



State of Ohio Environmental Protection Agency

Street Address:

Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

**RE: FINAL PERMIT TO INSTALL
WARREN COUNTY
Application No: 14-05175**

CERTIFIED MAIL

Y	TOXIC REVIEW
	PSD
	SYNTHETIC MINOR
	CEMS
	MACT
	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

DATE: 8/14/2001

Sumitomo Sitix Silicon
William Romaine
537 Grandin Road
Maineville, OH 450390000

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo, Manager
Field Operations and Permit Section
Division of Air Pollution Control

cc: USEPA

HCDES



**Permit To Install
Terms and Conditions**

**Issue Date: 8/14/2001
Effective Date: 8/14/2001**

FINAL PERMIT TO INSTALL 14-05175

Application Number: 14-05175
APS Premise Number: 1483080196
Permit Fee: **\$400**
Name of Facility: Sumitomo Sitix Silicon
Person to Contact: William Romaine
Address: 537 Grandin Road
Maineville, OH 450390000

Location of proposed air contaminant source(s) [emissions unit(s)]:
**537 Grandin Road
Maineville, Ohio**

Description of proposed emissions unit(s):
Installation of new Silicon Wafer Cleaning and Etching Equipment.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may

be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit to Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within thirty (30) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and

conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

**SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
NOx	6.57
OC	6.94
PM /PM10(acid mists)	0.20
ammonia	0.73

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P020 - Silicon Wafer Cleaning, Etching, and Wax Mounting process with packed bed/wet scrubbers	OAC rule 3745-31-05(A)(3)	1.5 lbs/hr NOx, 6.57 TPY NOx 0.045 lb/hr PM/PM10 as acid mists, 0.20 TPY PM/PM10 as acid mists 0.17 lb/hr ammonia, 0.73 TPY ammonia 1.58 lbs/hr OC, 37.92 lbs/day OC, 6.94 TPY OC
	OAC rule 3745-17-07(A)(1)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1). Visible particulate emissions from the stacks associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of the packed bed/wet scrubbers, compliance with the NO_x, PM/PM₁₀ (as acid mists), OC and ammonia emissions limits, compliance with the opacity limitation, compliance with the facility-wide HAPs emissions limits and compliance with the Ohio EPA Air Toxics Policy.

2.b The total allowable usage of Hazardous Air Pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from this facility shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.

The permittee has existing records to demonstrate compliance with this limit.

2.c The hourly, daily and annual emission limitations outlined in term A.1. are based upon the emissions unit's potential to emit. Therefore, no records or reports are required to demonstrate compliance with these limits.

B. Operational Restrictions

1. The scrubber water recirculation flow rate shall be continuously maintained at values of not less than the following at all times while the emissions unit is in operation:
 - a. 66 gallons per minute for the S-4 scrubber;
 - b. 87 gallons per minute for the NO_x scrubber (Stage 1); and
 - c. 122 gallons per minute for the NO_x scrubber (Stage 2).
2. The pH of the scrubber liquor shall be maintained within the range of the following at all times while the emissions unit is in operation:
 - a. pH 1-6 for the S-4 scrubber;
 - b. pH 8-13 for the NO_x scrubber (Stage 1); and
 - c. pH 8-13 for the NO_x scrubber (Stage 2).

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to monitor the scrubber water recirculation flow rate and scrubber pH for the S-4 scrubber and the NO_x scrubber while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day for the S-4 scrubber and both stages of the NO_x scrubber:

- a. the scrubber water recirculation flow rate, in gallons per minute on a once per day basis;
 - b. the pH of the scrubber liquor, on a once per day basis; and
 - c. the operating times for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit, in hours.
2. The permittee shall collect and record the following information each month for the entire facility:
- a. for all wafer cleaning, etching, and wax mounting processes, the amount of hydrogen fluoride (HF) and any other HAP used (input), in pounds;
 - b. for all wafer cleaning, etching, and wax mounting processes, the amount of HF and any other HAP released, in pounds;
 - c. for all wafer cleaning, etching, and wax mounting processes, the amount of controlled emissions of each HAP, in tons;
 - d. for all emissions units, the amount of any other material used which contains HAPs, in tons;
 - e. for all emissions units, the individual HAP content for each HAP of each material used, in percent by weight (ton HAP/ton material);
 - f. the total individual HAP emissions for each HAP from all materials employed, in tons per month [for each HAP the sum of c. plus (d. times e.)];
 - g. the total combined HAP emissions from all materials employed, in tons per month (the sum of all HAPs as calculated in f.);
 - h. the updated rolling, 12-month summation of each individual HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve calendar months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI; and
 - i. the updated rolling, 12-month summation of total combined HAP emissions, in pounds or tons. This shall include the information for the current month and the preceding eleven calendar months. For the first twelve calendar months following the issuance of the permit, this shall be a cumulative total for all months since the issuance of the PTI.

* A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Hamilton County Department of Environmental Services contact. This information does not have to be kept on a individual emissions unit basis.

3. The permit to install for this emissions unit (P020) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: toluene

TLV (ug/m3): 188,400

Maximum Hourly Emission Rate (lbs/hr): 0.5

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 14.7

MAGLC (ug/m3): 4,486

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-

01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. when the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters for the S-4 scrubber and the NOx scrubber were not maintained at or above the required levels or within the required ranges:
 - a. the scrubber water recirculation flow rate; and
 - b. the pH of the scrubber liquor.

The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

2. The permittee shall notify the Hamilton County Department of Environmental Services of any exceedance of the HAP emissions limitations set forth in this permit. The permittee shall submit annual reports which identify all exceedances of these limitations, as well as the corrective actions that were taken to achieve compliance. These reports shall be submitted by January 31 of each year. If no exceedances occurred during the reporting period then a report is required stating so.

E. Testing Requirements

1. Emissions Limitations

1.5 lbs/hr NO_x, 6.57 TPY NO_x

Compliance with the lbs/hr NO_x emissions limitation shall be demonstrated by the actual measured uncontrolled NO_x emissions multiplied by the NO_x scrubber NO_x control efficiency as supplied by the permittee in PTI application #14-05175, as submitted on July 2, 2001 [lbs NO_x/hr x (1-0.75)].

Compliance with the annual NO_x emissions limitation shall be demonstrated by multiplying the actual controlled lbs/hr NO_x emissions by the actual annual operating hours per year (lbs NO_x/hr x hours/year x 1 Ton/2000 lbs).

2. Emissions Limitations

0.045 lb/hr PM/PM₁₀ as acid mists, 0.20 TPY PM/PM₁₀ as acid mists

Compliance with the lb/hr PM/PM₁₀ as acid mists emissions limitation shall be demonstrated by the actual uncontrolled acid emissions multiplied by the NO_x scrubber acid mist control efficiency (for HF, HNO₃, and acetic acid) as supplied by the permittee in the PTI application #14-05175, as submitted on July 2, 2001 [lbs acid mist/hr x (1- control efficiency for specific acid)].

Compliance with the annual PM/PM₁₀ as acid mists emissions limitation shall be demonstrated by multiplying the actual controlled lbs/hr PM/PM₁₀ as acid mists emissions by the actual annual operating hours per year (lbs PM/PM₁₀, acid mists/hr x hours/year x 1 Ton/2000 lbs).

3. Emissions Limitations

0.17 lb/hr ammonia, 0.73 TPY ammonia

Compliance with the lbs/hr ammonia emissions limitation shall be demonstrated by the actual mass balance uncontrolled ammonium hydroxide emissions multiplied by the ammonium hydroxide/ammonia molecular weight ratio multiplied by the S-4 scrubber control efficiency as supplied by the permittee in PTI application #14-05175, as submitted on July 2, 2001 [lbs ammonium hydroxide/hr x (0.4866) x (1-0.90)].

Compliance with the annual ammonia emissions limitation shall be demonstrated by multiplying the actual controlled lbs/hr ammonia emissions by the actual annual operating hours per year (lbs ammonia/hr x hours/year x 1 Ton/2000 lbs).

4. Emissions Limitations

1.58 lbs/hr OC, 37.92 lbs/day OC, 6.94 TPY OC

Compliance with the lbs/hr OC emissions limitation shall be demonstrated by the actual mass balance uncontrolled OC emissions as supplied by the permittee in PTI application #14-05175, as submitted on July 2, 2001 (lbs OC/hr). The lbs/day limitation was developed by multiplying the lbs/hr OC limitation by the maximum operating schedule of 24 hours/day. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the daily limitation.

Compliance with the annual OC emissions limitation shall be demonstrated by multiplying the actual uncontrolled lbs/hr OC emissions by the actual annual operating hours per year (lbs OC/hr x hours/year x 1 Ton/2000 lbs).

5. Compliance with the visible particulate emissions limitation outlined in T&C A.1. shall be demonstrated by Method 9 of 40 CFR Part 60, Appendix A.
6. Compliance with the HAPs emissions limits outlined in T&C A.2.b. shall be demonstrated by the recordkeeping requirements in T&C C.2.
7. Compliance with the operational restrictions for the wet scrubbers in T&Cs B.1. and B.2. shall be demonstrated by the recordkeeping requirements in T&Cs C.1.

F. Miscellaneous Requirements

1. None

NEW SOURCE REVIEW FORM B

PTI Number: 14-05175

Facility ID: 1483080196

FACILITY NAME Sumitomo Sitix SiliconFACILITY DESCRIPTION Installation of new Silicon Wafer Cleaning and Etching Equipment. CITY/TWP MainevilleSIC CODE 3674 SCC CODE 3-99-999-99 EMISSIONS UNIT ID P020EMISSIONS UNIT DESCRIPTION 70 lbs/hr Silicon Wafer Cleaning, Etching, and Wax Mounting Line w/packed bed/wet scrubberDATE INSTALLED May 2001

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter	Attainment	0.045 lb/hr	0.175 TPY	0.045 lb/hr	0.20 TPY
PM ₁₀	Attainment	0.045 lb/hr	0.175 TPY	0.045 lb/hr	0.20 TPY
Sulfur Dioxide					
Organic Compounds	Attainment	1.58 lbs/hr	3.46 TPY	1.58 lbs/hr	6.94 TPY
Nitrogen Oxides	Attainment	1.00 lb/hr	2.19 TPY	1.5 lbs/hr	6.57 TPY
Carbon Monoxide					
Lead					
Other: Air Toxics		0.17 lb/hr	0.25 TPY	0.17 lb/hr	0.73 TPY

APPLICABLE FEDERAL RULES:

NSPS? _____ NESHAP? _____ PSD? _____ OFFSET POLICY? _____

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

Enter Determination Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of the packed bed/wet scrubbers, compliance with the NO_x, PM (as acid mists), OC and ammonia emissions limits, compliance with the opacity limitation, compliance with the facility-wide HAPs emissions limits and compliance with the Ohio EPA Air Toxics Policy.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? yesOPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$95000**TOXIC AIR CONTAMINANTS**

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? x YES _____ NO _____IDENTIFY THE AIR CONTAMINANTS: toluene, isopropanol

NEW SOURCE REVIEW FORM B

PTI Number: 14-05175

Facility ID: 1483080196

FACILITY NAME Sumitomo Sitix Silicon

FACILITY DESCRIPTION Installation of new Silicon Wafer Cleaning and Etching Equipment. CITY/TWP Maineville

Ohio EPA Permit to Install Information Form Please describe below any documentation which is being submitted with this recommendation (must be sent the same day). Electronic items should be submitted with the e-mail transmitting the PTI terms, and in software that CO can utilize. If mailing any hard copy, this section must be printed as a cover page. All items must be clearly labeled indicating the PTI name and number. Submit **hard copy items to Pam McGraner**, AQM&P, DAPC, Central Office, and electronic files to **airpti@epa.state.oh.us**

<i>Please fill out the following. If the checkbox does not work, replace it with an 'X'</i>	<u>Electronic</u>	<u>Additional information File Name Convention (your PTI # plus this letter)</u>	<u>Hard Copy</u>	<u>None</u>
<u>Calculations (required)</u>	<input type="checkbox"/>	0000000c.wpd	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Modeling form/results</u>	<input type="checkbox"/>	0000000s.wpd	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>PTI Application (complete or partial)*</u>	<input type="checkbox"/>	0000000a.wpd	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>BAT Study</u>	<input type="checkbox"/>	0000000b.wpd	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Other/misc.</u>	<input type="checkbox"/>	0000000t.wpd	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* Mandatory for netting, PSD, nonattainment NSR, 112(g), 21-07(G)(9)(g) and 21-09(U)(2)(f) - 2 complete copies.

Please complete (see comment bubble to the left for additional instructions):

NSR Discussion
PTI 14-05175

Sumitomo Sitix Silicon, Inc.
537 Grandin Road
Maineville, Ohio 45039

PN: 1483080196

This permit will bring Sumitomo Sitix Silicon, Inc. into compliance with OAC rule 3745-31-02. In May, 2001, the permittee installed a Silicon Wafer Cleaning, Etching, and Wax Mounting process with packed bed/wet scrubbers. This permit identifies the process as P020. The cleaning units use de-ionized water, hydrogen peroxide, ammonium hydroxide, sodium hydroxide, and detergent cleaners. The etching unit uses hydrofluoric acid, nitric acid, and acetic acid. The wax units coat the wafers with wax.

Sumitomo will operate P020 with two packed bed/wet scrubbers. The first scrubber (S-4) is a one stage packed bed wet scrubber which will control ammonia and caustic solutions. The second scrubber (NOx) is a two stage packed bed wet scrubber which will control NOx emissions and acid mist emissions. A third egress point (from the wax mounters) which will exhaust IPA and toluene remains uncontrolled.

This permit assumes that any emissions from the use of ammonium hydroxide will occur as ammonia. Therefore, the emissions calculations include a conversion from ammonium hydroxide to ammonia using a ratio of the molecular weights. It is also assumed that the acid emissions will occur as acid mists similar to particulate matter (PM). P020 will not emit any PM other than acid mists. Hydrofluoric acid (HF) and toluene constitute the Hazardous Air Pollutant (HAP) emissions from P020.

NEW SOURCE REVIEW FORM B

PTI Number: 14-05175

Facility ID: 1483080196

FACILITY NAME Sumitomo Sitix Silicon

FACILITY DESCRIPTION	Installation of new Silicon Wafer Cleaning and Etching Equipment.	CITY/TWP	Maineville
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Applicable Regulations: OAC rules 3745-17-07(A)(1), 17-11(B), 21-07(G)(2), 31-05(A)(3).

Emissions Limitations: 1.5 lb/hr NO_x, 6.57 TPY NO_x; 0.045 lb/hr PM (acid mist), 0.20 TPY PM/PM₁₀ (acid mist); 0.17 lb/hr ammonia, 0.73 TPY ammonia, 1.58 lbs/hr OC, 6.94 TPY OC.

The allowable emissions limitations, based on BAT, were calculated at the Potential to Emit of the emissions units including 8760 hours per year. The applicable OC and PM emissions limits are less stringent than the BAT emissions limits.

Ammonia is considered an Air Toxic pursuant to Ohio EPA guidance but is not considered a Hazardous Air Pollutant. Air Toxics modeling was not conducted for ammonia since the emissions are less than 1 TPY from the emissions unit. Air Toxics modeling was conducted for toluene and IPA emissions.

Sumitomo Sitix Silicon, Inc. is considered a Synthetic Minor/Title V (HAPs) in regards to Title V applicability. The Synthetic Minor HAPs limits/recordkeeping for the facility is included in this permit. However the permit itself does not require a Synthetic Minor since previous Synthetic Minor permits with the HAPs language have been issued. Recommend Direct Final issuance of this permit.

Permit Fee: P020 PWR = 361 lbs/hr Fee = \$200 x 2 (doubled for early installation) = \$400

Prepared by: Kurt Smith

Date Prepared: June 20, 2001

Please complete for these type permits (For PSD/NSR Permit, place mouse over this text):

Synthetic Minor Determination and/or Netting Determination
Permit To Install ENTER PTI NUMBER HERE

- A. Source Description
- B. Facility Emissions and Attainment Status
- C. Source Emissions
- D. Conclusion

PLEASE PROVIDE ADDITIONAL NOTES OR COMMENTS AS NECESSARY:

NONE

Please complete:

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

PollutantTons Per Year

NEW SOURCE REVIEW FORM B

PTI Number: 14-05175

Facility ID: 1483080196

FACILITY NAME Sumitomo Sitix Silicon

FACILITY DESCRIPTION	Installation of new Silicon Wafer Cleaning and Etching Equipment.	CITY/TWP	Maineville
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	NOx	6.57	
	OC	6.94	
	PM /PM10(acid mists)	0.20	
	ammonia	0.73	

NEW SOURCE REVIEW FORM B

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