

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

N727326626

FACILITY: EURO LIGHTING DESIGNS, INC.		SRN / ID: N7273
LOCATION: 945 GRAND RAPIDS ST., MIDDLEVILLE		DISTRICT: Grand Rapids
CITY: MIDDLEVILLE		COUNTY: BARRY
CONTACT: Eric Terpsma , Plant Manager		ACTIVITY DATE: 08/27/2014
STAFF: Steve Lachance	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Inspection for FY '014		
RESOLVED COMPLAINTS:		

This inspection was unannounced: SL arrived at about 10:30 AM, Wednesday 8-27-14. Conditions were clear, calm and about 75 F. No odors or visible emissions attributable to the plant were noted prior to plant entry.

Mr. Eric Terpsma, Production Manager, greeted and escorted SL throughout the inspection.

The facility manufactures "bubble lamp" shades of various configurations. These start out as a wire frame that spins on a turntable and is "coated" with a proprietary "web coating" which forms a skin over the wire frame. Two coats are applied to each shade in one booth; SL observed 3 sprayers simultaneously using the booth.

SL provided DEQ's "Inspection Rights and Responsibilities" brochure with Mr. Terpsma and announced his intentions to complete an air quality inspection. Mr. Terpsma said there were no on-site changes relative to AQD since the September, 2013 inspection. Mr. Terpsma appeared to be cognizant of PTI No. 226-03E and easily produced monthly Production/Emissions records through April. See attached. He was aware of the need to maintain records on a monthly basis, but later in the inspection, SL noted the origin of these records (number of barrels of coating used at the booth, per shift), and these were current and maintained contemporaneously with coating use.

Per Mr. Terpsma, coating is used "as received" and previous records (and MAERS, within rounding error, as verified by SL) indicate the following:

- 6.98 #/gallon coating density
- 24% acetone (non-VOC)
- 51% MEK

At 49 gallons of coating per per barrel, the number of barrels equates to mass VOC emissions per the following:

#Barrels x 49 gal/barrel x 6.98 pound/gal x 0.51

Note, MEK does not appear on the list of Hazardous Air Pollutants. It is the VOC of interest at this facility, but not a HAP.

PTI No. 226-03E, EU-BOOTH#1 SPECIAL CONDITIONS

**I. EMISSION LIMITS**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1.VOC	31.44 TPY	12-month rolling time period as determined at the end of each calendar month	EU-BOOTH#1	SC VI.1 SC VI.2 SC VI.3	R 336.1702(a)
2.Acetone	14.76 TPY	12-month rolling time period as determined at the end of each calendar month	EU-BOOTH#1	SC VI.1 SC VI.2 SC VI.4	R 336.1224 R 336.1225

Per attached recordkeeping; compliant. Given the simplicity of using a single coating, calculations appear to be properly set up.

**II. MATERIAL LIMITS**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1. VOC Content of Coatings	5.0 lb/gal (minus water) <sup>a</sup> as applied	Instantaneous	EU-BOOTH#1	SC VI.1 SC VI.2 SC VI.3	R 336.1702(a)
<p><sup>a</sup> The phrase "minus water" shall also include components which are used as organic solvents and which are excluded from the definition of volatile organic compound. (R336.1602(4))</p>					

Given the observed values, SL calculates the current actual value for VOC (pounds per gallon, as applied, minus water and exempted acetone) as 4.75, per the following:

At 6.98 #/gallon, 23.78% acetone and 51% MEK;

One gallon of coating contains 1.66 pounds Acetone; since the density of acetone = 0.79\*8.34 #/gal, this mass of acetone occupies 0.25 gallons; and so the MEK (0.51\*6.98 = 3.56 pounds per gallon of original coating) is actually contained in 0.75 gallons of coating (minus exempt solvent.)

3.56 pounds of MEK/0.75 gallons = 4.75 pounds VOC/gallon of coating (as applied, minus exempt solvent.)

SL concludes this is a compliant coating.

**III. Process / Operational Limits**

- 1.3 All waste coatings, solvents, etc. shall be captured and stored in closed containers and shall be disposed of in an acceptable manner in compliance with all applicable rules and regulations. (R336.1224, R336.1702(a))
- 1.4 The disposal of spent filters shall be performed in a manner which minimizes the introduction of air contaminants to the outer air. (R336.1224, R336.1370)
- 1.5 The permittee shall handle all VOC containing materials, including coatings and solvents, in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times except when operator access is necessary. (R 336.1224, R 336.1225, R 336.1702(a), R 336.1901)

SL's observations were consistent with these requirements; no issues noted.

**Equipment**

- 1.6 *The permittee shall not operate EU-BOOTH#1 unless all respective exhaust filters are installed, maintained and operated in a satisfactory manner. (R336.1224, R336.1301, R336.1331, R336.1910)*
- 1.7 *The permittee shall equip and maintain the EU-BOOTH#1 with HVLP applicator or equivalent technology with comparable transfer efficiency. For HVLP applicators, the permittee shall keep test caps available for pressure testing. (R336.1702(a))*

**Plant hygiene appeared to be good. The same equipment is in use as observed during previous inspection(s). Transfer efficiency appears to be good, exhaust filters appeared to be installed properly and functioning o.k.; no visible emissions outside the booth or stack were noted.**

### **Testing**

- 1.8 *The permittee shall determine the VOC content, water content, and density of any coating, as applied and as received, shall be determined using federal Reference Test Method 24. Upon prior written approval by the AQD District Supervisor, the VOC content may be determined from manufacturer's formulation data. If the Method 24 and the formulation values should differ, the Method 24 results shall be used to determine compliance. (R336.1702)*

A request to use mfg. formulation data had been previously approved.

### **Recordkeeping /Reporting /Notification**

- 1.9 *The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. (R336.1224, R336.1225, R336.1702)*

**Attached through April 2014; but contemporaneous records of coating use were available and Mr. Terpsma acknowledged his obligation to keep these records in a timely manner.**

- 1.10 *The permittee shall maintain a current listing from the manufacturer of the chemical composition of each coating, solvent, etc. including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. (R336.1224, R336.1225, R336.1702)*

MSDS and on-site calculating spreadsheet were reviewed and appear to calculate emissions properly.

1.11 The permittee shall keep the following information on a monthly basis for EU-BOOTH#1:

- a) Gallons (with water) of each coating, solvent, etc. used.
- b) VOC content (minus water and with water) of each coatings, solvents, etc. as applied.
- c) VOC mass emission calculations determining the monthly emission rate in tons per calendar month.
- d) VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. (R336.1224, R336.1225, R336.1702)

Attached through April 2014; but contemporaneous records of coating use were available and Mr. Terpsma acknowledged his obligation to keep these records in a timely manner.

1.12 The permittee shall keep the following information on a monthly basis for EU-BOOTH#1:

- a) Gallons (with water) of each acetone containing material used.
- b) The acetone content in pounds per gallon of each material used.
- c) Acetone mass emission calculations determining the monthly emission rate in tons per calendar month.
- d) Acetone mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. (R336.1224, R336.1225)

**Attached through April 2014; but contemporaneous records of coating use were available and Mr. Terpsma acknowledged his obligation to keep these records in a timely manner.**

**Stack / Vent Restrictions**

1.13 Not later than 45 days after permit approval, the exhaust gases from EU-BOOTH#1 shall be discharged unobstructed vertically upwards to the ambient air for the exhaust stacks listed in the following table:

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
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	<b>Stack &amp; Vent ID</b>	<b>Maximum Diameter (inches)</b>	<b>Minimum Height Above Ground Level (feet)</b>	<b>Applicable Requirement</b>
1.13a	SV-BOOTH#1-1	24.0	25	R336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d)
1.13b	SV-BOOTH#1-2	18.0	25	R336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d)

Stacks appear to be installed per requirements.

SL concludes that the facility is in compliance with applicable requirements; with the caveat that 12-month rolling period records are maintained in a timely manner per Special Condition 1.11, above.

NAME *S. J. Jankovic*      DATE *9/2/14*      SUPERVISOR *[Signature]*

