

N2914 - FCE - 2015 04 09

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

N291431053

FACILITY: TIODIZE CO., INC. - MICHIGAN DIVISION		SRN / ID: N2914
LOCATION: 28966 WALL ST., WIXOM		DISTRICT: Southeast Michigan
CITY: WIXOM		COUNTY: OAKLAND
CONTACT: Karen Eble , Quality Manager		ACTIVITY DATE: 04/09/2015
STAFF: Francis Lim	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT:		
RESOLVED COMPLAINTS:		

On April 9, 2015, AQD staff conducted a Level 2 unannounced inspection at Tiodize Michigan, Inc located at 28966 Wall St., Michigan. The purpose of the inspection was to evaluate the facility's compliance with P.A. 451 of 1994, as amended; Michigan Air Pollution Control Rules; and PTI No. 510-91B (Opt out Permit). Tom Moore and Gary Deflorio (248-348-6050) assisted during the inspection. Karen Eble, Quality Manager recently retired.

Tiodize is a California-based company specializing in the manufacture and application of products for the prevention of friction, wear and corrosion. Tiodize Michigan is a processing facility specializing in the coating of metal parts primarily for the automotive industry, as well as the electronics and commercial industries. Currently, this facility operates one 8-hour shift.

The facility operates a zinc phosphate line, alkaline wash, muriatic acid (HCl) pickling line, three dip spin coating lines with ovens, a chain-on-edge paint spray line, a paint spray booth, and one walk-in batch cure oven. A wastewater treatment system treats the water discharge to comply with industrial pretreatment standards. Concentrated sludge from the filter press is dumped to a regular dumpster since it is not considered hazardous. The sludge contains some zinc from the zinc phosphate line. Facility also operates a parts washer and a natural gas fired boiler (4 MM BTU/hr).

Zinc phosphating is a surface treatment where the metal part is coated by immersion in a solution of zinc phosphate. Zinc phosphate is a pre-coat that provides abrasion and corrosion resistance to the metal part.

The pickling tank uses muriatic acid (HCl). The acid is about 32% as received. It is reduced in concentration in the pickling tank. Fume emissions are ducted and vented outside. The pickling tank is Rule 290 exempt. Company has demonstrated that average yearly emissions to the atmosphere are about 5 pounds per year, if acid concentration in the bath is maintained below 16%. Company keeps a log of acid bath concentration. Company also keeps a log of HCl added to the pickling tank. Acid concentration in the bath is checked daily. The purpose of pickling is to remove scale and rust from the metal.

After the parts go through the zinc phosphate line and pickling lines, the parts are coated.

There are three dip/spin coating lines at the facility: EUDIPSPIN-16, EUDIPSPIN-24 (not operating), and EUDIPSPIN24A (used more frequently). The number denotes the diameter of the dip/spin wire mesh basket, in inches. Parts are loaded into a conveyor and then into a basket where the parts are weighed. The basket full of parts is submerged into a coating vat. The basket is raised above the coating solution, but still remains in the vat. Excess coatings are then removed by spinning the basket on its vertical axis at several hundred rpm. The excess coating that is spun off is caught by the paint vat and reused. Parts are dropped in a conveyor and go through a flash off zone and then to a curing oven. The dip spin process is ideally suited for small parts that have contours so that the parts can be coated in bulk to prevent the parts from adhering to each other. Examples of parts processed in the dip/spin are: fasteners, spring clamps, screws, bolts, motor mounts, O-rings, nails, clips, muffler hangers.

Records of as-received usage of the Tiolon1000/75W, Tiolon 1000/W20 , and Tiolube 75/75 on a shift basis is required by permit. Facility keeps a daily usage record of all coatings, not just the Tiolon/Tiolube coatings.

Coating usage in the dip spin lines is determined by logging hours of production. A usage factor for each coating used based on hours production has been estimated. Since the coating process does not vary much, facility

claims this is a reasonable assumption. At the end of the year, coating usage is compared with purchase records. Facility describes this method as VOC Tracker. Using the VOC Tracker, for each coating, number of hours production corresponds to gallons used for that coating. Facility claims that they can do a better and easier job of estimating emissions using the VOC tracker rather than the traditional method of determining daily coating usage by measuring with a dipstick.

Paint usage (estimated from hours production) and emissions records are kept on an Access database management system designed by NTH, although NTH is no longer their consultant. Facility just plugs in pertinent information. Monthly, 12-month rolling emissions and hourly emissions are automatically calculated. A copy of the calculations worksheet used in the Access database to demonstrate the basis of the calculations is maintained in our plant file.

As of Dec 2014, 12-month VOC emissions are: EUDIPSPIN16, 0.53 tons per year (limit is 7.2 tons) ; EUDIPSPIN24, 0 tons (limit is 10 tons); and EUDIPSPIN24A, 4.90 tons per year (limit is 10 tons). VOC emissions per emissions unit is less than the permit limit.

A chain-on-edge is a conveyor system consisting of a continuous loop chain with pins or spindles that convey the parts to be coated in and out of the paint spray booth. The chain-on-edge paint spray booth is used sparingly. For the period ending December 2014, 12-month VOC emissions are 0.12 tons per year.

A batch paint spray booth, identified as System C is also seldom used. The other paint booth, System H, has been removed. A batch oven is available for use if needed. For the period ending December 2014, 12-month VOC emissions are 0.17 tons per year.

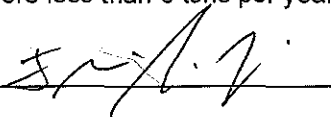
During the inspection, the chain-on-edge paint line and System C paint booth were not operating.

For the 12-month period ending December 2014, facility-wide VOC emissions from the coating lines were less than 6 tons per year. Total HAPs emissions are less than 6 tons per year. HAPs emissions from the facility are VOCs, but only a percentage of VOCs are HAPs. HAPs limits are 8.9 tons for each individual HAP and 22.4 tons aggregate HAPs.

Staff did not verify stack dimensions as specified in permit.

The facility had a consent order for using noncompliant coatings (Rule 621 violation). As a result of the consent order, facility switched to compliant coatings, but the compliant coatings could not deliver the same performance. Company nearly went out of business because of this. In 2001, the company applied for a permit revision to remove Rule 621 VOC content limits. Permit staff determined that the company was meeting BACT requirements in the dip spin lines by having a nearly 100% transfer efficiency. Permit-to-Install No. 510-91B was issued and Rule 621 VOC content limits were removed from the permit. Facility does not have to meet the VOC content limit if any metal coating line emissions are less than 2000 pounds per month and 10.0 tons per year (Rule 621(10)(a)) tons per year; and total metal coating line emissions are less than 30.0 tons per year (Rule 621(10)(b)). For the 12-month period ending December 2014, facility-wide VOC emissions from all the coating lines were less than 6 tons per year.

NAME



DATE

09-09-15

SUPERVISOR

CTE