

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 1
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

Thoro Packaging Inc.
1467 Davril Circle
Corona, CA 92880
ID#: 074830

PERMIT TO CONSTRUCT

TITLE V PERMIT REVISION:

Application Number 556340

EQUIPMENT DESCRIPTION:

Application Number 556339(Replacement of Previous P/O F66302, a/n 424941):

LITHOGRAPHIC PRINTING AND CURING SYSTEM CONSISTING OF:

1. PRESS, HEIDELBERG, MODEL XL 106-7+LYY-LX3_UV, SEVEN COLOR, 41.73-INCH SHEET WIDTH.
2. U.V. CURING UNIT, 124.8 KW TOTAL.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TMES.
[RULE 204]
3. FOUNTAIN SOLUTION USED IN THIS EQUIPMENT SHALL NOT EXCEED 8 PERCENT OF VOC BY VOLUME, AS APPLIED, INCLUDING WATER AND EXEMPT SOLVENTS.
[RULE 1303(a)(1)-BACT]
4. THE COMPOSITE VAPOR PRESSURE OF THE VOC IN THE BLANKET WASHES AND ROLLER WASHES USED ON THIS EQUIPMENT SHALL NOT EXCEED 10 MM HG @ 20 DEGREES CELSIUS.
[RULE 1303(a)(1)-BACT]
5. THE MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE 1 WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER, EXCEPT AMMONIA, ETHYLENE GLYCOL MONOBUTYL ETHER, ISOPROPYL ALCOHOL, PHOSPHORIC ACID, ETHYL BENZENE, STYRENE, ACRYLIC ACID, AND XYLENE.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 2
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

[RULE 1401]

6. THE TOTAL QUANTITY OF VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS TO THE ATMOSPHERE FROM THIS EQUIPMENT SHALL NOT EXCEED 900 POUNDS PER CALENDAR MONTH.

[RULE 1303(b)(2)-OFFSET]

7. THE TOTAL QUANTITY OF ETHYL BENZENE EMISSIONS TO THE ATMOSPHERE FROM THIS EQUIPMENT SHALL NOT EXCEED 120 POUNDS PER CALENDAR YEAR.

[RULE 1401]

8. IN ADDITION TO THE RECORDKEEPING REQUIREMENTS OF RULE 109, THE OPERATOR SHALL KEEP ADEQUATE RECORDS FOR THIS EQUIPMENT TO VERIFY THE FOLLOWING ON A DAILY BASIS:

A. USAGE OF INKS, FOUNTAIN SOLUTIONS INCLUDING WATER, ROLLER WASHES, BLANKET WASHES, AND ALL OTHER MATERIALS CONTAINING VOC, IN GALLONS.

B. DENSITY OF INKS, IN POUNDS PER GALLON, AND PERCENTAGE BY WEIGHT OF LITHOGRAPHIC OILS IN THE INKS.

C. INK ABSORPTION FACTOR AS SPECIFIED BY CURRENT SCAQMD GUIDELINES.

D. EMISSIONS IN POUNDS OF VOC.

E. EMISSIONS IN POUNDS OF ETHYL BENZENE

[RULE 109, 1303(b)(2)-OFFSET, 1401]

9. WITHIN 7 DAYS OF OPERATION OF THIS EQUIPMENT, LITHOGRAPHIC PRINTING SYSTEM OPERATING UNDER PERMIT NO. F66302 SHALL BE REMOVED FROM SERVICE.

[RULE 1303(b)(2)-OFFSET]

EMISSIONS AND REQUIREMENTS:

10. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: RULE 109

VOC: RULE 1130, SEE APPENDIX B FOR EMISSION LIMITS

VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

BACKGROUND

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 3
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

Thoro Packaging Inc. is a Title V facility. They filed application 556399 for a new lithographic printing press to replace an existing press under P/O F66302, a/n 424941. The facility is limited to a 2,040 lbs VOC per month cap. No increase is being requested.

No citizen nuisance complaints, Notices to Comply or Notices of Violation have been issued against this facility over the past two years as of 10/05/2013.

The permit revision is considered as a “de minimis significant permit revision” to the Title V renewal permit, as described in Regulation XXX evaluation.

PROCESS DESCRIPTION

The applicant operates a typical commercial lithographic printing operation at this site. The equipment will be used to print such items as brochures, magazines, and reports. In lithographic printing, the image and non-image areas are on the same plane (planographic). The image area is made to be oil receptive and water repellent, while the non-image area is made to be water receptive and oil repellent. The fountain solution (normally composed of water, alcohol or alcohol substitute, and etch) wets the non-image area, while the ink will adhere to the image area. The term offset refers to the fact that the ink is offset from the plate to a rubber blanket, and then from the blanket to the paper. This press is ultra-violet cured. The emissions occur during the curing of the inks and clean-up activities which release Volatile Organic Compound (VOC) in the inks and cleaning materials.

EMISSION ESTIMATES

The facility has a VOC cap of 2,040 lbs per month, 68 lbs VOC/day.

3 presses in operation:

$$2,040 \text{ lbs/month} / (30 \text{ days/month}) = 68 \text{ lbs/day}$$

The new press will be limited to 900 lbs VOC/month and will have the following emissions:

$$(900 \text{ lbs VOC/month}) / (30 \text{ days/month}) = 30 \text{ lbs VOC/day}$$

$$(30 \text{ lbs/day}) / (24 \text{ hrs/day}) = 1.25 \text{ lbs VOC/hr}$$

RISK ASSESSMENT

Product	Toxic Contaminant	CAS #	Wt %	Usage* (gal/month)	SPGR	Mass Toxic** lbs/month
3451 U Foun Conc	2-Butoxyethanol	111-76-2	5-10	15	1.07	13.37
MRC-85	Propan-2-ol	67-63-0	2.5-5.0	60	0.791	19.77
	xylene	1330-20-7	2.5-5.0	60	0.791	19.77

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 4
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

	ethylbenzene	100-41-4	≤2.5	60	0.791	9.88
water base cleaner	Butyl Oxitiol	111-76-2	20-40	9	1.02	30.59
Eclipse Storage Gum	Phosphoric Acid	7664-38-2	1.0	9	1.04	0.77
Starkote AQ-5002xt	IPA	67-63-0	1-3	9	1.04	2.34
Starkote AQ-122	Ammonia	7664-41-7	1-3	90	1.04	23.39
	IPA	67-63-0	2-4	90	1.04	31.19
Starkote AQ-443	IPA	67-63-0	2-4	600	1.04	207.92
1311B, BC, Cmatte	Ammonia	7664-41-7	1.0	90	1.1	8.25
1394 B,BC,C,D,E	Styrene	100-42-5	0.007	90	1.1	0.058
	Acrylic Acid	79-10-7	0.021	90	1.1	0.173

*Usage based on the max daily ratio of 30 lbs/day(900 lbs/month):10.02 lbs/day as submitted

*Mass Toxic determined by SPGR*Usage*8.33*wt%

Product	Toxic Contaminant	CAS #	Mass Toxic lbs/month	lbs/day	Daily Toxic lbs/day	Hourly toxic
3451 U Foun Conc	2-Butoxyethanol	111-76-2	13.37	0.45	1.47	0.06
water base cleaner	Butyl Oxitiol	111-76-2	30.59	1.02		
MRC-85	Propan-2-ol	67-63-0	19.77	0.66	8.71	0.363
Starkote AQ-5002xt	IPA	67-63-0	2.34	0.08		
Starkote AQ-122	IPA	67-63-0	31.19	1.04		
Starkote AQ-443	IPA	67-63-0	207.92	6.93		
MRC-85	xylene	1330-20-7	19.77	0.66	0.66	0.038
MRC-85	ethylbenzene	100-41-4	9.88	0.33	0.33	0.0138
Eclipse Storage Gum	Phosphoric Acid	7664-38-2	0.77	0.02	0.02	0.0008
Starkote AQ-122	Ammonia	7664-41-7	23.39	0.78	1.06	0.044
1311B, BC, Cmatte	Ammonia	7664-41-7	8.25	0.28		
1394 B,BC,C,D,E	Styrene	100-42-5	0.058	0.00193	0.00193	0.00008
	Acrylic Acid	79-10-7	0.173	0.0058	0.0058	0.00024

This equipment passes Tier 2 Screen Risk Assessment with the following results:

Tier 2 results: MICR

Residential

Commercial

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 6
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

A public notice is not required since the new press will not exceed the daily VOC maximum.

Rule 401: With proper operation and maintenance compliance with this rule is expected.

Rule 402: With proper operation and maintenance compliance with this rule is expected.

Rule 1130: (1) VOC Content of Graphic Arts Materials
No person shall apply any graphic arts material, including any VOC-containing materials added to the original graphic arts materials, which contains a total VOC in excess of the limits specified below:

GRAPHIC ARTS MATERIAL	VOC LIMIT	
	Grams per Liter of	
	Coating (or Ink or Adhesive), Less	
	<u>Water and Less Exempt Compounds</u>	
	<u>(October 8, 1999)</u>	<u>Effective January</u>
		<u>1, 2000</u>
Lithographic Ink	300	300

The VOC content of the Lithographic inks range from 28.8 to 93.6 gm/lt. The rule limit is 300 gm/lt. Compliance with this rule is expected.

- (2) VOC Content of Fountain Solution
Effective January 1, 2000, the VOC content of fountain solution, including any VOC containing material added to the original fountain solution as applied, shall be:
- (A) no greater than 80 grams per liter of material, or
 - (B) no greater than 100 grams per liter of material, if a refrigerated chiller is used.

The fountain solution will be mixed in a ratio of 4.0gal etch: 124 gal water.

$$\begin{aligned}
 \text{VOC} &= 2.17 \text{ lbs/gal} \\
 4.0 \text{ gal}(2.17 \text{ lbs VOC/gal}) &= 8.68 \text{ lbs VOC} \\
 8.68 \text{ lbs VOC} / (6.6 \text{ lbs VOC/gal}) &= 1.32 \text{ gal} \\
 \text{Total Gallons} &= 4 + 124 = 128 \text{ gallons} \\
 \text{VOC content} &= 8.68 \text{ lbs VOC} / 128 \text{ gallons} = 0.0678 \text{ lbs VOC/gal}, 8.14 \text{ gm/lt} \\
 \text{Vol\%} &= (1.32 \text{ gal} / 128 \text{ gal})(100) = 1.03 \text{ vol\%}
 \end{aligned}$$

Compliance with this rule is expected.

- (3) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials.
Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 7
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

Rule 1171: The Roller wash/blanket wash and system wash used for this equipment has a VOC content of 0.7 lbs/gallon (MRC-85) which will comply with the Rule 1171 requirements.

REG XIII: New Source Review.

1303 States that a new permit unit must meet each of the following requirements if there is an emission increase:

1)BACT

BACT requirements for the printing presses are satisfied by the imposition of the 8.0 vol% limitation on the fountain solution and the requirement that the VOC composite vapor pressure of the blanket and roller washes do not exceed 10 mmHg.

2)Modeling:

There are no modeling requirements for VOC emissions.

3)Emission Offsets:

The proposed project will not result in a VOC emission increase for the facility. Offsets are not required.

4)Facility Compliance:

It is expected that this equipment will comply with all District Rule and Regulations.

5)Major Polluting Facilities:

This replacement will not constitute a major modification to a major polluting facility.

Rule 1401: Toxics: 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.

This equipment passes Tier 2 Screen Risk Assessment with the following results:

Tier 2 results: MICR

Residential	Commercial
1.45E-08	9.11 E-07
Pass	Pass

Rule 1401.1: This is an existing facility and the rule only applies to new or relocated facilities.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 8
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

REGULATION XXX:

This facility is not in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or hazardous air pollutants (HAPs) to the Title V permit for this facility.

Non-RECLAIM Pollutants or HAPs

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 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 _x *	40
PM10	30
SO _x *	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 1st permit revision to the Title V renewal permit issued to this facility on November 2, 2010. 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 _x *	PM10	SO _x	CO
1 st Permit Revision: replace an existing press with a new press	0	0	0	0	0	0
Cumulative Total	0	0	0	0	0	0
Maximum Daily	30	30	40*	30	60	220

* RECLAIM pollutant, not subject to emission accumulation requirements

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” for non-RECLAIM pollutants or HAPs.

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” for non-RECLAIM pollutants, 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

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 9	PAGE 9
	APPL. NO. SEE BELOW	DATE 10/25/2013
	PRCSD BY REL	CHCKD BY

3003(j). If EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.

Conclusion:

This equipment will operate in compliance with all District Rule and Regulations. Permit to Construct is recommended for application number 556339 subject to preceding conditions.