

**AIR EMISSION PERMIT NO. 17100085-004**

**IS ISSUED TO**

Minnesota Diversified Products, Inc.

**MINNESOTA DIVERSIFIED PRODUCTS, INC. - WEST**

6901 West Road

Rockford, Wright County, MN 55373

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	Permit Action Number
Total Facility Operating Permit	04/21/1999	Oct. 25, 1999	001
Total Facility Oper. Permit - Reissuance	04/26/2004	July 18, 2005	002
Minor Amendment	07/11/2005	Sept. 29, 2005	003
Major Amendment	09/02/2005	See below	004

This permit authorizes the Permittee to operate and modify 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 as 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:** February 21, 2006

**Expiration:** 07/18/2010  
All Title I Conditions do not expire.

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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.

## **FACILITY DESCRIPTION:**

Minnesota Diversified Products West is an existing facility that manufactures expanded polystyrene boardstock. The first step in the production process is pre-expansion of the expanded polystyrene beads. In the pre-expander the beads—which look somewhat like white sugar—are mixed with steam allowing the blowing agent (pentane) to vaporize and, thus, expand the bead. After expansion, the beads are pneumatically conveyed to a storage area consisting of several large mesh bags. After stabilization, the beads are pneumatically conveyed to the molding area. In the mold, a block—or billet—is formed which then proceeds, after curing, to hot-wire cutters where they are cut to size. For some final products, a thin plastic sheet can be laminated onto the foam boards. All process air emissions enter the ambient air via building ventilation fans located on the wall of the building near the roofline. The main pollutant of concern is pentane (a Volatile Organic Compound (VOC)). Minor amounts of styrene (a hazardous air pollutant) are emitted. Products of combustion are also emitted from the natural gas-fired boiler. The facility also has equipment that is considered insignificant under Minnesota Rules. See Appendix I for a complete list of the current insignificant activities.

In previous permit actions, the facility has taken limits to avoid major source classification for New Source Review (40 CFR § 52.21). The facility is a major source under the federal operation permits program (40 CFR pt. 70) and is an area source under the National Emissions Standards for Hazardous Air Pollutants (NESHAPs, 40 CFR pt. 63). The permit contains requirements that limit emissions of volatile organic compounds.

### **Minor Amendment (Permit Action 003)**

Minnesota Diversified Products is installing a new mold press (EU 007) to manufacture insulating concrete forms. The new mold press will be capable of processing 252 lb/h of block and will primarily emit VOC in the form of pentane. With this minor amendment, the facility will become a major source of VOC, but they intend to apply for a major amendment at a later date to roll these emissions under their previous VOC cap.

### **Major Amendment (Permit Action 004)**

Minnesota Diversified Products is authorized to install two new mold presses (EU 008 and EU 009) to manufacture insulating concrete forms. The new mold presses will primarily emit VOC in the form of pentane. This amendment action authorizes places the emissions from EU 007-EU 009 under their previous GP 001 VOC cap. With this cap, the facility will return to being a non-major PSD source of VOC. (40 CFR § 52.21).

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 004

**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**

<b>What to do</b>	<b>Why to do it</b>
COMPLIANCE WITH NATIONAL AND MINNESOTA AMBIENT AIR STANDARDS	hdr
The Permittee shall comply, and upon written request demonstrate compliance, with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0100-7009.0080.
SOURCE-SPECIFIC REQUIREMENTS	hdr
This permit establishes limits on the facility to keep it a minor source under New Source Review. The Permittee cannot make any change at the source that would make the source a major source under New Source Review until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21
Equipment Inventory: The Permittee shall maintain a written list of all emissions units on site. The Permittee shall update the list to include any replaced or modified equipment prior to making the pre-authorized change.  The list shall correlate the units to the numbers used in this permit (EU, GP, CE) and shall include the data on GI-04, GI-05B, and GI-05C. The date of construction shall be the date the change was made for replaced or modified equipment.	Minn. R. 7007.0800, subp. 2
Equipment Labeling: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. The numbers shall correlate the unit to the appropriate EU and GP numbers used in this permit. The number can be affixed by placard, stencil, or other means. The number shall be maintained so that it is readable and visible at all times from a safe distance.	Minn. R. 7007.0800, subp. 2
OPERATIONAL REQUIREMENTS	hdr
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
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.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
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 control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices 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 practices, 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 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
MONITORING REQUIREMENTS	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 004

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, B, and/or C, 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)
RECORDKEEPING	hdr
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location 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)
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)
REPORTING/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
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
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.	Minn. R. 7019.1000, subp. 1
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: 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.	Minn. R. 7019.1000, subp. 1
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.	Minn. R. 7007.1150 through Minn. R. 7007.1500
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).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West  
Permit Number: 17100085 - 004

Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
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# TABLE A: LIMITS AND OTHER REQUIREMENTS

02/21/06

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 004

**Subject Item:** GP 001 Main Process Steps (for VOC limit)

**Associated Items:** EU 002 Pre-Expander (No. 1)

EU 003 Pre-Expander (No. 2)

EU 004 Molder

EU 006 Laminator

EU 007 Mold Press

EU 008 Mold Press (pre-approved)

EU 009 Mold Press (pre-approved)

SV 002 building ventilation

SV 003 Pre-Expander No. 1

SV 004 Molder

SV 005 Mold Press

SV 006 Mold Press (pre-approved)

SV 007 Mold Press (pre-approved)

What to do	Why to do it
LIMITS	hdr
<p>Volatile Organic Compounds: less than or equal to 40000 lbs/month using 12-month Rolling Average to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.</p> <p>All emission units included in GP 001, as allowed in this permit, shall be included in this calculation. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement in GP 001.</p> <p>If the Permittee replaces any existing VOC-emitting equipment, adds new VOC-emitting equipment, or changes the existing equipment, such equipment is subject to this permit limit as well as all of the requirements of GP 001. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to repeat VOC calculations described in Minn. R. 7007.1200, subp. 2.</p>	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
<p>Volatile Organic Compounds Continued:</p> <p>A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit.</p>	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
<p>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 applies separately to each emissions unit. None of these processes are expected to generate any particulate matter.</p>	Minn. R. 7011.0715, subp. 1(A)
<p>Opacity: less than or equal to 20 percent opacity . This applies separately to each emissions unit.</p>	Minn. R. 7011.0715, subp. 1(B)
MONITORING	hdr
<p>Daily Recordkeeping:</p> <p>For VOC used in the EPS bead processes: On each day of operation, the Permittee shall maintain production records showing the amount of each VOC-containing material used. This shall be based on written usage logs and meter readings.</p> <p>For other VOC-containing materials: The Permittee shall calculate, maintain, and record monthly usage showing the quantity of each material used. This shall be based on either written usage logs or purchase/delivery records.</p>	Title I Condition: to avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 and 5



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 004

<p>Monthly Recordkeeping -- VOC Emissions</p> <p>By the 15th day of the month, the Permittee shall calculate and record the following:</p> <p>1) The total usage of VOC-containing materials for the previous calendar month using the daily and monthly usage records. This record shall also include the VOC and contents of each material as determined by the Material Content requirement of this permit.</p> <p>2) The VOC emissions, in pounds, for the previous month using the formula specified in this permit.</p> <p>3) The 12-month rolling average VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months and dividing by 12.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Calculation -- VOC Emissions. The Permittee shall calculate the Monthly Emissions Rate of VOC (MER) using the following equation:</p> <p>MER (lbs/month) = (A1 x B1) + (A2 x B2) + (A3 x B3)...</p> <p>where:</p> <p>A# = amount of each VOC-containing material used (e.g., EPS bead, adhesive, etc.), in pounds/month;</p> <p>B# = weight percent VOC in A#, as a fraction.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Material Content of EPS Bead: The Permittee shall use the Certificate of Analysis (COA) provided by the supplier to determine the VOC content of each shipment. If a COA is not available, the Permittee shall use 7% for the VOC content. However, if in the preceding 12 months, EPS bead with a content greater than 7% was used, then the Permittee shall assume that the VOC content is equivalent to the highest VOC content used in the preceding 12 months.</p> <p>Other alternative methods approved by the MPCA may be used to determine the VOC contents. The Commissioner reserves the right to require the Permittee to determine the VOC contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for the material content determination, the data obtained shall supersede the MSDS.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Material Content of Other Materials: VOC contents in other materials shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. Other alternative methods approved by the MPCA may be used to determine the VOC contents. The Commissioner reserves the right to require the Permittee to determine the VOC contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.</p>	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 004

**Subject Item:** EU 001 Boiler 1**Associated Items:** SV 001 boiler stack

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . Potential emissions from the boiler based on equipment design and allowable fuels is 0.0072 lb/million Btu.	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent opacity ; except for one six-minute period per hour of not more than 60 percent.	Minn. R. 7011.0515, subp. 2
Combust only Natural Gas or Propane: The Permittee shall maintain fuel purchase records on-site.	Minn. R. 7007.0800, subp. 4

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 004

**Subject Item:** EU 005 Hot Wire Cutters**Associated Items:** SV 002 building ventilation

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)

## TABLE B: SUBMITTALS

02/21/06

Facility Name: Minnesota Diversified Products Inc -West  
Permit Number: 17100085 - 004

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**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West  
Permit Number: 17100085 - 004

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

**TABLE B: RECURRENT SUBMITTALS**

02/21/06

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 004

What to send	When to send	Portion of Facility Affected
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
Annual Report	due 30 days after end of each year following Permit Issuance. The Permittee shall submit an annual report by January 31st that describes the changes made at the facility during the previous calendar year using the latest MPCA application forms. The report shall document the VOC 12-month rolling average calculations for the previous calendar year. The report shall be submitted with the annual Compliance Certification listed in Table B. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained minor source status for New Source Review.	Total Facility
Compliance Certification	due 31 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: Minnesota Diversified Products Inc -West

Permit Number: 17100085-004

**Insignificant Activities and General Applicable Requirements**

The table below lists the insignificant activities that are currently at the facility and their associated general applicable requirements.

<b>Minn. R.</b>	<b>Rule Description of the Activity</b>	<b>General Applicable Requirement</b>
7008.4110	Emissions from equipment venting particulate matter (PM) or particulate matter less than 10 microns (PM-10) inside a building, provided that emissions from the equipment are: a). filtered through an air cleaning system; and b). vented inside of the building 100% of the time.	Minn. R. 7011.0715

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**DRAFT/PROPOSED AIR EMISSION PERMIT NO. 17100085-004**

This technical support document (TSD) is intended for all parties interested in the draft/proposed 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 draft/proposed permit.

**1. General Information**

**1.1. Applicant and Stationary Source Location:**

Applicant/Address	Stationary Source/Address (SIC Code: 3086)
Minnesota Diversified Products 9901 County Rd. 50 Rockford, MN 55373	Minnesota Diversified Products-West 6901 West Rd Rockford (Wright County), MN 55373
Contact: Steve Slavik Phone: (763) 477-5854	

**1.2. Description of the Facility**

Minnesota Diversified Products, Inc. manufactures rigid polystyrene boardstock by the expandable polystyrene (EPS) bead process. The EPS process results in emissions of volatile organic compounds (VOC), mainly pentane, and combustion products from the boilers used to produce steam for the process. The Facility has several smaller sources that qualify as insignificant activities under Minnesota Rules.

**1.3 Description of the Permit Action**

This permit action pre-authorizes the addition of two future mold presses (EU 008 and EU 009). At this time, the mold presses have not been specified. The permit application is based on a 350 lb/hr estimated maximum capacity for each new press. The installed mold presses could be smaller than this.

Based on the previous amendment action (PER003), the facility became a Prevention of Significant Deterioration (PSD) major source. In this permit action, the facility returns to a non-major PSD source status. The non-major PSD status is achieved by placing the existing EU 007 (from PER003) and the new EU 008 and new EU 009 (from PER004) into the existing EPS process units' GP 001 VOC emission cap of 240 tons/yr.

In addition, this permit action authorizes pre-cap provisions for GP 001.



#### 1.4. Facility Emissions:

**Table 1. Title I Emissions Increase Summary**

Pollutant	Emissions Increase from the Modification(tpy)*	Limited Emissions Increase from the Modification (tpy)	PSD/112(g) Significant Thresholds for major sources	NSR/112(g) Review Required? (Yes or No)
PM	Na		25	no
PM <sub>10</sub>	Na		15	no
NO <sub>x</sub>	Na		40	no
SO <sub>2</sub>	Na		40	no
CO	Na		100	no
VOC	90.2	0**	40	no
Lead	Na		0.6	no
Styrene (HAP)	0.84	0.84	10/25	no

\* The PTE values do not include any proposed not-yet-enforceable limits.

\*\*The EPS process units GP 001 emission cap is 240 tpy. The proposed emission units EU 008 and EU 009 are made subject to this existing GP 001 emission cap.

**Table 3. Total Facility Potential to Emit Summary**

	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 Potential Emissions (prior to PER004)	4.52	4.52	0.610	6.27	3.03	272.7*	3.06	3.06
Total Facility Potential Emissions (after PER004)	4.52	4.52	0.610	6.27	3.03	240.2*	3.90	3.90
Total Facility Actual Emissions (2003)	0	0	0	1	0	75	HAPs not reported in emission inventory	

\* Includes the limited GP 001 emission cap of 240 tpy. For PER003, EU 007 was not included in the GP 001 emission cap. For PER004, EU 007 as well the proposed new units EU 008 and EU 009 are all included in the GP 001 emission cap.

**Table 4. Facility Classification**

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD		X	
Part 70 Permit Program (VOC)	X		
Part 63 NESHAP			X

## 2. Regulatory and/or Statutory Basis

### New Source Review

With PER003, the facility became a PSD major source for New Source Review (NSR) (40 CFR § 52.21). This permit action returns the facility to non-major NSR status. The facility has returned to non-major NSR classification by including EU 007 – 009 into the existing GP 001 VOC emission limit of 240 tpy. Actual emissions have never exceeded the PSD major threshold of 250 tons per year.

### Part 70 Permit Program

The facility is a major source under the Part 70 permit program.

### New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility.

### National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility is a non-major source under 40 CFR pt. 63. Thus, no NESHAPs apply.

### Minnesota State Rules

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

- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

**Table 3. Regulatory Overview of Units Affected by the Permit Amendment**

EU, GP, or SV	Applicable Regulations	Comments:
GP 001	Title I Condition, 40 CFR § 52.21	Prevention of Significant Deterioration (PSD). Limits taken to avoid major source and modification classification under PSD for all noncombustion emissions

	Minn. R. 7011.0715	of VOC. It is a rolling limit due to substantial and unpredictable variations in operation. This limit is carried forward from the previous permit Standards of Performance for Post 1969 Industrial Process Equipment. This applies to all units in GP 001, individually.
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### 3. Technical Information

#### 3.1. Calculations of Potential to Emit

Potential to emit calculations for the modification are included in Attachment 1 of this TSD. In this permit action, it is noted that the PER003 EU 007 styrene emissions are accounted for.

##### **EPS Bead Processes**

These operations consist of the pre-expanders, molders, and storage. The majority of VOC is lost during pre-expansion (43%) and molding (42%) per U.S. Environmental Protection Agency 450/3-90-020. The remaining 15% is lost during final product storage and after the product leaves the facility. Since it is unknown how long it takes for the remaining 15% to evaporate, it is assumed that it all is emitted at the Facility.

#### 3.2. Permit Calculations

Section 3.3 of this TSD explains the various monitoring required by the permit. For the VOC limit, this includes calculating actual emissions on a monthly basis.

##### **Calculation of VOC emissions**

Total VOC emissions must each be calculated monthly using the following equation:

$$\text{MER} = (\text{A1} \times \text{B1}) + (\text{A2} \times \text{B2}) + (\text{A3} \times \text{B3}) + \dots$$

Where:

MER = the monthly VOC emissions, in pounds/month

A# = the amount of each VOC-containing material used in the previous month (e.g., EPS bead, adhesive, etc.), in pounds.

B# = the weight percent of VOC in A#, as a fraction. For example, if a material were 50% by weight VOC, this would be 0.50.

#### 3.3. Periodic Monitoring

Table 4 summarizes the existing periodic monitoring requirements for GP 001. The new emission units EU 008 and EU 009 are subject to these existing group requirements. No additional periodic monitoring requirements are required.

**Table 4. Existing GP 001 Periodic Monitoring**

<b>Emission Unit or Group</b>	<b>Requirement (basis)</b>	<b>Additional Monitoring</b>	<b>Discussion</b>
VOC Limit: GP 001	VOC $\leq$ 40,000 pounds per month, using a 12-month rolling average (limit to avoid NSR)	Recordkeeping: Daily records of EPS; On-going MSDS records of coating content; Monthly calculations of emissions.	Records can be generated on a daily basis for the EPS Bead processes, based on meter readings and written production logs. The remaining materials (e.g., adhesives) are very low volume and will be based on monthly usage records.
	PM: variable, depending on airflow  Opacity: $\leq$ 20 % (Minn. R. 7011.0715)	None	These units are not reasonably expected to generate particulate matter; therefore, it is highly unlikely that they could violate the applicable requirement.

### **3.4 Insignificant Activities**

No insignificant activities are associated with this permit action.

### **3.5 Comments Received**

Public Notice Period: 12/13/06 – 1/11/06

EPA 45-day Review Period: 12/13/06 – 1/26/06

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

Comments were not received from EPA during their review period.

## **4. Conclusion**

Based on the information provided by Minnesota Diversified Products Inc. – West, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the

Air Emission Permit No. 17100085-004 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:     Bruce Braaten (permit writer/engineer)  
   Emily Hansen (enforcement)  
   Elisabeth Freymiller (peer reviewer)

Attachments: 1. Calculation Spreadsheets