

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO ₂ e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H ₂ S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO _x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EUCHROME1	Decorative chrome electroplating tank controlled by a composite mesh pad scrubber – Control D.	FGLINEIV
EUCHROME2	Decorative chrome electroplating tank controlled by a composite mesh pad scrubber – Control D.	FGLINEIV
EUNI-CR	All tanks in nickel-chrome plating line IV except the decorative chrome plating tanks. This includes a soak tank, alkaline cleaning tank, electrolytic cleaning tank, hydrochloric acid dip tank, nickel strike plating tank, bright nickel plating tank, semi bright nickel plating tank, and several aqueous wash tanks. The nickel strike tank and hydrochloric acid dip tank are controlled by a composite mesh pad scrubber – Control D.	FGLINEIV
EUZINC	Zinc plating line with no control.	NA

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

EUZINC EMISSION UNIT CONDITIONS
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DESCRIPTION

Zinc plating line with no control.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

1. The permittee shall exhaust EUZINC only to the in-plant environment. (R 336.1225)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGLINEIV	All tanks in nickel-chrome plating line IV. This includes both decorative chrome plating tanks, a soak tank, alkaline cleaning tank, electrolytic cleaning tank, hydrochloric acid dip tank, nickel strike plating tank, bright nickel plating tank, semi bright nickel plating tank, and several aqueous wash tanks. The nickel strike tank and hydrochloric acid dip tank are controlled by a composite mesh pad scrubber – Control D.	EUCHROME1 EUCHROME2 EUNI-CR

**FGLINEIV
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

All tanks in nickel-chrome plating line. This includes both decorative chrome plating tanks, a soak tank, alkaline cleaning tank, electrolytic cleaning tank, hydrochloric acid dip tank, nickel strike plating tank, bright nickel plating tank, semi bright nickel plating tank, and several aqueous wash tanks. The nickel strike tank and chrome plating tanks are controlled by a composite mesh pad scrubber – Control D.

Emission Unit: EUCHROME1, EUCHROME2, EUNI-CR

POLLUTION CONTROL EQUIPMENT

Composite mesh pad scrubber – Control D.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Total chromium	0.007 micograms per dscm ^a	Hourly	EUCHROME1 EUCHROME2	SC V.1	R 336.1224 R 336.1225 R 336.1941 40 CFR 63.342(d)(1)
^a Corrected to 70°F and 29.92 inches Hg					

2. There shall be no visible emissions from FGLINEIV. **(R 336.1301)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall implement and maintain an approvable operation and maintenance plan. The plan shall contain all information required by 40 CFR 63.342(f)(3)(i), which includes the following:

- a) Operation and maintenance criteria for EUCHROME1, EUCHROME2, add-on control device(s), and for the process and control device(s) monitoring equipment as well as a standardized checklist to document the operation and maintenance of the equipment;
- b) The work practice standards for the add-on control device(s) and monitoring equipment;
- c) Procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and
- d) A systematic procedure for identifying process equipment, add-on control device(s) and monitoring equipment malfunctions and for implementing corrective actions to address such malfunctions.

All changes to the operation and maintenance plan shall be submitted to the AQD District Supervisor for review within 30 days of making the change.

(R 336.1224, R 336.1225, R 336.1910, R 336.1941, 40 CFR Part 63 Subparts A & N)

2. The permittee shall not operate EUCHROME1 or EUCHROME2 unless the chemical fume suppressant containing a wetting agent is applied in quantities and at a frequency to ensure the surface tension of the electroplating bath contained within each affect tank does not exceed, at any time during operation, 40 dynes/cm (2.8x10⁻³ pound-force per foot), as measured by a stalagmometer, or does not exceed 33 dynes/cm (2.3x10⁻³ pound-force-per foot) as measured by a tensiometer. **(R 336.1224, R 336.1225, R 336.1910, R 336.1941, 40 CFR 63.342(d)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EUCHROME1 unless the composite mesh pad scrubber system is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225)**
2. The permittee shall not operate EUCHROME2 unless the composite mesh pad scrubber system is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225)**
3. The permittee shall equip and maintain the composite mesh pad system with a differential pressure monitoring device. **(R 336.1224, R 336.1225, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request of the AQD District Supervisor, the permittee shall verify the total chromium emission rates from FGLINEIV, by testing at owner's expense, in accordance with 40 CFR Part 63 Subparts A and N. The permittee shall notify the AQD District Supervisor in writing of the intention to conduct a performance test, at least 60 calendar days before the test is scheduled to begin, in accordance with 40 CFR 63.347(d). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 63 Appendix A. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 90 days following the last date of the test. **(R 336.1224, R 336.1225, R 336.1941, R 336.2001, R 336.2002, R 336.2003, 40 CFR Part 63 Subparts A & N)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1224, R 336.1225, R 336.1910, R 336.1941, 40 CFR Part 63 Subparts A & N)**
2. The permittee shall monitor, in a satisfactory manner, the surface tension of the EUCHROME1 and EUCHROME2 once every four (4) hours of tank operation for the first 40 hours of tank operation. If there are no exceedances during the first 40 hours of tank operation, then surface tension measurements may be conducted once every eight (8) hours of tank operation for the next 40 hours of tank operation. If there are no exceedances during the 40 hours of tank operation when surface tension measurements are being conducted every eight (8) hours, then surface tension measurements may be conducted once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs. Once an exceedance occurs as indicated through surface tension monitoring, the original monitoring schedule of once every four hours must be resumed and the subsequent decrease in frequency shall follow the schedule as laid out above. The minimum frequency of monitoring allowed is once every 40 hours of tank operation. An example of monitoring frequency is available at 40 CFR 63.343(c)(5)(ii)(C). The surface tension shall be monitored with a stalagmometer or tensiometer as specified in Method 306B of 40 CFR Subpart N. **(R 336.1224, R 336.1225, R 336.1910, R 336.1941, 40 CFR 63.343(c)(5))**
3. The permittee shall perform inspections of the composite mesh pad (CMP) system as follows:
 - a) Determine pressure drop across the CMP system on a daily basis. If the pressure drop across the control varies by more than ± 2 inch of water column, from the pressure drop determined either during compliance testing if testing is conducted as required in 40 CFR Part 63 Subpart N or the pressure drop specified by the manufacturer if no testing is conducted, the permittee shall document the variation, and review the operation and maintenance procedures. The permittee shall document any corrective action.
 - b) Visually inspect the CMP system, on a quarterly basis, to ensure there is proper drainage, no chromic acid build up on the pads, and no evidence of chemical attack on the structural integrity of the control device.

- c) Visually inspect the back portion of the mesh pad closest to the fan, on a quarterly basis, to ensure there is no breakthrough of chromic acid mist.
 - d) Visually inspect ductwork from tanks to the CMP system, on a quarterly basis, to ensure there are no leaks.
 - e) Perform wash-down of composite mesh pads in accordance with manufacturer's recommendations. **(R 336.1224, R 336.1225, R 336.1910, R 336.1941, 40 CFR 63.342(f) and 63.343(c)(1))**
4. The permittee shall keep, in a manner satisfactory to the AQD District Supervisor, records of the pressure drop across the CMP system on a daily basis, as determined in accordance with SC VI.3. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1910, R 336.1941, 40 CFR 63.342(f) and 63.343(c)(1))**
5. The permittee shall monitor 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. The permittee shall keep records of all source emissions and operating and maintenance information on file at the facility and make them available to the Department upon request. **(40 CFR Part 63 Subparts A & N)**
6. The permittee shall maintain records of inspections required to comply with applicable work practice standards of 40 CFR 63.342(f). Each inspection record shall identify the device inspected, the date, approximate time of inspection, and a brief description of the working condition of the device during the inspection. The permittee shall also record any actions taken to correct the deficiencies found during the inspection. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1910, R 336.1941, 40 CFR Part 63 Subparts A & N)**
7. The permittee shall keep records of the surface tension of EUCHROME1, the amount of chemical fume suppressant added to EUCHROME1 and the date and time of each addition. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1941, 40 CFR Part 63 Subparts A & N)**
8. The permittee shall keep records of the surface tension of EUCHROME2, the amount of chemical fume suppressant added to EUCHROME2 and the date and time of each addition. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1941, 40 CFR Part 63 Subparts A & N)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVLINEIV	36	38	R 336.1225 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).