

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b> Large Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	1 of 14
	APP. NUMBERS	499420, 499492
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	12/17/09

**PERMIT TO CONSTRUCT  
COATING ENCLOSURE & RTO**

<b>Applicant's Name</b>	ANTHONY, INC.
<b>Company I.D.</b>	118314
<b>Mailing Address</b>	12812 ARROYO, SAN FERNANDO, CA 91342
<b>Equipment Address</b>	12812 ARROYO, SAN FERNANDO, CA 91342
<b>Equipment Description</b>	

**Application No.: 499492 (New Construction).**

GLASS COATING APPLICATION AND HEAT TREATMENT SYSTEM CONSISTING OF:

1. OVEN, GLASSTECH, MODEL NO. 60" SEMI-CONT/OSC, 62' - 6" L. X 5' - 0" W. X 5' - 0" H., ELECTRICALLY HEATED, 1880 KW. (D39)
2. SPRAY ENCLOSURE, ANTHONY INC., MODEL NO. DS-3, 6' - 0" W. X 2' - 6" L. X 5' - 0" H., WITH A SEPARATE SPRAY HOPPER. (D40)
3. EXHAUST SYSTEM TO VENT AN OVEN AND SPRAY ENCLOSURE TO AIR POLLUTION CONTROL SYSTEM.

**Application No.: 499420 (New Construction). (C38)**

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. REGENERATIVE THERMAL OXIDIZER, ADWEST TECHNOLOGIES INC., MODEL NO. RETOX 12.ORTO95, 12,000 CFM, 15' - 11" W X 24' - 0" L X 10' - 5" H, DUAL CHAMBER CERAMIC MEDIA, WITH A 3,400,000 BTU/HR MAXON NATURAL GAS-FIRED. BURNER, MODEL KINEDIZER-LE, A 7.5 H.P. COMBUSTION BLOWER , AND A NATURAL GAS INJECTION SYSTEM UP TO 1,800,000 BTU/HR.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	2 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

2. EXHAUST SYSTEM WITH A 75 H. P. FAN @ 12000 CFM, VENTING ONE SPRAY ENCLOSURE AND ONE OVEN/FURNACE.

**Application No.: 499493**

TITLE V PERMIT REVISION.

<b>HISTORY</b>
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Anthony, Inc. submitted the above permit applications (class I) for permits to construct a new glass coating and heat treatment system and a new regenerative thermal oxidizer (RTO).

Anthony, Inc. manufactures insulated glass units for commercial freezer and refrigerator doors. The facility has active permits from the District for a spray booth, a baghouse, and an oven under ID. No. 118314. In the manufacturing process, the glass panels are coated with a conductive transparent coating, so that the surface of the glass doors could be heated to prevent condensation from moisture in the room on the glass doors. The above described new coating line will apply a different conductive clearcoat and eventually will replace the current coating application line.

The District database shows one notice of violation issued to this facility for failure to submit annual compliance certification and semi-annual monitoring reports on time and operating and installing an ICE without permit. Since then, the inspector has disposed the notice of violation as “in compliance”, as the company had submitted necessary reports and the ICE has been disconnected. The database also shows one notice to comply was issued to the facility to store baghouse discharge in closed container, provide VOC emission reports and to replace the spray booth filters. Since then the inspector has disposed the notice of violation as “in compliance” The facility has not received any complaints for the public nuisance or visible emissions.

This facility is not located within 1000 feet from any school and there will not be any emission increases from this project above the R212(g) subparagraph limits, hence, these applications will not require a public notice.

Anthony Inc. is a Title V facility. A Title V renewal permit was issued to this facility on May 9, 2005. The proposed permit revision is considered as a “de minimis significant permit revision” to the renewed Title V permit, as described in Regulation XXX evaluation.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	3 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

<b>PROCESS DESCRIPTION</b>
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Anthony, Inc. fabricates commercial freezer and refrigerator glass door assemblies. The glass panels are coated with a conductive clearcoat, so that the surface could be heated to avoid condensation on the glass from moisture in the room. The facility already has a permitted coating line where the glass is initially heated in a furnace to a softening point (1100<sup>0</sup> F to 1300<sup>0</sup> F). The glass is then conveyed to the spray booth where a hydrofluosilicic acid solution (prespray solution) is sprayed automatically on to the hot glass to improve the stability of the subsequent coating. Next, a tin solution is automatically sprayed with a mixture of stannic chloride, methanol, and hydrochloric or hydrofluoric acid. These mixtures vary depending on the customer and the heating voltage requirements/specifications. This coating pyrolyzes (thermally decomposes) upon contact with the hot glass to form a tin oxide layer on the glass surface. The overspray is drawn into a duct and injected with ammonia and lime, which neutralizes the excess stannous chloride to stannous oxide and ammonium chloride, which are collected in a baghouse. The ammonia also maintains the pH level of the exhaust. In addition, filters in the spray booth stop the particulate overloading of the baghouse. The filters on the spray booth and the baghouse provide at least 99% PM10 control efficiency. A source test performed by the District (# 92-0033) also indicated 99% PM10 capture efficiency.

The applicant proposes to install a long, conveyORIZED, electrically heated furnace and coating application line, which will be vented to a new RTO unit. This system can be used as glass tempering (softening) equipment only or as a tempering and coating application and curing oven system. The heat treating furnace is exempt from a written permit pursuant to Rule 219(e)(12). However, the furnace will function as a curing oven when the coating is applied to the glass panels. Since the District requires a written permit for the curing oven, this equipment will only be describe on the permit as an oven.

The furnace/oven will have two heating sections, operating at a temperature of about 1100<sup>0</sup> to 1300<sup>0</sup> F. The furnace/oven will have electric heating elements throughout its length in the bottom. A 2.5 foot coating section will be located between these two sections. It will have a removable stainless steel exhaust hood and heated to above 1100<sup>0</sup> F by the heat from the two sections. During the coating application operation, a coating enclosure will be inserted in the middle of the furnace. A spray reciprocator (with spray nozzles) will enter the coating enclosure a couple of seconds before the glass entry and apply a tin-based coating. The spray reciprocator will come out of the enclosure after the glass panel is coated to avoid damage from the high temperature. The spray must start before the leading edge and stop after the trailing edge, as well as over the sides, to ensure the complete coating of the glass panel. This operation will repeat about 3 to 4 times a minute. A separate spray hopper outside the enclosure will be used to adjust the spray nozzle parameters.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	4 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

The glass will enter the furnace slot as usual on a conveyor, get heated to a softening point (1100<sup>0</sup> F to 1300<sup>0</sup> F) and get sprayed with a fluorine-doped organotin solution with IPA and ethanol carrier. The organotin compounds will pyrolytically decompose during the process to form a tin oxide film on the glass. NOx, CO and VOC emissions will be emitted from this thermal decomposition. The furnace/oven heats the glass to a temperature necessary for the coating to be pyrolytically applied to the glass. Once the coating contacts the hot glass, it instantly becomes fused to the glass and is fully formed.

The spray hopper, the spray enclosure, and the whole furnace (which acts as an oven during the coating application) are vented to the RTO. An interlock be installed and operated to prevent spraying of the coating until the RTO reaches operating temperature. The negative pressure in the furnace will results in 100% VOC and PM10 collection efficiency.

The chemicals used in the current system have corrosive chlorides and toxic antimony emissions. The new coatings will not have these components/emissions.

The customized glass coating with alcohols and tin compounds will have a maximum VOC content of 4.66 pounds per gallon. This coating will contain ammonium acetate as a buffer which will generate NOx emissions in this process. Generally only one coating (87% of total coatings) will be applied in this equipment, hence clean-up material will be used only once in a while on this equipment. The clean-up material will be IPA. The emissions from the clean-up solvents will also be vented to the RTO unit.

The RTO is capable of processing 12,000 CFM of contaminated air from the coating application enclosure and associated drying/curing oven. The RTO is initially heated to 1500<sup>0</sup> F by a startup burner, which supplies heat to the ceramic media. This media is located in two process zones. The hot exhaust air goes to the other process bed to transfer the heat to the other ceramic bed. The thermal energy recovery is 95%. The contaminated air switches every two minutes between the two ceramic beds. If the VOC in the contaminated stream is not sufficient to sustain the temperature, then natural gas is injected into the RTO. This equipment is expected to meet the VOC BACT requirements by achieving a minimum 90% collection efficiency and at least 95% destruction efficiency; overall VOC control efficiency of 95%. A source test will be conducted to verify the collection, destruction and control efficiencies.

From past experience operating similar equipment at their Illinois plant, the applicant informed the District that up to 70% of the coating solids are volatile and when exposed to high temperature are primarily reduced in the oven and the rest are reduced in the RTO. In addition, some amount of particulate emissions from the coating application are deposited on the inside wall of the enclosure and ducting.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	5 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

As the overspray of coating loses its solvent, the remaining PM is a sticky wax-like material. Traditional PM control, such as a baghouse equipped with a limestone/diatomaceous earth injection system, results in significant material that must be disposed of as hazardous waste (for this facility).

The applicant is proposing to use RTO as a control device for the VOC and PM10 emissions. Overtime, the ceramic media will get a tin coating and will get clogged eventually. The pressure drop across the ceramic media will indicate time to change the ceramic media. The VOC control function of the ceramic media is not expected to be affected with a metal coating on the ceramic, per RTO manufacturer. The applicant has requested less than one pound per day of PM10 emission limit from this equipment for now to comply with the current BACT requirement. A permit condition will be added to perform a source test for PM10 emissions to determine the emission factor. If the usage indicates more than one pound/day PM10 emissions, then the applicant will install a post-RTO PM10 particulate control system consisting of a high temperature baghouse.

The applicant is proposing to replace the ceramic media in the RTO semiannually to maintain the required VOC reduction efficiency of the RTO. The applicant will also conduct weekly bake-outs of the RTO where the RTO will be operated at a high temperature to reduce the build-up of PM on the ceramic media. This is expected to extend the effective use of the ceramic media under these operating conditions of the RTO as a PM control device. A permit condition for a periodic source testing will be imposed to determine initial and then later emission reduction efficiencies for VOC and PM10. This will provide valuable information on the continuous performance of the RTO to control VOC and PM10 emissions.

The applicant has operated a manufacturing operation at this site for a number of years. The existing glass coating line has been in use for a number of years and the applicant has decided to replace it with a new line for better quality and efficiency. The current coating line at this location is not controlled for VOC emissions. A facility-wide VOC emission cap of 150 lbs/day has been established for this location. The company has requested no VOC emission increase for this project. The above project will also emit NOx, PM10 and CO emissions, which are within the Rule 1304 offset exemption threshold limits for this facility. Thus emission offsets will not be required for this project.

The afterburner unit being a "Regenerative Thermal Oxidizer – RTO" with a 3.4 mm BTU/HR burner will use a burner with less than 30 ppmv NOx at 3% O<sub>2</sub>. This will comply with the current NOx BACT requirements for a RTO. The coating operation is also subject to Rules 1145 and 1171. With the RTO, the applicant will comply with the current BACT and rule requirements for VOC.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	6 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

**OPERATING HOURS**

Maximum: 24 hr/day, 7 day/week, 52 weeks/year

**OXIDIZER DESIGN**

Total maximum contaminated process flow rate:	12000 cfm
Inlet operating temperature	70 <sup>0</sup> F
Outlet operating temperature from combustion chamber	1500 <sup>0</sup> F
Heat exchanger efficiency:	95%
Heat Input Rating of the burner for initial heating of the media	3.4 mm BTU/HR
Volume of the combustion zone	661 ft <sup>3</sup>

**Heat required to heat air from 70 °F to 1600 °F(worst case)**

$$M = 12000 \text{ scfm} \times 0.075 \text{ lb/scf} \times 60 \text{ min/hr} = 54,000 \text{ lb/hr}$$

$$Cp_{70} = 0.240 \text{ Btu/lb } ^\circ\text{F} \quad Cp_{1500} = 0.275 \text{ Btu/lb } ^\circ\text{F}$$

$$Cp_{\text{avg}} = 0.258 \text{ Btu/lb } ^\circ\text{F}$$

$$Q = MCp \Delta T$$

$$= 54000 \times 0.258 \times (1600 - 70)$$

$$= 21.32 \text{ MM Btu/hr}$$

After 95% heat recovery,

$$Q = 21.32 \times 0.05 = 1.066 \text{ MM Btu/hr}$$

Heat input needed:  $1.066 \times 1050/615 = 1.82 \text{ mm BTU/HR.}$  (Table D7, Page 948, AP 40.)

The applicant will use the burner to start-up the RTO only. The natural gas injection and the VOCs will maintain the temperature in the combustion chamber. The RTO will have a burner rated at  $3.4 \times 10^6$  Btu/hr for start-up, which is sufficient to heat the RTO to operating temperature. A permit condition will require a source test upon completion of the installation. A permit condition will also limit the use of the burner for start-up operation only.

**Residence time calculation**

$$\text{Flow rate per minute} = 12000 \text{ cfm} / 60 \text{ sec/min} = 200 \text{ cfs}$$

$$\text{Corrected volume} = 200 \text{ cfs} \times 1960/530 = 740 \text{ cfs (1500 } ^\circ\text{F to 70 } ^\circ\text{F)}$$

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	7 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

Combustion zone volume = 248 cubic feet

Residence time =  $661 / 740 = 0.89$  sec (greater than 0.3 sec – compliance)

### EMISSION CALCULATIONS

The RTO (afterburner) will be equipped with a low NOx burner. It will take two hours maximum to get the ceramic bed up to temperature (1500° F).

<u>dy/wk</u>	7	7	<u>gross heating value</u>	1050 (BTU/scf)
<u>wk/yr</u>	52	52		
<u>load</u>	100%	100%		

	<u>Emission</u>	<u>MAX</u>	<u>AVE</u>	<u>MAX</u>	<u>30-DAY</u>	<u>MAX</u>	<u>MAX</u>
	<u>Factors</u>	(lb/hr)	(lb/hr)	(lb/dy)	(lb/dy)	(lb/yr)	(ton/yr)
SO <sub>2</sub> (R1)	0.6	0.002	0.002	0.047	NA	17	0.008
SO <sub>2</sub> (R2)	0.6	0.002	0.002	0.047	0.047	17	0.008
NO <sub>2</sub> (R1)	38.94	0.126	0.126	3.026	NA	1,102	0.551
NO <sub>2</sub> (R2)	38.94	0.126	0.126	3.026	3.026	1,102	0.551
CO (R1)	39.5	0.128	0.128	3.070	NA	1,117	0.559
CO (R2)	39.5	0.128	0.128	3.070	3.070	1,117	0.559
TOC (R1=R2)	7	0.023	0.023	0.544	NA	198	0.099
N <sub>2</sub> O (R1=R2)	2.2	0.007	0.007	0.171	0.171	62	0.031
PM, PM <sub>10</sub> (R1=R2)	7.5	0.024	0.024	0.583	0.583	212	0.106
Hexane	0.0063	2.0E-05	2.0E-05	4.9E-04	NA	1.78E-1	8.91E-5
Ammonia	3.2	1.0E-02	1.0E-02	2.5E-01	NA	9.05E+1	4.53E-2
ethyl benzene	0.0095	3.1E-05	3.1E-05	7.4E-04	NA	2.69E-1	1.34E-4
acetaldehyde	0.0043	1.4E-05	1.4E-05	3.3E-04	NA	1.22E-1	6.08E-5
acrolein	0.0027	8.7E-06	8.7E-06	2.1E-04	NA	7.64E-2	3.82E-5
benzene	0.008	2.6E-05	2.6E-05	6.2E-04	NA	2.26E-1	1.13E-4
formaldehyde	0.017	5.5E-05	5.5E-05	1.3E-03	NA	4.81E-1	2.40E-4
naphthalene	0.0003	9.7E-07	9.7E-07	2.3E-05	NA	8.49E-3	4.24E-6
PAH's	0.0001	3.2E-07	3.2E-07	7.8E-06	NA	2.83E-3	1.41E-6
toluene	0.0366	1.2E-04	1.2E-04	2.8E-03	NA	1.04E+0	5.18E-4
xylene	0.0272	8.8E-05	8.8E-05	2.1E-03	NA	7.69E-1	3.85E-4

NO<sub>2</sub> @ 3% excess O<sub>2</sub>----->>> 30.00 (ppmv)

SO<sub>2</sub> @ 3% excess O<sub>2</sub>----->>> 0.33 (ppmv)

CO @ 3% excess O<sub>2</sub>----->>> 49.98 (ppmv)

PM @ 12% CO<sub>2</sub>----->>> 5.5E-09 (grain/ft<sup>3</sup>)

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	8 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

**Total NOx Emissions.**

There will be additional process NOx emissions from this operation. The coating contains ammonium acetate, which will generate NOx emissions (a result of the high temperature treatment operation). From the data supplied by the applicant, 14.14 lbs/day of NOx will be emitted during the coating application.

The total NOx emission = 3.03 + 14.14 = 17.17 lbs/day (0.71 lbs/hr).

**Coating Related VOC Emissions**

The primary coating, which is mixed on site, will have dibutyltin oxide, ammonium acetate, hydrofluoric acid, ethyl alcohol, and IPA. The mixture ratio varies per customer specification. The maximum solid content will be 5.78 lbs/gal and maximum VOC content will be 4.66 lbs/gal. The applicant will apply a maximum of 21 gal/day of this coating and average being 14 gal/day.

**Average:**

14 gallon @ 4.66 lb-VOC/gal

Uncontrolled (R<sub>1</sub>) = 14.0 x 4.66 = 65.24 lb-VOC/day (2.72 lb/hr)

Controlled (R<sub>2</sub>) = 65.24 x (1 - 0.95) = 3.26 lb-VOCday (0.14 lb/hr)

**Maximum:**

21 gallon @ 4.66 lb-VOC/gal

Uncontrolled (R<sub>1</sub>) = 21.0 x 4.66 = 97.86 lb-VOC/day (4.08 lb/hr)

Controlled (R<sub>2</sub>) = 97.86 x (1 - 0.95) = 4.89 lb-VOCday (0.20 lb/hr)

**Toxic Emissions from the Coating Usage:**

Compounds	Content (lbs/gal)	Max. Gallons Sprayed in a Day	No. of Days In a year Possible max.	Lbs/year A X B X C	Tons/year E / 2000	Lbs/hr = D / 365 / 24
	A	B	C	D	E	
IPA	1.287	21	365	9865	4.93	1.13 (R1), 0.05 (R2)
HF	0.64117	21	365	4906897	2.453	0.56

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	9 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

### **Toxic Compound Emissions and Risk Assessment**

The toxic risk calculations from the combustion emissions will be added with the IPA, ammonia and hydrofluoric acid emissions.

A Tier 2 Risk Assessment was performed to determine the health risk from the toxic air contaminants emitted from the RTO due to combustion of natural gas. The assessment calculated a cancer risk of 0.035400148 in a million for the residential receptor and 0.027300422 in a million for a commercial receptor. The assessment also calculated both acute and chronic hazard index risks and all the risks were below 1. Thus, the Tier 2 risk assessment demonstrated compliance with the Rule 1401 requirements.

### **Coating Related PM Emissions**

The applicant provided PM emission data from a source test on similar equipment. The analysis is based on 7700 gallons of coating applied in a year.

The total solids of tin and inorganic acids in the coating = 19.167 tons/yr

The tin is 47.7% in Dibutyl tin oxide and 29% in stannous octate./yr

i.e.  $(21559.6 \times 0.477 + 3107.2 \times 0.29) = 5.569$  tons

The non-tin portion and inorganic acids =  $19.167 - 5.569 = 13.598$  tons/yr

The previous test demonstrated that 20.2% of the tin was deposited in the hood.

The composition of the reclaimed material was 50% tin.

Tin deposited in the hood =  $5.569 \times 0.202 = 1.125$  tons

Other solids deposited = 1.125 tons

Total tin emitted =  $5.569 - 1.125 - 1.125 = 3.319$  tons/yr.

The non-tin portion of the organo-tin coating and will also have particulate emissions. However, at the high temperature during the coating operation, over 95% of the organic material (non-tin solids) in the coating will be reduced.

Thus, non-tin PM =  $0.04491 \times$  total non-tin (13.598) = 0.612 tons/yr

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	10 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

Total PM (R1) = 3.319 + 0.612 = 3.93 tons/year (7,860 lbs/yr) (21.53 lbs/day) (0.9 lbs/hr).

Assumed: PM10 = 50% of PM

Total PM10 (R1) = (1.97 tons/year) (3,940 lbs/yr) (10.79 lbs/day) (0.45 lbs/hr)

These particulates will be vented to the RTO, where they will go through a very fine maze of silicon structure (ceramic) at an elevated temperature. Some of these particulates will be trapped in the cavities and will form a tin layer on the ceramic particles. The RTO manufacturer estimated that a minimum 80% particulate control efficiency can be expected from the RTO, an possibly much higher. The manufacturer of the RTO also provided their calculations on ceramic bed change (frequency) timeline. They recommended changing the bed after 2,242 hours of RTO operation.

Since a baghouse (99% efficiency) is BACT for this type of spray coating operation, the applicant has accepted a permit to emit less than 1 lb/day PM10 emissions from this equipment (uncontrolled PM10). The applicant will conduct a source test to determine the actual specific PM10 emission factor for this high temperature glass coating operation. If the PM10 emission factor is determined to result in an uncontrolled PM10 emission rate greater than 1 lb/day at the applicant's requested coating application rate for full production, BACT for PM10 will be required. The source test will also determine the actual PM10 control efficiency for the RTO. The applicant has submitted technical specifications for a baghouse, which will be installed if necessary (to be evaluated under a separate application).

The above calculations were based on continuous operation with a requested usage of 7700 gallons of coating per year.

Coating Usage=7700 gal/yr x 1 yr/12 mo x 1 mo/30 days x 1 day/24/hr = 0.89 gal/hour.

**For 1 lb/day PM10 emissions or less (uncontrolled), the coating usage shall be less than (0.89 / 0.45) =2 gallons/day.**

#### **RULES/REGULATION EVALUATION**

▫ *RULE 212, PUBLIC NOTIFICATION*

√ *SECTION 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. This source is not located within 1,000 feet from the outer boundary of a school. Therefore, public notice will not be required by this section.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	11 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

▼ **SECTION 212(c)(2):**

This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified in subdivision (g). As shown in the following table, the emission increases from this facility are below the daily maximum limits specified by Rule 212(g). Therefore, these applications will not be subject to this section.

<b>LB/DAY</b>	<b>CO</b>	<b>NOX</b>	<b>PM<sub>10</sub></b>	<b>ROG</b>	<b>Lead</b>	<b>SOX</b>
<b>MAX. LIMIT</b>	220	40	30	30	3	60
<b>INCREASES</b>	3.07	17.17	1.0	0	0	0

▼ **SECTION 212(c)(3):**

Please, see Rule 1401 evaluation section.

▼

**SECTION 212(g):**

This section requires a public notice for all new or modified sources which undergo construction or modifications resulting an emissions increase exceeding any of the daily maximum specified in the table below. As shown in the following table, the emission increases from this project are below the daily maximum limits specified by Rule 212(g). Therefore, public notice will not be required by this section.

<b>LB/DAY</b>	<b>CO</b>	<b>NOX</b>	<b>PM<sub>10</sub></b>	<b>ROG</b>	<b>Lead</b>	<b>SOX</b>
<b>MAX. LIMIT</b>	220	40	30	30	3	60
<b>INCREASES</b>	3.07	17.17	1.0	4.89	0	0

▫ **RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE**

AQMD database has no records of any visible emissions or nuisance violations against this company, except as already noted .in the background.

▫ **RULE 1145, PLASTIC, RUBBER, LEATHER AND GLASS COATINGS**

(c)(1) VOC CONTENT

The applicant will be in compliance with these requirements by using an air pollution control equipment with a sufficient VOC control efficiency (100% collection and 95% destruction).

▫ **RULE 1145, PLASTIC, RUBBER, LEATHER AND GLASS COATINGS**

(c)(4) TRANSFER EFFICIENCY

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	12 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

The applicant will be in compliance with these requirements by using an air pollution control equipment with a sufficient VOC control efficiency (100% collection and 95% destruction).

▫ **RULE 1171, SOLVENT CLEANING OPERATIONS**

The applicant will be in compliance with these requirements by using an air pollution control equipment with a sufficient VOC control efficiency (100% collection and 95% destruction).

**REGULATION XIII**

▫ **RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

(a) VOC EMISSIONS

VOC emissions from the coating spray enclosure are vented to an air pollution control system consisting of a RTO with a sufficient VOC control efficiency (100% collection and 95% destruction). This will comply with the provisions of the current BACT requirements.

(a) NO<sub>x</sub> EMISSIONS

The RTO burner is used for start-up operation only. Thus, NO<sub>x</sub> emissions are guaranteed to be <30 ppmv at 3% O<sub>2</sub>. This will comply with the provisions of the current BACT requirements.

(a) PM<sub>10</sub> EMISSIONS

PM<sub>10</sub> emissions are less than 1 lb/day. BACT is not triggered.

▫ **RULE 1303(b)(1), MODELING**

Detailed modeling analysis was performed for the NO<sub>x</sub> emissions. Results indicated compliance with the rule requirements. Modeling is not required for <17.1 lb/hr CO and <1.9 lb/hr PM<sub>10</sub> lb/hr emissions.

▫ **RULE 1303 (b)(2), EMISSION OFFSETS**

The combustion and VOC emissions are within the threshold limits. Thus, no emission offsets are required.

▫ **RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS**

As discussed in this evaluation report, this equipment is expected to comply with the rule requirements.

**REGULATION XXX**

This facility is not in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” to the Title V permit for this facility.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	13 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (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
NO <sub>x</sub> *	40
PM <sub>10</sub>	30
SO <sub>x</sub> *	60
CO	220

\* Not applicable if this is a RECLAIM pollutant

To determine if a project is considered as a “de minimis 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 Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 2<sup>nd</sup> permit revision to the Title V renewal permit issued to this facility on May 9, 2005. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

Revision	HAP	VOC	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>x</sub>	CO
1 <sup>st</sup> Permit Revision, to add abrasive blasting unit (D33), modify baghouse (C5), add two mixers (D36 and D37), and modify oven (D11).	0	0	0	1	0	0
2 <sup>ND</sup> rebision to add spray enclosure (D40), oven (D39), and RTO (C38)	1	1	17	1	0	1
Total	1	0	17	2	0	1
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 minimis significant permit revision”.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE AND COMPLIANCE DIVISION</b> Small Coating, Printing and Chemical Operations Team <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	14 of 14
	APP. NUMBERS	336600, 344538 344536
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	10/06/1998

**RECOMMENDATION**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis 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.