

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N727331315

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: 09/21/2015
STAFF: Steve Lachance	SOURCE CLASS: MINOR
SUBJECT: Unannounced, Self-Initiated Inspection for FY2015	
RESOLVED COMPLAINTS:	

This inspection was self-initiated and unannounced. SL arrived at about 1 PM, Monday 9-21-15. Conditions were clear, calm and about 75 F. No odors or visible emissions attributable to the plant were noted in the vicinity of the plant prior to 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. Later in the inspection, SL observed 4 sprayers simultaneously using the booth.

SL provided DEQ's "Inspection Rights and Responsibilities" brochure to Mr. Terpsma and announced his intentions to complete an air quality inspection relative to Permit to Install (PTI) No. 226-03E and pertinent air quality rules and regulations. In addition to the permit, SL was further interested in compliance with Rule 201 and associated exemptions, based on communications earlier in the summer regarding possible changes at the facility.

Mr. Terpsma said there were no on-site changes relative to AQD requirements since the last inspection in 2014. While quotes had been received regarding possible expansion of the existing spray booth to accommodate additional spray position(s), the work had not commenced; and in fact, it was more likely that any expansion would be undertaken with installation of an additional (not expanded, as had been discussed) spray booth.

On-site observations confirmed that the booth had not been modified, nor had any construction of new coating equipment commenced. SL and Mr. Terpsma discussed that any new equipment would be subject to permitting/exemption review; but that only a limited use booth (such as 200 gallons per month usage per Rule 287(c)) could be considered exempt; other "new" coating equipment would be subject to permitting review.

Mr. Terpsma appeared to be aware of PTI No. 226-03E's requirements and easily produced monthly Production/Emissions records, as well as records of total mass emissions through August 2015. See attached. These records are 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; see attached) indicate the following:

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

This appears to be the same as in previous inspection(s).

At 49 gallons of coating 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.

Also note, Acetone is treated as a separate Toxic Air Contaminant here and does not contribute to VOC total, but is rather regulated and calculated separately. Acetone is also not a HAP.

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

EMISSION LIMITS

Per attached recordkeeping; compliant with the mass emission limits of 31.44 tpy VOC and 14.76 tpy Acetone. Through August 2015, records indicate about 20.0 tons VOC and 9.4 tons Acetone emitted for the most recent 12-month period. Given the simplicity of using a single coating, calculations appear to be properly set up and SL verified various calculations and values within these records.

MATERIAL LIMITS

Allowed materials are limited to 5.0 lb/gal as applied, minus water and exempt solvents (such as acetone); and only a single coating is used. Using information from the readily available MSDS for the "White Webcoating", 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 = $0.79 \times 8.34 \text{ #/gal}$, this mass of acetone occupies 0.25 gallons; and so the MEK ($0.51 \times 6.98 = 3.56$ 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

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))

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)

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 on-site observations were consistent with these requirements; no issues noted.

Equipment

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)

The permittee shall equip and maintain the EU-BOOTH#1with HVLP applicators 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 the previous inspection. In discussing booth filters and the requirement for complete coverage of the air flow face, Mr. Terpsma clarified that filters are typically not replaced, but rather the dried web coating is peeled off the filters.

Testing

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)

No specific VOC testing has been requested by AQD to address Rule 702. The facility's previous request to use manufacturer's formulation data had been previously approved. The same web-coating has always been used in the life of this current permit.

Recordkeeping /Reporting /Notification

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)

As required; attached records through August 2015.

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 (which appears to be the same as the documentation used for MAERS reporting; also see attached MAERS documentation) were reviewed and appear to calculate emissions properly.

The permittee shall keep the following information on a monthly basis for EU-BOOTH#1: Gallons (with water) of each coating, solvent, etc. used.

VOC content (minus water and with water) of each coatings, solvents, etc. as applied.

VOC mass emission calculations determining the monthly emission rate in tons per calendar month.

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)

And;

The permittee shall keep the following information on a monthly basis for EU-BOOTH#1: Gallons (with water) of each acetone containing material used.

The acetone content in pounds per gallon of each material used.

Acetone mass emission calculations determining the monthly emission rate in tons per calendar month.

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)

Per attached through August 2015; these conditions are being met.

Stack / Vent Restrictions

The two stacks serving the spray booth appear to be installed per maximum diameter and minimum height requirements.

SL concludes that the facility is currently in compliance with applicable requirements. Records in support of this conclusion were current and very readily accessible.

Equipment conditions and operations were consistent with the previous inspection.

Mr. Terpsma appears to be very willing to communicate with AQD and to comply with applicable air quality regulations.

Attachments:

- Monthly Mass Calculation Records
- Rolling 12-month Mass Records
- MAERS EI2014 Attachment Review and MAERS Source Total Report

NAME



DATE

9/22/15

SUPERVISOR



