

N0305

MAWILA

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

N030543698

FACILITY: PERFECTION INDUSTRIES INC		SRN / ID: N0305
LOCATION: 18571 WEAVER, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Kerry Ryan , Vice President		ACTIVITY DATE: 11/07/2017
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Chrome Plating		
RESOLVED COMPLAINTS:		

INSPECTED BY : Terseer Hemben, MDEQ  
 PERSONNEL PRESENT : Kerry A. Ryan, (VP/Operations Mgr.)  
 FACILITY PHONE NUMBER : (313)-212-4040  
 FACILITY FAX : (313)-212-6535  
 DATES OF INSPECTION : 11/07/2017  
 Perfection Industries, Inc.  
 18571 Weaver Street, Detroit, MI 48228  
 SRN: N0305

**FACILITY BACKGROUND:**

The Perfection Industry, Inc. (PII) is a hard chrome plating operation. The facility has been in operation since 1952. The facility had problems with regulatory rules leading to violations and consent order in 2003-2004. The operation is a small source hard chrome plater using 5 hexavalent chrome plating tanks. The plating tank design is the open surface type. Chromic acid concentration is occasionally sampled, tested and made up when necessary by a contractor. The facility is regulated under 40 CFR 63, Subpart N. Emissions from the plating tanks are released within the general in-plant environment, while gaseous emissions inside the plant are captured through ductworks and routed to the scrubber for cleaning. PII was cited in 2004 for reinstalling and operating a chrome plating tank without an approved permit to install consistent with Rule 201(1). The violation was resolved through a consent order that required compliance with rule conditions covering Cr emission limits, fume suppressant/wetting agent, composite mesh pad (CMP) maintenance and recordkeeping. There is no record on file indicating if PII terminated the consent order since 2004. The facility was last inspected in 2011 and determined to have operated in compliance with air pollution control rules. The PII facility is a small source by the size of the amperage delivered from the rectifier per year. Amperage usage was estimated to be 38,000,000 amperes per year. This value compares less than 60,000,000 amperes per year, hence the facility is rated as a small.

**INSPECTION NARRATIVE**

I arrived at the premises of the PII on November 7, 2017 at 1040 hours. The purpose of visit was to conduct a scheduled regulatory compliance inspection of the plating facility based on PTI No. 213-01B. Temperature at the hour was 43 F. Wind speed was 4 mph coming from the North, and humidity was 58%. I met with Mr. Kerry Ryan, the Vice President-operations. Mr. Ryan and I went over the inspection agenda. He further showed me how records were maintained. We walked around the plating units. We walked outside the plating shop and inspected the premises. We concluded the walk through the facility with post-inspection conference. I left the area at 1210 hours.

**COMPLAINT/COMPLIANCE HISTORY:**

PII has not been a source of recent citizen air quality complaints or violations.

**OUTSTANDING CONSENT ORDERS:**

None

**OUTSTANDING VN'S:**

None

**OPERATING SCHEDULE/PRODUCTION RATE:**

The facility operates a regular 8-hour shift from 8:00 AM to 4:00 PM.

**PROCESS DESCRIPTION PROCESS EQUIPMENT:**

Pll operates 5 hard chromium plating tanks. The emissions from each tank are collected by vents into a series of ductwork. Collected air contaminants from all tanks and inside the plant are cleaned through a scrubber system. Air exchange between the process and ambient is through a stack. The plating processes are subject to requirements of the Chrome NESHAP, 40 CFR 63, Subpart N, adopted by reference as Rule 941. The Pll is required to keep daily records of the pressure drop for the composite mesh pad (CMP) and perform quarterly inspections of the scrubber system. The NESHAP also requires a facility to conduct quarterly inspections of the ductwork, check for leaks and make prompt repairs if necessary. The pollutant identified in this process is Cr+6.

The control on equipment is built in the process itself. The process uses alkaline wash for cleaning. Details of emission controls and monitoring for compliance collected in previous inspections are on AQD file.

**APPLICABLE RULES AND CONDITIONS:**

The visual inspection session with the Pll indicated the plant was operating according to the conditions set forth in the PTI No. 213-01B and NESHAP: the composite mesh pads were in place, and the 3 pressure differential gauges and amperage meters were reading within acceptable ranges. Four tanks were in operation at the time of inspection. The facility kept records at the site and provided the records for review. Random samples of records submitted by the Pll are attached for addressing the NESHAP/Rule 941 requirements.

The Pll facility is a hard chromium electroplating source that is subject to the provisions of Rule 941 and NESHAP, of 40 CFR Part 63, Subpart N for Hard & Decorative Chromium Electroplating and Chromium Anodizing tanks. These rules support the SIP issued PTI. Compliance with the NESHAP requirements for the facility include:

- a) Emission limits [On AQD file]
- b) Work practice standards [Attached for the AQD file]
- c) Performance testing [ Attached for the AQD file]
- d) Monitoring [Attached for the AQD file]
- e) Recordkeeping [Attached for the AQD file]
- f) Reporting [Attached for the AQD file]

The Pll was classified as an existing area source chrome electroplating operation when the process was commissioned. The source had to comply with Chrome NESHAP requirements.

**a) Emission Limits**

The Chrome NESHAP 40 CFR 63.342(d)(1) specifies that the concentration of total chromium in the exhaust gas stream discharged to the atmosphere not to exceed 0.006 milligrams/dry standard cubic meter(mg/dscm). Facilities can typically achieve this limitation by performing stack testing or using a control and monitoring of the surface tension (force/unit length) of the chromium electroplating tanks. Pll complied with this condition through stack testing. A copy of the stack test for meeting the limit through performance stack test results is in AQD files. The facility submitted the test results to AQD. Stack test performance results of the 7/23/2003 event was submitted in 2003. The emission of chromium was 0.002 mg/dscm and compared less than 0.006 mg/dscm specified as the limit; and the total chromium emission rate was  $9.07 \times 10^{-5}$  pph and compared less than  $4.0 \times 10^{-4}$  pph specified as the limit consistent with the conditions in SC. 1.1a and SC. 1.1b [Attachment B, pages 1 and 5]. Pll operated in compliance with this emission limit requirement.

**b) Not applicable.****c) PERFORMANCE TESTING**

The facility performed stack test to demonstrate compliance with emission limit. Stack test was performed on 7/3/2003 and results indicated the emission was 0.002 mg./dscm (Attachment B).

**d) MONITORING**

The facility must demonstrate continuous compliance by monitoring an operating parameter value for its control technique. The facility showed records of visual inspection of CMP and records of pressure drop of 3.0 iwg high and 0.2 iwg low extremes. (2.5-4.5 iwg. allowable range), ductwork, drainage, pitot tube maintenance and washdown of pads quarterly as logged [Attachments A & E]. Staff will validate the CMP dp values in the next inspection

**e) RECORDKEEPING**

The facility must keep records to document compliance with:

- Inspection records;
- Maintenance records which show pressure drop across the CMP to be within 3.5 iwg. with variance of -1/+1 iwg. (2.5-4.5) during operation (Subject to further validation).
- Malfunction and corrective action records;
- Performance test results;
- Monitoring data;
- Excess emission records, and
- The facility provided a standard operating procedure information Attached daily check list for compliance are included in this report covering 18 months.
- Process records include (i) operating time for the chromium electroplating tank, (ii) PII opted to demonstrate compliance based on performance of stack testing. The records kept in a satisfactory manner included the time and date of operations [Attachment E].

**f) REPORTING**

The facility must fulfill several reporting requirements. The table below summarized what reports are required for the facility and the reporting deadline:

Type of report	Facilities That Must Report	Reporting Deadline
1. Ongoing compliance status report	Area sources	Complete once a year or two times a year if exceedances occur or if requested
2. Notification of construction or reconstruction	All facilities	As soon as practical before construction or reconstruction is planned to begin
3. Notification of when construction or reconstruction is commenced	All facilities	Within 30 days of beginning construction
4. Notification of actual startup	All facilities	Within 30 days of startup
5. Notification of process change	All facilities	No later than 30 days after the process change

**Table Item#2**

The facility opted to comply through emission testing at the stack points, thereby monitored the plating process as presented in attachments B, C, D, and E. The notification of construction was complied with per the date 1/29/97. The copies of notification submitted by PII are in AQD file.

Table Items#1, #3, #4, and #5 met compliance as recorded in previous inspection. PII reported compliance in the past at the frequency of once per year (Item# 1), notification of construction commencement within 0 days was made timely (item# 3), a notification of start-up was made timely (item# 4), the item#5 complied because there had not been any change that required notification within 30 days.

**HYDROCHLORIC Acid (HCl)**

The 10% concentrated Hydrochloric acid used for the cleaning, degreasing and descaling of metal parts is stored in tanks labeled as Tank #2, Tank #4, Tank #5, and Tank #6. The review of HCl analysis log confirmed the concentration of the acid supplied to the facility was 10%. Regulatory requirement for HCl storage at concentration less than the SIP limit of 11% allows the container to be exempt from the provisions of Rule 201(1) pursuant to the provisions of Rule 284(2)(h)(iv). The storage of 10% HCl at the PII facility met the exempt status condition.

**PFAS**

PII does not use wetting agent for fumes suppression in the plating process. The inspection did not find chemicals at the site with PFAS content in the plating process at the facility.

**REGULATORY DISCUSSION**

Rule 201(1) – PII has not made any modification or changes to the process since the permit was issued.

Rule 301. There has not been any air pollution complaint regarding particulate matter fallouts or emission opacity causing nuisance in the surroundings attributed to the PII's operations.

40 CFR 63.342-PII operated in compliance with the federally rule requirements. The facility performed emission testing in accordance with the NESHAP requirements. Maintenance of the equipment and ductwork, notification requirements, operation of process, inspection of CMP, and adequate recordkeeping were all in compliance.

Rule 910: The facility maintained the air cleaning scrubber in a satisfactory manner.

**APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:**

This facility does not have nor needs a fugitive dust plan.

**FINAL COMPLIANCE DETERMINATION:**

The inspection of PII was conducted. Work practices and record keeping data was obtained and reviewed. The facility carried out recordkeeping consistent with requirements of NESHAP and state rules. The inspection determined the facility operated in compliance with federal and state regulatory requirements.

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NAME

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DATE

12/14/2018

SUPERVISOR

JR