

AIR EMISSION PERMIT NO. 16300002- 003

IS ISSUED TO

3M Company

3M COTTAGE GROVE SPECIALTY ADDITIVES

10746 Innovation Boulevard
Cottage Grove, Washington County, MN 55016

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date	Issuance Date
Total Facility Operating Permit	04/17/1995	03/24/2005
Major Amendment	12/15/2005	See below

This permit authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Pt 70/Limits to Avoid NSR

Issue Date: 03/24/2005

Expiration: 03/24/2010

All Title I Conditions do not expire.

Major Amendment

Issue Date: May 17, 2006

Richard J. Sandberg, Manager
Air Quality Permits Section
Industrial Division

for Sheryl A. Corrigan
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements. Certain requirements which have been determined not to apply are listed in Table A of this permit.

FACILITY DESCRIPTION:

This facility produces glass products for use at other 3M facilities and other customers.

Emissions result from handling the raw materials in the form of bulk powders, from fuel combustion, and from production processes. Natural gas is the primary fuel, with propane for backup. Direct electrical heating is also used.

Emission units include storage silos for the raw materials, blenders, furnaces, milling, final product forming, and packaging. All emission units emit some particulate matter. Fuel-burning units also emit nitrogen oxides and carbon monoxide and very small amounts of sulfur dioxide and volatile organic compounds.

Permit Action 003:

This permit action authorizes 3M to construct a new 99 percent control efficient baghouse (CE 034) to replace an existing baghouse (CE 004) to control emissions from Former 20 (EU 004). The existing baghouse (CE 004) will be used to replace a 95 percent efficient electrostatic precipitator for Former 18 (EU 003). This permit action also authorizes 3M to modify the permit recordkeeping language for EU 022, EU 024, and EU 026.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives
 Permit Number: 16300002 - 003

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
EMISSION CAP LIMITS	hdr
<p>Total Particulate Matter: less than or equal to 110 tons/year using 12-month Rolling Sum to be calculated by the 21st day of each month for the previous 12-month period as described later in this permit.</p> <p>All Total Particulate Matter (TPM)-emitting equipment is subject to this limit. If the Permittee replaces any TPM-emitting equipment, adds new TPM-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>
<p>Sulfur Dioxide: less than or equal to 120 tons/year using 12-month Rolling Sum to be calculated by the 21st day of each month for the previous 12-month period as described later in this permit.</p> <p>All sulfur dioxide (SO₂)-emitting equipment is subject to this limit. If the Permittee replaces any SO₂-emitting equipment, adds new SO₂-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>
<p>Nitrogen Oxides: less than or equal to 135 tons/year using 12-month Rolling Sum to be calculated by the 21st day of each month for the previous 12-month period as described later in this permit.</p> <p>All nitrogen oxides (NO_x)-emitting equipment is subject to this limit. If the Permittee replaces any NO_x-emitting equipment, adds new NO_x-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

<p>Volatile Organic Compounds: less than or equal to 110 tons/year using 12-month Rolling Sum of total mass of VOC to be calculated by the 21st day of each month for the previous 12-month period as described later in this permit.</p> <p>All volatile organic compound (VOC)-emitting equipment is subject to this limit. If the Permittee replaces any VOC-emitting equipment, adds new VOC-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit and all of the requirements under EMISSION CAP LIMITS listed as Total Facility requirements. Prior to making the change, the Permittee shall apply for and obtain the appropriate permit amendment. The Permittee is not required to repeat the calculations described in Minn. R. 7007.1200, subp. 2.</p> <p>A permit amendment is needed regardless of the emissions change if the change will be subject to new applicable requirements or requires revisions to the limits or monitoring and recordkeeping in this permit. Changes to existing monitoring, recordkeeping or reporting requirements require a major amendment.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>
<p>Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain records of the total quantity of all materials processed or used at the facility which result in emission of PM, PM10, SO2, NOx, or VOC. As an alternative, the Permittee may record hours of operation of emitting units. The records must provide adequate data to calculate emissions of PM, PM10, SO2, NOx, and VOC.</p>	<p>Title I Condition: Recordkeeping limit to avoid classification as a major source under 40 CFR Section 52.21</p>
<p>Monthly Recordkeeping: By the 21st day of each month, the Permittee shall calculate and record the PM, PM10, SO2, NOx, and VOC emissions for the previous month and the 12-month rolling sum emissions for the previous 12 month period by summing the monthly emissions data for the previous 12 months.</p>	<p>Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21</p>
<p>Insignificant Activities: The Permittee shall evaluate the emissions from changes made under Minn. R. 7007.1300 on a monthly basis, and shall include emissions from Insignificant Activities in the monthly rolling sum.</p>	<p>Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21</p>
<p>The Permittee shall not begin construction of any single project or projects that are connected or phased which will cause a total increase in actual emissions of greater than 99 tons per year for any criteria pollutant without first getting a permit amendment to authorize the project. Connected and phased have meanings as defined in Minn. R. 4410.0200 subps. 9b and 60. The Permittee shall not begin construction of any other project which is listed in Minn. R. 4410,4300 or Minn. R. 4410.4400 without first getting a permit amendment to authorize the project. Such projects may require the completion of an Environmental Assessment Worksheet or an Environmental Impact Statement prior to the amendment being issued. this is a state only requirement and is not federally enforceable.</p>	<p>Minn. R. 4410.4300 and Minn. R. 4410.4400</p>
<p>OPERATIONAL REQUIREMENTS</p>	<p>hdr</p>
<p>Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.</p>	<p>Minn. R. 7011.0020; 40 CFR Section 52.1222</p>
<p>Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.</p>	<p>Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)</p>
<p>Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and shall include a preventative maintenance program for that equipment, a description of the minimum but not necessarily the only corrective actions to be taken to restore the equipment to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment, and the records kept to demonstrate plan implementation.</p>	<p>Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)</p>
<p>Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.</p>	<p>Minn. R. 7019.1000, subp. 4</p>
<p>Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.</p>	<p>Minn. R. 7011.0150; 40 CFR Section 52.1222</p>
<p>Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.</p>	<p>Minn. R. 7030.0010 - 7030.0080</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A); 40 CFR Section 70.6(c)(2)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16; 40 CFR Section 70.6(a)(4), (5), and (6)
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A or B.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D); 40 CFR Section 70.6(a)(3)(i)(C)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D); 40 CFR Section 70.6(a)(3)(i)(C)
RECORDKEEPING	hdr
Recordkeeping: Retain all records required by this permit for a period of at least five (5) years from the date of monitoring, sample, measurement, or report. Records shall be retained at the stationary source for at least two (2) years, after which they may be transferred to and retained at the 3M Center for at least three (3) years. Records which must be retained at this location for at least two (2) years include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C); 40 CFR Section 70.6(a)(3)(ii)(B)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Recordkeeping: Maintain records describing any changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B); 40 CFR Section 70.4(b)(12)
REPORTING and SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3; 40 CFR Section 52.1222

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-4

05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	<p>Minn. R. 7019.1000, subp. 2; 40 CFR Section 52.1222</p>
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	<p>Minn. R. 7019.1000, subp. 1; 40 CFR Section 52.1222</p>
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. 	<p>Minn. R. 7019.1000, subp. 1; 40 CFR Section 52.1222</p>
<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>	<p>Minn. R. 7007.1150 through Minn. R. 7007.1500; 40 CFR Section 70.7(d) and (e)</p>
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	<p>Minn. R. 7007.1400, subp. 1(H); 40 CFR Section 70.7(d)(1)(vi)</p>
<p>Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.</p>	<p>Minn. R. 7019.3000 through Minn. R. 7019.3010; 40 CFR Section 52.1222</p>
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	<p>Minn. R. 7002.0005 through Minn. R. 7002.0095</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-5

05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 001 #2 Furnace**Associated Items:** SV 001 050 Vent for #2 Furnace

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Fuel: Natural gas	Minn. R. 7007.0800, subp. 2
Performance Test: due 30 days after Resuming Operation after permit issuance	Minn. R. 7017.2020, subp. 1
Performance Test Notifications and Submittals; Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-Test Meeting: due 7 day before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 day after each Performance Test. The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subp. 1-2

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-6

05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 002 #8 Flash Dryer**Associated Items:** CE 001 Centrifugal Collector - High Efficiency

SV 002 051 Vent for Centrifugal Collector for #8 Flash Dryer

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent of Minn. R. 7011.0730 or Minn. R. 7011.0735	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 003 Glass Bubble Maker #18

Associated Items: CE 004 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 003 052 Vent for Fabric Filter for Former 18

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the filter at all times that any emission unit controlled by the filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 30 inches of water column , unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 004 Glass Bubble Maker #20

Associated Items: CE 034 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 004 054 Vent for fabric Filter for Former 20

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.0675 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Title I Condition: Limit to comply with 40 CFR Part 51, Appendix S; Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the filter at all times that any emission unit controlled by the filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 30 inches of water column , unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 005 Glass Bubble Maker #21

Associated Items: CE 005 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 005 055 Vent for Fabric Filter for Former 21

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.0675 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Title I Condition: Limit to comply with 40 CFR Part 51, Appendix S; Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 30 inches of water column , unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-10

05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 022 Glass Furnace #74-04A**Associated Items:** CE 024 Fabric Filter - High Temperature, i.e., T>250 Degrees F

SV 007 065 Vent for Fabric Filter for Reject Hopper, Remelt Feeder, and Glass Furnace

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.01 grains/dry standard cubic foot applicable during electric heating	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
EU022 and EU023 cannot operate simultaneously. EU022 represents normal production operation with electric heating.	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21
Production limit: The emission unit shall be operated at an hourly production rate less than or equal to 3,530 lb/h, calculated as a daily average as specified below, unless a new range is set by permit reopening or permit amendment, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Minn. R. 7017.2025, subp. 3(C)
Recordkeeping: The Permittee shall maintain records of the weight of each product container and hours of production in each 24-hour period. By the 21st day of each month, the Permittee shall calculate an average pounds/hour production rate for each calendar day in the previous month from this data.	Minn. R. 7007.0800. subp. 4(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-11

05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 023 Glass Furnace #74-04B**Associated Items:** SV 008 066 Vent for Bypass for Glass Furnace

What to do	Why to do it
EU022 and EU023 cannot operate simultaneously. EU023 bypass is used only during warmup of this unit with natural gas. No raw materials are fed to this unit during this time.	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21
Fuel Usage: less than or equal to 2.88 million cubic feet/year using 12-month Rolling Sum using only natural gas for fuel for startup. Electric heating is used for normal operation after startup.	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21
Daily Recordkeeping. For each day of operation with natural gas, the Permittee shall record the total quantity of natural gas used. By the 21st day of each month, the Permittee shall calculate and record the 12-month rolling sum of natural gas used during the previous 12 months.	Title I Condition: recordkeeping for limit to avoid classification as a major source under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 024 Fritting Systems #74-05

Associated Items: CE 025 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 009 067 Vent for Fabric Filter for Fritting System

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.014 grains/dry standard cubic foot	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Production limit: The emission unit shall be operated at an hourly production rate less than or equal to 3,530 lb/h, calculated as a daily average as specified below, unless a new range is set by permit reopening or permit amendment, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Minn. R. 7017.2025, subp. 3(C)
Recordkeeping: The Permittee shall maintain records of the weight of each product container and hours of production in each 24-hour period. By the 21st day of each month, the Permittee shall calculate an average pounds/hour production rate for each calendar day in the previous month from this data.	Minn. R. 7007.0800, subp. 4(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 10 inches of water column, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 025 Impact Mill

Associated Items: CE 026 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 010 068 Vent for Fabric Filter for Impact Mill

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.016 grains/dry standard cubic foot	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 10 inches of water column , unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 026 Agglomerator System #74-04

Associated Items: CE 027 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 011 069 Vent for Fabric Filter for Cyclone and Dryer/Agglomerator System

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.029 grains/dry standard cubic foot	Title I Condition: limit to avoid classification as a major source under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Production limit: The emission unit shall be operated at an hourly production rate less than or equal to 5,980 lb/h, calculated as a daily average as specified below, unless a new range is set by permit reopening or permit amendment, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Minn. R. 7017.2025, subp. 3(C)
Recordkeeping: The Permittee shall maintain records of the weight of each product container and the hours of production in each 24-hour period. By the 21st day of each month, the Permittee shall calculate an average pounds/hour production rate for each calendar day in the previous month from this data.	Minn. R. 7007.0800, subp. 4(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 10 inches of water column, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-15

05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: EU 034 Emergency Backup Generator #55**Associated Items:** SV 012 073 Vent for Emergency Generator

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . This limit is met with fuel oil containing less than or equal to 0.5 % sulfur by weight.	Minn. R. 7011.2300, subp. 2
Fuel Supplier Certification: Obtain and maintain a fuel supplier certification for each shipment of No. 2 fuel oil, certifying the Sulfur Content of Fuel: less than or equal to 0.5 percent by weight	Minn. R. 7007.0800, subps. 4 & 5
Hours of Operation: The Permittee shall maintain documentation of hours of operation on site that the unit is an emergency diesel generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, based on operation of no more than 500 hours per year.	Minn. R. 7007.0800, subp. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

Associated Items: EU 007 Adds Blend to Former

EU 008 Adds Blend to Former

EU 009 Transfers Raw Materials

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 6.34 lbs/hour	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 10 inches of water column , unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

Subject Item: CE 024 Fabric Filter - High Temperature, i.e., T>250 Degrees F

Associated Items: EU 021 Holds Rejected Raw Material

EU 022 Glass Furnace #74-04A

EU 035 Reject Hopper Material Collection

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.01 grains/dry standard cubic foot	Title I Condition: limit to avoid classification as a major source or major modification under 40 CFR Section 52.21; most stringent, meets limit set by Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL EQUIPMENT REQUIREMENTS	hdr
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 10 inches of water column , unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every day when in operation.	Title I Condition: Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.	Title I Condition: Monitoring for Limit taken to avoid classification as a major source or major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 4 and 5

TABLE B: SUBMITTALS

B-1 05/17/06

Facility Name: 3M Cottage Grove Specialty Additives
Permit Number: 16300002 - 003

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

B-2 05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Protocol	due 365 days after 03/24/2005 for PM10, covering all 3M Cottage Grove facilities receiving a Part 70 permit. This protocol will describe the proposed modeling methodology and input data, in accordance with MPCA modeling guidance for Title V air dispersion modeling analyses. This is a state-only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility
Computer Dispersion Modeling Results	due 180 days after receipt of written MPCA approval covering all 3M Cottage Grove facilities receiving a Part 70 permit. The submittal should adhere to MPCA modeling guidance for Title V air dispersion modeling analyses. This is a state-only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility

TABLE B: RECURRENT SUBMITTALS

B-3 05/17/06

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002 - 003

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 03/24/2005 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 03/24/2005 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: 3M Cottage Grove Specialty Additives

Permit Number: 16300002-003

Appendix I – Insignificant Activities

As described in instructions for IA-01

G: quality control laboratory

H(1): less than 200 gallons VOC use

H(3): hydraulic and hydrostatic testing equipment

H(4): brazing, soldering, and welding equipment

Minn. R. 7007.100, 3D(2)

Blenders, EU031, EU032

Bins, EU029, 030

Mill product collection, EU036

Nuisance dust system, EU027, EU028

Reject hopper, EU035

#2 blending system

Offline packaging systems, EU010, EU011, EU038

Floated products line

Remelt transport, EU037

Weigh hoppers

Required to be listed in Part 70 permits

Product collection

Raw material handling

Dryer

Input hopper

Packaging room

Powder pusher

Bag baler

Frit product collection

Product collection (2)

Additive bag feeders (2)

Weigh hopper

Silica weigh hopper

ESP dust transport

charging and weighing

trailer loading

silica storage silo

blender

furnace hopper

lime storage silo, EU018

product storage silos, EU013, EU014

raw material bins, EU019

bag dump stations, EU020

reject hopper material collection, EU021

Insignificant Activities – Periodic Monitoring

The Permittee listed several current insignificant activities in the permit application and supplemental submittals, as noted in Table 6. The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities, and likely future ones, that might be located at this site.

Table 6. Insignificant Activities

Insignificant Activity	Currently on site? (Y/N)	General Applicable Emission limit	Discussion
Space heaters fueled by kerosene, natural gas or propane	Y	PM, variable depending on airflow Opacity ≤ 20% with exceptions (Minn. R. 7011.0610)	For these units based on the fuels used and published emissions factors, it is highly unlikely that they could violate the applicable requirement. These units are vented inside a building, so testing is not feasible.
Fuel use in furnaces or boilers with a capacity of less than 500,000 Btu/hr.	Y	PM ≤ 0.4 lb/MMBtu Opacity ≤ 20 % (Minn. R. 7011.0610)	For these units based on the fuels used and EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are operated and vented inside a building, so testing for PM or opacity is not feasible.
Infrared electric ovens	N	Opacity ≤ 20% (Minn. R. 7011.0110)	While no emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate visible emissions. In addition, these units would be operated and vented directly into the building, so monitoring or testing is not feasible.
Emissions from laboratory operations, as defined in Minn. R. 7007.1300, subp. 3(G)	Y	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0715)	These are very small, intermittent, bench-top operations that typically do not even have any emissions. It is highly unlikely that they could violate the applicable requirement.
Brazing, soldering or welding equipment	Y	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are operated and vented inside a building, so testing for PM or opacity is not feasible.
Blueprint copiers and photographic processes	N	Opacity ≤ 20% (Minn. R. 7011.0110)	While no emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that

Insignificant Activity	Currently on site? (Y/N)	General Applicable Emission limit	Discussion
			they could generate visible emissions. In addition, these units would be operated and vented directly into the building, so monitoring or testing is not feasible.
Cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners	Y	PM, variable depending on airflow Opacity \leq 20% (Minn. R. 7011.0610 + Minn. R. 7011.0715)	For these units, there are some factors available for the burners, but very little information regarding the cleaning operation itself. However, based on general knowledge of how they operate, it is highly unlikely that they could violate the applicable requirement or that testing would be feasible.
Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities	N	PM, variable depending on airflow or process weight rate Opacity \leq 20% (Minn. R. 7011.0715)	While spray equipment will have the potential to emit particulate matter, these particular activities are those not associated with production, so they would be infrequent and usually occur outdoors. Testing or monitoring is not feasible.
Individual units that have potential emissions of less than 2.28 lb/hr of various criteria pollutants and less than certain thresholds of HAPs.	Y	PM \leq 0.4 lb/MMBtu Opacity \leq 20 % (Minn. R. 7011.0515) or PM, variable depending on airflow Opacity \leq 20% (Minn. R. 7011.0715)	Based on calculations provided by the Permittee (see Attachment 3), it is highly unlikely that they could violate the applicable requirement. In addition, these units are operated and vented inside a building, so testing for PM or opacity is not feasible.

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 16300002-003

This Technical Support Document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 3229)
3M I-94 & McKnight Road St. Paul, MN 55133-3331	Chemolite Boulevard, Building 111 Cottage Grove Washington County
Contact: Tina Mumm, Senior Environmental Engineer Phone: (651) 778-5036	

1.2. Description of the Facility

This facility manufactures specialty glass products. Specialty Additives (Buildings 74, 101 and 110), Building 112, and Building 19 are all classified in SIC 32xx and thus comprise a single stationary source for PSD purposes.

1.3 Description of the Activities Allowed by this Permit Action

3M has requested limits on the potential-to-emit for each of these facilities so that the total PTE is less than 250 tons/year. Each 3M permit for the facilities in the table below will include a provision that allows new emission units to be installed, or existing units to be modified, usually under the Minor or Moderate Amendment process (depending on hourly emissions). Modifications may also qualify as Insignificant based on hourly emissions. The federal NSR regulations do not apply as long as total facility emissions are less than the facility-wide limits.

3M must apply for a major amendment if there is a significant change in monitoring, recordkeeping or reporting.

	Building 112		Building 74, 101, 110		Building 19	
Pollutant	Proposed FlexCap Limit	Actual Emissions	Proposed FlexCap Limit	Actual Emissions	Proposed FlexCap Limit	Actual Emissions
PM	100 tons/yr	10	110	12	30	1
SO2	90	1	120	30	NA	0
NOx	110	32	135	55	NA	0
VOC	90	1	110	20	45	1

Building 19 is a small production facility for abrasive media, such as disks, that are used for fine grinding such as polishing. A separate Part 70 permit application has been submitted for Building 19.

With this permit action, 3M is proposing to construct new 99 percent control efficient baghouse (CE 034) to replace an existing baghouse (CE 004) to control emissions from Former 20 (EU 004). The existing baghouse (CE 004) will be used to replace a 95 percent efficient electrostatic precipitator for Former 18 (EU 003). 3M is also proposing to modify the permit recordkeeping language for EU 022, EU 024, and EU 026.

2. Regulatory and/or Statutory Basis

New Source Review

Prevention of Significant Deterioration (PSD) uses two different thresholds for major source status, 100 or 250 tons per year, depending on the type of industry. The underlying definition of stationary source for PSD requires grouping all facilities under common ownership or control which are on contiguous or adjacent property **and which also have the same first two-digit SIC Code**. Facilities with different SIC Codes are aggregated into a single source if one is considered a support facility to the other(s). At Cottage Grove, Specialty Additives is classified in SIC Code 32xx as are Buildings 112 and 19.

None of the facilities at Cottage Grove qualifies as a support facility to any other, since no facility provides 50 percent or more of its products or services to any other facility at this location. The Corporate Incinerator incinerates wastes from 3M facilities nationwide. The utilities plant is primarily a wastewater treatment plant that receives some wastewater from all facilities at this location.

SIC Codes currently assigned to the Cottage Grove operations are:

Building No.	MPCA File No.	Delta ID	SIC
74, 101, & 110	23AS	16300002	3229
112, Abrasives	23AX	16300017	3291
17 - Auto	23AH	16300065	2297
17 - Film	23AF	16300023	3081
133 - TCM	23AT	16300059	3993
Utilities (wastewater)	23AB	16300015	4952
Corporate Incinerator	23AI	16300025	4953
3, 4, 6, 7, 11, 15, 16, 25, 70, 73 - SMD chem.	23AC	16300022	2891
102 – Tape/TPTC	23AE	16300080	2672

Buildings 74+101+110 together with Building 112 and Building 19 is considered a single stationary source for PSD, subject to the 250 ton/year threshold.

Part 70 Permit Program

A major source for this program is one which has the PTE 100 tons per year or more of any air pollutant, or which is a major source under the HAP program. The entire Cottage Grove facility is a major source under Part 63 and therefore is a major source for purposes of Part 70.

New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility. The main glass furnace is electrically heated when in production and thus is not subject to the NSPS. The other glass furnace was constructed before the effective date of the NSPS.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

For this program, all emission units under common ownership or control and on contiguous or adjacent properties must be grouped together and considered a single stationary source. This single source is considered a major source if it has the potential-to-emit (PTE) 10 tons per year or more of any HAP, or 25 tons per year or more of all HAP added together. The entire Cottage Grove center constitutes a contiguous area under the ownership and control of 3M and exceeds the thresholds, so it is a major source of HAP. Specialty Additives is thus considered a part of a major source for HAPs.

Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines

Table 1. Regulatory Overview of Units Affected by the Modification/Permit Amendment

EU, GP, or SV	Applicable Regulations	Comments:
EU 003: Glass Bubble Maker #18	Title I Condition taken to avoid major source classification under 40 CFR § 52.21	PM/PM ₁₀ control efficiency limits for a baghouse. Pressure drop limit used as a surrogate to demonstrate compliance with PM/PM ₁₀ control efficiency limit.
EU 004: Glass Bubble Maker #20	Title I Condition taken to avoid major source classification under 40 CFR § 52.21	PM/PM ₁₀ control efficiency limits for a baghouse. Pressure drop limit used as a surrogate to demonstrate compliance with PM/PM ₁₀ control efficiency limit.
EU 022: Glass Furnace #7404A	Minn. R. 7017.2025, subp. 3(C)	Production limit used as a surrogate for determining compliance with emissions limits for PM and Opacity.
EU 024: Fritting Systems #74-05	Minn. R. 7017.2025, subp. 3(C)	Production limit used as a surrogate for determining compliance with emissions limits for PM and Opacity.
EU 026: Agglomerator System #74-04	Minn. R. 7017.2025, subp. 3(C)	Production limit used as a surrogate for determining compliance with emissions limits for PM and Opacity.

3. Technical Information

Calculations of Potential to Emit

There is no increase in emissions associated with this permit action.

3.2 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 2. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
EU 003: Glass Bubble Maker #18	PM and Opacity Limits; pressure drop limits	Recordkeeping of pressure drop.	Verification that pressure drop across a baghouse is within the range specified during the most recent performance test where compliance is demonstrated is adequate assurance that PM/PM ₁₀ limits are met.
EU 004: Glass Bubble Maker #20	PM and Opacity Limits; pressure drop limits	Recordkeeping of pressure drop.	Verification that pressure drop across a baghouse is within the range specified during the most recent performance test where compliance is demonstrated is adequate assurance that PM/PM ₁₀ limits are met.
EU 022: Glass Furnace #7404A	Production limit	Recordkeeping of the weight of each product container and the hours of production in each 24-hour period.	Recordkeeping of the weight of each product container and hours of production ensures compliance with the production limit.
EU 024: Fritting Systems #74-05	Production limit	Recordkeeping of the weight of each product container and the hours of production in each 24-hour period.	Recordkeeping of the weight of each product container and hours of production ensures compliance with the production limit.
EU 026: Agglomerator System #74-04	Production limit	Recordkeeping of the weight of each product container and the hours of production in each 24-hour period.	Recordkeeping of the weight of each product container and hours of production ensures compliance with the production limit.

3.3 Insignificant Activities

Specialty Additives has several operations which are classified as insignificant activities. These are listed in Appendix I to the permit.

3.4 Comments Received

Public Notice Period: March 30, 2006 – April 28, 2006

U.S. Environmental Protection Agency's 45-day Review Period: March 30, 2006 – May 15, 2006

Comments were not received from the public during the public notice period.

4. Conclusion

Based on the information provided by 3M, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 16300002-003, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Elisabeth Freymiller (permit writer/engineer)
 Bob Berg (Enforcement)
 Curt Stock (stack testing)
 Dave Beil (peer reviewer)

Attachments: 1. Facility Description and CD-01 Forms