

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

April 21, 2011

**PERMIT TO INSTALL
27-11**

ISSUED TO
Rosler Metal Finishing, USA

LOCATED AT
1550 Denso Road
Battle Creek, Michigan

IN THE COUNTY OF
Calhoun

STATE REGISTRATION NUMBER
N7321

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:

April 18, 2011

DATE PERMIT TO INSTALL APPROVED:

April 21, 2011

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
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 ₂ 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 _x	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 ₂	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 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.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUPyrolysis	A Jackson Oven Model 15825 Pyrolysis oven used to remove polyurethane linings from wear resistant tubs, spinners, and vibratory bowls; equipped with an afterburner emission control system and a thermally insulated exhaust system.	April 2011	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 336.1290.			

The following conditions apply to: EUPyrolysis

DESCRIPTION: A Jackson Oven Model 15825 Pyrolysis oven used to remove polyurethane linings from wear resistant tubs, spinners, and vibratory bowls.

Flexible Group ID: N/A

POLLUTION CONTROL EQUIPMENT: Equipped with an afterburner emission control system with a thermally insulated exhaust system.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Hydrogen Chloride [CAS 7647-01-0]	3.8 pph ¹	Test Protocol shall specify averaging time.	EUPyrolysis	SC V.1	R 336.1224, R 336.1225, R 336.1901
2. Hydrogen Chloride [CAS 7647-01-0]	2,000 pounds per year ¹	12-month rolling time period as determined at the end of each calendar month	EUPyrolysis	SC VI. 5	R 336.1224, R 336.1225, R 336.1901
3. Hydrogen Cyanide [CAS 74-90-8]	0.15 pph ¹	Test Protocol shall specify averaging time.	EUPyrolysis	SC V.1	R 336.1224, R 336.1225, R 336.1901

4. There shall be no visible emissions from EUPyrolysis. **(R336.1225, R 336.1702(a), R336.1901, R336.1910)**

II. MATERIAL LIMITS

- The permittee shall burn only natural gas in EUPyrolysis. **(R336.1901)**
- The permittee shall not process any material in EUPyrolysis other than wear resistant tubs, spinners, and vibratory bowls coated with polyurethane linings including the material listed below based on 4,4-methylenebis(2-chloroaniline) [CAS # 101-14-4] curative chemistry and containing not more than 16 percent by weight of 4,4-methylenebis(2-chloroaniline)¹. **(R336.1224, R336.1225, R336.1901)**

Mixture No.	Material Name
1.	Vibrathane B600 – Used in Polyurethane Manufacturing Ethacure 300 – Curing Chemical
2.	Hyperkote Tmp 85A (Red) Polyol Hyperlast 5042 Prepolymer
3.	PF3280A Urethane Prepolymer – Isocyanate based Product PF3280B Urethane Curative
4.	PF5078A Urethane Prepolymer – Isocyanate based Product PF0800B Urethane Curative
5.	Conathane RN-1511 Urethane Prepolymer Vibracure A-133

3. The permittee shall not thermally remove more than 878 pounds of polyurethane linings per oven batch in EUPyrolysis. **(R336.1224, R336.1225, R336.1901)**

4. The permittee shall not process more than 61,425 pounds of urethane per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1225, R 336.1227(2), R 336.1901)**

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUPyrolysis unless a secondary chamber or afterburner is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the secondary chamber or afterburner includes maintaining a minimum temperature of 1560°F and a minimum retention time of 0.5 seconds. **(R336.1224, R336.1225, R336.1301, R 336.1702(a), R336.1901, R336.1910)**
2. The permittee shall not operate EUPyrolysis unless an automatic temperature control system for the primary chamber and secondary chamber or afterburner is installed, maintained, and operated in a satisfactory manner. **(R336.1224, R336.1225, R336.1301, R 336.1702(a), R336.1901, R336.1910)**
3. The permittee shall not operate EUPyrolysis 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)**
4. The permittee shall equip and maintain the EUPyrolysis 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

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

1. Within 180 days after commencement of trial operation, the permittee shall verify the Hydrogen Chloride [CAS 7647-01-0] and Hydrogen Cyanide [CAS 74-90-8] emission rate and their emissions factor verification from EUPyrolysis, by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1224, R 336.1225, R 336.1901, R 336.2001, R 336.2003, R 336.2004)**

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 336.1224, R 336.1225, R 336.1901)**
2. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to continuously monitor and record the temperature in the pyrolysis oven secondary chamber or afterburner. **(R336.1224, R336.1225, R336.1301, R 336.1702(a), R336.1901, R336.1910)**
3. The permittee shall keep, in a satisfactory manner, records of the temperature in the pyrolysis oven secondary chamber or afterburner. The permittee shall keep all records on file and make them available to

the Department upon request. **(R336.1224, R336.1225, R336.1301, R 336.1702(a), R336.1901, R336.1910)**

4. The permittee shall calibrate the thermocouples associated with the primary and secondary chambers at least once per year. **(R336.1201(3), R336.1224, R336.1225, R336.1301, R 336.1702(a), R336.1901, R336.1910)**
5. The permittee shall keep the following information on a calendar month basis for the EUPyrolysis:
 - a) A description of each lining thermally removed from parts and the weight in pounds removed.
 - b) Calculations determining the 4,4-methylenebis(2-chloroaniline) [CAS # 101-14-4] content (MOCA content) and chlorine content (each in percent by weight) for each lining removed.
 - c) The best available Hydrogen Chloride [CAS 7647-01-0] emission factor (in pounds emitted per 100 pounds of polyurethane burned) for each lining removed (assuming 100% conversion of chlorine to hydrogen chloride) updated by any available emission test results.
 - d) Hydrogen Chloride [CAS 7647-01-0] mass emission calculations determining the overall monthly emission rate in pounds per calendar month.
 - e) Hydrogen Chloride [CAS 7647-01-0] mass emission calculations determining the overall annual emission rate in pounds per 12-month rolling time period as determined at the end of each calendar month.
 - f) Urethane monthly usage and also usage based upon 12-month rolling time period as determined at the end of each calendar month.

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 336.1224, R 336.1225, R 336.1901)**

6. The permittee shall determine the content of 4,4-methylenebis(2-chloroaniline) [CAS # 101-14-4] (MOCA content) for each lining removed by means of measuring the lining Shore Hardness and correlating hardness to MOCA content. Within 30 days of permit approval, the permittee shall submit an updated plan for approval by the AQD District Supervisor outlining the method to be used to correlate Shore Hardness to MOCA content. The plan shall include information comparing the known MOCA content, percent NCO, and measured Shore Hardness level of each of the lining materials used by the permittee along with supporting documentation and calculation methods for predicting MOCA content. The permittee shall keep all records on file and make them available to the Department upon request¹. **(R 336.1224, R 336.1225, R 336.1901)**
7. The permittee shall keep a record of the pounds of polyurethane linings thermally removed per each oven batch in EUPyrolysis by weighing the parts processed before and after the burnoff process. The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1901)**
8. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material being removed from the parts being processed in EUPyrolysis, if available. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. **(R 336.1224, R 336.1225, R 336.1901)**

VII. REPORTING

N/A

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:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVPyrolysis-01	16	62	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
2. SVPyrolysis-02	16	62	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENTS

NA

Footnotes:

¹This 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
FGFacility	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	NA

The following conditions apply Source-Wide to: FGFacility

POLLUTION CONTROL EQUIPMENT: Please see above listed EU.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Each Individual HAP	Less than 9.0 tpy *	12-month rolling time period as determined at the end of each calendar month	FGFacility	SC VI.2	R 336.1205(3)
2. Aggregate HAPs	Less than 22.5 tpy *	12-month rolling time period as determined at the end of each calendar month	FGFacility	SC VI.2	R 336.1205(3)

* Beginning on April 21, 2011, and continuing for the first 12 calendar months, this limit applies to the cumulative total HAP emissions. Thereafter, the limit shall become a 12-month rolling limit.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

N/A

V. TESTING/SAMPLING

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

1. The permittee shall determine the HAP content of any material, as applied, using manufacturer's formulation data. Upon request of the AQD District Supervisor, the permittee shall verify the manufacturer's HAP formulation data using EPA Test Method 311. **(R 336.1205(3))**

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 336.1205(3))**
2. The permittee shall keep the following information on a calendar month basis for FGFacility:
 - a) Gallons or pounds of each HAP containing material used.
 - b) Where applicable, gallons or pounds of each HAP containing material reclaimed.
 - c) HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used.

- d) Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
- e) Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

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 336.1205(3))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

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