate box for negative or positive photoresist lines. If both negative and positive photoresist operations exist in the same fabrication area, photocopy this page and complete one for positive PR operations.

Check one: negative ☐ positive ☐

	Photoresist Maskant		
	Maskant #1	**Maskant #2**	**Maskant #3**
1. Maskant trade name			
2. Total maskant applied annually			
3. Percent organic solvent, by volume			
4. Composition of organic solvent			
a) largest component - % of total			
- material code			
b) 2nd largest component - % of total			
- material code			

	Photoresist Developer		
	Developer #1	**Developer #2**	**Developer #3**
1. Developer trade name			
2. Total developer applied annually			
3. Percent organic solvent, by volume			
4. Composition of organic solvent			
a) largest component - % of total			
- material code			
b) 2nd largest component - % of total			
- material code			