



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

DATE: *August 20, 2021*

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Imperial Plating Company, Chicago, IL

FROM: Emma Leeds, Environmental Engineer
AECAB (IL/IN)

THRU: Nathan Frank, Section Chief
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Imperial Plating Company

Facility Location: 7030 West 60th Street, Chicago, IL 60638

Date of Inspection: 6/24/2021

EPA Inspectors:

1. Emma Leeds, Environmental Engineer
2. Victoria Nelson, Environmental Engineer

Other Attendees:

1. Anthony Kuziel, Vice President – Imperial Plating Company
2. John Karrow, Associate Engineer – Environment Inc.

Contact Email Address: akuziel@implating.com, jkharrow@yahoo.com

Purpose of Inspection: To determine compliance with the Clean Air Act

Facility Type: Metal electroplating

Regulations Central to Inspection: 40 CFR Part 63 Subpart N – National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks; 40 CFR Part 63 Subpart WWWW – National Emission Standards for

Hazardous Air Pollutants (NESHAP): Area Source Standards for Plating and Polishing Operations

Arrival Time: 1:20 PM CDT

Departure Time: 3:30 PM CDT

Inspection Type:

- Unannounced Inspection
- Announced Inspection

OPENING CONFERENCE

- Presented Credentials
- Stated authority and purpose of inspection
- Provided Small Business Resource Information Sheet
- Provided CBI warning to facility

The following information was obtained verbally from Mr. Kuziel unless otherwise noted.

Process Description:

Imperial Plating Company (“Imperial Plating”) provides various types of metal plating and finishing for their customers, including nickel, tin, copper, silver, brass, and decorative chromium plating. Customers ship their metal parts to the facility in boxes and drums via trucks. Once unloaded in the docking area, metal parts go through an incoming inspection and then are organized and staged depending on whether they will receive rack or barrel plating. Larger parts go through rack plating and smaller parts go through barrel plating. Rack plating involves attaching individual parts to a metal bar using hanging pins, and then suspending the bar above the electroplating tanks so that the hanging parts are submerged in the metal ion electroplating solution. Alternatively, barrel plating involves submerging a plastic barrel containing many small parts in the electroplating tank. The barrel slowly rotates, and the parts are plated as they tumble inside. Emissions from electroplating tanks are controlled using wetting agents for each different type of metal plating solution, except for hexavalent chromium. A fume suppressant with up to 5% polyfluorosulfonic acid is used to control hexavalent chromium electroplating emissions. Covers are not used for any of the tanks.

Before plating, pieces go through a cleaning process that involves a mild alkaline rinse, followed by a water rinse, an acid rinse with either hydrochloric acid or sulfuric acid, and a final water rinse. A less abrasive cleaning process is used for any die cast materials that come through the plant, which receive a specialty zinc coating.

After plating, parts may go through chromate conversion or manual polishing, followed by either spin-drying machines or hand drying. Some parts are sent to the on-site laboratory for quality assurance testing to verify the thickness of the coating before all parts are packaged and returned to customers.

Staff Interview:

The Imperial Plating facility at 7030 W 60th Street has been in operation since the late 1980's and operates from Monday – Thursday, 5:30 AM – 4:00 PM, with Fridays reserved for maintenance. There are currently 38 employees at the facility, which plates metal parts from a broad range of industries, including automotive, medical, and musical instruments. Productivity is assessed based on sales rather than the number of parts coated. Business was down 30 – 50 percent during the COVID-19 pandemic but has since improved.

The facility operates 8 nickel electroplating tanks, 4 tin electroplating tanks, 4 copper electroplating tanks, 2 silver electroplating tanks, 1 brass electroplating tank, 1 trivalent chrome electroplating tank, and 1 hexavalent chrome electroplating tank. The facility also operates 6 chromate conversion tanks and has a separate room for polishing machines. Exhaust hoods are located near (but not directly above) heated tanks with the intention of collecting steam and venting to the atmosphere. All electroplating solutions are heated during the process except for zinc, which uses agitation instead of heating. Mr. Kuziel claimed that that filters in the fume hoods above the baths and electroplating tanks are checked and cleaned on a monthly basis.

Mr. Kuziel claimed that the facility switched from performing mostly hexavalent chromium plating to mostly trivalent chromium plating for the chrome electroplating process in the past 2 – 3 years. A fume suppressant is used as an air control for the hexavalent chromium while a wetting agent is used for the trivalent chromium.

Mr. Kuziel also shared that most of Imperial Plating's nickel, copper, and zinc tanks were replaced in 2019 with tanks from another electroplating facility in Chicago that went out of business.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

EPA inspectors toured the facility beginning at 2:20 PM, first observing the barrel plating process and then the rack plating process. The barrel plating tanks and associated baths were arranged in two parallel aisles, with a row of fume hoods and vents in the middle of the aisles and not directly over any tanks. The rack plating tanks and associated baths were arranged to allow for large parts to be mechanically submerged with an overhead crane system. At least one heated rack plating tank appeared to not have a fume hood. EPA inspectors also observed multiple uncovered hydrochloric acid and sulfuric acid drums throughout the facility.

Although not discussed during the staff interview, EPA inspectors also observed that an electro-cleaning process is used to clean certain parts.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

The following records were provided to and briefly reviewed by EPA inspectors on-site:

- 1999 IEPA Lifetime Operating Permit – NESHAP Source
- 2015 Compliance Status Report for 40 CFR Part 63 Subpart WWWWWW
- 2016 IEPA Inspection Work Sheet for 40 CFR Part 63 Subpart N
- 2020 IEPA Air Emissions Report

CLOSING CONFERENCE

- Provided U.S. EPA point of contact to the facility

Requested documents:

- 2021 Notification of Compliance Status for 40 C.F.R. Part 63 Subpart WWWWWW
- Material safety data sheets for all wetting agents used
- Wetting agent usage records

SIGNATURES

X Emma Leeds
Digitally signed by Emma Leeds
Date: 2021.08.20 12:31:41 -05'00'

Emma Leeds
Report Author

X NATHAN FRANK
Digitally signed by NATHAN FRANK
Date: 2021.08.20 16:08:18 -05'00'

Nathan Frank
Section Chief

Facility Name: Imperial Plating Company
Facility Location: 7030 West 60th Street, Chicago
Date of Inspection: June 24, 2021

APPENDICES AND ATTACHMENTS

- 1.* Digital Photo Log

Facility Name: Imperial Plating Company
Facility Location: 7030 West 60th Street, Chicago, IL 60638
Date of Inspection: June 24, 2021

APPENDIX A: DIGITAL IMAGE LOG

<p>1. Inspector Name: Victoria Nelson</p>	<p>2. Archival Record Location: https://usepa.sharepoint.com/:f:/r/sites/R5_Work/r5erc/ecad/AECAB%20Library/Enf_Imperial_IL_21/Enf_Imperial_IL_21_Insp/Digital%20Image%20Log?csf=1&web=1&e=oS3TSf</p>
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Image Number	File Name	Date and Time (CDT)	Description of Image
1	IMG_1199.JPG	6/24/2021, 02:40:59 PM	Dull tin barrel plating tanks.
2	IMG_1200.JPG	6/24/2021, 02:44:27 PM	Copper plating tanks.
3	IMG_1201.JPG	6/24/2021, 02:45:19 PM	Nickel barrel plating tanks.
4	IMG_1202.JPG	6/24/2021, 02:51:13 PM	Trivalent chrome tank.
5	IMG_1203.JPG	6/24/2021, 02:53:57 PM	Nickel plating tanks for rack plating (blurry).
6	IMG_1204.JPG	6/24/2021, 02:54:08 PM	Nickel plating tanks for rack plating.
7	IMG_1205.JPG	6/24/2021, 02:56:17 PM	Hydrochloric acid cleaning tank.
8	IMG_1206.JPG	6/24/2021, 03:04:33 PM	Zinc plating tanks.
9	IMG_1207.JPG	6/24/2021, 03:04:44 PM	Agitated zinc tank.
10	IMG_1208.JPG	6/24/2021, 03:04:57 PM	Agitated zinc tank.
11	IMG_1209.JPG	6/24/2021, 03:14:48 PM	Plating tank with no hood.
12	IMG_1210.JPG	6/24/2021, 03:15:50 PM	Electro-cleaner E-85 tank.