

AIR EMISSION PERMIT NO. 17100085- 001

IS ISSUED TO

MINNESOTA DIVERSIFIED PRODUCTS, INC. -- WEST

6901 West Road

Rockford, Wright County, Minnesota 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
Total Facility Operating Permit	April 21, 1999

This permit authorizes the Permittee to construct and 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 quality rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Part 70

Issue Date: October 25, 1999

Expiration: October 25, 2004
All Title I Conditions do not expire.

Michael J. Sandusky
Division Manager
Air Quality Division

for Karen A. Studders
Commissioner
Minnesota Pollution Control Agency

JP:lao

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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. Certain requirements, which have been determined not to apply, are listed in Table A of this permit.

The permit shield, however, does not apply to:

1. Any national ambient air quality standards adopted under section 109 of the Clean Air Act or increment or visibility under Part C of Title I of the Clean Air Act,
2. Any state ambient air quality standard under Minn. R. ch. 7009, and
3. The state noise pollution control rules, Minn. R. ch. 7030.

FACILITY DESCRIPTION:

The Permittee plans to construct a new expanded polystyrene boardstock manufacturing plant in a new industrial park. 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 a second pre-expander, 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). Minor amounts of styrene (a hazardous air pollutant) are emitted. Products of combustion are also emitted from the natural gas-fired boiler.

TABLE A: LIMITS AND OTHER REQUIREMENTS

10/25/99

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 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
Equipment List: 30 days prior to installation, submit all equipment information identified on forms GI-03, GI-04, and GI-05B as "To Be Determined". Submit this information on the appropriate application forms along with a signed certification form (CR-01).	Minn. R. 7007.0500
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
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
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
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
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

TABLE A: LIMITS AND OTHER REQUIREMENTS

10/25/99

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 001

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)
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)
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)
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
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS

10/25/99

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 001

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 005 Hot Wire Cutters

EU 006 Laminator

SV 002

What to do	Why to do it
<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.</p> <p>For the first 11 months of operation, however, the rolling average limit shall be defined by the following equation: $E = [19200 + 38,400(n)]/n$ (where E is the average emission limit for "n" months in operation).</p>	Title I Condition: Limit to avoid classification as major source under 40 CFR Section 52.21
<p>Monthly VOC Emission Rate Calculation Method: Monthly Emission Rate, lb VOC/month = $A + (B * C)$; where A is the pounds of pentane used during the month (equal to pounds of EPS bead used * weight percent pentane in bead, for each batch of beads), B is the VOC content of the hot melt glue in (lb/lb) and C is the pounds of hot melt glue used during the month. This calculation shall be done by the 15th day of each month for the previous month.</p>	Title I Condition: Calculation method for limit to avoid classification as major source under 40 CFR Section 52.21
<p>VOC Content of EPS Bead: The Permittee shall use the Certificate of Analysis provided by supplier(s) to determine the pentane content of each lot of EPS bead. If the Certificate of Analysis is not available, then the Permittee shall assume that the pentane content of that lot of bead is seven percent by weight. However, if in the preceding 12 months, EPS bead with a pentane content of greater than seven percent by weight was used, then the Permittee shall assume that the pentane content of that lot of EPS bead is equivalent to the highest pentane content of bead used in the preceding 12 months. Other alternative methods approved by the MPCA may be used to determine the percent pentane in the raw beads when calculating VOC limits.</p>	Recordkeeping for limit listed above
<p>The MPCA reserves the right to require the Permittee to take samples of the VOC containing materials, and to conduct analysis of VOC content as per EPA reference methods for the purpose of compliance demonstration. If the EPA reference method is used, it shall supersede the Certificate of Analysis.</p> <p>VOC Content of Hot Melt Glue: The Permittee shall base the VOC content of the hot melt glue on applicable MSDS or on the results of a U.S. EPA Method 24.</p>	Recordkeeping for limit listed above CONTINUED
<p>Keep daily records of the amount of EPS bead and hot melt glue used, and their pentane content and VOC content, respectively.</p>	Recordkeeping for limit listed above

TABLE A: LIMITS AND OTHER REQUIREMENTS

10/25/99

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 001

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

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input	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: Compliance with this requirement is to be demonstrated by means of on-site fuel purchase records.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

10/25/99

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 001

Subject Item: EU 005 Hot Wire Cutters**Associated Items:** GP 001 Main Process Steps (for VOC limit)

SV 002

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

10/25/99

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

10/25/99

Facility Name: Minnesota Diversified Products Inc -West
Permit Number: 17100085 - 001

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

10/25/99

Facility Name: Minnesota Diversified Products Inc -West

Permit Number: 17100085 - 001

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 occur, the Permittee shall submit the report stating no deviations.	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 U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year. The EPA copy shall be sent to: Mr. George Czerniak, Chief, Air Enforcement and Compliance Assurance Branch, Air and Radiation Division, EPA Region V, 77 West Jackson Boulevard, Chicago, Illinois 60604.	Total Facility
Emissions 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.	Total Facility

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 17100085-001
AQ File No. 2273B

This technical support document is for all the interested parties of the permit. The purpose of this document is to set forth the legal and factual basis for the 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 (list both if different)	Facility Address (SIC Code: 3086)
Minnesota Diversified Products 9091 County Road 50 Rockford, Minnesota 55373	Minnesota Diversified Products Inc. – West 6901 West Road Rockford (Wright County), Minnesota 55373

1.2 Description of the facility

The Permittee plans to construct a new expanded polystyrene boardstock manufacturing plant in a new industrial park. (Minnesota Diversified Products, also known as Diversifoam, currently operates and will continue to operate an existing boardstock facility—both extruded and expanded polystyrene—at another location in Rockford. The facilities are separate stationary sources.) 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 a second pre-expander, 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). Minor amounts of styrene (a hazardous air pollutant) are emitted. Products of combustion are also emitted from the natural gas-fired boiler.

1.3 Facility Emissions:

Table 1. Total Facility Emissions for the New Plant

Pollutant	Potential to Emit (Limited) (tpy)	NSR/112(g) Threshold Level (tpy)	NSR/MACT Review Required (Yes or No)
PM/PM ₁₀	48	250	No
SO ₂	0.02	250	No
NO _x	3.5	250	No
VOCs	243	250	No
CO	3.0	100	No
Styrene	2.8	10	No

Table 2. Facility and Permit Classification

Classification	Major	*Synthetic Minor	*Minor
PSD (VOC)		X	
NAAR (CO)			X
Part 70 Permit Program (VOC)	X		

* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

2. Regulatory and/or Statutory Basis

Summary of regulatory and/or statutory basis of the emissions or operational limits:

EU, GP, or SV #	Applicable Regulations	Comments:
GP001	Title I Condition, 40 CFR § 52.21	Main EPS process steps. VOC synthetic minor limit with daily recordkeeping and monthly calculation of 12-month rolling sum.
EU001	Minn. R. 7011.0515, subp. 1-2	Small boiler. State indirect heating standard with fuel type restricted to natural gas or propane. The fuel records are deemed adequate periodic monitoring for this standard because of the low likelihood of violation.
EU005	Minn. R. 7011.0715, subp. 1(A-B)	Hot-wire cutters. State industrial process equipment rule. No specific periodic monitoring requirements are deemed necessary for this process, because only small amounts of particulates result, which are indirectly emitted via the building ventilation system.

3. Technical Information

As it is a new facility, the Permittee proposed a permit requirement (under the Total Facility level) to submit manufacturer model information, and the like, 30 days before installation. Since there will be no previous volatile organic compounds records for GP001, the permit team requested the inclusion of the compliance equation for a rolling average limit during the first 11 months of operation, which transitions to the 12-month rolling average. The emission calculations are summarized in the attachments. Also attached are the major application forms, as entered into the MPCA's Delta computer system. Trimming and scrap recycling equipment (routers, kerfer, grinder debuster, and associated cyclone and baghouse, vented indoors) are insignificant activities required to be listed (under Minn. R. 7007.1300, subp. 3(D)), as indicated in the Permittee's application. An Environmental Assessment Worksheet was prepared for the facility concurrent with the development of the draft air emission permit.

[The MPCA Citizens' Board approved a negative declaration on the need for an Environmental Impact Statement on August 24, 1999. The permit comment period was extended two weeks to August 16, 1999. On August 5, 1999, an informal public information meeting was held in Rockford Township Hall. Two comment letters were ultimately received on the permit, which are attached along with their respective responses. One change was made to the draft permit on page A-3 in the second row. The "0.85" was removed so that the right side of the equation now reads "A + (B*C)." As discussed in the response letters, this means that in doing its emissions calculations the company will conservatively assume that all of the pentane blowing agent is emitted instead of 15 percent being retained in the final product. The construction authorization letter was sent to the Permittee on August 26, 1999. Per an August 30, 1999, letter from the City of Rockford Administrator and an October 18, 1999, telephone confirmation with Steve Slavik (Permittee contact), the facility street address in the permit, and above in this document, was changed to reflect the up-to-date layout. The U.S. EPA 45-day comment period on the operating aspects of the permit expired on or about October 11, 1999, and they did not submit comments.]

4. Conclusion

Based on the information provided by the Permittee, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in Air Emission Permit No. 17100085-001 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: Jeff Peltola, along with Rhonda Land, Craig Averman, and Barbara Conti (Environmental Assessment Worksheet)

Attachments: As indicated in Section 3