

A8087
MANIKA

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

A808746144

FACILITY: ARTED CHROME PLATING INC		SRN / ID: A8087
LOCATION: 38 PIQUETTE, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Mark Borawski , Manager		ACTIVITY DATE: 09/03/2018
STAFF: Terseer Hemben	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: MACT, N, No PFOS found at the site		
RESOLVED COMPLAINTS:		

ARTED CHROME PLATING INC.

INSPECTOR: Terseer Hemben (DEQ)

PRESENT: Ken Matthews/Mark Borawski

Date of Inspection: September 3 & 26, 2018

SRN: A8087

Address: 38 Piquette Street, Detroit, MI 48202

Regulatory Rules: Federal-40 CFR 63, Subpart A & N

State: R 336.1201; R 336.1941; R 336.1901

FACILITY BACKGROUND: ARTED CHROME PLATING, INC.

The Arted Chrome Plating, Inc. is owned by two brothers: Ronald and Frank Borawski. This plant has been in operation since 1945. The main business line at this facility is the decorative nickel/chrome plating operation regulated 40 CFR 63, Subparts A & N (the National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks or MACT N). The process operates EUCHROMETANK1- a decorative chrome electroplating tank with fume suppressant control (hexavalent chrome tank).

The facility was last inspected in 2016 and EUCHROMETANK1 that processes hexavalent chrome was found to have been exceeding the surface tension limit of 40 dynes/cm as measured by a stalagmometer. This represented a violation of the MACT N, of AQD Administrative Rule 941(1) which requires compliance with MACT N, and of certain special conditions (SCs) of Permit to Install (PTI) No. 74-02A. On May 16, 2017, the facility entered Consent Order AQD No. 11-2017 to resolve the violations. The Consent Order requires the facility to comply with the maximum surface tension limit within 40 CFR 63.342(d)(3) and to also comply with SCs VI.1 and VI.3 of PTI 74-02A for EUCHROMETANK1.

INSPECTION NARRATIVE:

I arrived at the facility location, 38 Piquette Street, Detroit, MI 48202 on September 3, 2018 at 1420 hours. The purpose of visit was to perform a scheduled compliance inspection for emission compliance with rules regulating decorative chrome plating. Temperature at the hour was 78 F, and wind speed 6 mph coming from the SSW. Humidity was 81%. I was admitted into the building by Ken Matthew who informed Mr. Borawski was away on vacation. We held a pre-inspection communication about my visit to the plant and went over the inspection agenda items. I gave him the inspection agenda to convey to Mr. Borawski. We exchanged information and I left the area at 1500 hours. Mr. Borawski sent records to me via email while still on vacation. The information in the records was inadequate. I repeated my visit to the facility on September 26, 2018 at 1000 hours to obtain the records. I met Mr. Borawski who explained the records sent to me contained inaccurate information. An interview with Mr. Borawski informed the ACPI stopped operating the trivalent chrome tank. The facility operates only one tank, which is the

EUCHROMETANK1 (hexavalent chrome). The wetting agent for the trivalent chrome was no longer in use at the facility. The company uses ethoxylated coconut oil alkyl amine of grade 20-30% by weight. He noted the ethoxylated coconut oil alkyl amine has no PFOS content. I confirmed. I received the records and left the area at 1045 hours.

COMPLAINT/COMPLIANCE HISTORY:

Arted Chrome Plating, Inc. has not been a source of citizen air quality complaints.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING LOV'S:

None

OPERATING SCHEDULE/PRODUCTION RATE:

The facility operates a regular 8-hour shift from 6:00 am to 2:00 pm. occasionally, the facility may run an evening shift if workload demands such considerations. The manager informed the facility has reduced production load and no longer operates as regularly as designed.

PROCESS DESCRIPTION:

Arted chrome plating facility handles decorative chrome/nickel operation as the main business line. The main service products are bolts, acorn nuts for auto industries, and Harley Davidson motor cycle parts. Operation processes are arranged in rows of baths lined in an open room. The floor plan for the process is in AQD files. On an average rating, the Arted Chrome Electroplating, Inc. currently operates 40 hours or less per week. Main pollutant emission from this process is chromic acid mists. Main units of operational concerns involve chrome tanks. Emission activities in, and around, the acid tank is controlled with a fume wetting agent. According to the AP-42 theoretical description, the chrome plating process deposits a relatively thick layer of chromium directly on the base of the metal (usually steel) to provide a surface with wear resistance. Chrome plating process makes the surface to bear a low coefficient of friction, hardness, and corrosion resistance or to build up surfaces that have eroded over time. Hard plating is used for items such as hydraulic cylinders and rods, industrial rolls, zinc die castings, plastic molds, engine component, and marine hardware.

Process operations comprise a Decorative Chromium Electroplating process. The decorative chromium electroplating of metals and plastics is performed in one tank. The dimensions of this tank are 56 inches in height, 44 inches wide, and 130 inches in length. Chromic acid mist generated due to the operation of the plating tank is exhausted to the ambient air via lip exhaust. The lip exhaust captures chromic acid mist and exhausts to the ambient air through a circular stack. Details regarding the exhaust stack serving the decorative chromium electroplating tank are in AQD files. Chromium emissions, which arise from operation of the decorative chromium electroplating tank, are controlled by adding a chemical fume suppressant (ethoxylated coconut oil alkyl amine) to the plating bath. Plating time allowed for Chrome plating is 2 min. Of course, the magnitude of the surface area of the plated item determines the plating time.

EQUIPMENT AND PROCESS CONTROLS:

The AQD permitted the process under Permit to Install No. 74-02 stipulating regulatory conditions for ensuring compliance for the decorative chromium electroplating tank and nickel stripping tank (EUCHROMETANK1). The permit was modified in 2010 to PTI No. 74-02A to add a trivalent chromium tank. The plating tanks are raised on a platform in such a position that drips of chromium solution on the floor are captured into the waste water treatment stream. Chrome fumes or mists inside the building are discharged into the stack's 4 strategically placed hoods. As noted in the last inspection, the facility discontinued the nickel stripping process and uninstalled equipment designated for the process. The trivalent chrome plating was discontinued and the EUCHROMETANK2 is empty.

APPLICABLE RULES/PERMITS PTI# 74-02A CONDITIONS:

EUCHROMETANK1 – Hexavalent Chrome Tank with Fume Suppressant/Wetting Agent Added

1. SC I.1: The total chromium emission in EUCHROMETANK1 did not exceed 0.00018 pph. The emission level is

maintained through addition of a chemical fume suppressant in quantities and frequency for ensuring the surface tension of the liquid does not exceed 40 dynes/cm, as measured by a stalagmometer. The permit limit was set based upon the previous MACT N surface tension limit of 45 dynes/cm and therefore compliance with the new surface tension limit of 40 dynes/cm also demonstrates compliance with the pound per hour limit. Records attached indicate the highest surface tension measurements in the past year was 36.50 dynes/cm (February 2, 2018).

2. SC. III.1: ACPI applied fume suppressant during operations of EUCHROMETANK1 in quantities and at a frequency to ensure the surface tension of EUCHROMETANK1 did not exceed 40 dynes/cm at any time during operation. Records attached showed compliance with frequent addition and corresponding values of surface tension of the plating solution [Attachment pg. 1-6]. The highest surface tension measurements in the past year was 36.50 dynes/cm (February 2, 2018). The permit condition was set based upon the previous MACT N surface tension limit of 40 dynes/cm, as measured by a stalagmometer.

3. SC. VI.1: ACPI monitored the surface tension of EUCHROMETANK1 every four hours except as allowed in 40 CFR 63.343(c)(5). Compliance to this condition was reviewed in the attachment. [Attachment pgs. 1-6].

4. SC. VI.2: ACPI monitored emissions and operating and maintenance information in accordance with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and N. Compliance was reviewed according to the data attached [Attachment Pgs. 1-6].

5. SC. VI.3: ACPI maintained the work practice standard of operations as listed in the attachment named STANDARDS. Mr. Borowski explained the operation of EUCHROMETANK1 was observed as written in the attachment. There were no deviations or deficiencies experienced. Therefore, there were no corrections to record since operation frequency was low. The tank was not frequently inspected beside taking the stalagmometer readings and surface tension corrections. Records of this condition were provided in the previous inspection and are on AQD file.

6. SC. VI.4: ACPI recorded the surface tension measurements of EUCHROMETANK1, the amount of chemical fume suppressant added to EUCHROMETANK1 and the date and time of each addition were kept. The records were kept on file for a period of five years and made available to the Department upon request. Records covering the last 2 years were accessed in the database. Extracts of records maintained covering the last 24 months are attached [Attachment Pgs. 1-6]

7. SC. VIII.1: ACPI did not modify or change the Stack/vent dimensions as permitted, and exhaust gases from stacks listed in SC. VIII.1 were discharged unobstructed vertically upwards to the ambient air unless otherwise noted. Visual inspections indicated there was no change in stack configuration and were free of rain caps.

EUCHROMETANK2 – Trivalent Chrome Tank with Fume Suppressant/Wetting Agent Added

8. SC. III.1: Not Applicable-ACPI no longer operates EUCHROMETANK2.

9. SC. VI.1: Not Applicable-ACPI no longer operates EUCHROMETANK2.

10. SC. VI.2: Not applicable-ACPI no longer operates EUCHROMETANK2.

11. SC. VII.1: Not applicable- ACPI no longer operates EUCHROMETANK2.

12. SC. VII.2: Not applicable- ACPI no longer operates EUCHROMETANK2

13. SC. VII.3: Not applicable - ACPI does not use scrubber.

14. SC. VIII.1: ACPI discharged unobstructed vertically upwards to the ambient air. The stacks configurations were not altered. Visual inspection indicated the stacks had no rain cap installed.

Regulatory Discussions

MACT N – The ACPI operated below the design capacity. The total rectifier amperage per year required to operate the open surface electroplating tanks was estimated to 35,000 amps per year. Pursuant to 40 CFR 63.342(d)(4), after September 21, 2015 the facility is prohibited from adding PFOS-based fume suppressants to the chrome tanks. A perfluorooctane sulfonic acid (PFOS)-based fume suppressant is defined by MACT N as a fume suppressant that contains 1 percent or greater PFOS by weight.

The ACPI submitted to use of wetting agent as fume suppressant called ethoxylated coconut oil alkyl amine for the hexavalent chrome. The fume suppressant is manufactured by Haviland Products Company, is named the Havachrome Mist Eliminator III, and has a product code of H005797. The MSDS on the fume suppressant indicates it is free from PFOS content. The MSDS lists a CAS #61791-14-8 for ethoxylated coconut oil alkyl amine. PFOS has a CAS #1763-23-1. The MSDS is attached.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

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

FINAL COMPLIANCE DETERMINATION:

The inspection of Arted Chrome Plating Inc. determined that facility operated in compliance with PTI No. 74-02A. By complying with maximum surface tension limit within 40 CFR 63.342(d)(3) and by complying with SCs VI.1 and VI.3 of PTI 74-02A for EUCHROMETANK1, the facility is in compliance with the consent order requirements. The facility's fume suppressant did not show presence of PFOS content.

NAME *JA*

DATE *9/26/2018* SUPERVISOR *JK*