

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - RENEWAL
NESHAP SOURCE

PERMITTEE

Avery Dennison
Attn: Nick DiGrazia
6565 West Howard Street
Niles, Illinois 60714

Application No.: 89030068
Applicant's Designation: 85-273
Subject: Reflector Manufacturing Facility
Date Issued:
Location: 7542 North Natchez Avenue, Niles
6565 West Howard Street, Niles

I.D. No.: 031201ACZ
Date Received: October 25, 2002
Expiration Date:

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of

Adhesive Applicator
Marker Coating Line
2 Potting Lines
2 Glassing Lines
4 Vacuum Metallizers
Batch Vapor Degreaser
Caustic Cleaning Tank
2 Atmospheric Evaporators
Cleaver Brooks Boiler
15 Nickel Electroforming Tanks

as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

- 1a. This federally enforceable state operating permit is issued to limit the emissions of volatile organic material (VOM) and hazardous air pollutants (HAPs) from the source to less than major source thresholds, i.e., VOM to less than 25 tons per year, and HAPs to less than 10 tons per year of any single HAP and 25 tons per year of any combination of such HAPs, as further described in Attachment A. As a result, the source is excluded from requirements to obtain a Clean Air Act Permit Program permit.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
2. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements of Section 112(G) of the Clean Air Act.

- 3a. The Batch vapor degreaser is subject to 40 CFR part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning. The Illinois EPA is administering this regulation in Illinois on behalf of the United States EPA under a delegation agreement.
- b. Any change in the type of degreasing solvent used must be permitted prior to making such change.
- 4a. Emissions and operation of 2 potting lines, 2 Glassing Lines, adhesive applicator, and marker coating line shall not exceed the following limits:

<u>Material</u>	Usage		<u>Pollutant</u>	Emissions	
	<u>(Lb/Mo)</u>	<u>(Lb/Yr)</u>		<u>(Lb/Mo)</u>	<u>(Tons/yr)</u>
Methylene Chloride	1,500	18,000	HAP	1,500	9.00

<u>Material</u>	VOM Usage		<u>Pollutant</u>	Emissions	
	<u>(Lb/Mo)</u>	<u>(Lb/Yr)</u>		<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
Adhesives, Hardeners, Alcohol, and Marker Coatings	3,047	36,540	VOM	3,047	18.27

These limits are based on methylene chloride is 100% HAP and 0% VOM, VOM usage = material VOM content x material usage, complete volatilization of the VOM and HAP contents of the materials, and information provided in the permit application. Compliance with annual limits shall be determined from a running total of 12 months of data.

- b. Marker coating (clear coat) shall maintain compliance with 35 Ill. Adm. Code 218.204(j) (1).
- 5a. Emissions and operation of the batch vapor degreaser shall not exceed the following limits:

<u>Material</u>	Usage		<u>Pollutant</u>	Emissions	
	<u>(Lb/Mo)</u>	<u>(Lb/Yr)</u>		<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
Trichloroethylene (TCE)	1,000	12,000	VOM	1,000	6.00
			HAP	1,000	6.00

* Virgin TCE added to the degreaser, as determined by daily addition log sheets.

These limits are based on Trichloroethylene is 100% HAP and 100% VOM, complete volatilization of the solvent usage as defined in condition 5(b), and information provided in the permit application. Compliance with annual limits shall be determined from a running total of 12 months of data.

- b. For determination of compliance with the limits of condition 5(a), solvent usage shall be determined by the following equation:

$$U = V - (W \times P)$$

Where:

U = Solvent usage for compliance determinations (gallons).

V = Virgin solvent^A added to the solvent cleaning machines (gallons), as determined by daily addition log sheets.

W = Waste solvent^B removed from the solvent cleaning machines and sent off-site for reclamation or disposal, as determined by monthly manifests.

P = Percent concentration of solvent in waste, as determined by analysis/testing^C.

^A For purposes of this permit, virgin solvent is defined as unused solvent.

^B For purposes of this permit, waste solvent is defined as used solvent.

^C The percent concentration of solvent in waste (P) shall be determined in accordance with USEPA Test Methods for Evaluation of Solid Waste, Physical/Chemical Methods (SW-846), Test Method 8260.

- c. The emissions and operation of the Batch vapor degreaser shall not exceed the following limits; pursuant to 40 CFR 63.463(b) (1) (ii) or (b) (2) (ii).

<u>Type of Cleaning Machine</u>	<u>Solvent Air-Interface Area (Ft²)</u>	<u>Idling Emission Rate (Lb/Hour)</u>
Batch Vapor Machine	15.0	0.68

These limits are based on the type of solvent cleaning machine, and an idling emission rate of 0.045 lb/hr per square feet of solvent air interface area, and emission limits were determined considering that the machine is turned on, but not actively cleaning parts.

- d. i. Establish parameters that will be monitored to demonstrate compliance, (40 CFR 63.463(f) (1) (ii)).
- ii. Operate each Batch vapor degreaser within parameters identified in the initial performance test, (40 CFR 63.463(f) (3)).

- e. Pursuant to 35 Ill. Adm. Code 218.183, no person shall operate the Batch vapor degreaser unless:
 - i. The cover of the degreaser is closed when workloads are not being processed through the degreaser;
 - ii. Solvent carryout emissions are minimized by:
 - A. Racking parts to allow complete drainage;
 - B. Moving parts in and out of the degreaser at less than 3.3 m/min (11 ft/min);
 - C. Holding parts in the vapor zone until condensation ceases;
 - D. Tipping out any pools of solvent on the cleaned parts before the removal from the vapor zone; and
 - E. Allowing parts to dry within the degreaser until visually dry.
 - iii. Porous or Absorbent materials, such as cloth, leather, wood or rope, are not degreased;
 - iv. Less than half of the degreaser's open top area is occupied with a workload;
 - v. The degreaser is not loaded to the point where the vapor level would drop more than 10 cm (4 in) when the workload is removed from the vapor zone;
 - vi. Spraying is done below the vapor level only;
 - vii. Solvent leaks are repaired immediately;
 - viii. Waste Solvent is stored in covered containers only and are not disposed of in a manner that more than 20% of the solvent (by weight) is allowed to evaporate into the atmosphere;
 - ix. Water is not visually detectable in solvent exiting from the water separator;
 - x. Exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser open area is not used; unless necessary to meet the requirements of the Occupational Safety and Health Act (29 U.S.C. Section 651 et seq.);
 - xi. The degreaser is equipped with a cover designed to open and close easily without disturbing the vapor zone;
 - xii. The degreaser is equipped with the following switches:

- A. One which shuts off the sump heat if the amount of condenser coolant is not sufficient to maintain the designed vapor level; and
 - B. One which shuts off the spray pump if the vapor level drops more than 10 cm (4 in) below the bottom condenser coil; and
 - C. One which shuts off the sump heat source when the vapor level exceed the design level;
 - D. A permanent conspicuous label summarizing the operating procedure is affixed to the degrease;
 - E. The degreaser is equipped with one of the following devices:
 - xiii. A freeboard height of 3/4 of the inside width of the degreaser tank or 91 cm (36 in), which ever is less; and if the degreaser opening is greater than 1 square meter, a powered or mechanically assisted cover; or
 - xiv. Any other equipment or system of equivalent emission control as approved by the Illinois EPA and further processed consistent with 35 Ill. Adm. Code 218.108. Such equipment or system may include a refrigerated chiller, an enclosed design or a carbon absorption system.
- f. The Permittee shall comply with the following monitoring procedures for Batch vapor degreaser, pursuant to 40 CFR Part 63.466(c).
- i. The Permittee shall determine the hoist speed by measuring the time it takes for the hoist to travel a measured distance. The speed is equal to the distance in meters divided by the time in minutes (meters per minute).
 - ii. The monitoring shall be conducted monthly. If after the first year no exceedances of the hoist speed are measured the Permittee may begin monitoring the hoist speed quarterly.
 - iii. If an exceedance of the hoist speed occurs during quarterly monitoring the monitoring frequency returns to monthly until another year of compliance without an exceedance is demonstrated.
 - iv. If the Permittee can demonstrate to the Illinois EPA's satisfaction in the initial compliance report that the hoist cannot exceed a speed of 11 feet per minute, the required monitoring frequency is quarterly, including during the first year of compliance.
- g. Each solvent cleaning machine shall meet the following base design requirements, pursuant to 40 CFR, Part 63.463(a).

- i. Each solvent cleaning machine shall be equipped with a manual or working -mode cover that completely covers the machine openings. The cover must be periodically inspected to ensure that it remains free of cracks, holes, and other defects. The cover must be closed at all times except during the cleaning, solvent removal, maintenance and monitoring of the degreasers.
 - ii. A freeboard ratio of 0.75 or greater must be maintained for each solvent cleaning machine.
 - iii. Each solvent cleaning machine shall have an automated parts handling system that handles parts from initial loading to removal of cleaned parts. If the Permittee wants to use manual hoist, the Permittee must demonstrate to the Illinois EPA that the hoist can never exceed 11 feet per minute.
 - iv. Each solvent cleaning machine shall be equipped with a liquid and vapor level indicator and must be operational at all times.
 - v. Each solvent cleaning machine shall be equipped with a primary condenser to provide continuous condensation or rising solvent vapors and to create a controlled vapor zone.
 - vi. Each solvent cleaning machine with lip exhaust control must be controlled by a carbon adsorption unit.
- h. The Permittee shall comply with the following work practices, requirements and post in the work place a one page summary of work practices, pursuant to 40 CFR Part 63.463(d).
- i. Conduct maintenance as per manufacturer's recommendation to ensure that each degreaser works properly. Any alternative maintenance practice must be approved by the Illinois EPA.
 - ii. Each solvent cleaning machine shall be covered to minimize air disturbances in the degreaser and the room at all times except during the cleaning, removal of solvent, maintenance and monitoring. If a cover cannot be used, air disturbances shall be controlled by Reduced Room Draft. Room draft shall not exceed 50 feet/minute.
 - iii. A. Parts basket or parts size shall be less or equal to 50% of the solvent air interface area.

or

B. A speed of 3 feet/minute or less shall be maintained between entry and removal of parts basket or parts.
 - iv. If cleaning operation involves spraying, spraying must be performed within the vapor zone (i.e., a baffled or enclosed area of the degreaser).

- v. The Permittee must ensure that parts or parts basket are positioned so that solvent drains freely and parts basket or parts are not removed from the machine until parts are clean and solvent dripping has stopped.
 - vi. During the startup, the Permittee must turn on the primary condenser prior to turning on the sump pump and during shutdown, turn off the sump heater prior to turning off the primary condenser.
 - vii. The Permittee must add and remove solvent with leak-proof couplings. The end of the pipe or hose introducing or withdrawing the solvent be located beneath the liquid solvent surface (i.e., submerged filling) in the sump.
 - viii. The Permittee must collect and store the waste solvent, still bottoms, and sump bottoms in a closed container. Absorbent materials such as sponges, fabric, wood, and paper products shall not be cleaned.
 - ix. Each operator of a solvent cleaning operation must be ready to take and pass an Operator Test at any time during the normal operation of the plant.
6. The Permittee shall comply with the following reporting requirements, pursuant to 40 CFR Part 63.468:
- a. An annual compliance report shall be submitted by February 1, of the year following the year report cover, pursuant to 40 CFR part 63.468(f). The compliance report shall include the following:
 - i. A statement, signed by the owner or operator or someone designate, stating that, "All operators of solvent cleaning machines have received training on the proper operation of solvent cleaning machines and their control devices sufficient to pass the test required."
 - ii. Solvent consumption and HAP emissions for each machine in lb/month and ton/year.
 - b. An exceedance report shall be submitted every 6 months if there is not an exceedance, and every 3 months if there is an exceedance, pursuant to 40 CFR Part 63.468(h). If an exceedance did not occur the report would consist of a statement certifying that there were no exceedances. The frequency of exceedance report will increase to quarterly after an exceedance occurs. The quarterly exceedance report shall include the following:
 - i. The type of exceedance (i.e., control/operating parameter, solvent emissions limit), the reason for the exceedance and the corrective actions taken.

c. The Permittee shall submit exceedance report within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

7a. Natural gas shall be the only fuel fired in the combustion units.

b. Emissions and Operation of the natural gas combustion units shall not exceed the following limits:

<u>Process</u>	<u>Natural Gas Usage</u>		<u>Pollutant</u>	<u>Emission</u>	<u>Emissions</u>	
	<u>(mmscf/mo)</u>	<u>(mmscf/yr)</u>		<u>Factor</u>	<u>(lb/mo)</u>	<u>(Tons/yr)</u>
Natural Gas Combustion	3	27	NO _x	100	300	1.35
			CO	84	252	1.13
			PM	7.6	23	0.10
			VOM	5.5	17	0.07
			SO ₂	0.6	2	0.01

These limits are based on standard AP-42 emission factors, maximum firing rates, natural gas as the only fuel fired in the units, and information provided in the permit application. Compliance with annual limits shall be determined from a running total of 12 months of data.

8. This permit is issued based on negligible emissions of Particulate Matter (PM) from 4 Vacuum Metallizers, Cleaning Tank, 2 Atmospheric Evaporators, and 15 Nickel Electroforming. For this purpose emissions from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
9. No person shall cause or allow any visible emissions of fugitive particulate matter from any process, including any material handling or storage activity beyond the property line of the emission source, pursuant to 35 Ill. Adm. Code 212.301.
10. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the pollution control equipment covered under this permit such that the pollution control equipment be kept in proper working condition and not cause a violation of the Environmental Protection Act or regulations promulgated therein.
11. The Permittee shall maintain records of the vendor recommendations at the facility and be available for inspection and copying by the Illinois EPA.
12. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw

material or installation of controls, in order to eliminate the odor nuisance.

13. The Permittee shall maintain the following records:

- a. Name, Usage (gallons/month and gallons/year), VOM and HAP content (lb/gallon or % weight) and VOM and HAP emissions for the following materials:
 - i. Degreaser Solvent;
 - ii. Coatings;
 - iii. Adhesives;
 - iv. Hardeners;
 - v. Thinners; and
 - vi. Clean up Solvents.
- b. VOM content (lb/gallon) of the marker coating as applied minus water and other exempt compounds;
- c. Natural gas usage (mmscf/month and mmscf/year);
- d. The Permittee shall retain the following records on paper or computer disk for life time, pursuant to 40 CFR Part 63.467(a):
 - i. An owners manual or a written maintenance and operating procedure for each machine and each piece of control equipment.
 - ii. The installation date of each machine. If installation date isn't available, a letter certifying that machine was installed prior to or on or after November 29, 1993, to determine compliance option for existing or new source.
 - iii. Records of the idling emissions limit standard of the initial performance test, including the idling emission rate and values of the monitoring parameters measured during the test.
 - iv. Records of the Halogenated HAP solvent content of each solvent used in each solvent cleaning machine.
- e. The Permittee shall retain the following records, pursuant to 40 CFR Part 63.467(b) and to verify compliance with the limits set forth in this permit:
 - i. Solvent usage (U) in gallons/month and gallons/year.

- ii. Virgin solvent added to the degreasers (V) in gallons/month and gallons/year, as determined by daily addition log sheets.
 - iii. Waste solvent removed from the degreasers (W) in gallons/month and gallons/year, as determined by monthly manifests.
 - iv. Analysis sheet(s) showing test results and any calculations used to determine percent concentration of solvent in waste (P) for each month.
 - v. Emissions of VOM in lb/month and tons/year.
 - vi. Emissions of HAPs in lb/month and tons/year.
 - vii. Keep record of manufacturer's recommendation of solvent air interface area. If manufacturer's data is not available keep record of solvent air interface determination.
 - viii. Keep record of manufacturer's data for idling emission rate. If manufacturer's data is not available, keep record of determination of idling emission rate (Test Method 307).
 - ix. Idling emissions rate in lb/hour.
 - x. All records and logs required by the NESHAP shall be retained at a readily accessible location at the source for at least 5 years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request. Any records retained in a 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 request for records during the course of a source inspection.
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, unless otherwise specified, and shall be made available for inspection and copying by the Illinois EPA 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 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

If you have any questions on this, please call Eric Jones at 217/782-2113.

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

DES:EEJ:psj

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emission of an affected drum-mix asphalt plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Agency used the annual operating scenario, which results in maximum emissions from such a plant. Limiting usage of VOM does this and HAP containing materials to levels below major status and basing emissions are equal to the usage of these materials. The resulting maximum emissions are well below the levels, e.g., 25 tons per year of combined total HAPs, 10 tons per year of a single HAP, and 25 tons per year of volatile organic material, at which a plant would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this facility will be less than predicted in this summary to the extent that the plant uses less of material, gaseous fuel is used, and control measures are more effective than required by this permit.

<u>Equipment/Process</u>	<u>EMISSIONS (Tons/yr)</u>					
	<u>PM</u>	<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>VOM</u>	<u>HAP</u>
Adhesive applicator, Marker coating line, 2 Potting lines, and 2 Glassing lines (Total)	-	-	-	-	18.27	9.00 ^A
Batch vapor degreaser	-	-	-	-	6.00	6.00 ^B
4 vacuum metallizers (Total)	1.76	-	-	-	-	-
Caustic cleaning tank	0.44	-	-	-	-	-
2 Atmospheric evaporators (Total)	0.88	-	-	-	-	-
15 Nickel electroforming tanks (Total)	6.60	-	-	-	-	-
Boiler	0.10	1.35	1.13	0.01	0.07	-
Total	9.78	1.35	1.13	0.01	24.34	15.00

^A Methylene Chloride

^B Trichloroethylene

DES:EEJ:psj

I. INTRODUCTION

Avery Dennison has voluntarily applied to renew its Federally Enforceable State Operating Permit for the Reflector Manufacturing Plant. These limits would prevent the Reflector Manufacturing Plant from being a major source of emissions so that an operating permit does not have to be obtained under the Clean Air Act Permit Program. The permit would contain conditions to assure that the facility is operated as a non-major source. These conditions would be enforceable by both the USEPA and the Illinois EPA.

II. PROJECT DESCRIPTION

Avery Dennison manufactures reflective markers from metal, plastic, and glass for use on roads. The facility uses various volatile organic materials (VOM) in the potting lines, glassing lines, chip seal machine, marker coating, bonding adhesive applicator, and the degreaser. The potting lines are used to fill the concave side of the plastic shell with an epoxy and uses Methylene chloride for cleanup. At the glassing lines a protective glass shield is glued over the reflective materials and isopropanol is used for cleanup. The chip seal machine applies a primer coating in assembling the chip seal and the bonding adhesive applicator applies a bonding adhesive to a reflector. The vapor degreaser uses Trichloroethylene for cleaning steel conveyor racks. The marker coating line applies a clear coat to the markers.

The plant has one small gas fired boiler used for space heating.

III. EMISSIONS

The principal air contaminant emitted from the potting lines, glassing lines, marker coating operation, chip seal machine, bonding adhesive applicator, and the degreaser are VOM. The VOM emission from these emission units are assumed to be 100% of all VOM used is emitted. The only hazardous air pollutants (HAP) used are Methylene chloride and Trichloroethylene.

The principal air contaminant emitted from the boiler is nitrogen oxides (NO_x). NO_x can be formed thermally by combination of oxygen and nitrogen in the air at the temperatures at which fuel is burned. Thermal NO_x is formed during the operation of all common high temperature combustion processes. The secondary air contaminant emitted from the boilers is carbon monoxide (CO). It is formed by the incomplete combustion of fuel. CO is associated with most fuel combustion processes and is found in measurable amounts in the fuel combustion stack exhaust. Other contaminants formed by fuel combustion are particulate matter (PM), sulfur dioxide (SO_2), and VOM. These are normally found in trace amounts from combustion of natural gas.

All other emission units at the plant emit negligible emissions.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board emission standards. The Board's emission standard represents the basic requirements for sources in Illinois. The Board has standards for sources of VOM, PM, NO_x, CO, and SO₂. Avery Dennison complies with all applicable standards.

V. PROPOSED PERMIT

The conditions of the proposed permit contain limitations and requirements to assure that this source will be operated as a non-major source. The permits set limitations on the material usage, VOM content and HAP contents of materials and emissions. These limitations are consistent with the historical operation. The VOM and HAP emissions are based on the amount of material used and air pollution control efficiency.

The permit conditions also establish appropriate compliance procedures, including inspection practices, recordkeeping and reporting requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the plant is operating within the limitations set by the permit.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this facility meets all applicable state and federal air pollution control requirements, subject to the conditions proposed in the draft permit. The Illinois EPA is therefore proposing to issue a permit with federally enforceable limits for this project.

The Illinois EPA and the proposed condition of the draft permit request comments on this proposed action. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 166.