



**Environmental Quality Control
Bureau of Air Quality
Inspection/Investigation Report**

**Myrtle Beach EQC Office
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Myrtle Beach, SC 29577
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Source (Project):	AVX Corporation	Date/Time:	September 02, 2008 @ 1000
Source No:	1340-0002	Type:	Comprehensive
Mailing Address:	PO Box 867 Myrtle Beach SC 29578-0867	Owner/Operator:	Jack Huggins
Source Address:	801 17th Ave S Myrtle Beach SC 29577	Person Contacted:	Jack Huggins / Boyd Holt
County:	Horry	Source Telephone:	843-448-9411
		Code:	MA01X
		Inspector:	Marshall, Mike A

AVX Corporation (AVX) produces electronic capacitors. This facility consists of two manufacturing areas, MB1 and MB2. Title V permit #1340-0002 was issued June 19, 2001 and expires July 31, 2006. The permit was updated January 19, 2005.

On this date the following representatives of SCDHEC; Matthew Maxwell, Ronnie Driggers, Buck Graham, Mike Marshall and Wendy McIntyre met with Mr. Boyd Holt, Safety and Environmental Manager and Mr. Jack Huggins, Facilities Manager for AVX. The following observations were made:

Emission Units

Unit ID	Unit Description	Control Device Description	Operational Status
01	Metals Department	N/A	Operational. Visible emissions were nonexistent.
02	Plating Department	N/A	Operational. Visible emissions were nonexistent.
03	Miscellaneous Site Support	N/A	Operational. Visible emissions were nonexistent.
04	Slip Manufacturing	N/A	Operational. Visible emissions were nonexistent.
05	Termination Department	N/A	Operational. Visible emissions were nonexistent.
06	Raw Materials Manufacturing (RMM)	Scrubber, Dust Collectors	Operational. Visible emissions were nonexistent.
07	MB1 - CMAP Buildup	Solvent Recovery	Operational. Visible emissions were nonexistent.
08	MB1 - CMAP Support	Baghouses	Operational. Visible emissions were nonexistent.
09	MB1 - Kiln Room	N/A	Operational. Visible emissions were nonexistent.
10	MB2 - CMAP Buildup	Absorbers/ Desorbers, Thermal	Operational. Visible emissions were nonexistent.

Source (Project) : AVX Corporation	Date/Time: September 02, 2008 @ 1000
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Unit ID	Unit Description	Control Device Description	Operational Status
		Oxidizers	
11	MB2 - CMAP Support	Baghouse	Operational. Visible emissions were nonexistent.
12	MB2 - Kiln Room	N/A	Operational. Visible emissions were nonexistent.
13	MB2 – Thin Film Process	Scrubbers	This unit was in operation at the time of inspection. Visible emissions were nonexistent.

N/A = Not Applicable

Control Devices

Unit Description	Control Device & Range	Status & Readings
06 – Raw Materials Manufacturing (RMM)	Dust Collectors A, B, C: ΔP range = 1.0" – 5.0" w.c.	A – 3.6" w.c. B – 1.2" w.c. C – not in operation Visible emissions were nonexistent.
06 – Raw Materials Manufacturing (RMM)	Scrubber: N/A	Taken out of service. See construction permit #1340-0002-CW
07 – MB1, CMAP Buildup	Solvent Recovery: Inlet gas temp = $\leq 95^{\circ}\text{F}$ Cooling coil temp = $30^{\circ}\text{F} - 45^{\circ}\text{F}$ Cooling water temp = $33^{\circ}\text{F} - 42^{\circ}\text{F}$	Inlet gas temp = #1 reading @ 76.2°F , #2 @ 53.2°F Cooling coil temp = #1 @ 41.9°F , #2 @ 41.5°F , #3 @ 41.9°F Cooling water temp = 40.1°F Visible emissions were nonexistent.
08 – MB1, CMAP Support	Baghouses 1, 2, 3 ΔP range = 1.0" – 7.0" w.c.	#1 – not in operation #2 – not in operation #3 – not in operation Visible emissions were nonexistent.
10 – MB2, CMAP Buildup	Absorbers ΔP range 1.0" – 5.0" w.c. Desorbers $350^{\circ}\text{F} - 500^{\circ}\text{F}$ Thermal Oxidizers $1400^{\circ}\text{F} - 1800^{\circ}\text{F}$	Absorbers = #2 reading @ 2.1" w.c., #3 @ 2.7" w.c., #4 out of service. Desorbers = #2 @ 415°F , #3 @ 387°F , #4 out of service (not needed) Thermal Oxidizers = #1 reading @ 1532°F , #2 @ out of service (not needed) Visible emissions were nonexistent.
11 – MB2, CMAP Support	Baghouse ΔP range = 1.0" – 5.0" w.c.	Not in operation at the time of inspection. (process not operating)
13 – MB2, Thin Film Process	Scrubbers ΔP range 1.0" – 3.0" w.c. pH range = 6.0 – 13.0 s.u.	#1 reading @ 1.31" w.c., and 8.5 s.u. #2 @ 1.36" w.c., and 8.5 s.u. Visible emissions were nonexistent.

Comments: None

UNIT ID 01 – Metals Department

Equip ID	Equipment Description	Install Date	Control Device ID	Status
BM-4	Bead Mill (Small) for particle size distribution rated at 1,200 kg/day	1998	N/A	Removed
BM-5	Bead Mill (Large) for particle size distribution rated at 2,400 kg/day	1998	N/A	Removed
BM-6	Bead Mill (Large) for particle size distribution rated at 2,400 kg/day	1998	N/A	Removed
BM-7	Bead Mill (Large) for particle size distribution rated at 2,400 kg/day	1998	N/A	Removed
BM-8	Bead Mill (Large) for particle size distribution rated at 2,400 kg/day	1998	N/A	Removed
BM-9	Bead Mill (Large) for particle size distribution rated at 2,400 kg/day	1998	N/A	Removed
BM-10	Bead Mill (Large) for particle size distribution rated at 2,400 kg/day	1998	N/A	Removed
BRM-1	Buhler Roll Mill #1 for particle size distribution rated at 1,000 kg/day	1999	N/A	On site and operational.
BRM-2	Buhler Roll Mill #2 for particle size distribution rated at 1,000 kg/day	1999	N/A	On site and operational.
DM-1	Dyno Mill for particle size distribution rated at 64 kg/day	1989	N/A	Removed
KMS-1	Kady Zolver #1 for particle size distribution rated at 200 kg/day	1980	N/A	On site and operational.
KMS-2	Kady Zolver #2 for particle size distribution rated at 200 kg/day	1980	N/A	On site and operational.
TRM-1	Three Roll Mill (Large) for particle size distribution in the making of termination paste (rated at 1,000 kg/day)	1980	N/A	On site and operational.
TRM-2	Three Roll Mill (Medium) for particle size distribution in the making of binder (rated at 1,000 kg/day)	1980	N/A	Removed
TRM-3	Three Roll Mill (Large) for particle size distribution in the making of binder (rated at 1,000 kg/day)	1998	N/A	On site and operational.
TRM-4	Three Roll Mill (Small) for particle size distribution in the making of termination paste (rated at 1,000 kg/day)	1980	N/A	On site and operational.
AM-1	Air Mixer #1 for process blending rated at 120 kg/day	2000	N/A	On site and operational.
AM-2	Air Mixer #2 for process blending rated at 120 kg/day	1999	N/A	On site and operational.
AM-3	Air Mixer #3 for process blending rated at 120 kg/day	1999	N/A	On site and operational.
AM-4	Air Mixer #4 for process blending rated at 120 kg/day	1999	N/A	On site and operational.
AM-5	Air Mixer #5 for process blending rated at 120 kg/day	1998	N/A	Removed
AM-6	Air Mixer #6 for process blending rated at 120 kg/day	1998	N/A	Removed

Equip ID	Equipment Description	Install Date	Control Device ID	Status
	kg/day			
AVM1	Armenco Vacuum Mixer for process blending rated at 240 kg/day	1993	N/A	On site and operational.
H-1 thru H-7	Hockmeyer Mixers #1 thru #7 for process blending rated at 120 kg/day (each)	1981	N/A	On site and operational.
H-8 thru H-12	Hockmeyer Mixers #8 thru #12 for process blending rated at 120 kg/day (each)	1999	N/A	Mixers #8-9 on site and operational. Mixers #10-12 were removed.
MM-1	Meyers Mixer #1 for process blending rated at 600 kg/day	1991	N/A	On site and operational.
MM-2	Meyers Mixer #2 for process blending rated at 600 kg/day	1991	N/A	On site and operational.
PD-2	PD2 Mixer for process blending rated at 24 kg/day	1986	N/A	On site and operational.
HDM1 thru HDM5	Planetary Mixers #1 thru #5 for process blending rated at 400 kg/day (each)	1980	N/A	On site and operational.

UNIT ID 02 – Plating Department

Equip ID	Equipment Description	Install Date	Control Device ID	Status
A1	Autoline Barrel #1 for plating of Ni and Sn/Pb rated at 276 barrel/day	1989	N/A	Removed.
A2	Autoline Barrel #2 for plating of Ni and Sn/Pb rated at 276 barrel/day	1992	N/A	On site and operational.
A3	Autoline Barrel #3 for plating of Ni and Sn/Pb rated at 276 barrel/day	1994	N/A	On site and operational.
A4	Autoline Barrel #4 for plating of Ni and Sn/Pb rated at 276 barrel/day	1996	N/A	Removed.
A5	Autoline Barrel #5 for plating of Ni and Sn/Pb rated at 276 barrel/day	1997	N/A	Never installed.
GP1	Gold Plating for electroplating of gold rated at 200 barrel/mo.	1991	N/A	On site and operational.
RF-1	RFT Plater #1 for electroplating of capacitors (rated at 15 KVA)	1997	N/A	Removed.
RF-2 & RF-3	RFT Platers #2 & #3 for electroplating of capacitors (rated at 15 KVA)	1998	N/A	Removed.
RF-4	RFT Plater #4 for electroplating of capacitors (rated at 15 KVA)	1999	N/A	Removed.

Comments: Solder strip with exhaust not listed in Unit ID 02 or Appendix B as insignificant.

UNIT ID 03 – Miscellaneous Site Support

Equip ID	Equipment Description	Install Date	Control Device ID	Status
E4	Emergency Generator (MIS) rated at 245 kW	1982	N/A	Unable to verify.
E5	Emergency Generator (MIS) rated at 260 kW	1982	N/A	Unable to verify.
E6	Emergency Generator (RMM & Calcining) rated at 600 kW	1995	N/A	On site and operational.
E7	Emergency Generator (Sol Gel) rated at 565 kW	1997	N/A	On site and operational.
STR1	Stripping Tower #1 for Air Stripping rated at 100 gpm	1997	N/A	On site and operational.
STR2	Stripping Tower #2 for Air Stripping rated at 10 gpm	1997	N/A	Unable to verify.
SM3	Support Maintenance for MB1: Miscellaneous Cleaning	N/A	N/A	Unable to verify.

UNIT ID 04 – Slip Manufacturing

Equip ID	Equipment Description	Install Date	Control Device ID	Status
KMS1 thru KMS3	Kady Zolvers #1 thru #3 for particle size distribution rated at 600 kg/day (each)	1980	N/A	Removed
MCD1 thru MCD5	MC Dispersers #1 thru #5 for particle size distribution rated at 800 kg/day (each)	1997	N/A	On site and operational.
NM1	Netzsch Mill #1 for particle size distribution rated at 2,400 kg/day	1992	N/A	On site and operational.
NM2	Netzsch Mill #2 for particle size distribution rated at 2,400 kg/day	1992	N/A	Removed
NM3	Netzsch Mill #3 for particle size distribution rated at 2,400 kg/day	1996	N/A	Removed
S1	Sweco M18 Mill #1 for particle size distribution rated at 800 kg/day	1989	N/A	On site and operational.
S2	Sweco M18 Mill #2 for particle size distribution rated at 800 kg/day	1989	N/A	On site and operational.
S3	Sweco M18 Mill #3 for particle size distribution rated at 800 kg/day	1995	N/A	On site and operational.
S4 thru S6	Sweco M18 Mills #4 thru #6 for particle size distribution rated at 800 kg/day (each)	1996	N/A	On site and operational.
SG1 thru SG11	Sweco M45 Mills #1 thru #11 for particle size distribution rated at 800 kg/day (each)	1997	N/A	On site and operational.
KM1	Kady Mill #1 for process blending rated at 2,400 kg/day	1988	N/A	Removed
KM2	Kady Mill #2 for process blending rated at 2,400 kg/day	1989	N/A	Removed
KM3	Kady Mill #3 for process blending rated at 2,400 kg/day	1989	N/A	Removed

Equip ID	Equipment Description	Install Date	Control Device ID	Status
MC1 thru MC7	MC Mixers #1 thru #7 for particle size distribution rated at 800 kg/day (each)	1997	N/A	Mixers #1-6 on site and operational. Mixer #7 was removed.
AVM1	Armenco Vacuum Mixer for process blending rated at 240 kg/day	1993	N/A	On site and operational.
SPM1	Stock pot mixers for the addition of solvent to powders	1996	N/A	On site and operational.

UNIT ID 05 – Termination Department

Equip ID	Equipment Description	Install Date	Control Device ID	Status
CS1 thru CS5	Chipstar CS-325 Ovens #1 thru #5 for drying termination ink rated at 313 BTU/min (each)	1995	N/A	15 Chipstar ovens are on site and operational. Others have been removed.
CS6 thru CS15	Chipstar CS-325 Ovens #6 thru #15 for drying termination ink rated at 313 BTU/min (each)	1996	N/A	
CS16	Chipstar CS-325 Oven #16 for drying termination ink rated at 313 BTU/min	1997	N/A	
CS17 thru CS24	Chipstar CS-325 Ovens #17 thru #24 for drying termination ink rated at 313 BTU/min (each)	2000	N/A	
CS30	Chipstar CS-325 (Modified) Oven #30 for drying termination ink rated at 313 BTU/min	1997	N/A	
MGB	Gruenberg Oven L3-1H506 for moisture and organic removal rated at 260 Kg/day	1999	N/A	Removed.
KL-1 thru KL-4	Koyo-Lindburg Ovens #1 thru #4 for copper termination firing rated at 51.6 KVA (each)	1998	N/A	Eight Koyo-Lindburg ovens are on site and operational. Others have been removed.
KL-5	Koyo-Lindburg Oven #5 for copper termination firing rated at 51.6 KVA	1999	N/A	
KL-6	Koyo-Lindburg Oven #6 for copper termination firing rated at 51.6 KVA	1999	N/A	
KL-7 thru KL-12	Koyo-Lindburg Ovens #7 thru #12 for copper termination firing rated at 51.6 KVA (each)	2000	N/A	
P20 thru P24	Palomar 2007 Ovens for drying of termination ink rated at 313 BTU/min (each)	1996	N/A	Five Palomar ovens are on site and operational. Others have been removed.
P25 thru P31	Palomar 2009 Ovens for drying of termination ink rated 313 BTU/min (each)	2000	N/A	

ST-8 thru ST-10	Sierra Therm Ovens for 24" silver termination firing rated at 56 KVA	1997	N/A	Four Sierra Therm ovens are on site and operational. Others have been removed.
ST-11	Sierra Therm Oven for 24" silver termination firing rated at 56 KVA	1996	N/A	
ST-12 thru ST-16	Sierra Therm Ovens for 24" silver termination firing rated at 56 KVA	1999	N/A	
WJO	WJ Oven for moisture and organic removal rated at 260 K/day	1993	N/A	Removed.
WJ-7	WJ Oven 24CA-87 for silver termination firing rated at 45 KVA	1993	N/A	Removed.
PO1	Palomar 2001 Modified Oven (1 Oven only) for application and drying of termination ink rated at 313 BTU/min	1994	N/A	On site and operational.
PO2	Palomar 2009 Modified Oven for application and drying of termination ink rated at 313 BTU/min	1994	N/A	On site and operational.
P1	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min	1981	N/A	Removed.
P2	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min	1984	N/A	Removed.
P3 & P4	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min (each)	1985	N/A	On site and operational.
P5 & P6	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min (each)	1988	N/A	Removed.
P7 thru P9	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min (each)	1989	N/A	Removed.
P10 thru P16	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min (each)	1991	N/A	Removed.
P17	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min	1993	N/A	Removed.
P18	Palomar 246 System for application and drying of termination ink rated at 313 BTU/min	1996	N/A	Removed.

UNIT ID 06 – Raw Materials Manufacturing

Equip ID	Equipment Description	Install Date	Control Device ID	Status
SG3	VOID - Roller Hearth Kiln for the production of barium titanate from barium oxalate titanate rated at 223,000 kg/yr	1997	VOID	N/A
SG5	VOID - Barium Chloride Tank for barium chloride dihydrate storage; rated use of 289,000 kg/yr	1996	VOID	N/A
SG7 & SG8	VOID - Mixing Tanks #1 & #2 for the mixing of BaCl ₂ , HO ₂ CCO ₂ H, Titanium Oxychloride rated at 223,000 kg/yr (each)	1996	VOID	N/A

SG9	VOID - Mixing Tank #3 for the mixing of BaCl ₂ , HO ₂ CCO ₂ H, Titanium Oxychloride rated at 223,000 kg/yr	2001	VOID	N/A
SG10	VOID - Q320 Centrifuge to wash barium oxalate titanate cake rated at 446,000 kg/yr	1996	VOID	N/A
SG13	VOID - Barium Chloride Tank for barium chloride dihydrate storage; rated use of 289,000 kg/yr	1997	VOID	N/A
DOA thru DOK	Drying Ovens for exhausting heat	1999	N/A	Drying Ovens H, I, J, K, and L are on site and operational.
BL1	Blender for preparation of ceramic powder rated at 1,000,000 lb/yr	1983	**	Removed.
B4	Blender for preparation of ceramic powder rated at 1,000,000 lb/yr	1985	**	On site and operational as BL3.
B5	Blender for preparation of ceramic powder rated at 1,000,000 lb/yr	1984	**	On site and operational as BL4.
CSB1	Cone Screw Blender rated at 1,000,000 lb/yr	1985	**	On site and operational.
B6	Dynamic Air Mixer for process blending rated at 1,000,000 lb/yr	1994	**	Removed.
RMM PS1 thru RMM PS3	Pre-Slurry Carts to add ceramic powders to slurry mixes rated at 4,000,000 lb/yr	1996	**	On site and operational.
V1	Vat for BaCO ₃ weighing/batching rated at 2,000,000 lb/yr	1983	**	On site and operational.
V3	Vat for BaTiO ₃ weighing/batching rated at 4,000,000 lb/yr	1983	**	On site and operational.
V8	Vat for Bismuth Trioxide weighing/batching rated at 1,000,000 lb/yr	1989	**	On site and operational.
V5	Vat for Lead Bismuth Titanate weighing/batching rated at 1,100,000 lb/yr	1983	**	On site and operational.
V7	Vat for Lead Niobate weighing/batching rated at 1,000,000 lb/yr	1989	**	On site and operational.
V2	Vat for Pb weighing/batching rated at 2,000,000 lb/yr	1983	**	On site and operational.
V4	Vat for TiO ₂ weighing/batching rated at 4,000,000 lb/yr	1983	**	On site and operational.
V6	Vat for Y832 weighing/batching rated at 1,100,000 lb/yr	1983	**	On site and operational.
PR1	Ceramic Priller (3 pump) rated at 300,000 lb/yr	1983	**	On site and operational.
PR2	Ceramic Priller (3 pump) rated at 300,000 lb/yr	1983	**	On site and operational.
PR3	Ceramic Priller (1 pump) rated at 100,000 lb/yr	1983	**	On site and operational.
PR4	Ceramic Priller (3 pump) rated at 300,000 lb/yr	1983	**	On site and operational.
PR5	Ceramic Priller (3 pump) rated at 300,000 lb/yr	1983	**	On site and operational.

PR6 thru PR9	Ceramic Prillers (4 pump) rated at 400,000 lb/yr (each)	1983	**	Ceramis Prillers 6, 7, and 8 are on site and operational.
RTF-1	Rapid Temp Furnace for calcining/recalcining rated at 750 kg/yr	1992	**	On site and operational.
RTF-2	Rapid Temp Furnace for calcining/recalcining rated at 750 kg/yr	1988		
RTF-3	Rapid Temp Furnace for calcining/recalcining rated at 750 kg/yr	1994		
G1 & G2	Prill Grinders rated at 700,000 lb/yr (each)	1983	**	G1 on site and operational. G2 has been removed.
G4 & G5	Prill Grinders rated at 700,000 lb/yr (each)	1984		On site and operational.
M1 thru M3	Sweco Mills for particle size distribution rated at 800 kg/day (each)	1989		M1 on site and operational. Others have been removed.
M4 & M6	Sweco Mills for particle size distribution rated at 800 kg/day (each)	1996	**	On site and operational.
M7 thru M12	Sweco Mills for particle size distribution rated at 800 kg/day (each)	1997		M5, M7, and M8 on site and operational. Others have been removed.

Comments: ** Control Device ID DC-A, DC-B, DC-C

UNIT ID 07 – MB1: CMAP Buildup

Equip ID	Equipment Description	Install Date	Control Device ID	Status
C0 thru C4	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1999	SRS-ATOM	C0 is not operational. C1-C3 has been removed. C4 is on site and operational.
C5	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1987	SRS-ATOM	On site and operational.
C6	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1987	SRS-ATOM	On site and operational.
C7	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1988	SRS-ATOM	On site and operational.
C8	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1990	SRS-ATOM	On site and operational.
C9	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1991	SRS-ATOM	On site and operational.
C10	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1992	SRS-ATOM	On site and operational.
C11	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1992	SRS-ATOM	On site and operational.
C12 thru C18	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	1993	SRS-ATOM	On site and operational.

Equip ID	Equipment Description	Install Date	Control Device ID	Status
C19 thru C27	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	1994	SRS-ATOM	On site and operational.
C28 thru C32	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	1995	SRS-ATOM	On site and operational.
C33 thru C36	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	1995	SRS-CR9	C33 and C34 have been removed. C35 and C36 are on site and operational.
C37	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	1995	N/A	On site and operational.
C38 thru C40	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	1996	N/A	On site and operational.
C41 thru C53	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	1997	N/A	C41, C51-C53 have been removed. C42-C50 are on site and operational.
C54	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day	2001	*	Not installed.

UNIT ID 08 – MB1 CMAP Support

Equip ID	Equipment Description	Install Date	Control Device ID	Status
D1	Blue M Oven POM-7-336G-3 for drying; rated at 341 BTU/min	1978	N/A	Removed.
D2	Blue M Oven POM-7-336G-3 for drying; rated at 341 BTU/min	1984	N/A	Removed.
CD1 thru CD22	Chip Dryers for excess moisture removal	1985	N/A	13 Chip Dryers on site and operational.
GPBO -1 thru GPBO -7	Gruenberg Post Bake Oven to drive off moisture rated at 1,366 BTU/min (each)	1996	N/A	Removed.
GPBO -11 & GPBO -12	Gruenberg Post Bake Oven to drive off moisture rated at 1,366 BTU/min (each)	1996	N/A	Removed.
GPBO -13 thru GPBO -16	Gruenberg Post Bake Oven to drive off moisture rated at 1,366 BTU/min (each)	1997	N/A	16 and 18 on site and operational. Others have been removed.
MTO1	Microtech Oven 1 - Thermal release ovens to remove	1996	N/A	MTO1 has been

Equip ID	Equipment Description	Install Date	Control Device ID	Status
& MT02	paper and buildup from plates (each)			removed. MT02 is on site and operational.
MTO3 & MT04	Microtech Oven 3 - Thermal release ovens to remove paper and buildup from plates (each)	1998	N/A	Removed.
DD-1	Disco Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1998	MB1-H3	On site and operational.
DD-2	Disco Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1998	MB1-H3	(DD-2 to DD-4)Two of these Four units were moved to the MB2 plant and are operational. The other two have been removed.
DD-3	Disco Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1999	MB1-H3	“
DD-4	Disco Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1999	MB1-H3	“
DD-5	Disco Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	2000	MB1-H3	“
DD-6	Disco Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	2000	MB1-H3	On site and operational.
GS-1	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1985	MB1-H1	Removed.
GS-2	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1987	MB1-H1	Removed.
GS-4	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1991	MB1-H1	Removed.
GS-5 GS-6	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day (each)	1993	MB1-H1	Removed.
GS-7	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1994	MB1-H1	Removed.
GS-8	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1995	MB1-H1	Removed.
GS-9	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1996	MB1-H1	Removed.
GS-10	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1997	MB1-H1	On site and operational.
GS-11	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1998	MB1-H1	On site and operational.
GS-12	M&E Dicer chip fabrication/capacitor separation - 9.2x10 ⁶ pcs/day	1998	MB1-H1	Removed.

UNIT ID 09 – MB1: Kiln Room

Equip ID	Equipment Description	Install Date	Control Device ID	Status
RA8 thru RA13, RA29 & RA33	Blue M Ovens CW-888OG for air burnout of volatile compounds from capacitors rated at 512 BTU/min (each)	1989	N/A	Four Blue M Ovens CW-888OG on site and operational. Others have been removed.
RA34 & RA37	Blue M Oven CW-888OG for air burnout of volatile compounds from capacitors rated at 512 BTU/min (each)	1990	N/A	
BM27	Blue M Oven POM-7-336F for air burnout of volatile compounds from capacitors 341 BTU/min	1984	N/A	Three Blue M Ovens POM-7-336F on site and operational. Others have been removed.
BM28	Blue M Oven POM-7-336F for air burnout of volatile compounds from capacitors 341 BTU/min	1996	N/A	
BM64	Blue M Oven POM-7-336F for air burnout of volatile compounds from capacitors 341 BTU/min	1984	N/A	
BM65 & BM66	Blue M Oven POM-7-336F for air burnout of volatile compounds from capacitors 341 BTU/min (each)	1996	N/A	
(VOID) CL01 CL02	(VOID) Cladan Kiln 315 for densification of ceramic capacitors rated at 682 BTU/min (each)	1992	N/A	Six Cladan Kilns 315 on site but not operational.
(VOID) CL03 thru CL05	(VOID) Cladan Kiln 315 for densification of ceramic capacitors rated at 682 BTU/min (each)	1993	N/A	
GB1	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1991	N/A	A total of 35 Gruenberg Ovens C135H11M in the MB1 building and operational. Others have been removed.
GB2 & GB3	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1992	N/A	
GB4, GB5 & GB14 thru GB20	Gruenberg Ovens C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1994	N/A	
GB36 & GB38	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1995	N/A	

Equip ID	Equipment Description	Install Date	Control Device ID	Status
GB39, GB40, GB42, GB43 & GB46	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1994	N/A	
GB47	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1993	N/A	
GB48	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1991	N/A	
GB59	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1993	N/A	
GB60 thru GB62	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1992	N/A	
GB63, GB65 thru GB79	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1991	N/A	
GB81 thru GB99	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1991	N/A	
GB100	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1992	N/A	
GB101	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1993	N/A	
GB102	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1991	N/A	
GB111	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1994	N/A	
GB112	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1991	N/A	
GB113	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1993	N/A	
GB114	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1994	N/A	

Equip ID	Equipment Description	Install Date	Control Device ID	Status
GB115 & GB116	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1995	N/A	
GB117 thru GB120	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1996	N/A	
GB121 & GB122	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1997	N/A	
GB126 thru GB129	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	2000	N/A	
GB130	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	1991	N/A	
GB131 thru GB180	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	2000	N/A	
GB182 thru GB184	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	2000	N/A	
HA9	Harper Double Hearth Kiln for densification of ceramic capacitors rated at 13,298 BTU/min	1992	N/A	
HA10 & HA11	Harper Double Hearth Kiln for densification of ceramic capacitors rated at 13,298 BTU/min (each)	1993	N/A	
HA12	Harper Double Hearth Kiln for densification of ceramic capacitors rated at 13,298 BTU/min	1995	N/A	
HA15 & HA16	Harper Double Hearth Kiln for densification of ceramic capacitors rated at 16,026 BTU/min (each)	1996	N/A	
HA17 & HA18	Harper Double Hearth Kiln for densification of ceramic capacitors rated at 16,026 BTU/min (each)	2000	N/A	
HA1 thru HA7	Harper Single Hearth Kiln for densification of ceramic capacitors rated at 5,456 BTU/min (each)	1983	N/A	Eight Harper Single Hearth Kilns on site and operational.
HA14	Harper Single Hearth Kiln for densification of ceramic capacitors rated at 5,456 BTU/min	1995	N/A	
N13 & N14	Sierra Therm Oven 2k26-91C69-7AN for nitrogen burnout of volatile compounds rated at 3,182 BTU/min (each)	1995	N/A	On site and operational.
N15	Sierra Therm Oven 2k26-91C69-7AN for nitrogen burnout of volatile compounds rated at 3,182 BTU/min	1996	N/A	On site and operational.
(VOID) TK1	(VOID) Tokai Continuous Kiln for burnout and firing; 10,415 BTU/min (each)	2000	N/A	N/A

Equip ID	Equipment Description	Install Date	Control Device ID	Status
thru TK5 & TK9				
(VOID) TK6 & TK7	(VOID) Tokai Continuous Kiln for burnout and firing; 10,415 BTU/min (each)	2001	N/A	N/A
(VOID) NNE1 thru NNE4	(VOID) Tokai Non-Noble Kiln for burnout and firing rated at 63 KVA (each)	1995	N/A	N/A
(VOID) NNE5 thru NNE9	(VOID) Tokai Non-Noble Kiln for burnout and firing rated at 63 KVA (each)	1998	N/A	N/A
N5	WJ Oven 12CA-87 for nitrogen burnout of volatile compounds rated at 2,557 BTU/min	1983	N/A	Five WJ Oven 12 CA-87 are on site, two are operational. One has been removed.
N7 thru N10	WJ Oven 12CA-87 for nitrogen burnout of volatile compounds rated at 2,557 BTU/min (each)	1984	N/A	
N12	WJ Oven 12CA-87 for nitrogen burnout of volatile compounds rated at 2,557 BTU/min	1987	N/A	

UNIT ID 10 – MB2: CMAP Buildup

Equip ID	Equipment Description	Install Date	Control Device ID	Status
C200 thru C207	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	1998	AD-1 TO-1	16 CMAP machines were in place and operational. All others were never installed or removed.
C208 thru C215	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	2000	AD-2 TO-1	“
C216 thru C223	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	2001	AD-3 TO-1	“
C224 thru C231	CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	2001	AD-4 TO-2	“
C232 thru C239	VOID - CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	2001	VOID	N/A
C240 thru C247	VOID - CMAP machine (buildup process): chip fabrication of 1.8x10 ⁶ pcs/day (each)	2001	VOID	N/A

UNIT ID 11 – MB2: CMAP Support

Equip ID	Equipment Description	Install Date	Control Device ID	Status
BM-202 thru BM-205	Blue M Ovens TA662G-1 for air burnout of volatile compounds from capacitors rated at 325 BTU/min (each)	2000	MB2-BH	1 Blue M Oven was in place and operational. All others were never installed or removed.
DD-7 thru DD-10	Disco Dicer chip fabrications/capacitor separations - 9.2×10^6 pcs/day (each)	2000	MB2-BH	6 total units, 2 were moved over from MB1 and are accounted for by the permit.
GB232 thru GB235	Gruenberg Ovens for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	2000	MB2-BH	12 total units. The 8 additional units are accounted for by the 84 (only 37 of which are present & operable) permitted units in the Kiln Room (Unit ID 12).
LD1 thru LD3	Linear Dryers for the drying of capacitor chips	1998	MB2-BH	2 are present and operable.
LD4	Linear Dryer for the drying of capacitor chips	2001	MB2-BH	On site and operational.
MTI-201 & MTI-202	MTI Dicer chip fabrications/capacitor separations - 9.2×10^6 pcs/day (each)	1998	MB2-BH	Removed.
B201	MB2 Boiler for steam production rated at 13.4×10^6 BTU/hr; NSPS Subpart Dc	1999	N/A	Operational/not in operation.
SM2	Support Maintenance for MB2 miscellaneous cleaning	N/A	N/A	Operational.

N/A = Not Applicable

UNIT ID 12 – MB2: Kiln Room

Equip ID	Equipment Description	Install Date	Control Device ID	Status
BM-201	Blue M Oven TA662G-1 for air burnout of volatile compounds from capacitors rated at 325 BTU/min	1999	N/A	Removed.
GB201 thru GB207	Gruenberg Ovens C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1999	N/A	37 Gruenberg Ovens were present and operational. All others have been removed, never installed or relocated in the plant.
GB208	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	2001	N/A	“
GB209 thru GB215	Gruenberg Ovens C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1999	N/A	“
GB216	Gruenberg Oven C135H11M for air burnout	2001	N/A	“

Equip ID	Equipment Description	Install Date	Control Device ID	Status
	of volatile compounds from capacitors rated at 1,366 BTU/min			
GB217 thru GB223	Gruenberg Ovens C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1999	N/A	“
GB224	Gruenberg Oven C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min	2001	N/A	“
GB225 thru GB231	Gruenberg Ovens C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	1999	N/A	“
GB236 thru GB284	Gruenberg Ovens C135H11M for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)	2001	N/A	“
TK1	Tokai Continuous Kiln for burnout and firing; 10,415 BTU/min	1999	N/A	4 Tokai Continuous Kilns were present and operational. All others have been removed, never installed or relocated in the plant.
TK2 & TK3	Tokai Continuous Kilns for burnout and firing; 10,415 BTU/min (each)	2000	N/A	“
TK8 thru TK12	Tokai Continuous Kilns for burnout and firing; 10,415 BTU/min (each)	2001	N/A	“
NNE20 thru NNE25	Tokai Non-Noble Kilns for burnout and firing rated at 65 KVA (each)	1999	N/A	4 Tokai Non-Noble Kilns were present and operational. All others have been removed, never installed or relocated in the plant.
NNE26 thru NNE31	Tokai Non-Noble Kilns for burnout and firing rated at 65 KVA (each)	2001	N/A	“

N/A = Not Applicable

UNIT ID 13 – MB2: Thin Film Process

Equip ID	Equipment Description	Install Date	Control Device ID	Status
TFP	Thin Film Process which transforms silicon wafers into integrated passive components (IPCs)	2002	TFS	Operational.

Emission Unit Conditions:

4. Limit the VOC emissions to 39.5 TPY.

- This condition is being met.

6. Maintain a startup and shutdown log for the thermal oxidizers.

- This condition is being met.

8. Maintain a startup and shutdown log for the MB2 boiler.

- This condition is being met.

Monitoring and Reporting Conditions:

2. For the control devices that are to be monitored daily, if the controlled process is not operating in such a manner to obtain a reading of the specified parameter, a clear notation shall be indicated in the log.

- This condition is being met.

5. AVX shall conduct and log maintenance inspections of all scrubbers in accordance with the Preventative Maintenance (PM) Plan.

- This condition is being met.

6. AVX shall install, calibrate and maintain a pressure drop gauge on each module of the dust collector or baghouse. Readings shall be recorded daily and maintained in logs along with any corrective action taken.

- This condition is being met.

7. AVX shall maintain an adequate supply of bags on hand and replace ruptured bags promptly. A log will be kept of bag maintenance, specifically the time and date bags are replaced.

- This condition is being met.

8. AVX shall conduct and log maintenance inspections of all baghouses in accordance with the PM Plan.

- This condition is being met.

9. Pressure drop readings shall be required for the MB1 Dicer Baghouses and MB2 Dicer Baghouse when operating in the “dry mode”. When operating in the “wet mode” a clear notation shall be made in the log.

- This condition is being met.

10. & 11. AVX shall calibrate and maintain the cooling coil thermocouple, inlet gas thermocouple and cooling water temperature gauge. Temperature readings shall be within the specified ranges. Readings shall be maintained in a log along with any corrective action taken.

- These conditions are being met.

12. AVX shall conduct and log maintenance inspections of the solvent recovery system to ensure proper operation in accordance with the PM Plan.

- This condition is being met.

13. & 14. AVX shall install, operate and maintain a continuous temperature gauge on each thermal oxidizer. Daily readings shall be recorded in a log and be within specified ranges. Any corrective action taken shall be maintained in the log. The unit shall be outfitted with an alarm feature. A hard copy of the date and time when the alarm is triggered shall be maintained.

- These conditions are being met.

15. & 16. MB2 boiler will only use natural gas as fuel. Records of the amount of fuel combusted each month shall be maintained. The boiler shall be inspected and preventive maintenance performed on a quarterly basis. All maintenance activities shall be maintained in logs along with any corrective action taken.

- These conditions are being met.

18. Daily visual inspection on all emission points for Units 01 – 13 for which a cyclone or no air pollution control device is utilized. Readings shall be maintained in a log, including cause and corrective action taken if necessary.

- This condition is being met.

19. AVX shall maintain semiannual consumption records of all solvents containing volatile organic compounds (VOCs) and/or hazardous air pollutants (HAPs).

- This condition is being met. VOC emissions for the 12-month reporting period August 1, 2007 – July 31, 2008 totaled 61.7 tons and 3.2 tons for MB1 and MB2, respectively, for a facility total of 64.9 tons (facility limit = 282.88 TPY).

20. Calculate a 12 month rolling sum of VOC emissions from MB2.
- This condition is being met. MB2 VOC emissions for the 12-month reporting period August 1, 2007 – July 31, 2008 totaled 3.2 tons (MB2 limit = 39.5 TPY).

21. AVX shall report to BAQ if the 12-month rolling sum of VOC emissions from MB2 at any time exceeds 35 tons.
- Facility has not documented any incidence exceeding this permit condition during the reviewed reporting period.

23. AVX shall install, calibrate and maintain pressure drop indicators and pH meters on the fluidized bed scrubber (Thin Film Scrubber). Both parameters shall be recorded daily and readings maintained in a log. Monitoring devices shall be calibrated annually. Operational ranges shall be established.
- This condition is being met.

Specific Conditions

3. AVX shall implement a program for routine inspection and maintenance on all equipment, including duct work, piping, or any other materials pertaining to material transport or storage. Maintenance events shall be recorded in a log. A reasonable inventory of routine replacement items shall be kept on site.
- This condition is being met.

Operational Flexibility

4. Solvent cleaning operations in the MB2 facility using solvents that meet any one or more of the exemption requirements are exempt from any additional work practice or housekeeping requirements.
- AVX is using an exempt solvent for cleaning.

5. If utilizing hand-wipe cleaning operations at the MB2 facility, to the maximum extent practical, utilize cleaning solvent solutions that have a composite vapor pressure 45mmHg or less at 20°C.
- This condition is being met.

7. For each cleaning solvent used in cleaning operations in the MB2 facility that is exempt, or for any semi-aqueous cleaning solvents used for flush cleaning operations, AVX shall maintain records.

- AVX does not utilize flush cleaning.

Conclusion:

No violations of air quality permit requirements or applicable air quality regulations were observed during this inspection.

Insignificant Activities

(Equip) ID	General Description	Status
1 Metals Department		
FP-1	AVX Filter Press - Filter electrode ink under vacuum rated at 500 kg/day	On site and operational.
FP-2	AVX Filter Press - Filter electrode ink under vacuum rated at 500 kg/day	On site and operational.
CT-1	Centrifuge for particle size distribution rated at 200 kg/day	Process shutdown and removed.
CT-2	Centrifuge for particle size distribution rated at 200 kg/day	Process shutdown and removed.
FH-1	Fume hood for exhausting emissions	On site and operational.
FH-2	Fume hood for exhausting emissions	On site and operational.
FP-3	Kyocera Filter Press to filter electrode ink under vacuum rated at 500 kg/day	Removed.
BA2	Metals Maintenance - Clean Metals Using Ultrasonics (300 pots/day)	On site and operational.
SW4	Solvent Wash Sink - Removal of metals from operating equipment	On site and operational.
SW5	Solvent Wash Sink - Removal of metals from operating equipment	On site and operational.
SM4	Support Maintenance - Metals Miscellaneous Cleaning	On site and operational.
2 Plating Department		
PL-1	Blue M Oven for moisture removal rated at 194 BTU/min	On site and operational.
PL-2	Blue M Oven for moisture removal rated at 512 BTU/min	On site and operational.
PL-3	Blue M Oven for moisture removal rated at 512 BTU/min	On site and operational.
PL-4	Blue M Oven for moisture removal rated at 683 BTU/min	On site and operational.
PL-5	Blue M Oven for moisture removal rated at 683 BTU/min	On site and operational.
PL-6	Blue M Oven for moisture removal rated at 683 BTU/min	On site and operational.
SS1	Solder Station for soldering of parts rated at 260 kg/day	On site and operational.
SS2	Solder Station for soldering of parts rated at	On site and operational.

Source (Project) : AVX Corporation	Date/Time: September 02, 2008 @ 1000
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(Equip) ID	General Description	Status
	260 kg/day	
3 Miscellaneous Site Support		
APTC	Advanced Product Technology Center Research and Development	On site and operational.
B1	Boiler for the heating of plating baths rated at 392,000 BTU/hr	Unable to verify.
B2	Boiler for the heating of plating baths rated at 392,000 BTU/hr	Unable to verify.
B3	Boiler for the heating of plating baths rated at 776,000 BTU/hr	Unable to verify.
CT1	Cooling Tower 1	Unable to verify.
CTA	Cooling Tower 2A	Unable to verify.
CTC	Cooling Tower 2C	Unable to verify.
WL-90	Boiler for use in MB1: CMAP rated at 998,000 BTU/hr	Unable to verify.
E1	Emergency Generator (CMAP) rated at 100 kW	On site and operational. Referred to as Generator #1.
PDG	Product Development Group: Research and Development	On site and operational.
E3	Emergency Generator (Kiln Room) rated at 75 kW	Unable to verify.
DFP	Diesel Fire Pump rated at 87 bHp for emergency use	On site and operational.
4 Slip Manufacturing		
BA1	Bio Act 113 (ultrasonic cleaner) to clean 300 slip pots/day using ultrasonics	On site and operational.
DU1	Distillation Unit: Cleans dirty bioact	On site and operational
FH-3	Fume Hood for exhausting emissions in testing and development	On site and operational.
FU-1	Small furnaces under fume hood in Slip QC area: Testing and Development	On site and operational.
SM5	Support Maintenance Slip Manufacturing: Miscellaneous Cleaning	On site and operational.
5 Termination Department		
L1	Laser to mark chips with ID number rated at 260 K/day	On site and operational.
L2	Laser to mark chips with ID number rated at 260 K/day	On site and operational.
L3	Laser to mark chips with ID number rated at 260 K/day	On site and operational.
L4	Laser to mark chips with ID number rated at 260 K/day	On site and operational.
L5	Laser to mark chips with ID number rated at 260 K/day	On site and operational.
SW6	Solvent Wash for cleaning of equipment	On site and operational.
SW7	Solvent Wash for cleaning of equipment	On site and operational.
6 Raw Materials Manufacturing (RMM)		
CM-1	5 Chamber Mill for Testing and Development	On site and operational.

(Equip) ID	General Description	Status
	rated at 5 tons/yr	
CM-2	5 Chamber Mill for Testing and Development rated at 5 tons/yr	On site and operational.
BMO-1	Blue M Oven for Testing and Development rated at 300 Btu/min	On site and operational.
RMMLAB	Lead Blower: Air conveyor for feeding process equipment	Removed.
RMM1	Blue M Oven CW778OG4 for moisture and organic removal rated at 797 BTU/min	Removed.
RMM2	Blue M Oven CW778OG4 for moisture and organic removal rated at 797 BTU/min	Removed.
RMMA	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational.
RMMB	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to baghouse A or B.
RMMC	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to baghouse A or B.
RMMD	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to baghouse A or B.
RMME	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to baghouse A or B.
RMMF	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to baghouse A or B.
RMMG	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to baghouse A or B.
RMMH	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to ambient air.
RMMI	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to ambient air.
RMMJ	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to ambient air.
RMMK	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to ambient air.
RMML	Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min	On site and operational. Vents to ambient air.
M45-6	M18 Sweco Mill for Testing and Development rated at 20 tons/yr	Part of APTC system.
M45-7	M18 Sweco Mill for Testing and Development rated at 20 tons/yr	Part of APTC system.
M45-8	M18 Sweco Mill for Testing and Development rated at 20 tons/yr	Part of APTC system.
M45-9	M18 Sweco Mill for Testing and Development rated at 20 tons/yr	Part of APTC system.
PLB	Ceramic Priller rated at 8,000 kg/yr	On site and operational.
RK1	Rotary KilnTape for reclaim and calcining rated at 200,000 lb/yr	On site and operational.
RK2	Rotary KilnTape for reclaim and calcining rated at 200,000 lb/yr	On site and operational.

(Equip) ID	General Description	Status
RK3	Rotary KilnTape for reclaim and calcining rated at 200,000 lb/yr	On site and operational.
RK4	Rotary KilnTape for reclaim and calcining rated at 200,000 lb/yr	On site and operational.
SMM1	Spex Mixer Mill for Testing and Development rated at 1 ton/yr	On site and operational.
SMM2	Spex Mixer Mill for Testing and Development rated at 1 ton/yr	On site and operational.
SMM3	Spex Mixer Mill for Testing and Development rated at 1 ton/yr	On site and operational.
VK1	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK2	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK3	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK4	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK5	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK6	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK7	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK8	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK9	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	Removed.
VK10	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	On site and operational.
VK11	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	On site and operational.
VK12	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	On site and operational.
VK13	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	On site and operational.
VK14	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	On site and operational.
VK15	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	On site and operational.
VK16	Vertical Kiln for calcining of ceramic powders rated at 200,000 lb/yr	On site and operational.
AG1	Storage Tank in Testing and Development rated at 20,000 kg/yr	Part of APTC system.
7	MB1 - CMAP Buildup	
SRT1	Screen Room Table to make and stretch screen for electrode pattern	On site and operational.
SRT2	Screen Room Table to make and stretch	On site and operational.

(Equip) ID	General Description	Status
	screen for electrode pattern	
SRT3	Screen Room Table to make and stretch screen for electrode pattern	On site and operational.
SRT4	Screen Room Table to make and stretch screen for electrode pattern	Removed.
SRW1	Screen Wash Station to clean screens with acetone	On site and operational.
SW1	Solvent Wash Sink for removal of slip from operating equipment	Never built.
SW2	Solvent Wash Sink for removal of slip from operating equipment	On site and operational.
SW3	Solvent Wash Sink for removal of slip from operating equipment	On site and operational.
8 MB1 - CMAP Support		
BC1	Blade Cleaning with acetone	Removed to MB-2.
KPA1	Kraft Paper Applicator	Removed.
NA1	Nitto Paper Applicator	On site and operational.
SM1	Support Maintenance for Blade Spacer alcohol cleaning	Removed to MB-2.
TA1	Teslin Paper Applicator	On site and operational.
9 MB1 - Kiln Room		
CL01-CL05	Cladan Kiln 315 for densification of ceramic capacitors rated at 682 BTU/min (each)	On site and operational.
TK1-TK9	Tokai Continuous Kiln for and firing; 10,415 BTU/min (each)	1-6 have been removed. 7-10 have been moved to MB-2. 11-13 are on site and operational.
NNE1-NNE9	Tokai Non-Noble Kiln for firing rated at 63 KVA (each)	On site and operational.
10 MB2		
JHC1	JHCMAP for Chip fabrication - build-up process	Not observed.
SC1	SCMAP for Chip fabrication - build-up process	Not observed.
11 MB2 - CMAP Support		
BC2	Blade Cleaning with acetone	Not observed.
NA2	Nitto Paper Applicator	Not observed.
NA3	Nitto Paper Applicator	Not observed.
TA2	Teslin Paper Applicator	Not observed.
SB1	Start-up Burner to provide start up energy for the thermal oxidizers rated at 1.0x10 ⁶ BTU/hr	Not observed.
12 MB2 - Kiln Room		
N/A	N/A	N/A
Lot Quality Department		
LQ2	Blue M Oven QV472A2	On site and operational.
LQ3	Blue M Oven QV490A2	On site and operational.
LQ4	Blue M Oven QV490A2	Removed.
LQ5	Blue M Oven SW11TA	On site and operational.
LQ6	Blue M Oven SW11TA	On site and operational.

(Equip) ID	General Description	Status
HDS1	Hand Dip Solder Station	On site and operational.
HDS2	Hand Dip Solder Station	On site and operational.
HDS3	Hand Dip Solder Station	On site and operational.
HDS4	Hand Dip Solder Station	On site and operational.
HDS5	Hand Dip Solder Station	On site and operational.
HDS6	Hand Dip Solder Station	On site and operational.
HDS7	Hand Dip Solder Station	On site and operational.
HDS8	Hand Dip Solder Station	On site and operational.
QCS1	QC Solder Station	On site and operational.
WS1	Wave Solder	On site and operational.

N/A = Not Applicable