

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

March 29, 2011

**PERMIT TO INSTALL  
37-11**

**ISSUED TO  
Aeroflex/Inmet, Inc.**

**LOCATED AT  
293 & 300 Dino Drive  
Scio Township, Michigan**

**IN THE COUNTY OF  
Washtenaw**

**STATE REGISTRATION NUMBER  
P0218**

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:

**March 3, 2011**

DATE PERMIT TO INSTALL APPROVED:

**March 29, 2011**

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

## PERMIT TO INSTALL

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant/Measurement Abbreviations</b>	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H <sub>2</sub> S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO <sub>x</sub>	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than or equal to 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than or equal 2.5 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	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO <sub>2</sub>	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

\* 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. **(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 Environmental Quality, 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 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 R 336.1219 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 R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(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 R 336.1301, 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 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 R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

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

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Flexible Group ID</b>
EUResistorDegr1	Ultra-Kool, Inc. Cold Trap Plus Vapor Degreaser Model 1012 (10-gallon capacity) located at 293 Dino Drive.	FGVaporDegr
EUResistorDegr2	Ultra-Kool, Inc. Cold Trap Plus Vapor Degreaser Model AMA-LVD (8-gallon capacity) located at 293 Dino Drive.	FGVaporDegr
EUResistorStill	Solvent Recovery Still Model 15E (15-gallon capacity) located at 293 Dino Drive.	FGVaporDegr
EUIInmetDegr	Ultra-Kool, Inc. Cold Trap Plus Vapor Degreaser Model AMA-LVD (8-gallon capacity) located at 300 Dino Drive.	FGVaporDegr
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 336.1290.		

**FLEXIBLE GROUP SUMMARY TABLE**

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

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGVaporDegr	Vapor degreasing operations for electronic components.	EUResistorDegr1, EUResistorDegr2, EUResistorStill, EUIInmetDegr

**The following conditions apply to: FGVaporDegr**

**DESCRIPTION:** Vapor degreasing operations for electronic components.

**Emission Units:** EUResistorDegr1, EUResistorDegr2, EUResistorStill, EUIInmetDegr

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period/ Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
NA					

**II. MATERIAL LIMITS**

1. The permittee shall not use more than 220 gallons of vapor degreaser solvents, hereinafter "solvent", per year based on a 12-month rolling period as determined at the end of each calendar month. The permittee shall determine the amount of solvent used on a "net usage" basis. "Net usage" is defined as the amount of solvent added to FGVaporDegr to bring the solvent levels up to starting levels less any amount of solvent removed as waste. **(R 336.1225, R 336.1702(a), R 336.1901)**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall recover and reclaim, recycle, or dispose of, in accordance with all applicable state rules and federal regulations, the solvents used for FGVaporDegr. **(R 336.1225, R 336.1702(a))**
2. The permittee shall capture all waste solvents and shall store them in closed containers. The permittee shall dispose of all waste solvents in a manner such that not more than 20% by weight is allowed to evaporate into the atmosphere. **(R 336.1225, R 336.1702(a), R 336.1708(3)(i))**
3. The permittee shall develop written procedures in accordance with SC IV.1 for the operation of FGVaporDegr, and such procedures shall be posted in an accessible, conspicuous location near the vapor degreasers. **(R 336.1708(4))**
4. The permittee shall not use any of the listed halogenated solvents in FGVaporDegr, pursuant to the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts T. **(R 336.1225, R 336.1901)**

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall not operate FGVaporDegr unless all of the following conditions are met:
  - a. A cover shall be installed that is designed to be opened and closed easily without disturbing the vapor zone. The cover shall be closed at all times, except when processing workloads through the degreaser.
  - b. A procedure shall be developed to minimize solvent carryout by doing all of the following:
    - i. Racking parts to allow complete drainage.
    - ii. Moving parts in and out of the degreaser at a vertical speed of less than 11 feet per minute when a powered hoist is used to raise or lower the parts.
    - iii. Holding parts in the vapor zone not less than 30 seconds or until condensation ceases.

- iv. Tipping or tumbling parts in a manner such that no pools of organic solvent remain on the cleaned parts before removal.
- v. Allowing parts to dry within the degreaser for not less than 15 seconds or until visually dry.
- c. The following control devices shall be installed:
  - i. A condenser flow switch and thermostat that shut off the sump heat if the condenser coolant is either not circulating or is too warm.
  - ii. If equipped with spray, a spray safety switch that shuts off the spray pump if the vapor level drops excessively.
  - iii. A vapor level control device that shuts off the sump heat if the solvent vapor level rises above the normal design level.
- d. The total workload shall not occupy more than 1/2 of the degreaser's open top area.
- e. Solvent shall not be sprayed above the vapor level.
- f. Solvent leaks shall be repaired immediately.
- g. The degreaser shall be operated in such a manner that no water is visibly detectable in solvent exiting the water separator.

**(R 336.1708(3))**

#### **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))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1225, R 336.1702, R 336.1901)**
2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each vapor degreaser solvent, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702, R 336.1901)**
3. The permittee shall keep the following information on a monthly basis for the use of vapor degreaser solvents associated with FGVaporDegr:
  - a. Gallons of each solvent used and removed as waste.
  - b. Solvent usage calculations determining the monthly "net usage" rate in gallons per calendar month.
  - c. Solvent usage calculations determining the annual "net usage" rate in gallons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records on file in a format acceptable to the AQD District Supervisor and make them available to the Department upon request. **(R 336.1225, R 336.1702, R 336.1901)**

#### **VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

1. The exhaust gases from FGVaporDegr shall not be discharged to the ambient air at any time. **(R 336.1225, R 336.1702, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

**IX. OTHER REQUIREMENTS**

NA

**Footnotes:**

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