

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- NSPS SOURCE
REVISED

PERMITTEE

Sun Process Converting, Inc.
Attn: Tim Fitzgerald
1660 Kenneth Drive
Mount Prospect, Illinois 60056

Application No.: 98020059 I.D. No.: 031198ABP
Applicant's Designation: Date Received: August 26, 2002
Subject: Pressure Sensitive Tape, Coating
Date Issued: September 19, 2002 Expiration Date: March 29, 2006
Location: 1660 Kenneth Drive, Mount Prospect

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of four coating lines (CL-1, CL-2, CL-3, and CL-4) controlled by a regenerative thermal oxidizer (RTO-1), pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., volatile organic material to less than 25 tons per year, individual hazardous air pollutants (HAP) to less than 10 tons per year, and a combination of such HAP to less than 25 tons per year). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
2. This coating plant is subject to a New Source Performance Standard (NSPS) for Pressure Sensitive Tape and Label Surface Coating Operation, 40 CFR 60, Subparts A and RR. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
3. The owner or operator shall demonstrate for the each coating line (CL-1, CL-2, CL-3, and CL-4) controlled by a regenerative thermal oxidizer (RTO-1) a 90 percent overall VOC emission reduction as calculated over a calendar month, pursuant to 40 CFR 60.442(a)(2)(i).

4. To determine compliance with 40 CFR 60.442 the owner or operator of each coating line shall calculate a weighted average of the mass of solvent used per mass of coating solids applied for a one calendar month period according to the following procedures:
- a. Determine the weight fraction of organics and the weight fraction of solids of each coating applied by using Reference Method 24 or by the coating manufacturer's formulation data.
 - b. Compute the weighted average by the following equation:

$$G = \frac{\sum_{i=1}^n W_{oi} M_{ci}}{\sum_{i=1}^n W_{si} M_{ci}}$$

- Where:
- G = The calculated weighted average mass (kg) of VOC per mass (kg) of coating solids applied each calendar month.
 - M_{ci} = The total mass (kg) of each coating (i) applied during the calendar month as determined from source records.
 - W_{oi} = The weight fraction of organics applied of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.
 - W_{si} = The weight fraction of solids applied of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.

When calculating the weighted average VOC content of coatings applied on the coating lines on a monthly basis pursuant to 40 CFR 60.443(a) to determine compliance with the NSPS, the Permittee shall use the maximum VOC content for the coatings being employed on the line for a coating for which the actual VOC content is not used.

- c. The owner or operator shall calculate the required overall VOC emission reduction according to the following equation:

$$R_q = \frac{G - 0.2}{G} \times 100$$

Where: R_q = The required overall VOC emission reduction (in percent)

G = The calculated weighted average mass (kg) of VOC per mass (kg) of coating solids applied each calendar month.

- d. The owner or operator shall determine calendar monthly compliance by comparing the monthly required overall VOC emission (R_q) to the overall VOC emission reduction demonstrated in the most recent performance test which complied with 40 CFR 60.442(a)(2). If the monthly required overall VOC emission reduction is less than or equal to the overall VOC reduction of the most recent performance test, the coating line is in compliance with 40 CFR 60.442(a)(2).
 - e. The owner or operator shall continuously record the destruction device combustion temperature during coating operations. The owner or operator shall record all 3-hour periods (during actual coating operations) during which the average temperature of the device is more than 28EC (50EF) below the average temperature of the device during the most recent performance test complying with 40 CFR 60.442(a)(2).
- 5a. After the initial performance test required under 40 CFR 60.8, compliance with the VOC emission limitation and percentage reduction requirements under 40 CFR 60.442 is based on the average emission reduction for one calendar month. A separate compliance test is completed at the end of each calendar month after the initial performance test, and a new calendar month's average VOC emission reduction is calculated to show compliance with the standard.
- b. The performance test shall be conducted as follows:
 - i. The performance of the solvent destruction device shall be determined by averaging the results of three test runs as specified in 40 CFR 60.8(f).
 - ii. Determine for each coating line prior to each test run the weighted average mass of VOC per mass of coating solids applied being used at the facility. The weighted average shall be determined as specified in 40 CFR 60.443(a). In this application the quantities of W_{oi} , W_{si} , and M_{ci} shall be determined for the time period of each test run and not a calendar month as specified in 40 CFR 60.441.
 - iii. Calculate the required percent overall VOC emission reduction as specified in 40 CFR 60.443(b).
 - iv. Determine the percent overall VOC emission reduction of the solvent destruction device by the following equation and procedures:

$$R = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^m Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi} + \sum_{k=1}^p Q_{fk} C_{fk}} \times 100$$

- Where:
- a = The gas stream vents exiting the emission control device.
 - b = The gas stream vents entering the emission control device.
 - C_{aj} = The concentration of VOC (carbon equivalent) in each gas stream (j) exiting the emission control device, in parts per million by volume.
 - C_{bi} = The concentration of VOC (carbon equivalent) in each gas stream (i) entering the emission control device, in parts per million by volume.
 - C_{fk} = The concentration of VOC (carbon equivalent) in each gas stream (k) emitted directly to the atmosphere, in parts per million by volume.
 - Q_{aj} = The volumetric flow rate of each effluent gas stream (j) exiting the emission control device, in dry standard cubic meters per hour.
 - Q_{bi} = The volumetric flow rate of each effluent gas stream (i) entering the emission control device, in dry standard cubic meters per hour.
 - Q_{fk} = The volumetric flow rate of each effluent gas stream (k) emitted to the atmosphere, in dry standard cubic meters per hour.
 - R = The overall VOC emission reduction achieved for a calendar month (in percent).

- A. The owner or operator shall construct the overall VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in 40 CFR 60.446(b).

- B. The Permittee shall notify the Illinois EPA prior to making any changes to the line that would interfere with the Permanent Total Enclosure, as present during the initial performance test conducted on October 16, 1997. The performance test conducted on October 16, 1997 satisfies the initial performance test requirements of this permit and 40 CFR 60, Subpart RR.
 - C. For each coating line where the value of R is greater than or equal to the value of R_q calculated in 40 CFR 60.443(b), compliance with 40 CFR 60.442(a)(2) is demonstrated.
- c. The owner or operator shall install, calibrate, maintain, and operate a monitoring device which continuously indicates and records the temperature of the solvent destruction device's exhaust gases. The monitoring device shall have an accuracy of the greater of "0.75 percent of the temperature being measured expressed in degrees Celsius or "2.5EC.
 - d. The owner or operator of a coating line controlled by a solvent destruction device which uses a hood or enclosure to capture fugitive VOC emissions shall install, calibrate, maintain, and operate a monitoring device which continuously indicates that the hood or enclosure is operating. No continuous monitor shall be required if the owner or operator can demonstrate that the hood or enclosure system is interlocked with the coating line's oven recirculation air system.
- 6. The owner or operator shall maintain a calendar month record of all coatings used and the results of the reference test method specified in 40 CFR 60.446(a) or the manufacturer's formulation data used for determining the VOC content of those coatings.
- 7a. Following the initial performance test, the owner or operator shall submit quarterly reports to the Illinois EPA of exceedances of the VOC emission limits specified in 40 CFR 60.442. If no such exceedances occur during a particular quarter, a report stating this shall be submitted to the Illinois EPA semiannually.
 - b. The owner or operator shall also submit reports at the frequency specified in 40 CFR 60.7(c) when the incinerator temperature drops as defined under 40 CFR 60.443(e). If no such periods occur, the owner or operator shall state this in the report.
- 8. The coating lines are subject to 35 Ill. Adm. Code 218.207, the coating lines shall be equipped with a capture system and control device that provides 80 percent reduction in the overall emissions of VOM and the control device shall have a 90 percent efficiency.
- 9a. The afterburner shall be in operation at all times when the associated emission unit(s) is in operation and emitting air contaminants.

- b. The afterburner combustion chamber shall be preheated to at least the manufacturer's recommended temperature but no less than the temperature at which compliance was demonstrated in the most recent compliance test. This temperature shall be maintained during operation.
- c. The Permittee shall collect and record the following information each day;
 - i. Afterburner combustion chamber monitoring data.
 - ii. A log of operating time for the capture system, afterburner, monitoring device, and the associated emission unit(s).
 - iii. A maintenance log for the capture system, afterburner, and monitoring device detailing all routine and non-routine maintenance performed including dates and duration of any outages.
- 10. Emissions and operation of the three at a time of the four coating lines (CL-1, CL-2, CL-3 and CL-4) controlled by a regenerative thermal oxidizer (RTO-1) shall not exceed the following limits:

<u>Material</u>	<u>VOM Usage (Tons/Yr)</u>	<u>VOM Emissions (Tons/Yr)</u>
Coating	410	8.2

These limits are based on the maximum material usage, the maximum VOM content of the material, and a minimum 98 percent overall control efficiency of the oxidizer. Compliance with the annual limit shall be determined monthly from a running total of the last 12 months of data.

- 11a. Emissions and operation of the regenerative thermal oxidizer) shall not exceed the following limits:

<u>Fuel Usage (mmscf/Yr)</u>	<u>Pollutant</u>	<u>Emission Factor (Lb/mmscf)</u>	<u>Emissions (Ton/Yr)</u>
23.0	NO _x	100	1.14
	CO	84	0.96
	PM	7.6	0.09
	VOM	5.5	0.06
	SO ₂	0.6	0.01

These limits are based on maximum fuel usage and standard emission factors. Compliance with the annual limits shall be determined monthly from a running total of the last 12 months of data.

- b. Natural gas shall be the only fuel(s) fired in the regenerative thermal oxidizer. Use of any other fuel will require a revised permit.

12. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in rule which would require the Permittee to obtain a CAAPP permit from the Illinois EPA. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.
13. The Permittee shall maintain monthly records of the following items:
 - a. VOM and HAP usage for each coating (tons/month and tons/year);
 - b. Natural gas usage for the regenerative thermal oxidizer (mmscf/month and mmscf/year);
 - c. Operating hours of each coating line; and
 - d. VOM and HAP emissions (tons/month and tons/year).
14. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
15. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.
16. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

17. The Permittee shall submit the following additional information with the Annual Emissions Report, due May 1st of each year:
 - a. VOM and HAP usage for each coating (tons/month and tons/year);
 - b. Natural gas usage for the thermal oxidizer (mmscf/month and mmscf/year); and
 - c. VOM and HAP emission (tons/month and tons/year).

It should be noted that this permit has been revised to no longer include operation of the 14 silk screen printing presses and 4 UV dryers.

If you have any questions on this, please call Tara Nguyen-Ede at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:TNE:psj

cc: Illinois EPA, FOS Region 1
Illinois EPA, Compliance Section
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the coating plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. This is using 539.1 tons per year VOM in the coating lines. The resulting maximum emissions are well below the levels, e.g., 25 tons per year of volatile organic material, 10 tons per year of individual hazardous air pollutants, and 25 tons per year of a combination of such HAPs at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, less coating is used, a higher overall destruction efficiency is achieved and control measures are more effective than required in this permit.

1. Emissions from the four coating lines (CL-1, CL-2, CL-3, and CL-4) controlled by a regenerative thermal oxidizer (RTO-1):

<u>Material</u>	<u>VOM Usage (Tons/Yr)</u>	<u>VOM Emissions (Tons/Yr)</u>
Coating	410	8.2

2. Emissions from the regenerative thermal oxidizer):

<u>Fuel Usage (mmscf/Yr)</u>	<u>Pollutant</u>	<u>Emission Factor (Lb/mmscf)</u>	<u>Emissions (Ton/Yr)</u>
23.0	NO _x	100	1.14
	CO	84	0.96
	PM	7.6	0.09
	VOM	5.5	0.06
	SO ₂	0.6	0.01

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