

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

February 19, 2003

PERMIT TO INSTALL

No. 73-02A

ISSUED TO

MacDermid, Inc.

LOCATED AT

1221 Farrow Avenue
Ferndale, Michigan 48220

IN THE COUNTY OF

Oakland

STATE REGISTRATION NUMBER

A9805

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: 1/13/2003 | |
| DATE PERMIT TO INSTALL APPROVED: 2/19/2003 | SIGNATURE: |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

NEW SOURCE REVIEW PERMIT TO INSTALL

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Common Abbreviations / Acronyms Used in this Permit to Install

| 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 | NO _x | Oxides of Nitrogen |
| MAP | Malfunction Abatement Plan | PM | Particulate Matter |
| MDEQ | Michigan Department of Environmental Quality | PM-10 | Particulate Matter less than 10 microns diameter |
| MIOSHA | Michigan Occupational Safety & Health Administration | pph | Pound per hour |
| MSDS | Material Safety Data Sheet | ppm | Parts per million |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | ppmv | Parts per million by volume |
| NSPS | New Source Performance Standards | ppmw | Parts per million by weight |
| NSR | New Source Review | psia | Pounds per square inch absolute |
| PS | Performance Specification | psig | Pounds per square inch gauge |
| PSD | Prevention of Significant Deterioration | scf | Standard cubic feet |
| PTE | Permanent Total Enclosure | sec | Seconds |
| PTI | Permit to Install | SO ₂ | Sulfur Dioxide |
| RACT | Reasonable Available Control Technology | THC | Total Hydrocarbons |
| SC | Special Condition | tpy | Tons per year |
| SCR | Selective Catalytic Reduction | µg | Microgram |
| SRN | State Registration Number | VOC | Volatile Organic Compounds |
| TAC | Toxic Air Contaminant | 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, altered, 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, reconstruction, relocation, or alteration 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 person to whom this permit was issued, 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, reconstruction, relocation, or alteration 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 owner or operator of a source, process, or process equipment shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant in excess of standards for more than one hour, or of any air contaminant in excess of standards for more than two hours, as required in this rule, to the District Supervisor, Air Quality Division. The notice shall be provided no 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 District Supervisor within ten days, with the information required in this rule. **[R336.1912]**
8. Approval of this permit does not exempt the person to whom this permit was issued from complying with any future applicable requirements which may be promulgated under Part 55 of Act 451, PA 1994 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 Act 451, PA 1994, 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, a person 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), 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 |
|---|---|-----------------------------|
| EUPDPLATEBLEND | Palladium activator batch production process, consisting of two premix tanks (50 gal and 500 gal capacity), two reactors (100 gal and 500 gal capacity), and a dilution tank (1100 gal capacity), controlled by a spray scrubber. | SVHCLBLEND |
| EUCUCLPROD | Copper chloride products production process, consisting of a 2850 gallon tank and controlled by the spray scrubber. | SVHCLBLEND |
| 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. | | |

Flexible Group Identification

| Flexible Group ID | Emission Units Included in Flexible Group | Stack Identification |
|--------------------------|--|-----------------------------|
| FGHCLBLEND | EUPDPLATEBLEND, EUCUCLPROD | SVHCLBLEND |

The following conditions apply to: EUCUCLPROD

Emission Limits

| | Pollutant | Equipment | Limit | Time Period | Testing/ Monitoring Method | Applicable Requirement |
|------|-------------------------|------------------|--------------|---------------------|---|-----------------------------------|
| 1.1a | Hydrogen chloride (HCl) | EUCUCLPROD | 2.4 lb/day | Calendar day | SC 3.1, 3.2, 3.3, 3.7 | R336.1224, R336.1225 |
| 1.1b | HCl | EUCUCLPROD | 1.0 lb/hr | According to method | GC 14 SC 3.1, 3.3, 3.7 | R336.1224, R336.1225 |

The following conditions apply to: EUPDPLATEBLEND

Emission Limits

| | Pollutant | Equipment | Limit | Time Period | Testing/ Monitoring Method | Applicable Requirement |
|------|-------------------------|------------------|--------------|---------------------|---|-----------------------------------|
| 2.1a | Hydrogen chloride (HCl) | EUPDPLATEBLEND | 2.4 lb/day | Calendar day | SC 3.1, 3.2, 3.3, 3.7 | R336.1224, R336.1225 |
| 2.1b | HCl | EUPDPLATEBLEND | 1.0 lb/hr | According to method | GC 14 SC 3.1, 3.3, 3.7 | R336.1224, R336.1225 |

The following conditions apply to: FGHCLBLEND

Material Usage Limits

3.1 The hydrogen chloride content of all acid used in FGHCLBLENDs shall not exceed 36.5 percent by weight. [R336.1224, R336.1225]

Process/Operational Limits

3.2 The permittee shall not heat raw materials in FGHCLBLENDs for more than 8 hours during any calendar day. [R336.1224, R336.1225]

Equipment

3.3 The permittee shall not operate FGHCLBLENDs unless the spray scrubber is installed, maintained, and operated in a satisfactory manner. Operating in a satisfactory manner includes keeping the solution used in the spray scrubber at a pH of 8 or greater. [R336.1224, R336.1225, R336.1910]

3.4 The permittee shall equip and maintain the spray scrubber with a liquid flow rate indicator. [R336.1224, R336.1225, R336.1910]

Monitoring

3.5 The permittee shall monitor, in a satisfactory manner, the pH of the solution used in the spray scrubber on a daily basis. [R336.1224, R336.1225, R336.1910]

Recordkeeping/Reporting/Notification

3.6 The permittee shall keep, in a satisfactory manner, daily records of the pH of the scrubber solution used in the spray scrubber. 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]

3.7 The permittee shall keep a written record of the HCl content of the acids used in FGHCLBLENDs. The records shall be kept in a format acceptable to the AQD District Supervisor. 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]

3.8 The permittee shall keep, in a satisfactory manner, a written log of the daily hours that raw materials are heated in FGHCLBLENDs. 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]

Stack/Vent Restrictions

| | Stack & Vent ID | Maximum Diameter (inches) | Minimum Height Above Ground Level (feet) | Applicable Requirement |
|---|----------------------------|----------------------------------|---|-------------------------------|
| 3.9 | SVHCLBLENDs | 12 | 30 | R336.1225 |
| The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air. | | | | |