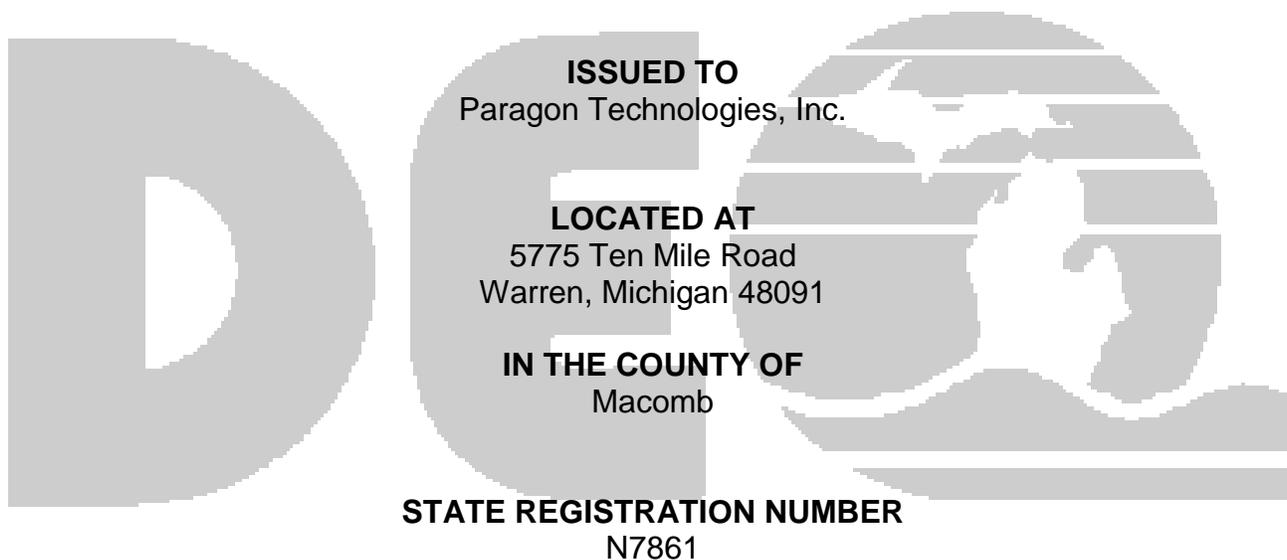


**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

December 30, 2008

**PERMIT TO INSTALL**

No. 339-08



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: <b>12/23/2008</b>	
DATE PERMIT TO INSTALL APPROVED: <b>12/30/2008</b>	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	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than 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, 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 AQD District Supervisor shall be notified, in writing, of a change in ownership or operational control of the stationary source or emission unit(s) authorized by this Permit to Install pursuant to R 336.1219. The notification shall include all of the information required by R 336.1219(1)(a) and (b). In addition, a new owner or operator must submit a written statement pursuant to R 336.1219(1)(c), agreeing to and accepting the terms and conditions of this Permit to Install, and shall notify the AQD District Supervisor of any change in the contact person for this Permit to Install. **(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>
EUVARNISHCOAT	A varnish dip coating operation used to apply varnish to electric motor windings in a dip tank; with varnish curing in an electric curing oven or the Bayco Model BB216 oven.	FGVARNISH
EUCUREBURNOFF	A Bayco Model BB216 burnoff oven used to cure varnish applied to electric motor windings or burn off varnish from electric motor windings; equipped with an afterburner emission control system and a thermally insulated exhaust system.	FGVARNISH

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.

#### The following conditions apply to: EUVARNISHCOAT

**DESCRIPTION:** A varnish dip coating operation used to apply varnish to electric motor windings in a dip tank; with varnish curing in an electric curing oven or the Bayco Model BB216 oven.

**Flexible Group ID:** FGVARNISH

**POLLUTION CONTROL EQUIPMENT:** NA

#### **I. EMISSION LIMITS**

NA

#### **II. MATERIAL LIMITS**

NA

#### **III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall capture all waste varnish and clean-up solvents and shall store them in closed containers. The permittee shall dispose of all waste varnish and clean-up solvents in an acceptable manner in compliance with all applicable state rules and federal regulations. **(R 336.1225, R 336.1702(a), R 336.1901)**
2. The permittee shall handle all VOC and/or HAP containing materials, including varnish and clean-up solvents, in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times except when operator access is necessary. **(R 336.1225, R 336.1702(a), R 336.1901)**

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall equip and maintain EUVARNISHCOAT with a dip coating tank or comparable technology with equivalent transfer efficiency. **(R 336.1702(a))**

**V. TESTING/SAMPLING**

NA

**VI. MONITORING/RECORDKEEPING**

NA

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA

**The following conditions apply to: EUCUREBURNOFF**

**DESCRIPTION:** A Bayco Model BB216 burnoff oven used to cure varnish applied to electric motor windings or burn off varnish from electric motor windings; equipped with an afterburner emission control system and a thermally insulated exhaust system.

**Flexible Group ID:** FGVARNISH

**POLLUTION CONTROL EQUIPMENT:** Afterburner control system on the Bayco Model BB216 curing and burnoff oven.

**I. EMISSION LIMITS**

1. There shall be no visible emissions from EUCUREBURNOFF. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**

**II. MATERIAL LIMITS**

1. The permittee shall burn only natural gas in EUCUREBURNOFF. **(R 336.1301, R 336.1331, R 336.1402, R 336.1901)**
2. The permittee shall not process any material in EUCUREBURNOFF other than cured varnish on electric motor windings when operating as a burnoff oven and uncured varnish on electric motor windings when operating as a curing oven<sup>1</sup>. **(R 336.1224, R 336.1225, R 336.1901)**

### **III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not use EUCUREBURNOFF for the thermal destruction or removal of rubber, plastics, uncured paints, or any other materials containing sulfur or halogens (chlorine, fluorine, bromine, etc.) such as epoxy, plastisol, polyvinyl chloride (PVC), or Teflon coatings<sup>1</sup>. **(R 336.1224, R 336.1225, R 336.1901)**
2. The permittee shall provide, and maintain onsite, certifications that any materials removed from electric motor windings in EUCUREBURNOFF contain no halogenated or sulfur-containing compounds such as epoxy, plastisol, polyvinyl chloride (PVC), or Teflon. Such certifications shall also be obtained and maintained onsite for materials removed from electric motor windings processed for outside customers. In addition, the permittee shall maintain a current listing of the chemical composition of each material removed from electric motor windings processed in EUCUREBURNOFF. The data may consist of Material Safety Data Sheets (MSDS), manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all certifications and chemical composition data on file at the facility for a period of at least five years and make them available to the Department upon request<sup>1</sup>. **(R 336.1224, R 336.1225, R 336.1901)**
3. The permittee shall not operate EUCUREBURNOFF for more than 1200 hours per 12-month rolling time period as determined at the end of each calendar month<sup>1</sup>. **(R 336.1225)**

### **IV. DESIGN/EQUIPMENT PARAMETERS**

1. Beginning within 30 days of permit approval, satisfactory operation of the EUCUREBURNOFF secondary chamber or afterburner includes maintaining a minimum temperature of 1400 F and a minimum retention time of 0.5 seconds whenever the primary chamber burner is on. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
2. Beginning within 30 days of permit approval, the permittee shall not operate EUCUREBURNOFF unless a preheat interlock system which prevents primary chamber burner operation until the secondary chamber or afterburner is preheated to 1400 F, is installed, maintained and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
3. The permittee shall not operate EUCUREBURNOFF unless an automatic temperature control system for the primary chamber and secondary chamber or afterburner is installed, maintained, and operated in a satisfactory manner. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
4. The permittee shall not operate EUCUREBURNOFF unless an interlock system is installed, maintained and operated in a satisfactory manner that shuts down the primary chamber burner when the secondary chamber or afterburner is not operating properly including malfunctions such as detection of a loss of afterburner flame or low natural gas supply pressure to the afterburner. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
5. The permittee shall equip and maintain the EUCUREBURNOFF exhaust system with the manufacturer's recommended thermal insulation from the afterburner to the exhaust stack exit point. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910)**

### **V. TESTING/SAMPLING**

NA

### **VI. MONITORING/RECORDKEEPING**

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

1. The permittee shall calibrate the thermocouples and the temperature monitoring and recording system associated with the primary and secondary chambers of EUCUREBURNOFF at least once per calendar year. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
2. Beginning within 30 days of permit approval, the permittee shall install, calibrate, maintain and operate in a satisfactory manner devices on EUCUREBURNOFF to continuously measure the temperature in the burnoff oven primary chamber and to continuously monitor and record the afterburner temperature. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
3. Beginning within 30 days of permit approval, the permittee shall keep, in a satisfactory manner, temperature data records for the EUCUREBURNOFF secondary chamber or afterburner. All records shall be kept on file and made available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
4. Beginning within 30 days of permit approval, the permittee shall clearly mark the start and stop times for each batch and label each start and stop time with the correct clock time, date and initials on the afterburner temperature chart recording for the EUCUREBURNOFF secondary chamber or afterburner. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1901, R 336.1910)**
5. The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction of the control equipment, any maintenance performed and any testing results for EUCUREBURNOFF. All records shall be kept on file and made available to the Department upon request. **(R 336.1910, R 336.1912)**
6. The permittee shall keep, in a satisfactory manner, a log of the hours of operation of EUCUREBURNOFF per 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file at the facility and make them available to the Department upon request.<sup>1</sup> **(R 336.1225)**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

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

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVCUREBURNOFF	16	30	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENTS**

NA

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

**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
FGVARNISH	A varnish dip coating operation including a dip tank used to apply varnish to electric motor windings; an electric curing oven for varnish curing; and a Bayco Model BB216 burnoff oven used for both curing of varnish and to burn off varnish from motor windings.	EUVARNISHCOAT, EUCUREBURNOFF

**The following conditions apply to: FGVARNISH**

**DESCRIPTION:** A varnish dip coating operation including a dip tank used to apply varnish to electric motor windings; an electric curing oven for varnish curing; and a Bayco Model BB216 burnoff oven used for both curing of varnish and to burn off varnish from motor windings.

**Emission Units:** EUVARNISHCOAT, EUCUREBURNOFF

**POLLUTION CONTROL EQUIPMENT:** Afterburner control system on the Bayco Model BB216 curing and burnoff oven.

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	130 lbs per year	12-month rolling time period as determined at the end of each calendar month	FGVARNISH	SC V.1, SC VI.3	R 336.1702(a)
2. Diallyl phthalate <sup>1</sup> [CAS # 131-17-9]	0.05 pound per hour	Test Protocol	FGVARNISH	GC 13	R 336.1225
3. Diallyl phthalate <sup>1</sup> [CAS # 131-17-9]	1.1 lbs/gal (minus water)* as applied	Test Protocol	FGVARNISH	GC 13	R 336.1225

\* The phrase "minus water" shall also include compounds which are used as organic solvents and which are excluded from the definition of volatile organic compound. **(R 336.1602(4))**

**II. MATERIAL LIMITS**

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOCs	1.1 lbs/gal (minus water)* as applied	Test Protocol	FGVARNISH	GC 13	R 336.1702(a)

\* The phrase "minus water" shall also include compounds which are used as organic solvents and which are excluded from the definition of volatile organic compound. **(R 336.1602(4))**

### **III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not apply more than 100 gallons of varnish per 12-month rolling time period as determined at the end of each calendar month in FGVARNISH<sup>1</sup>. **(R 336.1225)**
2. The permittee shall only operate the two burnoff ovens at the facility to prepare motor windings that will be coated with varnish on site at the Paragon Technologies facility<sup>1</sup>. **(R 336.1225)**

### **IV. DESIGN/EQUIPMENT PARAMETERS**

NA

### **V. TESTING/SAMPLING**

NA

### **VI. MONITORING/RECORDKEEPING**

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

1. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each varnish and clean-up 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)**
2. 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(a))**
3. The permittee shall keep the following information on a calendar month basis for FGVARNISH:
  - a) Gallons (with water) of varnish used.
  - b) VOC content (minus water and with water) of varnish as applied. A VOC content of 1.1 pounds VOC per gallon of varnish shall be used for emission calculations unless testing is carried out determining an updated VOC content estimate.
  - d) VOC mass emission calculations determining the monthly emission rate in pounds per calendar month using the most recently determined VOC content estimate.
  - e) VOC mass emission calculations determining the annual emission rate in pounds per 12-month rolling time period as determined at the end of each calendar month using the most recently determined VOC content estimate.

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

### **VII. REPORTING**

NA

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

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA