

AIR EMISSION PERMIT NO. 08500032-008

IS ISSUED TO

Hutchinson Technology Inc.

HUTCHINSON TECHNOLOGY INC – HUTCHINSON

40 West Highland Park Drive Northeast
Hutchinson, McLeod County, MN 55350-9784

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	Issue Date	Action #
Total Facility Operating Permit	May 15, 1995	March 4, 2002	001
Administrative Amendment	August 8, 2002	September 4, 2002	002
Major Amendment	November 15, 2002	June 3, 2003	003
Major Amendment	November 4, 2003	May 4, 2004	004
Administrative Amendment	March 16, 2004	May 6, 2004	005
Major Amendment	May 12, 2004	October 6, 2004	006
Major Amendment	August 11, 2005	November 16, 2005	007
Major Amendment	March 13, 2006	See Below	008

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

Authorization to Construct and Operate Issuance Date: August 8, 2006

Final Permit Amendment Issuance Date: August 22, 2006

Expiration: March 4, 2007
Title I Conditions do not expire.

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

for Brad Moore
Acting 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:

Hutchinson Technology, Inc. (HTI) is a manufacturer of suspension assemblies for all sizes of computer disk drives. The suspension assembly holds the read/write head at extremely small distances above the spinning disks. HTI currently holds about 50 percent of the world market, with its only competitors being in Asia. Two types of suspension assemblies are made, conventional and TSA (suspensions incorporating integrated electrical leads). The TSA product is now the core product manufactured by the HTI.

The high tech market HTI is in can prove to be very volatile. Sales of all types of suspension assemblies from HTI have increased and decreased at rates greater than 10 percent per year over the last five years. Most products in this industry usually only have lifetimes of about three years. Because of this volatility, HTI needs to have a permit that is as flexible as possible so that it can respond quickly to changing market demands.

The significant emission sources at the facility are all evaporative and include the photo etching solutions and the many different cleaning solvents used throughout all areas of the plant. About 75 percent of the Volatile Organic Compound (VOC) emissions at the facility are emitted during the application of the photo resist solution by either the two roller coaters or the two dip coaters. The roller coaters are vented through a hood to a thermal oxidizer while the dip coaters are vented to a process boiler.

Other emission units at the facility are controlled as well. The air from the plasma etching solutions is vented to a scrubber to remove HF. Other evaporative sources such as the clean lines and strippers have spray nozzles in the exhaust vents that spray water countercurrent to the exhaust gas flow. Testing has not been done to determine the control efficiencies of the spray nozzles, so the control efficiency is not claimed by the facility. The HF scrubber, the thermal oxidizer and boiler control efficiency have all been tested and their control efficiencies have been claimed in the permit.

There are Metal Hydroxide Sludge Dryers that are listed in the permit as only having natural gas combustion emissions. It was discovered that these units may also generate Particulate Matter (PM), and these emissions are through the process of drying sludge. HTI believes the PM emissions are less than 1 ton per year per sludge dryer.

MAJOR AMENDMENT (PER 008) DESCRIPTION:

This is a major amendment to the existing Title V permit. The purpose of this amendment is to remove EU 172 from permit requirements and track it as an insignificant activity. This will provide extra volumetric flow capacity to the thermal oxidizer CE 007 to better control units which have higher VOC emissions. This will also fix an error in the listing of EU 173, previously listed associated with CE 007, corrected to show associated with CE 005.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

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
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply 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. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Sec. 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2, & 4; Minn. R. 7009.0010 - 7009.0080
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, subps. 2 & 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, subps. 14 & 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emissions of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emission 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
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-Test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche or CD Copy: due 105 days after each Performance Test. The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2035, subps. 1-2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

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 and completion of permit reopening and reissuance. If limits serve to cause more stringent operating conditions, resulting changes to facility operation need to be made immediately. If limits serve to relax current operating conditions, resulting changes to facility operation must not be made prior to issuance of permit amendment with new limit incorporated.	Minn. R. 7017.2025
MONITORING	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment.	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)
RECORDKEEPING	hdr
Recordkeeping: 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 strip-chart 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 a record of the material safety data sheets (MSDS) for each VOC- or HAP- containing material currently used at the facility. Maintain a record of the material safety data sheets (MSDS) for each VOC- or HAP- containing material previously used at the facility for a period of 5 years from the date the material was last used.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5
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

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

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 - 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 - 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill	Minn. R. 7002.0005 - 7002.0095
FACILITY SPECIFIC REQUIREMENTS	hdr
This permit establishes limits on the facility to keep it a non-major source under New Source Review. The Permittee shall not make any changes at the source that would make the source a major source under New Source Review until a major permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications, or minor or moderate amendments.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2
Environmental Review: The Permittee shall not begin construction of any single project or projects that are connected or phased, which will cause a total increase in actual emissions of greater than 99 tons per year for any criteria pollutant, without first getting a permit amendment to authorize the project. Connected and phased have meanings as defined in Minn. R. 4410.0200 subps. 9b and 60. The Permittee shall not begin construction of any project which is listed in Minn. R. 4410.4300 or Minn. R. 4410.4400 without first obtaining a permit amendment to authorize the project. Such project(s) may require the completion of an Environmental Assessment Worksheet or an Environmental Impact Statement prior to issuance of the amendment.	Minn. R. 4410.4300; Minn. R. 4410.4400
Labeling Requirements: The Permittee shall label all emission units at the stationary source that are in groups (GP 001-010) with their respective EU and GP numbers. The EU and GP number labels on each emission unit shall be permanent and readily visible from a distance. The letters shall be at least 3 inches in height.	Minn. R. 7007.0800, subp. 2
Equipment List: The Permittee shall maintain a written list that identifies all emission units at the facility and the group (GP 001-010 or insignificant) that the emission unit belongs. The list shall include the EU and GP numbers, the emission unit name, the type of equipment, and the date(s) of installation, modification/reconstruction, and removal.	Minn. R. 7007.0800, subp. 5
Updating the Equipment List: The list shall be updated to include any new, modified, or changed equipment before installing any new equipment, or making a change or modification (as defined at Minn. R. 7007.0100, subp. 14) to existing equipment. A dated, written record of the following four (4) determinations shall be made before each modification or change: 1. Determine Pollution Prevention measures applicable to the proposed modification or change 2. Determine if any other applicable requirements would be triggered, other than those included in this permit 3. Examine the MSDS for all new materials used on site for VOC and/or HAP content, and determine whether all emissions from the new material can be tracked by any of the methods specified in the Groups in this permit 4. Determine whether all applicable total facility 12-month rolling sum limits for VOC, HAP, PM, PM10, NOx, CO, SO2, single HAP, and total HAPs will be met	Minn. R. 7007.0800, subp. 5
If the answer is "yes" to item number 2, or "no" to either items number 3 or 4, then you must obtain the appropriate amendment to this permit (as described at Minn. R. 7007.1150 through 1500) before you commence construction on the modification or change. If the change involves a change that qualifies as an insignificant modification (Minn. R. 7007.1250), only the first two (2) determinations above must be made and recorded.	(continued from above)
Addition/Modification of Emission Units: The Permittee may add emission units to the stationary source that are either: 1. Described in GP 001-010, or 2. Qualify as an insignificant modification (as described in Minn. R. 7007.1250). When adding new emission units to GP 001 through GP 010, the emissions from these emission units must be able to be calculated according to the procedure for the appropriate Group (as described in this permit and its appendices).	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

The addition of new emission units which do not fit into an existing Group, and are not insignificant modifications, must follow the permit amendment procedures at Minn. R. 7007.1150 - Minn. R. 7007.1500. The specific emission units at this stationary source may be modified, but the changed stationary source must meet all conditions in this permit at all times.	(continued from above)
Insignificant Modifications Recordkeeping: The potential emissions of all criteria pollutants emitted from emission units which are added and qualify as insignificant modifications (Minn. R. 7007.1250) must be recorded and kept on file at the facility. A list of insignificant emission units must be included as a part of the equipment inventory list. The cumulative total of potential criteria emissions from all insignificant modifications must be determined each time a subsequent insignificant modification is made. If the addition of new emission units cause the cumulative total of emissions from all insignificant modifications, for ANY criteria pollutant to be greater than: 1) four times the amount listed in Minn. R. 7007.1250, subp. 1(B)(2), on annual basis, or 2) 15 tons per year for Total Particulate Matter, the Permittee shall apply for a major amendment to this permit to adjust the allocation of emissions for ALL criteria pollutants under their respective Total Facility Caps.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5
After the adjustment is made, and the amendment is issued, the cumulative totals for potential emissions from insignificant activities for all criteria pollutants will be reset to zero and will begin accumulating again with the next insignificant modification.	(continued from above)
Emissions Monitoring and Recordkeeping: By the 15th day of each month calculate and record: 1. Emissions of each pollutant from each Group for the previous month, using the methods described in this permit and Appendix B of this permit; 2. Total facility monthly emissions of each pollutant by summing the monthly emissions of each pollutant from each Group (calculated above in item 1); 3. 12-month rolling sum emissions for each pollutant by summing the total facility monthly emissions of each pollutant (calculated above in item 2) and add it to the total from the previous 11 months.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 4 & 5
Total Particulate Matter: less than or equal to 249 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 234 tons per year for GP 001-010, and 15 tons per year for Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21
Particulate Matter < 10 micron: less than or equal to 249 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 234 tons per year for GP 001-010, and 15 tons per year for Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21
Nitrogen Oxides: less than or equal to 249 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 209 tons per year for GP 001-010, and 40 tons per year for Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21
Sulfur Dioxide: less than or equal to 249 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 209 tons per year for GP 001-010, and 40 tons per year for Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21
Carbon Monoxide: less than or equal to 249 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 149 tons per year for GP 001-010, and 100 tons per year for Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21
Volatile Organic Compounds: less than or equal to 225 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 185 tons per year for GP 001-009, and 40 tons per year for Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 52.21
HAP-Single: less than or equal to 4.9 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 4.4 tons per year for GP 001-007, 009, 010, EU 163, and 0.5 tons per year for Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 63.2
The Permittee must keep records of all insignificant modifications at the facility and the related HAP emissions.	
HAPs - Total: less than or equal to 19.9 tons/year using 12-month Rolling Sum for the total facility. This total shall be allocated as such: 17.9 tons per year for GP 001-007, 009, 010, EU 163, and 2.0 tons per year for all Insignificant Modifications.	Title I Condition: To avoid classification as a major source and modification under 40 CFR Section 63.2
The Permittee must keep records of all insignificant modifications at the facility and the related HAP emissions.	

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: GP 001 Photoresist Coaters**Associated Items:** CE 003 Direct Flame Afterburner w/Heat Exchanger

CE 007 Thermal Oxidizer

EU 002 Dipper 2

EU 088 Roller Coater 2

EU 184 Roller Coater 3

EU 185 Roller Coater 4

What to do	Why to do it
GP 001 emission units are limited to coaters that use materials containing VOC and HAP (e.g. photoresist)	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
RECORDKEEPING	hdr
<p>Daily Recordkeeping: Record separately for each dip coater and each roller coater, the volume of each VOC- and HAP-containing material added to the coater, when the material is taken from the central storage area.</p> <p>On any day that coater waste is shipped off-site, record the volume of the shipment. By the 15th day of the month calculate and record the mass of VOC and each HAP in the coater waste shipments for the previous month.</p> <p>Note: In order to calculate the mass of VOC and HAP in coater waste shipped off-site, the VOC and HAP content of the coater waste material must be equivalent to the VOC and HAP content in the virgin material (wastes with different VOC and HAP content can not be mixed together).</p> <p>If different wastes were mixed, the Permittee must sample from each drum and analyze the waste to determine VOC and HAP content (according to EPA or ASTM methods), in order to receive credit for the mass of VOC and HAP in recycled/recovered waste; or, the Permittee must use the lowest MSDS values of VOC and HAP of the materials that comprise mixed wastes.</p>	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5
<p>Monthly Recordkeeping: By the 15th day of each month calculate and record the following data separately for the roller coaters and for the dip coaters:</p> <ol style="list-style-type: none"> 1. The total quantity of each type of VOC- and HAP-containing material used during the previous month 2. The uncontrolled emissions during the previous month of VOC, Toluene, and Xylene (and any other HAP listed on the MSDS), based on the quantity of each type of VOC- and HAP-containing material used during the previous month, and the maximum percentage of each VOC and HAP component (stated on the relevant MSDS) 3. The mass of VOC and each HAP in coater waste shipped during the previous month 	(continued from above)
<ol style="list-style-type: none"> 4. GP 001 VOC and individual HAP emissions during the previous month based on: the uncontrolled emissions (determined in item 2), minus waste shipped (determined in item 3) 5. Apply 84% VOC control efficiency to the emissions from the roller coaters 6. Apply 42% VOC control efficiency to the emissions from the dip coaters <p>For items 5 and 6 use the control efficiency values stated, or the values from the most recent performance test.</p> <p>See Appendix B for additional information on these emission calculations.</p> <p>During any bypass of control equipment, record the material usage during the bypass and then do not apply the control efficiency for this amount of material usage when doing the emission calculations.</p>	(continued from above)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: GP 002 Conventional Strippers**Associated Items:** EU 016 Blueline Stripper

EU 018 Vertical Stripper 2

EU 019 Vertical Stripper 3

EU 080 Vertical Stripper 4

EU 081 Vertical Stripper 6

EU 084 Vertical Stripper 9

What to do	Why to do it
GP 002 emission units are limited to units that utilize materials containing VOC and HAP	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
GLYCOL ETHER (includes Butyl Carbitol) EMISSION FACTORS EU 016, EU 019, EU 081 and EU 084: 0.0254 lb/operating-hr per stripper EU 018 and EU 080: 0.0633 lb/operating-hr per stripper These emission factors apply unless otherwise recalculated per procedure below.	Minn. R. 7007.0800, subp. 2
MEA EMISSION FACTORS EU 016: 0.24 lb/operating-hr per stripper EU 018 and EU 080: 1.3885 lb/operating-hr per stripper EU 019, EU 081 and EU 084: 0.1314 lb/operating-hr per stripper These emission factors apply unless otherwise recalculated per procedure below.	Minn. R. 7007.0800, subp. 2
Glycol Ether Concentration for all Emission Units: less than or equal to 0.006 mole fraction in bath solution MEA concentration for EU 018 and EU 080: less than or equal to 0.036 mole fraction in bath solution MEA concentration for EU 016, EU 019, EU 081 and EU 084: less than or equal to 0.0049 mole fraction in bath solution These concentrations apply unless otherwise changed per procedure below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 2
Temperature: less than or equal to 145 degrees F ; as a 5-day rolling average of readings taken once each operating day, for EU 018 and EU 080 non-HCl stripper sumps. Temperature of the chemical sump is read by a thermocouple.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Temperature: less than or equal to 125 degrees F ; as a 5-day rolling average of readings taken once each operating day, for EU 016, EU 019, EU 081 and EU 084 non-HCl stripper sumps. Temperature of the chemical sump is read by a thermocouple.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Corrective Action: If any 5-day rolling average sump temperature exceeds the maximum permitted value, take corrective action according to the O & M Plan, to reduce the temperature to at least the permitted maximum value. Record all corrective actions taken when completed.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 14
Any of the following events requires the Permittee to recalculate the GP 002 emissions factors: 1. The temperature of any of the non-HCl stripper sumps exceeding the permitted limit for the Emission Unit as listed in GP 002 2. Any change (i.e. to the ductwork or fan) that increases airflow above the bath 3. The mole fraction concentration of the VOC/HAP component in the bath solution exceeding the permitted concentration for the Emission Unit as listed in GP 002 The emission factor shall be recalculated on the date the event occurs.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

<p>Emission Factor Recalculation: When necessary the Permittee shall recalculate GP 002 emission factor as follows:</p> <ol style="list-style-type: none"> 1. Determine the vapor pressure of the pure VOC/HAP component at the sump temperature using data from the MSDS and/or standard chemical engineering reference texts 2. For MEA emission factor: Use Raoult's Law to determine the partial pressure of the VOC/HAP component at the concentration used in the sumps 3. For Glycol Ether emission factor: Use Henry's Law to determine the partial pressure of the VOC/HAP component at the concentration used in the sumps 4. Calculate the mole fraction of the VOC/HAP component in the overlying air 5. Calculate the new emission factor by using the design airflow and the molar volume of an ideal gas at the sump temperature 6. Maintain records of these calculations on site 	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 2 & 5</p>
MONITORING AND RECORDKEEPING	hdr
<p>Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the temperature as required by this permit, if not already present. The monitoring equipment must be installed, in use, and properly maintained when the cleanlines are in operation.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4</p>
<p>Monitoring: Once each day, observe and record the temperature in the sump, during operation of GP 002 emission unit(s), and calculate and record the 5-day rolling average temperature, as described in Appendix B of this permit</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4</p>
<p>Monitoring and Recordkeeping: When each sump solution is made, calculate and record the glycol ether, MEA, and HCl concentration in units of mole fraction for glycol ether and MEA, and percent by weight for HCl</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 4 & 5</p>
<p>Recordkeeping: Once each day, record the hours each emission unit was operated during the previous day.</p> <p>By the 15th day of each month, calculate and record:</p> <ol style="list-style-type: none"> 1. GP 002 operating hours for the previous month 2. GP 002 VOC and individual HAP emissions using monthly operating hours calculated in item one, and emission factors specified in GP 002 	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5</p>
<p>Recordkeeping: The Permittee shall maintain records on site of the daily and 5-day rolling average temperatures</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-8**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: GP 003 TSA (Trace) Strippers**Associated Items:** EU 082 Vertical Stripper 7

EU 083 Vertical Stripper 8

EU 162 Vertical Stripper 15

What to do	Why to do it
GP 003 emission units are limited to units that utilize materials containing VOC and HAP	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
The MEA emission factor is 1.7062 lb/operating-hr per stripper	Minn. R. 7007.0800, subp. 2
MEA: less than or equal to 0.0332 mole fraction in bath solution	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 2
Temperature: less than or equal to 149 degrees F ; as a 5-day rolling average of readings taken once each operating day, for each of the non-HCl stripper sumps. Temperature of the chemical sump is read by a thermocouple.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Corrective Action: If the 5-day rolling average sump temperature exceeds the maximum permitted value, take corrective action according to the O & M Plan, to reduce the temperature to at least the permitted maximum value. Record all corrective actions taken when completed.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 14
Any of the following events requires the Permittee to recalculate the GP 003 emissions factors: 1. The temperature of any of the non-HCl stripper sumps exceeding the permitted limit for GP 003 2. Any change (i.e. to the ductwork or fan) that increases airflow above the bath 3. A mole fraction concentration of the VOC/HAP component in the bath solution exceeding the permitted concentration for GP 003 The emission factor shall be recalculated on the date the event occurs.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Emission Factor Recalculation: When necessary the Permittee shall recalculate GP 003 emission factor as follows: 1. Determine the vapor pressure of the pure VOC/HAP component at the sump temperature using data from the MSDS and/or standard chemical engineering reference texts 2. Use Raoult's Law to determine the partial pressure of the VOC/HAP component at the concentration used in the sumps 3. Calculate the mole fraction of the VOC/HAP component in the overlying air 4. Calculate the new emission factor by using the design airflow and the molar volume of an ideal gas at the sump temperature 5. Maintain records of these calculations on site	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 2 & 5
MONITORING AND RECORDKEEPING	hdr
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the temperature as required by this permit, if not already present. The monitoring equipment must be installed, in use, and properly maintained when the cleanlines are in operation.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
Monitoring: Once each day, observe and record the temperature in the sump, during operation of GP 003 emission unit(s), and calculate and record the 5-day rolling average temperature, as described in Appendix B of this permit	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
Monitoring and Recordkeeping: When each sump solution is made, calculate and record the MEA and HCl concentration in units of mole fraction and percent by weight, respectively	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 4 & 5
Recordkeeping: Once each day, record the hours each emission unit was operated during the previous day. By the 15th day of each month, calculate and record: 1. GP 003 operating hours for the previous month 2. GP 003 VOC and individual HAP emissions using monthly operating hours calculated in item one, and emission factors specified in GP 003	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5
Recordkeeping: The Permittee shall maintain records on site of the daily and 5-day rolling average temperatures	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-9**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: GP 005 Combustion Equipment

Associated Items:

- EU 029 O.B. Gas Heater (10 B.)
- EU 030 O.B. Gas Heater (20 B.)
- EU 031 Shipping Recieving Heater
- EU 032 O.B. Hot Water Boiler
- EU 033 4-Bay Warehouse Heater
- EU 034 4-Bay Hot Water Boiler
- EU 035 4-Bay Steam Boiler
- EU 036 4-Bay HVAC-3
- EU 037 4-Bay HVAC-8
- EU 038 Equipcenter Gas Generator
- EU 039 Equipcenter Water Boiler
- EU 040 Equipcenter Water Heater
- EU 041 Equipcenter Shipping, Rec. Heaters
- EU 042 Cooling Tower Heater (Changed to electric 7-95.)
- EU 043 Baby Rupp (MA-11)(Vented inside building)
- EU 044 Sludge Drier
- EU 045 MA-6
- EU 046 MA-9
- EU 047 HVAC-1
- EU 048 MA-3 (Vented inside building)
- EU 049 HVAC-7
- EU 050 HVAC-4
- EU 051 HVAC-5
- EU 052 HVAC-6
- EU 053 MA-10 (Vented inside building)
- EU 054 MA-12
- EU 055 Back-up Generator
- EU 056 Penthouse (MA-4)(Vented inside building)
- EU 057 Penthouse Steam Boiler #3
- EU 058 Penthouse Steam Boiler #4
- EU 059 Shredder Room Heater
- EU 060 Shipping, Receiving Heaters
- EU 061 Water Boiler WB-01
- EU 062 Water Boiler (L48)
- EU 063 Water Boiler (Aldrich)
- EU 064 Mezzanine Steam Boiler (SB-01)
- EU 065 Mezzanine Water Boiler
- EU 066 Mezzanine Water Heater
- EU 067 '93 Shipping, Rec. Heaters

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-10**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Associated Items: EU 068 '93 Cart Hotel Heater

EU 069 '93 Water Boiler (HWB-1)

EU 070 '93 Water Boiler (HWB-2)

EU 071 '93 Steam Boiler (SB-1)

EU 072 '93 Water Heater (WH-1)

EU 141 Hot Water Boiler (B-1)

EU 142 Hot Water Boiler (B-2)

EU 143 Steam Boiler (B-3)

EU 144 Steam Boiler (B-4)

EU 145 Natural Gas Generator

What to do	Why to do it
GP 005 emission units are limited to combustion units. Fuel usage is limited to distillate fuel oil, natural gas, LPG, and gasoline.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2
Indirect Heating Equipment Rated Heat Input: The rated heat input of all indirect heating equipment at the facility in total shall be less than 250 million Btu/hr	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 2
EXISTING INDIRECT HEATING EQUIPMENT	hdr
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, 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 opacity	Minn. R. 7011.0510, subp. 2
NEW INDIRECT HEATING EQUIPMENT	hdr
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 opacity	Minn. R. 7011.0515, subp. 2
FOSSIL-FUEL-BURNING DIRECT HEATING EQUIPMENT	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
STATIONARY INTERNAL COMBUSTION ENGINES	hdr
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained	Minn. R. 7011.2300, subp. 1
RECORDKEEPING	hdr
Recordkeeping: The Permittee shall monitor and record the amount of each type of fuel used at the facility by maintaining monthly fuel usage records on site. By the 15th day of each month, calculate and record: 1. GP 005 usage of each fuel type during the previous month 2. GP 005 emissions of SO ₂ , NO _x , and CO as specified in Appendix B	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
Recordkeeping: The Permittee shall include a calculation of the rated heat input of all indirect heating equipment at the facility with the annual submittal of the Equipment Inventory List.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-11**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson
Permit Number: 08500032 - 008

Subject Item: GP 006 Plasma Etchers

Associated Items: CE 002 Packed-Gas Adsorption Column

EU 089 Plasma Etcher 1

EU 090 Plasma Etcher 2

EU 100 Plasma Etcher 12

EU 101 Plasma Etcher 13

EU 104 Plasma Etcher 16

EU 105 Plasma Etcher 17

EU 106 Plasma Etcher 18

EU 107 Plasma Etcher 19

EU 108 Plasma Etcher 20

EU 109 Plasma Etcher 21

EU 110 Plasma Etcher 22

EU 111 Plasma Etcher 23

EU 112 Plasma Etcher 24

EU 113 Plasma Etcher 25

EU 114 Plasma Etcher 26

EU 115 Plasma Etcher 27

EU 130 Plasma Etcher 28

EU 131 Plasma Etcher 29

EU 132 Plasma Etcher 30

EU 133 Plasma Etcher 31

EU 134 Plasma Etcher 32

EU 135 Plasma Etcher 33

EU 136 Plasma Etcher 34 - clean

EU 137 Plasma Etcher 35

EU 138 Plasma Etcher 36 - clean

EU 139 Plasma Etcher 37 - clean

EU 140 R&D Plasma Etcher

EU 153 Plasma Etcher 38

EU 154 Plasma Etcher 39

EU 155 Plasma Etcher 40

EU 156 Plasma Etcher 41

EU 157 Plasma Etcher 42

EU 158 Plasma Etcher 43

EU 159 Plasma Etcher 44

EU 160 Plasma Etcher 45

EU 161 Plasma Etcher 46

EU 175 Plasma Etcher 55

EU 176 Plasma Etcher 57

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Associated Items: EU 177 Plasma Etcher 58
EU 178 Plasma Etcher 67
EU 179 Plasma Etcher 78
EU 180 Plasma Etcher 79
EU 181 Plasma Etcher 80
EU 182 Plasma Etcher 91
EU 183 Plasma Etcher 98
EU 186 Plasma Etcher 102

What to do	Why to do it
GP 006 emission units are limited to plasma etchers that emit HF, NOx, and CO	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
PLASMA ETCHERS EMISSION FACTORS NOx: 0.18 lb/plasma etcher-hr CO: 0.32 lb/plasma etcher-hr HF: 0.319 lb/plasma etcher-hr	Minn. R. 7007.0800, subp. 2
RECORDKEEPING	hdr
Recordkeeping: Once each day, record the hours each plasma etcher was operated during the previous day. By the 15th day of each month calculate and record: 1. GP 006 operating hours for the previous month 2. GP 006 HF, NOx, and CO emissions for the previous month using operating hours calculated in item one, and GP 006 emission factors	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-13**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: GP 007 Miscellaneous Equipment**Associated Items:** EU 027 Flammable Solvent Precision Parts Cleaner

What to do	Why to do it
GP 007 emission units are emission units not included in GP 001-006 and use VOC- and/or HAP-containing materials	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
RECORDKEEPING	hdr
<p>Daily Recordkeeping: Record separately for each emission unit in GP 007, the volume of each VOC- and HAP-containing material when the material is taken from the inventory on hand stock.</p> <p>On the day of waste shipment, record the volume of the shipment. By the 15th day of the month calculate and record the mass of VOC and each HAP in the waste shipments for the previous month.</p> <p>Note: In order to calculate the mass of VOC and HAP in waste shipped off-site, the VOC and HAP content of the waste material must be equivalent to the VOC and HAP content in the virgin material (wastes with different VOC and HAP content can not be mixed together).</p>	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5
If different wastes were mixed, the Permittee must sample each drum and analyze the waste to determine VOC and HAP content (according to EPA or ASTM methods), in order to receive credit for the mass of VOC and HAP in recycled/recovered waste, the Permittee must use the lowest MSDS values of VOC and HAP of the materials that comprise mixed wastes.	(continued from above)
<p>Monthly Recordkeeping: By the 15th day of each month calculate and record the following data for GP 007:</p> <ol style="list-style-type: none"> 1. The total quantity of each type of VOC- and HAP-containing material used during the previous month 2. The emissions during the previous month of VOC and HAP listed on the MSDS, based on the quantity of each type of VOC- and HAP-containing material used during the previous month, and the maximum percentage of each VOC and HAP component (stated on the relevant MSDS) 3. The mass of VOC and each HAP in waste shipped during the previous month 4. GP 007 VOC and individual HAP emissions during the previous month based on the emissions (determined in item 2), minus waste shipped (determined in item 3) 	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Hutchinson Technology Inc - Hutchinson
Permit Number: 08500032 - 008

Subject Item: GP 008 Coating

- Associated Items:
- CE 005 Thermal Oxidizer #2
 - EU 163 TSA Clean 1
 - EU 164 TSA Coat 1
 - EU 165 TSA Coat 2
 - EU 166 TSA Coat 3
 - EU 167 TSA Develop 1
 - EU 173 TSA Strip 2
 - SV 072 RTO2 Exhaust

What to do	Why to do it
<p>VOC limits for this Group are under Total Facility Requirements. Control Equipment Requirements are listed under CE 005.</p> <p>The Permittee is required to keep daily and monthly records of VOC emissions from emission units listed under this group, and include the monthly total with the 12-month rolling sum of VOC emissions for the facility.</p> <p>See Appendix B for additional information on emission calculations.</p>	<p>hdr</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Hutchinson Technology Inc - Hutchinson
Permit Number: 08500032 - 008

Subject Item: GP 009 TSA Etchers 1 and 2

Associated Items: CE 004 Wet Scrubber - High Efficiency
CE 006 Wet Scrubber - High Efficiency
EU 169 TSA Etch 1
EU 170 TSA Etch 2
SV 006
SV 071 E-157/E-158

What to do	Why to do it
VOC and HAP limits for this Group are under Total Facility Requirements. Control Equipment Requirements are listed under CE 004 and CE 006. The Permittee is required to keep daily and monthly records of VOC and HAP emissions from emission units listed under this group, and include the monthly total with the 12-month rolling sum of VOC and HAP emissions for the facility. See Appendix B for additional information on emission calculations.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-16**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: GP 010 TSA Metalizer and Ni/Au Plate**Associated Items:** CE 004 Wet Scrubber - High Efficiency

EU 168 TSA Metalizer 2

EU 174 TSA Ni/Au Plate

SV 071 E-157/E-158

What to do	Why to do it
HAP limits for this Group are under Total Facility Requirements. Control Equipment requirements are listed under CE 004. The Permittee is required to keep daily and monthly records of HAP emissions from emission units listed under this group, and include the monthly total with the 12-month rolling sum of individual and combined HAP emissions for the facility. See Appendix B for additional information on emission calculations.	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-17**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: CE 001 Direct Flame Afterburner w/Heat Exchanger

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Operational Requirement: Route all captured emissions from the roller coaters to the thermal oxidizer at all times except for breakdowns or malfunction or when the roller coaters are being cleaned. Time periods when emissions are not routed to the thermal oxidizer shall be treated as uncontrolled in the emission calculations for the facility.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Control Efficiency: For emission calculations the Permittee can use the following values, or the values from the most recent performance test: 84% for the boiler based on a capture efficiency of 89% and a destruction efficiency of 95% for VOC	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Temperature: greater than or equal to 1499 degrees F using 3-hour Rolling Average while the roller coaters are operated unless a new minimum is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new minimum is required it will be based on the average temperature recorded during the most recent performance test where compliance for VOC emissions was demonstrated.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 14
Corrective Action: If the 3-hour rolling average temperature falls below the required minimum value, take corrective action according to the O & M Plan, to restore the temperature to at least the required minimum value as soon as possible. Record all corrective actions taken when completed. If the temperature falls below the required minimum value, all emissions during this time shall be considered uncontrolled and a control efficiency of 0% shall be used in the monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 14
TESTING	hdr
Performance Test: due before end of each calendar 24 months starting 11/15/2005 to determine the VOC capture and destruction efficiencies of the thermal oxidizer control system for use in calculating emissions as described above.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 90 days before Startup of material used in the roller coaters that contains any HAP for which a destruction efficiency test hasn't been conducted under Minn. R. 7017.2020 - Minn. R. 7017.2060. Until a performance test is conducted, a control efficiency can not be used for the new HAP when calculating monthly emissions.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING	hdr
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the temperature at the combustion chamber outlet. The monitoring equipment must be installed, operated, and properly maintained when the roller coaters are in operation. The temperature monitoring device must be accurate to within +/- 10 degrees Fahrenheit, and the recordkeeping system must be capable of tracking and recording a 3-hour rolling average or a raw temperature in a retrievable and readable manner for a period of 5 years.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
Recordkeeping: The Permittee shall maintain either a continuous hard copy readout of the inlet temperature, electronic copy, or maintain a hard copy of manual readings taken at least once every 15 minutes. The Permittee shall also calculate and record 3-hour rolling averages of these readings, as described in Appendix B of this permit.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5
Recordkeeping - Control Equipment Bypasses: Record the date and start and stop times of each thermal oxidizer bypass period. Record the volume of coating material used during the bypass period. Report all bypasses in the facility's semiannual deviation report, and as required by Minn. R. 7019.1000. Apply a capture efficiency of 0% during a bypass period when conducting monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 6

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-18**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: CE 002 Packed-Gas Adsorption Column**Associated Items:** EU 089 Plasma Etcher 1

EU 090 Plasma Etcher 2

EU 101 Plasma Etcher 13

EU 105 Plasma Etcher 17

EU 106 Plasma Etcher 18

EU 107 Plasma Etcher 19

EU 108 Plasma Etcher 20

EU 109 Plasma Etcher 21

EU 110 Plasma Etcher 22

EU 111 Plasma Etcher 23

EU 112 Plasma Etcher 24

EU 113 Plasma Etcher 25

EU 114 Plasma Etcher 26

EU 115 Plasma Etcher 27

EU 130 Plasma Etcher 28

EU 131 Plasma Etcher 29

EU 132 Plasma Etcher 30

EU 133 Plasma Etcher 31

EU 134 Plasma Etcher 32

EU 135 Plasma Etcher 33

EU 136 Plasma Etcher 34 - clean

EU 137 Plasma Etcher 35

EU 138 Plasma Etcher 36 - clean

EU 139 Plasma Etcher 37 - clean

EU 140 R&D Plasma Etcher

EU 153 Plasma Etcher 38

EU 154 Plasma Etcher 39

EU 155 Plasma Etcher 40

EU 156 Plasma Etcher 41

EU 157 Plasma Etcher 42

EU 158 Plasma Etcher 43

EU 159 Plasma Etcher 44

EU 160 Plasma Etcher 45

EU 161 Plasma Etcher 46

EU 175 Plasma Etcher 55

EU 176 Plasma Etcher 57

EU 177 Plasma Etcher 58

EU 178 Plasma Etcher 67

EU 179 Plasma Etcher 78

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Associated Items: EU 180 Plasma Etcher 79

EU 181 Plasma Etcher 80

EU 182 Plasma Etcher 91

EU 183 Plasma Etcher 98

EU 186 Plasma Etcher 102

GP 006 Plasma Etchers

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Operational Requirement: Route all emissions from the plasma etchers to the scrubber at all times except for breakdowns or malfunctions	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2
Control Efficiency: For emission calculations the Permittee can use a control efficiency of 99% for HF, or the value from the most recent performance test	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Scrubbing Liquid pH: greater than or equal to 9 pH units after treatment by the caustic portion of the scrubbing system	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Recirculated Liquid Flow Rate: greater than or equal to 4 gallons/minute	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Upstream Water Spray Valves: Inspect these valves once per calendar quarter to ensure they are in the open position. Make a record of each inspection.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Corrective Action: If any of the parameters monitored on the scrubber falls outside the range, take the appropriate corrective action as stated in the O & M Plan. Record all corrective actions taken when completed. If any of the scrubber parameters fall outside their required ranges, all emissions during this time shall be considered uncontrolled and a control efficiency of 0% shall be used in the monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 5 & 14
TESTING	hdr
Performance Test: due before end of each 48 months starting 01/25/2006 to determine the HF emission factor, per plasma etcher, after control, for use in calculating emissions as described above.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7017.2020, subp. 1
Performance test completed January 25, 2006.	
MONITORING AND RECORDKEEPING	hdr
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring the Scrubbing Liquid pH and the liquid flow rate. The monitoring equipment must be installed, operated, and properly maintained when the plasma etchers are in operation. Records must be kept for a period of 5 years.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
The monitoring equipment must be installed, in use, and properly maintained when the plasma etchers are in operation. Calibrate the monitoring equipment annually, or as required by the manufacturing specification.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 2
Monitoring and Recordkeeping: The Permittee shall obtain and record the liquid flow rate and scrubbing liquid pH once each day during operation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 & 5
Recordkeeping - Control Equipment Bypasses: Record the date and start and stop time of each scrubber bypass period. Report all scrubber bypasses in the facility's semiannual deviation report, and as required by Minn. R. 7019.1000. Apply a control efficiency of 0% during a bypass period when conducting monthly emissions calculations.	Minn. R. 7007.0800, subps. 5 & 6

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-20**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: CE 003 Direct Flame Afterburner w/Heat Exchanger**Associated Items:** EU 001 Dipper 1

EU 002 Dipper 2

GP 001 Photoresist Coaters

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Control Efficiency: For emission calculations the Permittee can use the following value, or the values from the most recent performance test: 42% for VOC	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Boiler Firing Rate Capacity: greater than or equal to 400 actual cubic feet/minute	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 14
Corrective Action: If the boiler firing rate setting falls below 400 actual cubic feet per minute, take corrective action according to the O & M Plan as soon as possible, to restore the boiler firing rate to at least the required minimum value. Record all corrective actions taken when completed. If the boiler firing rate falls below the required minimum value all emissions during this time shall be considered uncontrolled and a control efficiency of 0% shall be used in the monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 14
TESTING	hdr
Performance Test: due before 06/04/2004 to determine the VOC control (i.e. capture and destruction) efficiencies of the boiler system for use in calculating emissions as described above. All tests shall be done under low boiler load conditions.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7017.2020, subp. 1
Performance test completed April 27, 2004.	
Performance Test: due 90 days before Startup of material used in the dip coaters that contains any HAP for which a destruction efficiency test hasn't been conducted under Minn. R. 7017.2020 - Minn. R. 7017.2060. Until a performance test is conducted, a control efficiency can not be used for the new HAP when calculating monthly emissions.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING	hdr
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the firing rate of the boiler. The monitoring equipment must be installed, operated, and properly maintained when the dip coaters are vented to the boiler. The recordkeeping system must be capable of tracking and recording a continuous reading of the boiler firing rate in a retrievable and readable manner for a period of 5 years.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
Recordkeeping - Control Equipment Bypasses: Record the date and start and stop times of any period where the entire boiler control system was bypassed (e.g. through the normally locked out bypass stack, not through the normally used bypass stack whereby part of the gas flow not demanded by the boiler is routed to the atmosphere). Record the volume of coating material used during the bypass period. Report all bypasses in the facility's semiannual deviation report, and as required by Minn. R. 7019.1000. Apply a capture efficiency of 0% during a bypass period when conducting monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-21**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: CE 004 Wet Scrubber - High Efficiency**Associated Items:** EU 163 TSA Clean 1

EU 168 TSA Metalizer 2

EU 169 TSA Etch 1

EU 174 TSA Ni/Au Plate

GP 009 TSA Etchers 1 and 2

GP 010 TSA Metalizer and Ni/Au Plate

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Operational Requirement: Route all emissions from the above listed emission units to the scrubber at all times except for breakdowns or malfunctions	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2
Hydrochloric acid: greater than or equal to 95 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Scrubbing Liquid pH: greater than or equal to 9 pH units after treatment by the caustic portion of the scrubbing system	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Recirculated Liquid Flow Rate: greater than or equal to 4 gallons/minute	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Upstream Water Spray Valves: Inspect these valves once per calendar quarter to ensure they are in the open position. Make a record of each inspection.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Corrective Action: If any of the parameters monitored on the scrubber falls outside the range, take the appropriate corrective action as stated in the O & M Plan. Record all corrective actions taken when completed. If any of the scrubber parameters fall outside their required ranges, all emissions during this time shall be considered uncontrolled and a control efficiency of 0% shall be used in the monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 5 & 14
TESTING	hdr
Initial Performance Test: due 180 days after Equipment Installation of emission units to determine the HCl emission factor, after control, for emission calculations use.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7017.2020, subp. 1
Performance test completed November 15, 2005.	
MONITORING AND RECORDKEEPING	hdr
Monitoring: the Permittee shall install the necessary monitoring equipment for measuring the Scrubbing Liquid pH and the liquid flow rate. The monitoring equipment must be installed, operated, and properly maintained when the plasma etchers are in operation. Records must be kept for a period of 5 years.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
The monitoring equipment must be installed, in use, and properly maintained when the plasma etchers are in operation. Calibrate the monitoring equipment annually, or as required by the manufacturing specification.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 2
Monitoring and Recordkeeping: The Permittee shall obtain and record the liquid flow rate and scrubbing liquid pH once each day during operation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 & 5
Recordkeeping - Control Equipment Bypasses: Record the date and start and stop time of each scrubber bypass period. Report all scrubber bypasses in the facility's semiannual deviation report, and as required by Minn. R. 7019.1000. Apply a control efficiency of 0% during a bypass period when conducting monthly emissions calculations.	Minn. R. 7007.0800, subps. 5 & 6

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-22**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: CE 005 Thermal Oxidizer #2**Associated Items:** EU 164 TSA Coat 1

EU 165 TSA Coat 2

EU 166 TSA Coat 3

EU 167 TSA Develop 1

EU 173 TSA Strip 2

GP 008 Coating

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Operational Requirement: Route all captured emissions from the emission units to the thermal oxidizer at all times except for breakdowns or malfunction or when the emission units are being cleaned. Time periods when emissions are not routed to the thermal oxidizer shall be treated as uncontrolled in the emission calculations for the facility.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Control efficiency for Volatile Organic Compounds: greater than or equal to 95 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average while the roller coaters are operated unless a new minimum is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new minimum is required it will be based on the average temperature recorded during the most recent performance test where compliance for VOC emissions was demonstrated.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 14
Corrective Action: If the 3-hour rolling average temperature falls below the required minimum value, take corrective action according to the O & M Plan, to restore the temperature to at least the required minimum value as soon as possible. Record all corrective actions taken when completed. If the temperature falls below the required minimum value, all emissions during this time shall be considered uncontrolled and a control efficiency of 0% shall be used in the monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 14
TESTING	hdr
Initial Performance Test: due 180 days after Equipment Installation of emission unit to determine VOC Control Efficiency.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7017.2020, subp. 1
Performance test completed November 15, 2005.	
Performance Test: due 90 days before Startup of material used in the roller coaters that contains any HAP for which a destruction efficiency test hasn't been conducted under Minn. R. 7017.2020 - Minn. R. 7017.2060. Until a performance test is conducted, a control efficiency can not be used for the new HAP when calculating monthly emissions.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING	hdr
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the temperature at the combustion chamber outlet. The monitoring equipment must be installed, operated, and properly maintained when the roller coaters are in operation. The temperature monitoring device must be accurate to within +/- 10 degrees Fahrenheit, and the recordkeeping system must be capable of tracking and recording a 3-hour rolling average or a raw temperature in a retrievable and readable manner for a period of 5 years.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
Recordkeeping: The Permittee shall maintain either a continuous hard copy readout of the inlet temperature, electronic copy, or maintain a hard copy of manual readings taken at least once every 15 minutes. The Permittee shall also calculate and record 3-hour rolling averages of these readings, as described in Appendix B of this permit.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 5
Recordkeeping - Control Equipment Bypasses: Record the date and start and stop times of each thermal oxidizer bypass period. Record the volume of coating material used during the bypass period. Report all bypasses in the facility's semiannual deviation report, and as required by Minn. R. 7019.1000. Apply a capture efficiency of 0% during a bypass period when conducting monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 6

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-23**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: CE 006 Wet Scrubber - High Efficiency**Associated Items:** EU 170 TSA Etch 2

GP 009 TSA Etchers 1 and 2

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Operational Requirement: Route all emissions from emission units listed above to the scrubber at all times except for breakdowns or malfunctions	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2
Control Efficiency for Hydrochloric acid: greater than or equal to 95 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Scrubbing Liquid pH: greater than or equal to 9 pH units after treatment by the caustic portion of the scrubbing system	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Recirculated Liquid Flow Rate: greater than or equal to 4 gallons/minute	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Upstream Water Spray Valves: Inspect these valves once per calendar quarter to ensure they are in the open position. Make a record of each inspection.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 4
Corrective Action: If any of the parameters monitored on the scrubber falls outside the range, take the appropriate corrective action as stated in the O & M Plan. Record all corrective actions taken when completed. If any of the scrubber parameters fall outside their required ranges, all emissions during this time shall be considered uncontrolled and a control efficiency of 0% shall be used in the monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 5 & 14
TESTING	hdr
Initial Performance Test: due 180 days after Equipment Installation of emission unit to determine Control Efficiency of HCl emissions.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7017.2020, subp. 1
Performance test completed December 6, 2005.	
MONITORING AND RECORDKEEPING	hdr
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring the Scrubbing Liquid pH and the liquid flow rate. The monitoring equipment must be installed, operated, and properly maintained when the plasma etchers are in operation. Records must be kept for a period of 5 years.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 4
The monitoring equipment must be installed, in use, and properly maintained when the plasma etchers are in operation. Calibrate the monitoring equipment annually, or as required by the manufacturing specification.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subp. 2
Monitoring and Recordkeeping: The Permittee shall obtain and record the liquid flow rate and scrubbing liquid pH once each day during operation	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 & 5
Recordkeeping - Control Equipment Bypasses: Record the date and start and stop time of each scrubber bypass period. Report all scrubber bypasses in the facility's semiannual deviation report, and as required by Minn. R. 7019.1000. Apply a control efficiency of 0% during a bypass period when conducting monthly emissions calculations.	Minn. R. 7007.0800, subps. 5 & 6

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-24**

08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

Subject Item: CE 007 Thermal Oxidizer**Associated Items:** EU 088 Roller Coater 2

EU 184 Roller Coater 3

EU 185 Roller Coater 4

GP 001 Photoresist Coaters

What to do	Why to do it
OPERATIONAL REQUIREMENTS	hdr
Operational Requirement: Route all captured emissions from the emission units to the thermal oxidizer at all times except for breakdowns or malfunction or when the emission units are being cleaned. Time periods when emissions are not routed to the thermal oxidizer shall be treated as uncontrolled in the emission calculations for the facility.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Control efficiency for Volatile Organic Compounds: greater than or equal to 95 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subp. 2
Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average while the roller coaters are operated unless a new minimum is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new minimum is required it will be based on the average temperature recorded during the most recent performance test where compliance for VOC emissions was demonstrated.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; 40 CFR Section 64; Minn. R. 7007.0800, subp. 14
Corrective Action: If the 3-hour rolling average temperature falls below the required minimum value, take corrective action according to the O & M Plan, to restore the temperature to at least the required minimum value as soon as possible. Record all corrective actions taken when completed. If the temperature falls below the required minimum value, all emissions during this time shall be considered uncontrolled and a control efficiency of 0% shall be used in the monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 14
TESTING	hdr
Initial Performance Test: due 90 days after Equipment Installation EU 185 Roller Coater #4 to determine VOC capture and destruction efficiencies of the thermal oxidizer control system for use in calculating emissions as described above. Subsequent tests shall be before the end of each 24 months after the Initial Performance Test.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7017.2020, subp. 1
Performance Test: due 90 days before Startup of material used in the roller coaters that contains any HAP for which a destruction efficiency test hasn't been conducted under Minn. R. 7017.2020 - Minn. R. 7017.2060. Until a performance test is conducted, a control efficiency can not be used for the new HAP when calculating monthly emissions.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7017.2020, subp. 1
MONITORING AND RECORDKEEPING	hdr
Monitoring: The Permittee shall install the necessary monitoring equipment for measuring and recording the temperature at the combustion chamber outlet. The monitoring equipment must be installed, operated, and properly maintained when the roller coaters are in operation. The temperature monitoring device must be accurate to within +/- 10 degrees Fahrenheit, and the recordkeeping system must be capable of tracking and recording a 3-hour rolling average or a raw temperature in a retrievable and readable manner for a period of 5 years.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; 40 CFR Section 64; Minn. R. 7007.0800, subp. 4
Monitoring and Recordkeeping Requirement: Perform annual burner inspection and keep records of the inspection at the facility	40 CFR Section 64
Recordkeeping: The Permittee shall maintain either a continuous hard copy readout of the inlet temperature, electronic copy, or maintain a hard copy of manual readings taken at least once every 15 minutes. The Permittee shall also calculate and record 3-hour rolling averages of these readings, as described in Appendix B of this permit.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; 40 CFR Section 64 Minn. R. 7007.0800, subp. 5
Recordkeeping - Control Equipment Bypasses: Record the date and start and stop times of each thermal oxidizer bypass period. Record the volume of coating material used during the bypass period. Report all bypasses in the facility's semiannual deviation report, and as required by Minn. R. 7019.1000. Apply a capture efficiency of 0% during a bypass period when conducting monthly emissions calculations.	Title I Condition: To avoid classification as a major source under 40 CFR Sections 52.21 and 63.2; Minn. R. 7007.0800, subps. 5 & 6

TABLE B: SUBMITTALS**B-1** 08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson
Permit Number: 08500032 - 008

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

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

Send any application for a permit or permit amendment to:

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

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

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

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

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

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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification of the Actual Date of Initial Startup	due 2 days after Initial Startup (2 working days) begins.	CE007
Notification of the date of Equipment Removal/Dismantlement	due 2 days after Equipment Removal and/or Dismantlement (2 working days) begins.	CE001

TABLE B: RECURRENT SUBMITTALS**B-3** 08/22/06

Facility Name: Hutchinson Technology Inc - Hutchinson

Permit Number: 08500032 - 008

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
Compliance Certification	due 30 days after end of each calendar year starting 03/04/2002 (for the previous calendar year). To be submitted on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year.	Total Facility
Equipment List	due 31 days after end of each calendar year starting 01/01/2006 (January 31), to include the calculation of rated heat input from GP 005.	Total Facility

APPENDIX B

Methodology For Calculating Emissions

Facility Name: Hutchinson Technology Inc – Hutchinson

Permit Number: 08500032-008

A. Calculating emissions on a 12-month Rolling Sum basis:

To calculate the emissions for Groups 001 and 007 on a 12-month Rolling Sum basis, each month the Permittee shall sum the monthly emissions from the previous 12-month period.

Monthly emissions are calculated as specified in the equations below.

To assist in the calculation of the 12-month rolling sums, the following clarifications are added below. The Permittee shall review any new material used on site for new HAP and/or VOC.

The following pollutants emitted from the facility are classified as both HAP and VOC:

- glycol ethers
- toluene
- xylene
- cresol

The following pollutants emitted from the facility are only classified as VOC:

- monoethanolamine (MEA)
- isopropyl alcohol (IPA)
- cyclohexane
- propylene glycol monomethyl ether acetate (PGMEA)
- naphtha
- ethanol

The following pollutants emitted from the facility are only classified as HAP:

- HCl
- HF
- CN
- Pb
- chlorine (gas)

NOTE: to make these determinations for new materials consult 40 CFR Section 51.100(s) and Section 112(b) of the Clean Air Act

A.1. Methodology For Calculating Monthly VOC and HAP Emissions Based On Emission Factors – Groups 002-003, and 006

Groups that have emission factors contained in the permit shall calculate emissions based on multiplying the emission factor by the cumulative hours the specific type of emission units were operated for the month. Specifically,

Equation 1:

$$\text{VOC/HAP} = \text{EF}_i \times h_i$$

where:

VOC/HAP = emissions, lb/mo

EF_i = the emission unit specific emission factor for one compound i, lb/emission unit-hr

h_i = the total number of hours the specific type of emission unit was operated for the month

A.2. Methodology For Calculating Monthly VOC and HAP Emissions Based On Material Usage – Groups 001 and 007

Equation 2.a. For emission units qualifying for 100 % capture efficiency:

$$\text{VOC/HAP} = (\sum A_i V_i) \times (1 - \text{control eff}) \times 0.0005$$

Equation 2.b. For emission units qualifying for less than 100 % capture efficiency:

$$\text{VOC/HAP} = [(\sum A_i V_i) \times \text{capture eff} \times (1 - \text{control eff}) \times 0.0005] + [(\sum A_i V_i) \times (1 - \text{capture eff}) \times 0.0005]$$

where:

- i = denotes each separate VOC/HAP containing material used
- A_i = amount of VOC/HAP containing material used, lb/month
- V_i = fraction of VOC/HAP in A_i as applied, by weight
- capture eff = capture efficiency of the VOC/HAP control equipment
- control eff = control efficiency of the VOC/HAP control equipment
- 0.0005 = conversion factor, pounds to tons

Determination of the Use of VOC containing material (A_i)

A_i may be determined by either:

- 1) Direct measurement
- 2) Mass balance calculation*

*The mass balance calculation can account for recovered/recycled VOC containing material as long as records are kept of the weights of the recovered material on a monthly basis.

A.3. Methodology for Calculating Monthly Combustion Source Emissions (Indirect heating sources and Internal Combustion Engines) based on emission factors – Group 005

SO₂, NO_x, and CO are calculated using Equation 3:

Equation 3:

$$\begin{aligned} \text{Pollutant (tons/month)} = & 0.0005 \times [(\text{EF} \times \text{Q})_{\text{ng}} + (\text{EF} \times \text{Q})_{\text{lpgb}} + (\text{EF} \times \text{Q})_{\text{lpgp}} + (\text{EF} \times \text{Q})_{\text{do}}]_{\text{lhs}} \\ & + 0.0005 \times [(\text{EF} \times \text{Q})_{\text{ng}} + (\text{EF} \times \text{Q})_{\text{lpgb}} + (\text{EF} \times \text{Q})_{\text{lpgp}} + (\text{EF} \times \text{Q})_{\text{do}}]_{\text{dhs}} \\ & + 0.0005 \times [(\text{EF} \times \text{Q})_{\text{ng}} + (\text{EF} \times \text{Q})_{\text{do}} + (\text{EF} \times \text{Q})_{\text{g}}]_{\text{rice}} \end{aligned}$$

where:

- EF = emission factor (see Table 1 and 2)
- Q = actual quantity of fuel burned per month (group the units that are appropriate to the emission factor for each fuel type.)
- ng = natural gas
- lpgb = liquefied petroleum gas (butane)
- lpgp = liquefied petroleum gas (propane)
- do = distillate oil
- g = gasoline
- lhs = indirect heating source
- dhs = direct heating emission source
- rice = reciprocating internal combustion engines
- 0.0005 = conversion factor, pounds to tons

Table 1. Emission Factors for Industrial Indirect and Direct Heating Sources

Pollutant	Natural Gas lb/million ft³	LPG - Butane lb/1000 gal	LPG - Propane lb/1000 gal	Distillate Oil lb/1000 gal
SO _x	0.6	0.09S	0.10S	144S
NO _x	100	21	19	25
CO	84	3.6	3.2	5

Table 2. Emission Factors for Industrial Reciprocating Internal Combustion Engines

Pollutant	Natural Gas lb/million ft³	Distillate Oil (Diesel) lb/1000 gallons	Gasoline lb/1000 gallons
SO _x	0.6	31.2	5.31
NO _x	3400.0	469.0	102.0
CO	430.0	102.0	3940.0

Where:

SO₂ = Sulfur Dioxide
NO_x = Oxides of Nitrogen
CO = Carbon Monoxide
MM = Million
Btu = British thermal unit
lbs = pounds
ft³ = cubic feet
gal = gallons
S = % sulfur in the fuel

Note: any subsequent revisions of the emission factors in sections 1.3, 1.4, 3.3, 3.4 of AP-42 supersede the numbers in Tables 1 and 2.

B. Calculating GP 001 temperature on a 3-hour Rolling Average basis:

To calculate temperature on a 3-hour Rolling Average basis, once each hour the Permittee shall sum and average all temperature data points for the previous operating hour, and then sum and average the hourly temperature values from the previous 3 operating hours.

C. Calculating GP 002, GP 003, and GP 004 temperature on a 5-day Rolling Average basis:

To calculate temperature on a 5-day Rolling Average basis, once each day the Permittee shall sum and average the daily temperature values from the previous 5 operating days.

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 08500032-008

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

1. General Information

1.1 Applicant and Stationary Source Location

Stationary Source/Address (SIC Code: 3577)	Mailing Address
40 West Highland Park Drive Northeast Hutchinson McLeod County	Hutchinson Technology Inc. 40 West Highland Park Drive Northeast Hutchinson, MN 55350
Contact: Eric Yost Phone: (320) 587-1541	

1.2 Description of the Facility

Hutchinson Technology, Inc. (HTI) is a manufacturer of suspension assemblies for all sizes of computer disk drives. The suspension assembly holds the read/write head at extremely small distances above the spinning disks. HTI currently holds about 50 percent of the world market, with its only competitors being in Asia. Two types of suspension assemblies are made, conventional and TSA (suspensions incorporating integrated electrical leads). The TSA product is now the core product manufactured by the HTI.

The high tech market HTI is in can prove to be very volatile. Sales of all types of suspension assemblies from HTI have increased and decreased at rates greater than 10 percent per year over the last five years. Most products in this industry usually only have lifetimes of about three years. Because of this volatility, HTI needs to have a permit that is as flexible as possible so that it can respond quickly to changing market demands.

The significant emission sources at the facility are all evaporative and include the photo etching solutions and the many different cleaning solvents used throughout all areas of the plant. About 75 percent of the Volatile Organic Compound (VOC) emissions at the facility are emitted during the application of the photo resist solution by either the two roller coaters or the two dip coaters. The roller coaters are vented through a hood to a thermal oxidizer while the dip coaters are vented to a process boiler.

Other emission units at the facility are controlled as well. The air from the plasma etching solutions is vented to a scrubber to remove HF. Other evaporative sources such as the clean lines and strippers have spray nozzles in the exhaust vents that spray water countercurrent to the exhaust gas flow. Testing has not been done to determine the control efficiencies of the spray nozzles, so the control efficiency is not claimed by the facility. The HF scrubber, the thermal oxidizer and boiler control efficiency have all been tested and their control efficiencies have been claimed in the permit.

There are Metal Hydroxide Sludge Dryers that are listed in the permit as only having natural gas combustion emissions. It was discovered that these units may also generate Particulate Matter (PM), and these emissions are through the process of drying sludge. HTI believes the PM emissions are less than 1 ton per year per sludge dryer.

1.3 Description of the Activities Allowed by this Permit Action

This is a major amendment to the existing Title V permit. The purpose of this amendment is to remove EU 172 from permit requirements and track it as an insignificant activity. This will provide extra volumetric flow capacity to the thermal oxidizer CE 007 to better control units which have higher VOC emissions. This will also fix an error in the listing of EU 173, previously listed associated with CE 007, corrected to show associated with CE 005.

Other changes made through this permit action

Removed requirements pertaining only to permit action 007, the addition and transition of thermal oxidizers.

Total Facility – removed references to individual units as they are now part of a group or tracked as an insignificant activity

GP 006 – added EU 181-183 based on previous facility description

GP 008 – added EU 163 based on previous facility description

removed CE 001, CE 007, SV 057, and SV 073 as they no longer apply

CE 005 – added EU 173, removed EU 172 to correct previous incorrect listing

CE 001-007 – added dates that equipment was tested, review on tests have not been done, will have to be done for reissuance.

1.4 Permit History

Permit Number and Issuance Date	Action Authorized
08500032-007 (11/16/05)	Authorized construction and operation of a new thermal oxidizer to replace CE 001 - Installed a new Roller Coater
08500032-006 (10/06/04)	Authorized construction and operation of a new process line Increased minimum temperature for CE 001
08500032-005 (5/06/04)	90 day test deadline extension for CE 003
08500032-004 (5/04/04)	Increased emission factor for HF in the GP 006 plasma etchers Increased max temperature for EU 018, EU 080, and GP 003 Increased MEA concentration for EU 018 and EU 080 Specified how to calculate MEA emissions Added EU 162 to GP 003 Removed EU 119 from facility
08500032-003 (6/03/03)	To authorize insignificant modifications that contribute HAP emissions
08500032-002 (9/04/02)	120 day test deadline extension for GP 002
08500032-001 (3/04/02)	Part 70 Total Facility Permit issuance

1.5 Facility Emissions

Table 1. Total Facility Potential to Emit Summary

	PM (tpy)	PM ₁₀ (tpy)	SO ₂ (tpy)	NO _x (tpy)	CO (tpy)	VOC (tpy)	HAPs (tpy)	
							Single	All
Total Facility Limited Potential Emissions	249	249	249	249	249	225	4.9	19.9
Total Facility Actual Emissions (2004)	0.5	0.5	0.04	14.6	15.1	32.1	HAPs not reported in emission inventory	

Total Facility PTE remains unchanged; the unit being removed from group requirements will still be tracked as an insignificant activity and subject to insignificant activity limits.

Table 2. Facility Classification

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

2. Regulatory and/or Statutory Basis

New Source Review

The facility has limits to keep it a synthetic minor source under New Source Review regulations. No changes are authorized by this permit.

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 has accepted limits on HAP usage such that it is a non-major source under 40 CFR pt. 63. Thus, no NESHAPs apply.

EAW/EIS

The EAW/EIS does not apply due to zero potential air emissions increases.

Compliance Assurance Monitoring (CAM)

There are no CAM requirements which apply to this modification.

Minnesota State Rules

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

- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

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

Unit	Applicable Regulations	Comments:
Total Facility	40 CFR § 52.21	Removed references to EU 172
GP 001	N/A	Added CE 003 and CE 007 to GP 001
GP 006	N/A	Added EU 181, EU 182, EU 183, and CE 002 to GP 006
GP 008	N/A	Added EU 163 Removed CE 001, CE 007, SV 057, and SV 073 from GP 008
CE 005	N/A	Added EU 173 Removed EU 172 from CE 005

3. Technical Information

3.1 Calculations of Potential to Emit

Attachment 1 to this TSD contains emissions calculations for EU 172. Total facility PTE remains unchanged, emissions from EU 172 will be tracked as an insignificant activity and subject to the limits of insignificant activities.

3.2 Insignificant Activities

HTI has several operations which are classified as insignificant activities. These are tracked and subject to limits in the permit. A complete list of insignificant activities will be submitted with the permit reissuance application.

3.3 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be tracked (e.g., limits, submittals, etc.), should be in Table A or B. The main reason is that the appendices are word processing sections and are not part of the tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

3.4 Comments Received

Public Notice Period: July 7, 2006 – August 7, 2006; *no comments received*

EPA 45-day Review Period: July 7, 2006 – August 21, 2006, *no comments received*

Received a letter from the Lac Vieux Desert Band of Lake Superior Chippewa Indians stating they have no interest in the permit.

4. Conclusion

Based on the information provided by HTI, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 08500032-008, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Trevor Shearen (permit writer/engineer)
Emily Hansen (enforcement)
Curtis Stock (stack testing)
John Chikkala (peer reviewer)

Attachments: 1. EU 172 Emissions Calculations

ATTACHMENT 1:
EU 172 Emission Calculations

Emission Calculations – Original Permit Application

Process Step	Solute	Exhaust Flow (cfm)	Bath Temp		Bath Conc. (mole frac)		Uncontrolled Emission Rate ⁵ (lb/hr)	PTE	
			(deg F)	(deg R)				Uncontrolled (tons/year)	Controlled (tons/year)
Strip Resist	Monoethanolamine	300	149	609	0.0317		1.961	8.588	0.429

Note 1: Emissions calculated by a modified Raoult's law emission model (Liesch Associates, 2004)

Emission Calculations – Proposed Permit Modification (MEA chemistry)

Process Step	Solute	Exhaust Flow (cfm)	Bath Temp		Bath Conc. ³ (mole frac)	Bath Vapor Pressure ⁴ (mm Hg)	Uncontrolled Emission Rate ⁵ (lb/hr)	PTE	
			(deg F)	(deg R)				Uncontrolled (tons/year)	Controlled (tons/year)
Component 1	MEA ²	280	158	618	0.059	0.0171	0.061	0.269	N/A
Component 2	Ethylene Diamine	280	158	618	0.011	0.1302	0.461	2.018	N/A
Total							0.522	2.287	

Control Equipment: Thermal Oxidizer

Capture Efficiency: 100%

Overall Efficiency: 95%

Control Efficiency: 95%

Safety Factor: 20%

[2] MEA is monoethanolamine also known as ethanolamine

[3] Bath Solution concentration by weight was 1.87% for MEA and 0.37% for ethylene diamine

[4] Mole fraction in vapor phase was determined using Peng-Robinson equation of state

[5] Safety Factor of 20% is included even though emissions are conservative because solute interactions and kinetics are not factored in (also see Note 2)

Emission Rate = ((Exhaust Flow*60*bath vapor pressure*MW of solute*528)/(760*385*Bath Temp in R))*(1.2 safety factor)

Note 2: Comprehensive Air Test by Pace Analytical in December 2002 showed MEA emissions from Trace Strippers to be 0.067 lb/hr for 10% MEA by weight at 140 deg F