



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Engineering and Compliance Office

APPLICATION PROCESSING AND CALCULATIONS

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Deminimus Significant Title V Permit Revision
Section D (PC/PO)
Flow Coating Systems

Legal Owner
or Operator:

SIERRACIN/SYLMAR CORP
12780 SAN FERNANDO RD.
SYLMAR, CA 91342

ID: 149814

Equipment

Location: 12780-82 SAN FERNANDO RD, SYLMAR, CA 91342

Equipment Description:

A/N 505540

Title V Permit Revision (non RECLAIM)

A/N 505539

(PCPO, Previous PO F93608, A/N 468421)

DEVICE NO. D61, COATER, PLANT 1 3, ROOM NO. 6, WITH ONE 5-GAL MILLIPORE FLOW COATER, ~~ONE 45 KW IR LAMP CURING BANK, AND FIVE ROBOTIC UV CURING SYSTEMS (7.2 KW TOTAL)~~ ONE MOTOMAN HP50-35 UV CURING SYSTEM, CONSISTING OF TWO ROBOTIC ARMS, EACH WITH ONE UV LAMP.

History

The company manufactures clear acrylic canopies and windows for military or commercial aircrafts. Protective transparent films are flow coated on to these clear acrylic substrates inside six HEPA treated clean rooms, Nos. 1 to 6, with a dedicated Millipore flow coater in each room. Coated parts are cured by

1. Air dried
2. A portable IR-lamp curing bank
3. Three portable UV-robotic curing systems, or
4. A UV curing conveyor.

The IR-lamp curing bank and the three UV-robotic curing systems are portable, and thus can be operated inside any one of the six clean rooms. The curing conveyor is located permanently inside clean room No. 7.

Flow coating and curing operations conducted inside clean rooms, Nos. 1, 2, 3, 4, 5 and 6 are permitted under Devices IDs Nos. D4, D19, D13, D60, D44 and D61 respectively.

In this project, Sierracin is proposing the following:

1. Relocate D61 from Plant 1 to Plant 3 (contiguous building).



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2. Add additional coatings (with an increase in quantities and coating types), but keeping the same equipment VOC limit of 15 pounds per day.
3. Use a new robotic curing system, Motoman HP50-35, with two robotic arms, each with one UV curing lamp.

The company also conducts similar flow coating/curing operations in Plant 3, under Device ID Nos. D12 and D57. D12 and D57 will remain unchanged for this project.

A review of District compliance records indicates that the facility has had no citizen complaints filed, or Notices of Violation issued in the last two years. However, the facility was issued a Notice to Comply on 8/5/2008 requiring the applicant to post all permits, identify device ID numbers on usage records, provide accurate VOC content of all coatings, provide abrasive usage records, and provide all visible emissions monitoring records. A follow-up inspection of the facility revealed that the facility posted all the permits. In addition the facility identified device ID numbers on usage records and provided all the requested information. The facility is currently operating in compliance with all applicable rules and regulations.

Process Description

Parts to be coated are manually placed inside a clean room, rested on a rack, which is equipped with a collection reservoir at the bottom to capture run-off flow coating materials. A continuous stream of liquid coatings is applied on parts using a Millipore flow coater. Only 10% of applied coatings stay on part. The remaining 90% of applied coatings is run-off and collected in the reservoir. The collected run-off materials cannot be reused because of product quality concerns. At the end of each flow coating process, the run-off materials are transferred to a vapor tight storage container for later hazardous disposal.

For other coating rooms, coated parts are either allowed to cure by air drying, by using the IR-lamp curing bank, by the conveyor in the No. 7 clean room, or by one of the three UV-robotic curing systems. The robotic system passes UV light across entire surfaces in a configured pattern allowing a more consistent and uniform cure.

In this project, a dedicated robotic UV curing system, Motoman HP50-35, with two robotic arms, each with one UV curing lamp, is used inside the No. 6 clean room, serving D61.



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The following is the proposed operating schedule of the equipment:

<u>hr/dy</u>	<u>dy/wk</u>	<u>wk/yr</u>	
16	6	50	<-- <u>average</u>
24	7	52	<-- <u>maximum</u>

ROG Emission Limits

The company is subject to a facility limit of 3510 pounds of ROG in any one month (Condition No. F2.1). It is also subject to a Rule 442 limit of 833 pounds of ROG in any one month (Condition No. F2.2). All emissions resulting from this project are bubbled into the above emission limit of 833 pounds of VOC in any one month. Therefore, there will not be an ROG emission increases facility-wide.

Further, the company is also proposing to keep the same daily equipment limit of 15 pounds of ROG and as a result there will not be an emission increase from the equipment.

Emission Calculations

Based on multiple tests conducted by the company and observed by a District representative on 7-25-03 & 8-27-03, the amount of run-off materials collected in reservoirs were determined to be ranging from 92.64% to 94.18% by weight. Therefore, an emission factor of 0.10 (1-90%) is used in the following equation to determine ROG emissions from flow coating and curing operations:

ROG (lb/day) = Usage (gal/day) X VOC (lb/gal) X 0.10

The applicant is required to use the same emission factor of 0.10 in their calculations even though the actual flow coatings being recovered are greater than 90% (Condition No. A63.8).

For AEIS Data Entry:

About 3 gallons per day of various flow coating materials are applied inside the No. 6 clean room per company projection, with a maximum VOC content of 6.71 lb/gal. The following are ROG emissions to be entered in AEIS for this project:

ROG (R1) = (3 gal/dy)(6.71 lb/dy)(0.1)/(16 hr/dy) = 0.13 lb/hr



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ROG (R2) = 0.13 lb/hr

For NSR Data Entry:

Based on a maximum emission limit of 15 pounds of VOC per day, the following are VOC emissions to be entered in NSR:

ROG (R1) = (15 lb/dy)/24 hr/dy = 0.63 lb/hr

ROG (R2) = 0.63 lb/hr

However, since the emissions were bubbled into the monthly facility wide emission limit of 3510 pounds, the 30DA are entered with the same values as previous NSR values.

Rule 1401 Toxic Evaluation

The applicant is proposing to use the following coatings:

Coating Name	VOC Contents lbs/gal	Proposed Maximum Usage (gal/yr)	CAS #	TAC Name	TAC % by Weight
FX-317	6.45	392	107-98-2	Propylene glycol monomethyl ether	12
FX-313	6.5	360			
FX-437 (new)	6.7	768			
FX-325 (new)	6.6	576			
FX-384 (new)	6.66	18	67-63-0	Isopropyl alcohol	99
FX-177	6.71	3	67-63-0	Isopropyl alcohol	80
FX-385 (new)	6.3	32			

The attached excel worksheets calculate the MICRs, HIAs and HICs for both types of receptors. Calculated MICRs for both receptors are less than 1E-6. Calculated HIAs and HICs for all target organs are less than 1.0 for both receptors. Therefore, Rule 1401 compliance is expected for this project.

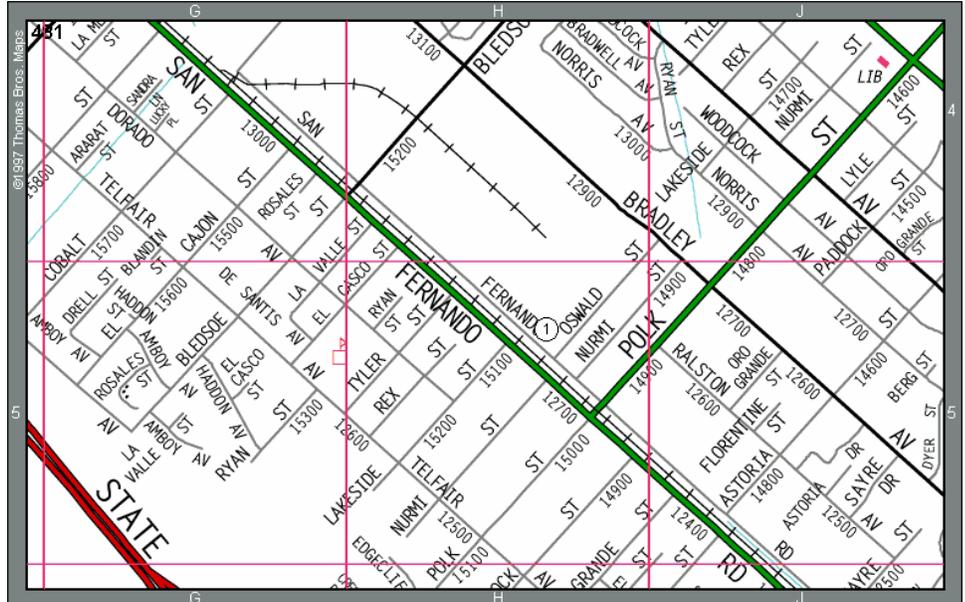


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Rule Evaluation

Rule 212(c)(1):

This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school.



Since no school is located within 1,000 ft, a public notice will not be required.

Rule 212(c)(2):

This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g).

	Maximum Daily Controlled Emissions					
	ROG	NO _x	PM ₁₀	SO ₂	CO	Pb
Total Increase (lb/dy)	0	0	0	0	0	0
MAX MDC Limit (lb/dy)	30	40	30	60	220	3
Compliance Status	Yes	Yes	Yes	Yes	Yes	yes

The above table summarizes the emission limits and increases. Since emission increases are less than the limits, a public notice will not be required.

Rule 212(c)(3):

There will increases in TACs emissions resulting from this project. However, the calculated MICRs are less than 1E-6 for both receptors. Therefore, a public notice will not be required.



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Rule 212(g):

This section requires a public notice for all new or modified sources that have emission increases exceeding any of the daily maximums as specified by Rule 212(g).

The proposed project will not result in an emission increase from the equipment. The following summarizes the emission from the equipment and the rule limits:

	Maximum Daily Controlled (MDC) Emissions					
	<u>ROG</u>	<u>NO_x</u>	<u>PM₁₀</u>	<u>SO₂</u>	<u>CO</u>	<u>Pb</u>
Emission Increase	0	0	0	0	0	0
MAX MDC Limit (lb/dy)	30	40	30	60	220	3
Compliance Status	Yes	Yes	Yes	Yes	Yes	yes

No public notice is required since the MDC is not more than the limits.

Rule 401:

Visible emissions are not expected with the proper operation of the equipment.

Rule 402:

Nuisance is not expected with the proper operation of the equipment.

Rule 442:

Since the proposed coatings are exempt from Rule 1124 VOC requirements, they are subject to Rule 442. The facility is subject to a monthly maximum ROG limit of 833 pounds in any one month from all emission sources that are subject to Rule 442. By complying with facility condition F2.2, the company is expected to be in compliance with this rule.

Rule 1124:

Since coatings used are translucent and applied on transparent substrates, per Rule 1124(1)(5), the coatings used are exempted from Rule 1124(c)(1) VOC content requirement.

The use of flow coater complies with Rule 1124(c)(3) transfer efficiency requirement.

IPA is used to clean miscellaneous polycarbonate substrates as surface preparation, in compliance



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with Rule 1124(c)(1)—the VOC composite partial pressure is 31.5 mm Hg, less than 44 mm Hg.

- Rule 1171: Acetone is used as application equipment clean-up solvent, in compliance with Rule 1171(c)(1)(C).
- Rule 1303(a): The proposed modification will not result in an emission increase from the above equipment and as a result the BACT requirements of this rule are not triggered.
- Rule 1303(b)(1): Further air quality modeling analysis will not be needed since negligible PM₁₀ emissions are expected from this project. Further, no modeling is required for ROG emissions.
- Rule 1303(b)(2): The applicant is not proposing to increase the ROG emissions and the equipment will continue to operate under the existing ROG limit of 15 lbs/day. Therefore, external emission offsets will not be needed.
- Rule 1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.
- Rules 1303(b)(5)(A) & 1303(b)(5)(D): The proposed project does not qualify as a major modification at a major polluting facility. Further, the proposed project is exempt from CEQA according to the responses Sierracin/Sylmar provided on Form 400-CEQA for this project. Their responses in "Review of Impacts Which May Trigger CEQA" on Form 400-CEQA were all marked "No".
- Rule 1303(b)(5)(B): The proposed project does not result in an emission increase. Compliance.
- Rule 1303(b)(5)(C): A modeling analysis for plume visibility is not required since the net emission increase from the proposed project does not exceed 15 ton/yr of PM₁₀ or 40 ton/yr of NO_x.



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Rule 1401: Rule 1401 contains the following requirements:

1)(d)(1) *MICR and Cancer Burden* - The cumulative increase in MICR which is the sum of the calculated MICR values for all toxic air contaminants emitted from the new, relocated or modified permit unit will not result in any of the following:

- (A) an increased MICR greater than one in one million (1.0×10^{-6}) at any receptor location, if the permit unit is constructed without T-BACT;
- B) an increased MICR greater than ten in one million (1.0×10^{-5}) at any receptor location, if the permit unit is constructed with T-BACT;
- C) a cancer burden greater than 0.5.

2)(d)(2) *Chronic Hazard Index* - The cumulative increase in total chronic HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.

3)(d)(3) *Acute Hazard Index* - The cumulative increase in total acute HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.

The calculated MICRs are less than $1E-6$ and the calculated HIAs and HICs are less than 1.0. Therefore, this project is in compliance with Rule 1401.

The equipment will be conditioned such that no toxic air contaminants will be used that are listed in 1401 amended 6-5-2009, except for IPA and propylene glycol methyl ether.



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Regulation XXX Evaluation

Rule 3000(b)(6) defines a "de minimus significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or HAPs from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NOx	40
PM ₁₀	30
SOx	60
CO	220

To determine if a project is considered as a "de minimus significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the renewal Title V permit shall be accumulated and compared to the above threshold levels. This proposed project is the 3rd permit revision to the Title V renewal permit issued to this facility on 5-9-05. The following table summarizes the cumulative emission increases resulting from all permit revisions since the initial Title V permit was issued:

	HAP	VOC	NOx	PM10	SOx	CO
Current Revision	0	0	0	0	0	0
2 nd Revision, Adding Two Flow Coaters	0	0	0	0	0	0
1 st Revision, Change of Ownership	0	0	0	0	0	0
Cumulative Total	0	0	0	0	0	0
Maximum Daily	30	30	40	30	60	220

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimus significant permit revision" for non-RECLAIM pollutants or HAPs.



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Recommendation

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "de minimus significant permit revision", it is exempt from the public participation requirements under Rule 3006(b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility.

Conditions:

Facility Conditions

F2.1 THE OPERATOR SHALL LIMIT EMISSIONS FROM THIS FACILITY AS FOLLOWS:

CONTAMINANT	EMISSIONS LIMIT
VOC	LESS THAN OR EQUAL TO 3510 LBS IN ANY ONE MONTH

To ensure compliance with the monthly Volatile Organic Compound (VOC) emission limit(s) of this condition, the operator shall comply with the following recordkeeping requirements:

- (1) The operator shall comply with Rule 109 (Recordkeeping for Volatile Organic Compound Emissions).
- (2) Within 14 calendar days after the end of each month, the operator shall total and record VOC emissions for the month from all equipment and operations covered by the monthly emission limit(s). The record shall include any procedures used to account for control device efficiencies and/or waste disposal. It shall be signed and certified for accuracy by the highest ranking individual responsible for compliance with District rules.
- (3) The operator shall maintain a single list which includes only the name and address of each person from whom the facility acquired VOC-containing material regulated by the District that was used or stored at the facility during the preceding 12 months.
- (4) The operator shall retain all purchase invoices for all VOC-containing material used or stored at the facility, and all waste manifests for all waste VOC-containing material removed from the facility, for five years.



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For the purpose of this condition, the VOC emission limit shall be from all equipment and operations that are required to have written permits or are exempt from written permits pursuant to rule 219.

F2.2 THE OPERATOR SHALL LIMIT EMISSIONS FROM THIS FACILITY AS FOLLOWS:

CONTAMINANT	EMISSIONS LIMIT
VOC	LESS THAN OR EQUAL TO 833 LBS IN ANY ONE MONTH

For the purpose of this condition, the VOC emission limit shall be from all equipment and operations that are subject to rule 442.

To ensure compliance with the VOC Volatile Organic Compound (VOC) emission limit(s) of this condition, the operator shall comply with the following recordkeeping requirements:

- (1) The operator shall comply with Rule 109 (Recordkeeping for Volatile Organic Compound Emissions).
- (2) Within 14 calendar days after the end of each month, the operator shall total and record VOC emissions for the month from all equipment and operations covered by the monthly emission limit(s). The record shall include any procedures used to account for control device efficiencies and/or waste disposal. It shall be signed and certified for accuracy by the highest ranking individual responsible for compliance with District rules.

Device Conditions:

A63.8 THE OPERATOR SHALL LIMIT EMISSIONS FROM THIS EQUIPMENT AS FOLLOWS:

CONTAMINANT	EMISSIONS LIMIT
VOC	LESS THAN 15 LBS IN ANY ONE DAY

The operator shall calculate the emission limit(s) in this device for coating usage based on total collection efficiency of 90 % by weight. [Devices Subject to this condition: D4, D13, D19, D44, D60, D61]

B59.3 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE: Materials containing any toxic air contaminants (TAC) listed in Table 1 of Rule 1401, with an effective date of June 5, 2009, or earlier, except isopropyl alcohol (CAS No. 67-63-0) and propylene glycol methyl ether (CAS No. 107-98-2). [Devices Subject to this condition: D61]

H23.7 THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:



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CONTAMINANT	RULE	RULE/SUBPART
VOC	DISTRICT RULE	109
VOC	DISTRICT RULE	442

[Devices Subject to this condition: D4, D13, D19, D44, D57, D60, D61, D62]

K67.1 THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):

Daily usage of coatings and solvents

[Devices Subject to this condition: D2, D4, D6, D9, D10, D11, D13, D16, D19, D44, D53, D54, D60, D61]

K67.2 THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):

Material safety data sheets for all coatings and solvents used at this facility shall be kept current and made available to district personnel.

[Devices Subject to this condition: D4, D13, D14, D15, D18, D19, D44, D55, D57, D60, D61]