

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

May 29, 2003

PERMIT TO INSTALL

No. 183-02

ISSUED TO

DCI Aerotech, Inc.

LOCATED AT

7515 Lyndon Avenue
Detroit, Michigan 48238

IN THE COUNTY OF

Wayne

STATE REGISTRATION NUMBER

A8831

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: 12/11/2003	
DATE PERMIT TO INSTALL APPROVED: 5/29/2003	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

NEW SOURCE REVIEW PERMIT TO INSTALL

Common Abbreviations / Acronyms Used in this Permit to Install

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
EPA	Environmental Protection Agency	gr	Grains
EU	Emission Unit	Hg	Mercury
FG	Flexible Group	hr	Hour
GACS	Gallon of Applied Coating Solids	H ₂ S	Hydrogen Sulfide
GC	General Condition	HP	Horsepower
HAP	Hazardous Air Pollutant	lb	Pound
HVLP	High Volume Low Pressure *	m	Meter
ID	Identification	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM-10	Particulate Matter less than 10 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonable Available Control Technology	sec	Seconds
SC	Special Condition	SO ₂	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
VE	Visible Emissions	VOC	Volatile Organic Compounds
		yr	Year

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

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. **[R336.1201(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 Environmental Quality, PO Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **[R336.1201(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 R336.1210, 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. **[R336.1201(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. **[R336.1201(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 R336.1219 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 R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**
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. **[R336.1901]**
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). **[R336.1912]**
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 Act 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 R336.1301, 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 R336.1303. **[R336.1301]**
 - 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 R336.1370(2). **[R336.1370]**
13. Except as allowed by Rule 285 (a), (b), and (c), the permittee shall not substitute any fuels, coatings, nor raw materials for those described in the application and allowed by this permit, nor make changes to the process or process equipment described in the application, without prior notification to and approval by the Air Quality Division. **[R336.1201(1)]**
14. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EUCHROME	Seven hard chrome electroplating tanks with four stage wet scrubber/composite mesh pad system	SVCHROME
EUELECTROLESS	Two electroless nickel tanks with a four stage composite mesh pad system	SVNICKEL
EUDEGREASER	One n-propyl bromide vapor degreaser. Model PLD/PLDF 2024	SVGGENERAL3
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.		

The following conditions apply to: EUCHROME

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirements
1.1a	Total chromium	EUCHROME	0.015 milligram per dry standard cubic meter, corrected to 70°F and 29.92 inches Hg	Test Method	SC 1.6, 1.7, 1.8, 1.9, 1.10	R336.1225, 40 CFR Part 63 Subpart N
1.1b	Total chromium	EUCHROME	0.002 pph	Test Method	SC 1.6, 1.7, 1.8, 1.9, 1.10	R336.1225

Equipment

- 1.2 The permittee shall not operate EUCHROME unless the packed-bed scrubber/composite mesh pad system is installed, maintained, and operated in a satisfactory manner. **[R336.1225, 40 CFR Part 63 Subpart N]**
- 1.3 The permittee shall equip and maintain the packed-bed scrubber/composite mesh pad system with a differential pressure monitoring device. **[R336.1225, R336.1910, 40 CFR 63.343(c)]**

Process/Operational Limits

- 1.4 Within 30 calendar days of the date of permit approval, the permittee shall submit to the AQD District Supervisor, 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: **[R336.1225, 40 CFR Part 63 Subpart N]**
 - a) Operation and maintenance criteria for EUCHROME, 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.

1.5 The permittee shall use fresh water for any make-up water, and shall supply this water to the unit at the top of the packed bed scrubber. **[R336.1225, R336.1910, 40 CFR Part 63 Subpart N]**

Monitoring

1.6 The permittee shall perform inspections of the composite mesh pad (CMP) system as follows: **[R336.1225, R336.1910, 40 CFR Part 63 Subpart N]**

- a) Determine pressure drop across the CMP system on a daily basis. If the pressure drop across the control varies by more than ± 1 inch of water gauge, from the pressure drop determined during compliance testing, the variation shall be documented, and the operation and maintenance procedures shall be reviewed. Any corrective action shall be documented.
- 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.

1.7 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. **[40 CFR Part 63 Subpart N]**

Recordkeeping/Reporting/Notification

1.8 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. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1225, R336.1910, 40 CFR Part 63 Subpart N]**

1.9 The permittee shall keep records of emission information and operating and maintenance information to comply with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and N. All source emissions and operating and maintenance information shall be kept on file for a period of at least five years and made available to the Department upon request. **[40 CFR Part 63 Subpart N]**

1.10 Permittee shall submit the following notifications to the Department in accordance with 40 CFR Part 63.347: **[40 CFR Part 63 Subpart N]**

- a) A notification of the date when construction was commenced, submitted no later than 30 calendar days after such date.
- b) A notification of the actual date of startup of the source, submitted within 30 calendar days after such date.

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirements
1.11	SVCHROME	40	28	R336.1225
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

The following conditions apply to: EUELECTROLESS

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Compliance Method	Applicable Requirement
2.1	Nickel	EUELECTROLESS	0.002 pph	Test Method	SC 2.6, 2.7, 2.8, 2.9, 2.10, GC 14	R336.1225

Process/Operational Limits

- 2.2 The permittee shall not operate more than one electroless nickel plating tank at any time. **[R336.1225]**
- 2.3 Within 30 calendar days of the date of permit approval, the permittee shall submit to the AQD District Supervisor, an approvable operation and maintenance plan. The plan shall include the following: **[R336.1224, R336.1225]**
 - a) Operation and maintenance criteria for EUELECTROLESS, 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.

Equipment

- 2.4 The permittee shall not operate EUELECTROLESS unless the composite mesh pad system is installed, maintained, and operated in a satisfactory manner. **[R336.1224, R336.1225, R336.1910]**
- 2.5 The permittee shall equip and maintain the composite mesh pad system with a differential pressure monitoring device. **[R336.1224, R336.1225, R336.1910]**

Monitoring

2.6 The permittee shall monitor, in a satisfactory manner, the pressure drop for the composite mesh pad system portion of EUELECTROLESS once per calendar day. [R336.1224, R336.1225, R336.1910]

Recordkeeping/Reporting/Notification

2.7 The permittee shall keep monthly usage records of all nickel containing materials. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1225]

2.8 The permittee shall keep daily records of hours of operation for both nickel plating tanks. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1225]

2.9 The permittee shall keep calculations of nickel emission rates on a pound per hour basis from the current representative bath make-up. This calculation must be revised when the representative bath makeup is modified. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1225]

2.10 The permittee shall record, in a satisfactory manner, at least once per calendar day the pressure drop for the composite mesh pad system portion of EUELECTROLESS. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1224, R336.1225, R336.1910]

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
2.11	SVNICKEL	12	24	R336.1225
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

The following conditions apply to: EUDEGREASER

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/Monitoring Method	Applicable Requirements
3.1a	N-propyl bromide	EUDEGREASER	4.1 tpy	12-month rolling time period as determined at the end of each calendar month.	SC 3.3, 3.4	R336.1225, R336.1702(a)

Material Usage Limits

3.2 The permittee shall not use more than 750 gallons of n-propyl bromide, hereinafter "solvent", per year based on a 12-month rolling period as determined at the end of each calendar month. The amount of solvent used shall be determined on a "net usage" basis. "Net usage" is defined as the amount of solvent added to EUDEGREASER to bring the solvent levels up to starting levels less any amount of solvent removed as waste. [R336.1225, R336.1702(a)]

Recordkeeping/Reporting/Notification

- 3.3 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the amount of solvent used each month and 12-month rolling time period. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1225, R336.1702(a)]
- 3.4 The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of calculations of the n-propyl bromide emissions for EUDEGREASER. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1225, R336.1702(a)]

Stack/Vent Restrictions

Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirements
3.5 SVGENERAL3	36	23	R336.1225
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.			