

**AIR EMISSION PERMIT NO. 04100003- 001**

**IS ISSUED TO**

**3M**

3M - Alexandria  
2115 South Broadway  
Alexandria, Douglas County, MN 56308

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
Total Facility Operating Permit	June 1995; Revised September 2002

This permit authorizes the permittee to operate 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 as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** Federal; Part 70

**Issue Date:** April 7, 2003

**Expiration:** April 7, 2008

All Title I Conditions do not expire.

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Michael (Mike) J. Tibbetts  
Major Facilities Section Manager  
Majors and Remediation 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. 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 description of 3M Alexandria of operations at the time of permit issuance is intended for reference and does not constitute permit conditions. 3M Alexandria began operation in 1967. It currently employs 298 people on 47 acres of property. The facility manufactures abrasive products such as sanding belts and sanding discs. In addition, the facility converts intermediate materials from other 3M plants into saleable abrasive products and also provides intermediate products to other 3M Abrasive Plants.

The facility production areas include abrasive coating/treating lines, a Specialty Abrasive Product Line, Sierra Lines, and Converting Areas. The two abrasive coating/treating lines make the abrasive backings for sanding belts and discs. The Specialty Abrasive Product Line makes specialty abrasive products for fine metal polishing. The Sierra lines makes only sanding discs. In the Converting Areas the abrasive backings are converted into various sizes of belts (small, medium and wide belts) and discs.

The typical abrasive product construction is a backing material, water-based phenolic resins, and mineral. On the treating lines, the backing is coated with the multiple coatings and sometimes mineral and then dried in ovens. The abrasive backing is then converted into discs and belts onsite or it is shipped to another 3M location. Belts are spliced together using a solvent-based adhesive. Volatile Organic Compound emissions are primarily from coatings and belt splice adhesive. The facility also has various dust collection units in the converting areas, and gas ovens and boilers.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria  
 Permit Number: 04100003 - 001

**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
PENDING NESHAPS	hdr
Comply with the "Miscellaneous Organic Chemical Production and Processes" category standard, as it applies, after promulgation as a final rule.	40 CFR 63, subp. FFFF
Comply with the "Industrial Boilers" category standards, as it applies, after promulgation as a final rule.	40 CFR pt. 63, subp. DDDDD
By the date specified in 40 CFR 63.52(e) (proposed by EPA on December 9, 2002, 67 Fed. Reg. 72875), or other date subsequently specified by EPA, submit to the MPCA a Part 2 MACT Hammer notification meeting the requirements of 40 CFR Section 63.53(b).	40 CFR Section 63.52(e)
PROMULGATED NESHAP	hdr
Comply with the "Paper and Other Webs Coating" category standards as it applies, by the compliance date of December 5, 2005. Complete performance testing required in 40 CFR 63.3360 within 180 days of the compliance date. On or before December 5, 2004, provide information on which compliance demonstration option has been chosen for the "affected source" per 40 CFR 63.3400(b)(1)	40 CFR pt. 63, subp. JJJJ
OPERATIONAL REQUIREMENTS	hdr
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, subp. 9b and 60, respectively. Such projects may require the completion of an Environmental Worksheet or an Environmental Impact Statement prior to the amendment being issued. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 4410.4300 and Minn. R. 4410.4400
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.	Minn. R. 7011.0020
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment exhausting to the outdoor atmosphere. At a minimum, the O & M plan shall identify all air pollution control equipment exhausting to the outdoor atmosphere 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.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation that could endanger human health or the environment, 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.	Minn. R. 7019.1000, subp. 4
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.	Minn. R. 7011.0150
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.	Minn. R. 7030.0010 - 7030.0080
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)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/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	Minn. R. 7017.2030, subp. 1-4 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
<b>MONITORING REQUIREMENTS</b>	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)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A and/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)
Air Pollution Control Equipment: Operate all pollution control equipment exhausting to the outdoor atmosphere whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
<b>MODELING REQUIREMENTS</b>	hdr
Modeling information for 3M Alexandria was provided in the permit application in form MI-01. Further modeling is not required unless requested by the MPCA.	Minn. R. 7007.0800, subp. 2; MPCA Modeling Guidance for Title V Air Dispersion Modeling, August 10, 2001
<b>RECORDKEEPING</b>	hdr
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sampling, measurement, or report. Records which must be retained at this location include all calibration and maintenance records specified in this permit, 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)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or 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)
<b>REPORTING/SUBMITTALS</b>	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
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.  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.	Minn. R. 7019.1000, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

<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</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"> <li>1. the cause of the deviation;</li> <li>2. the exact dates of the period of the deviation, if the deviation has been corrected;</li> <li>3. whether or not the deviation has been corrected;</li> <li>4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and</li> <li>5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.</li> </ol>	<p>Minn. R. 7019.1000, subp. 1</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</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)</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</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**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

**Subject Item: GP 001 Boilers**

**Associated Items:** EU 030 Boiler B-1

EU 031 Boiler B-2

EU 032 Boiler B-3

EU 033 Boiler B-4

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input . This limit applies separately to each boiler. The potential to emit based on equipment design and allowable fuels is 0.014 lb/MMBtu.	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies separately to each boiler.	Minn. R. 7011.0510, subp. 2
The Permittee is authorized to burn natural gas as a primary fuel and No. 2 Fuel Oil as a back-up fuel.	Minn. R. 7011.0510
No. 2 Fuel Oil, Sulfur Content of Fuel: less than or equal to 0.5 percent by weight	Minn. R. 7007.0800, subp. 2
Visible Emissions: The Permittee shall check the boiler stacks for visible emissions (VE) once each day of operation during daylight hours when burning No. 2 Fuel Oil. A non-certified reader may conduct the qualitative VE check. If visible emissions are observed, the Permittee shall: a) take the corrective actions specified in the O&M plan to eliminate the visible emissions within 24 hours of the observation, and b) if visible emissions are not corrected within 24 hours of the observation this will be noted as a "deviation" in the semiannual deviation report.	Minn. R. 7011.0510
Fuel Records: The Permittee shall obtain and maintain a certification from the fuel oil supplier for each fuel oil delivery specifying the sulfur content of the fuel oil in percent by weight.	Minn. R. 7007.0800, subp. 5
Comply with "Industrial Boilers" category standards, as it applies, after promulgation as a final rule.	40 CFR pt. 63, subp. DDDDD



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

**Subject Item: GP 002 Direct Heating Equipment**

- Associated Items:** EU 008 Wide Maker Oven  
 EU 022 Cloth Coater Treater Oven  
 EU 029 Coater Cure Oven 2  
 EU 044 Sierra 1 Make Oven  
 EU 045 Sierra 1 Size Oven  
 EU 048 Sierra 2 Make Cure Oven  
 EU 050 Sierra 2 Size Cure Oven

What to do	Why to do it
MINNESOTA RULES	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. This limit applies separately to each unit.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies separately to each unit.	Minn. R. 7011.0610, subp. 1(A)(2)
The Permittee shall burn only natural gas in the Group 2 emission units.	Minn. R. 7011.0610

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

**Subject Item: GP 003 Sierra #1 Process Equipment****Associated Items:** EU 041 Sierra Maker Coater

EU 042 Mixstation

EU 043 Sierra 1 Size Coater

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 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

**Subject Item: GP 004 Sierra #2 Process Equipment****Associated Items:** EU 046 Sierra 2 Mixroom

EU 047 Sierra 2 Make Coater

EU 049 Sierra 2 Size Coater

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 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria  
 Permit Number: 04100003 - 001

**Subject Item: GP 005 Miscellaneous Process Equipment**

- Associated Items:** EU 001 Large Mixer A  
 EU 002 Large Mixer B  
 EU 003 Large Mixer C  
 EU 004 Large Mixer D  
 EU 005 Large Mixer E  
 EU 006 Coater Room  
 EU 007 Counter Coater  
 EU 012 Belt Adhesive Mix Room  
 EU 013 Medium Belt Making  
 EU 014 Wide Belt Making  
 EU 015 Butt Splice Coater  
 EU 016 Mix Tank D, 1092  
 EU 017 Mix Tank C, 1093  
 EU 018 Mix Tank B, 1904  
 EU 019 Mix Tank A, 1095  
 EU 020 Mix Tank E  
 EU 021 Cloth Coater Treater

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 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria  
 Permit Number: 04100003 - 001

**Subject Item: GP 006 Subpart JJJJ NESHAP Units**

- Associated Items:**
- EU 001 Large Mixer A
  - EU 002 Large Mixer B
  - EU 003 Large Mixer C
  - EU 004 Large Mixer D
  - EU 005 Large Mixer E
  - EU 006 Coater Room
  - EU 007 Counter Coater
  - EU 008 Wide Maker Oven
  - EU 015 Butt Splice Coater
  - EU 016 Mix Tank D, 1092
  - EU 017 Mix Tank C, 1093
  - EU 018 Mix Tank B, 1904
  - EU 019 Mix Tank A, 1095
  - EU 020 Mix Tank E
  - EU 021 Cloth Coater Treater
  - EU 022 Cloth Coater Treater Oven
  - EU 029 Coater Cure Oven 2
  - EU 041 Sierra Maker Coater
  - EU 042 Mixstation
  - EU 043 Sierra 1 Size Coater
  - EU 044 Sierra 1 Make Oven
  - EU 045 Sierra 1 Size Oven
  - EU 046 Sierra 2 Mixroom
  - EU 047 Sierra 2 Make Coater
  - EU 048 Sierra 2 Make Cure Oven
  - EU 049 Sierra 2 Size Coater
  - EU 050 Sierra 2 Size Cure Oven

What to do	Why to do it
Paper and Other Web Coating NESHAP - Comply with the standards in 40 CFR 63.3370 beginning on December 5, 2005 for the "affected source". The Subpart JJJJ "affected source" includes the following: EU 006 - 008 (Wide Maker Treater); EU 021 - 022 (Cloth Treater); EU 015 (Butt Splice Coater); EU 029, EU 041, EU 043 - 045 (Sierra #1); EU 047 - 050 (Sierra #2; and IA 009 (Trizact Line). The Subpart JJJJ "affiliated operations" include: EU 001 - 005; EU 016 - 020; EU 042; EU 046; and IA 009 (Trizact Mixing).	40 CFR 63.3370
Paper and Other Web Coating NESHAP - On or before December 5, 2004, provide information on which compliance demonstration option has been chosen for the "affected source" per 40 CFR 63.3400(b)(1)	40 CFR 63.3370

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

**Subject Item: EU 034 Prism Beltmaking Line**

<b>What to do</b>	<b>Why to do it</b>
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 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission unit listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

**TABLE B: SUBMITTALS**

04/07/03

Facility Name: 3M - Alexandria  
Permit Number: 04100003 - 001

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:

Permit Technical Advisor  
Permit Section  
Air Quality 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:

Supervisor  
Compliance Determination Unit  
Air Quality 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**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility



**TABLE B: RECURRENT SUBMITTALS**

04/07/03

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 001

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. 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 following Permit Issuance (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 - Alexandria

Permit Number: 04100003-001

## **APPENDIX A**

### List Of Insignificant Activities

## **APPENDIX B**

### Facility Emissions

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 04100003-001**

This technical support document is for all the interested parties of the draft permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

**1. General Information**

1.1. Applicant and Stationary Source Location.

Owner and Operator Address and Phone Number	Facility Address (SIC Code: 3291)
3M Company	2115 South Broadway Street
P.O. Box 3333, Building 42-2E-27	Alexandria
St. Paul, Minnesota 55133	Douglas County

1.2. Description of the facility

3M Alexandria began operation in 1967 and today employs 298 people on 47 acres of property. The facility manufactures abrasive products such as sanding belts and sanding discs. In addition, the facility converts intermediate materials from other 3M plants into saleable abrasive products and also provides intermediate products to other 3M Abrasive Plants.

The facility production areas include abrasive coating/treating lines, a Specialty Abrasive Product Line, Sierra Lines, and Converting Areas. The two abrasive coating/treating lines make the abrasive backings for sanding belts and discs. The Specialty Abrasive Product Line makes specialty abrasive products for fine metal polishing. The Sierra lines makes only sanding discs. In the Converting Areas the abrasive backings are converted into various sizes of belts (small, medium and wide belts) and discs.

The typical abrasive product construction is a backing material, water-based phenolic resins, and mineral. On the treating lines, the backing is coated with the multiple coatings and sometimes mineral and then dried in ovens. The abrasive backing is then converted into discs and belts onsite or it is shipped to another 3M location. Belts are spliced together using a solvent-based adhesive. Volatile Organic Compound emissions are primarily from coatings and belt splice adhesive. The facility also has various dust collection units in the converting areas, and gas ovens and boilers.

1.3. Description of any changes allowed with this permit issuance.

This permit allows the installation of the Sierra 2 abrasive coating/treating line and a size oven unit for the Sierra 1 abrasive coating/treating line. Emissions from these units are well below the New Source Review significant thresholds. These units will be installed in 2003.

1.4. Description of all amendments issued since the issuance of the last total facility permit and to be included in the Part 70 Permit.

Permit Number and Issuance Date	Action Authorized
Amendment No. 1 to Permit No. 23M-88-OT-1; 6/4/90	Replacement of a bag filter with a high efficiency cyclone. The emission unit that this control equipment controls is now an insignificant activity.
Amendment No. 2 to Permit No. 23M-88-OT-1; 11/15/94	Installation and operation of an abrasive product line. This process has since been permanently removed.
Amendment No. 3 to Permit No. 23M-88-OT-1; 6/26/97	Removed material usage limitations from the extruder, and added a new VOC limit. This process has since been permanently removed.
Amendment No. 4 to Permit No. 23M-88-OT-1; 10/28/97	Allowed installation of a new automated butt splice coating machine and an associated parts cleaning machine. This process has since been permanently removed.

1.5. Facility Emissions.

Table 1. Total Facility Potential to Emit Summary

EU #	Emission Unit Description	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
001	Large Mixer A	-	-	-	-	-	7.87	6.12	7.8
002	Large Mixer B	-	-	-	-	-	7.87	6.12	7.8
003	Large Mixer C	-	-	-	-	-	7.87	6.12	7.8
004	Large Mixer D	-	-	-	-	-	7.87	6.12	7.8
005	Large Mixer E	-	-	-	-	-	7.87	6.12	7.8
006	Coater Room	-	-	-	-	-	35.4	7.87	35.4
007	Counter Coater	-	-	-	-	-	3.93	3.1	3.9
008	Wide Maker Oven	0.1	0.1	0.02	3.1	0.61	319	248	319
012	Adhesive Mix Room	-	-	-	-	-	11.2	3.72	3.8
013	Medium Belt	-	-	-	-	-	56.7	1.87	18.9
014	Wide Belt Making	-	-	-	-	-	15.8	5.21	5.3

EU #	Emission Unit Description	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
015	Butt Splice Coater	-	-	-	-	-	13.7	.044	0.04
016	Mix Tank D	-	-	-	-	-	4.3	1.34	1.796
017	Mix Tank C	-	-	-	-	-	4.3	1.34	1.796
018	Mix Tank B	-	-	-	-	-	4.3	1.34	1.796
019	Mix Tank A	-	-	-	-	-	4.3	1.34	1.796
020	Mix Tank E	-	-	-	-	-	4.3	1.34	1.796
021	Cloth Coater Treater	-	-	-	-	-	19.2	6.03	2.1
022	Cloth Coater Oven	.11	.11	0.02	3.5	0.7	172.8	54.3	72.7
029	Coater Cure Oven	.01	.01	0	0.22	0.04	0.02	0.02	0.06
030	Boiler B-1	.65	0.32	23.3	6.48	1.62	0.12	0.08	0.079
031	Boiler B-2	.65	0.32	23.3	6.48	1.62	0.12	0.08	0.079
032	Boiler B-3	.39	0.2	14.2	3.94	0.99	0.14	0.05	0.047
033	Boiler B-4	.65	0.32	23.3	6.48	1.62	0.12	0.08	0.079
034	Prism Beltmaking	-	-	-	-	-	25.8	9.3	9.4
041	Sierra Maker Coater	7.8	7.8	-	-	-	0.06	.044	.055
042	Mixstation	2.3	2.3	-	-	-	0.07	.058	.073
043	Sierra 1 Size Coat	7.8	7.8	-	-	-	0.06	0.04	0.06
044	Sierra 1 Make Oven	.02	.02	-	0.33	0.28	5.6	.006	5.6
045	Sierra 1 Size Oven	.02	.02	-	0.33	0.28	5.6	.006	5.6
046	Sierra 2 Mixroom	4.0	4.0	-	-	-	0.08	0.06	0.08
047	Sierra 2 Make	1.1	1.1	-	-	-	0.06	0.05	0.06
048	Sierra 2 Make Oven	.02	.02	-	0.33	0.28	5.9	4.9	5.9
049	Sierra 2 Size Coater	1.7	1.7	-	-	-	0.06	0.05	0.06
050	Sierra 2 Size Oven	.02	.02	-	0.33	0.28	5.9	4.9	5.9

	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions	27	26	84	15	4.38	758	93.2	534
Total Facility Actual Emissions	1.5	1.35	0.22	2.9	1.2	181	13.2	87

Table 2. Facility (TF) and Permit Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD (list pollutant)	VOC		PM10, SO2, NOx, CO
NAAR (list pollutant)			
Part 70 Permit Program (list pollutant)	VOC, HAPs		PM, PM10, NOx, CO, SO2

## 2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

### Regulatory Overview of Facility

EU, GRP, or SV #	Applicable Regulations	Comments:
GP001	Minn. R. 7007.0510	Standards of Performance for Existing Indirect Heating Equipment. <b>Periodic monitoring</b> consists of fuel sulfur content limit and visible emissions checks.
GP002	Minn. R. 7011.0610	Standards of Performance for Fossil Fuel burning Direct Heating Equipment. <b>Periodic Monitoring:</b> Due to the use of only natural gas these units are expected to never approach the particulate matter limit or the 20 percent opacity limit and therefore no periodic monitoring is required.
GP003, GP004, GP005, EU034	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment. <b>Periodic Monitoring:</b> The particulate limit is a generous general requirement that applies to all industrial process equipment. These units do not generate particulate matter in any appreciable amounts and therefore periodic monitoring is not required.



**NESHAPs:** Units at 3M – Alexandria are subject to two pending and one promulgated national emission standards for hazardous air pollutant sources (NESHAPs). These NESHAPs are outlined below.

- Comply with the pending NESHAP, 40 CFR pt. 63, subp. FFFF "Miscellaneous Organic Chemical Production and Processes" category standard, as it applies, after promulgation as a final rule.

- Comply with the pending NESHAP, 40 CFR pt. 63, subp. DDDDD "Industrial Boilers" category standards, as it applies, after promulgation as a final rule.

- By the date specified in 40 CFR § 63.52(e) (proposed by U.S. Environmental Protection Agency (EPA) on December 9, 2002, 67 Fed. Reg. 72875), or other date subsequently specified by EPA, submit to the Minnesota Pollution Control Agency (MPCA) a Part 2 MACT Hammer notification meeting the requirements of 40 CFR § 63.53(b).

- Comply with the "Paper and Other Web Coating" category standards, 40 CFR pt. 63, subp. JJJJ, as it applies, by the compliance date of December 5, 2005. Complete performance testing required in 40 CFR 63.3360 within 180 days of the compliance date. On or before December 5, 2004, provide information on which compliance demonstration option has been chosen for the "affected source" per 40 CFR § 63.3400(b)(1).

The Paper and Other Web Coating NESHAP, Subpart JJJJ was promulgated on December 5, 2002, and the compliance date is December 5, 2005. I had placed draft Subpart JJJJ requirements in the draft permit based on the compliance demonstration option thought most likely to be used. Upon review of the draft requirements, 3M requested that MPCA remove the requirements and replace them with a statement requiring 3M to comply with the standard by December 5, 2005, and to provide information on the chosen compliance demonstration option by December 5, 2004. I have attached the draft requirements as I had written them and a January 17, 2003, comment letter from 3M where they clarified some applicability questions and defined the "affected source" units. I have also attached the compliance equations from Subpart JJJJ and placed them in a Word document in Delta.

## **2.1 Continuous and Periodic Monitors – missing data and acceptable monitor downtime**

Minnesota Rules 7017.1090, subp. 2, "Acceptable Monitor Downtime," lists and describes circumstances under which an emission unit may be operating and data normally recorded by a continuous or periodic monitor is not recorded. This Minnesota Rule is written primarily for continuous emission monitors (CEMS) and continuous opacity monitors (COMS) which directly measure emissions or opacity.

Minn. R. 7017.1090, subp. 2 is paraphrased and adapted below to address parameter monitoring specified in the Technical Support Document (TSD) and associated permit. Examples of parameter monitoring would include combustion chamber temperature in a thermal oxidizer, baghouse pressure drop or scrubber water flow rate and pressure drop:

Acceptable Monitor Downtime. Monitor downtime is a violation [of the requirement to monitor during all times that the emission unit operates], **except for reasonable periods of monitor downtime due to the following causes:**

- A. damage to the monitoring system due to acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative;
- B. sudden and not reasonably preventable monitor breakdowns;
- C. scheduled monitor maintenance based on equipment manufacturer's recommended maintenance schedule or schedule specified in the O&M plan which cannot reasonably be conducted when the emission unit is not operating; or
- D. unavoidable monitor downtime in order to conduct [required calibrations, audits and accuracy checks] which are required by a compliance document, applicable requirement, or by request of the commissioner.

“Compliance document” includes the permit. “Acceptable Monitor Downtime” is reported as “Monitor Downtime” on the semiannual deviations report. Monitor downtime due to other circumstances such as failure to complete described maintenance or failure to operate the monitor as described in the Operation and Maintenance Plan (for the air pollution control equipment) is reported as a deviation on the semiannual deviations report.

## 2.2 Insignificant Activities

The Permittee listed several current insignificant activities in the permit application as noted in a list attached to this permit. 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.

### Insignificant Activities

Insignificant Activity	Currently on site? (Y/N)	General Applicable Emission limit	Discussion
Space heater fueled by natural gas	Y	PM, variable depending on airflow Opacity $\leq$ 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.
Brazing, soldering or welding equipment	Y	PM, variable depending on	For these units, based on EPA published emissions factors, it is

Insignificant Activity	Currently on site? (Y/N)	General Applicable Emission limit	Discussion
		airflow Opacity $\leq$ 20% (Minn. R. 7011.0715)	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.
Small ovens	N	Opacity $\leq$ 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 $\leq$ 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.
Roads and parking lots fugitive emissions	Y	PM, Minn. R. 7011.0150	Minn. R. 7007.1300, subp. 3.J
Blueprint copiers and photographic processes	N	Opacity $\leq$ 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.

### 3. Technical Information

A corrected emissions list is found in the AQD files

#### **4. Conclusion**

Based on the information provided by 3M Alexandria, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 04100003-001 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Greg Kvaal