

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

December 18, 2018

**PERMIT TO INSTALL**  
99-15B

**ISSUED TO**  
Mold Masters Injectioneering, LLC

**LOCATED AT**  
29111 Stephenson Highway  
Madison Heights, Michigan

**IN THE COUNTY OF**  
Oakland

**STATE REGISTRATION NUMBER**  
P0609

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>November 26, 2018</b>	
DATE PERMIT TO INSTALL APPROVED: <b>December 18, 2018</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

**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	Michigan Department of Environmental Quality
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
MDEQ	Michigan Department of Environmental Quality
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 <sub>2</sub> 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 <sub>2</sub> S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO <sub>x</sub>	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 <sub>2</sub>	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 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 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 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 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))	Installation Date / Modification Date	Flexible Group ID
EUFLUIDCLEAN	Dinamec Fluid Clean Fluidized Bed Type F-42.12.12 natural gas-fired cleaning furnace used for removal of plastic residues from plastic extrusion tooling. Emission controls include a natural gas-fired afterburner zone and a cyclone.	Date of PTI Issuance	NA
EUMINICLEAN	Dinamec Systems LLC DMC 450-400V cleaning furnace, manufactured in 2007, equipped with an electrically heated cleaning chamber used for removal of plastic residues from plastic extrusion tooling. Emission controls include a lime cartridge filter followed by a natural gas-fired afterburner chamber.	10/13/2017	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.

**EUFLUIDCLEAN  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Dinamec Fluid Clean Fluidized Bed Type F-42.12.12 natural gas-fired cleaning furnace used for removal of plastic residues from plastic extrusion tooling. Emission controls include a natural gas-fired afterburner zone and a cyclone.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

A cyclone separator for the removal of particulate matter from the exhaust stream.

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring / Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. PM	0.083 lb per 1000 lbs of dry exhaust gas	Hourly	EUFLUIDCLEAN	GC 13, SC VI.4, SC VI.5	R 336.1331(1)(c)
2. PM10	1.52 pph	Hourly	EUFLUIDCLEAN	GC 13, SC VI.4, SC VI.5	40 CFR 52.21(c) & (d)
3. PM2.5	1.52 pph	Hourly	EUFLUIDCLEAN	GC 13, SC VI.4, SC VI.5	40 CFR 52.21(c) & (d)

4. Visible emissions from EUFLUIDCLEAN shall not exceed a six-minute average of 10 percent opacity. **(R 336.1301(1)(c))**

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee not shall process any material in EUFLUIDCLEAN other than metal parts with small amounts of cured residues of the following approved types of plastics: polyethylene, polypropylene, polystyrene, polycarbonate, polyamide, acrylonitrile-butadiene-styrene (ABS), polysulfone, and polyethersulfone. The amount of plastic residue on each part shall be minimized by removing as much residue as possible using hand tools.<sup>1</sup> **(R 336.1224, R 336.1225)**
2. The permittee shall not operate EUFLUIDCLEAN unless the sand bed is preheated to 850°F before parts are loaded into the sand bed for processing. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**
3. The permittee shall not operate EUFLUIDCLEAN unless the exhaust airflow is preheated to 445°F before parts are loaded into the sand bed for processing. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUFLUIDCLEAN unless the natural gas-fired afterburner zone and the cyclone system are installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes operating the sand bed and the air pollution control systems in accordance with the manufacturer's recommendations. **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1702(a), R 336.1910, 40 CFR 52.21(c) and (d))**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a negative pressure switch in the duct before the fan in the cyclone control system for EUFLUIDCLEAN on a continuous basis. **(R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**
3. The permittee shall not operate EUFLUIDCLEAN unless the manufacturer's automatic temperature control system for the sand bed and exhaust air flow are installed, maintained and operated according to the manufacturer's specifications. **(R 336.1224, R 336.1225, R 336.1702(a))**

#### **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 and make them available 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 336.1301, R 336.1702, 40 CFR 52.21(c) and (d))**
2. The permittee shall maintain a current listing from the customer of the chemical composition of each material being removed from the parts being processed in EUFLUIDCLEAN. The data may consist of Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. 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 336.1224, R 336.1225, R 336.1702)**
3. The permittee shall record, on a calendar day basis, the sand bed temperature in EUFLUIDCLEAN for each batch. 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 336.1224, R 336.1225, R 336.1702(a))**
4. The permittee shall monitor cyclone control system to verify it is operating properly, by taking visible emission readings for EUFLUIDCLEAN a minimum of once per calendar month. Either a certified or non-certified reader shall take each visible emission reading during routine operating conditions. If any visible emissions (other than uncombined water vapor) are observed, the permittee shall immediately inspect the cyclone control system and perform any required maintenance. **(R 336.1301, R 336.1910)**
5. The permittee shall keep, in a satisfactory manner, records of all visible emission readings for EUFLUIDCLEAN. At a minimum, records shall include the date, time, name of observer/reader, whether the reader is certified, and status of visible emissions. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1910)**
6. The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction of the cleaning furnace, any maintenance performed and any testing results for EUFLUIDCLEAN. The permittee shall keep the records on file and make them available to the Department upon request. **(R 336.1910, R 336.1911)**
7. The permittee shall record on a calendar day basis, the date, time, duration, and sand bed temperature and the exhaust air flow temperature at equally spaced intervals, not to exceed 15 minutes per interval, of EUFLUIDCLEAN for each batch of materials processed. 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 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) and (d))**

**VII. REPORTING**

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of all equipment in EUFLUIDCLEAN. **(R 336.1201(7)(a))**

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVFLUIDCLEAN	21	50	R 336.1225, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

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

## **EUMINICLEAN EMISSION UNIT CONDITIONS**

### **DESCRIPTION**

Dinamec Systems LLC DMC 450-400V cleaning furnace, manufactured in 2007, equipped with an electrically heated cleaning chamber used for removal of plastic residues from plastic extrusion tooling.

**Flexible Group ID:** NA

### **POLLUTION CONTROL EQUIPMENT**

A lime cartridge filter followed by a natural gas-fired afterburner chamber.

#### **I. EMISSION LIMIT(S)**

NA

#### **II. MATERIAL LIMIT(S)**

NA

#### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee not shall process any material in EUMINICLEAN other than metal parts with small amounts of cured residues of the following approved types of plastics: polyethylene, polypropylene, polystyrene, polycarbonate, polyamide, acrylonitrile-butadiene-styrene (ABS), polyvinyl chloride (PVC), polysulfone, polyethersulfone, and any of these plastics containing brominated additives (e.g., compounds of bromine such as bromine-based fire retardants, etc.) provided that the plastic contains no more than 1 percent by weight total bromine content. The amount of plastic residue on each part shall be minimized by removing as much residue as possible using hand tools.<sup>1</sup> **(R 336.1224, R 336.1225)**
2. The permittee shall not operate EUMINICLEAN for more than 880 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1224, R 336.1225, R 336.1702(a))**
3. The permittee shall not operate EUMINICLEAN unless the furnace operator preheats the afterburner chamber to 1560°F prior to charging parts to the cleaning chamber. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUMINICLEAN unless the natural gas-fired afterburner chamber and the lime cartridge filter are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the afterburner includes maintaining a minimum temperature of 1560°F in the chamber and operating the air pollution control systems according to manufacturer's recommendations. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor the temperature in the afterburner chamber for EUMINICLEAN on a continuous basis. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**
3. The permittee shall not operate EUMINICLEAN unless an interlock system is installed, maintained and operated in a satisfactory manner. The interlock system shall shut down the cleaning chamber heater when the afterburner chamber is not operating properly such as detection of a loss of afterburner flame or detection of low natural gas supply pressure to the afterburner. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

**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 and make them available 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 336.1702)**
2. The permittee shall maintain a current listing from the customer of the chemical composition of each material being removed from the parts being processed in EUMINICLEAN. 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 the records on file, 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 336.1702)**
3. The permittee shall keep, in a satisfactory manner, temperature data records for the afterburner chamber on EUMINICLEAN. The temperature data shall be recorded at least once every 15 minutes. The records shall be kept on file and made available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, a record of the hours of operation of EUMINICLEAN on a monthly basis and on a 12-month rolling time period as determined at the end of each calendar month. The records shall be kept on file and made available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a))**
5. The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction of the cleaning furnace, any maintenance performed and any testing results for EUMINICLEAN. The permittee shall keep the records on file and make them available to the Department upon request. **(R 336.1910, R 336.1911)**

**VII. REPORTING**

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of all equipment in EUMINICLEAN. **(R 336.1201(7)(a))**

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVMINICLEAN	8	45	R 336.1225, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

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