

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT  
SOLVENT CLEANING MACHINE - NESHAPE SOURCE

PERMITTEE

R. S. Owens & Co., Inc.  
Attn: Frank Poradek  
5535 North Lynch Avenue  
Chicago, Illinois 60630

Application No.: 92100008

I.D. No.: 031600FPE

Applicant's Designation: TROPHY & PLAQUE MFG. Date Received: October 10, 1997

Subject: Trophy Manufacturer

Date Issued: November 12, 1999

Expiration Date: November 12, 2004

Location: 5521-5525 North Lynch Avenue, Chicago, 60630

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

One Batch Vapor Degreaser

Remelt Pot

14 Hand Cast Pots

4 Center Cast Pots

Coating Operation Consisting of 3 Spray Booths Controlled by a Filter  
with 3 Electric Ovens

6 Silk Screen Presses with Gas Fired Dryer and Electric Dryer

Plating Operation:

20 Plating Tanks

5 Sulfuric Acid Tanks

5 Hot Water Rinse Tanks

3 Cleaning Tanks

Nickel Strip Tank

Nitric Acid Tank

Bright Dip Tank

Etching Operation:

Nitric Acid Etcher

Ferric Chloride Etcher

Developer

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., 25 tons/year for volatile organic material (VOM) and 10 tons/year for single hazardous air pollutant (HAP) and 25 tons/year

for total HAPs). 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.
- 2a. The batch vapor degreaser solvent cleaning machine(s) are 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. The United States EPA issued this final rule on December 2, 1994.
- b. The Permittee must be in compliance with 40 CFR Part 63, Subpart T - National Emissions Standards for Halogenated Solvent Cleaning on or before December 2, 1994 or immediately upon startup whichever is later.
- 3. This permit is issued for the coating operation based on its not being required to meet the requirements of 35 Ill. Adm. Code 218.204(j) by qualifying for the exemption in 218.208(a). To qualify for this exemption, emissions of VOM from all coating lines must not exceed 15 lbs/day before the application of capture systems and control devices.
- 4a. Source wide usage and emissions of the following material shall not exceed the following limits:

<u>Material</u>	<u>Usage</u>		<u>Emission</u>	<u>VOM</u>
	<u>(Per Mo)</u>	<u>(Per/Yr)</u>	<u>Factor</u>	<u>Content</u>
Zinc	170,000 lbs	850 tons	0.1 lb PM/ton	---
Lead Alloys	10,000 lbs	50 tons	0.03 lb PM/ton	---
Nitric Acid	5,000 lbs	25 tons	5% NO <sub>x</sub>	---
Coating <sup>a</sup>	105 gal	1,050 gal	---	7.37 lbs/gal
Trichloroethylene	2,320 lbs	9.76 tons	---	100 % wt.

<sup>a</sup> This coating limit includes coatings used in the 3 spray booths and the inks used in the 6 silk screening presses.

E M I S S I O N S									
CO		NO <sub>x</sub>		PM		SO <sub>2</sub>		VOM	
<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>
588	2.94	950	4.75	356	1.78	88	0.44	3,130	13.82

These limits define the potential emissions of the plant and are based on maximum usages and standard emission factors as indicated in the permit application. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

- b. The emissions of 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 by rule which would require the Permittee to obtain a Clean Air Act Permit Program 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 Clean Air Act Permit Program permit from the Illinois EPA.
  - c. This permit is issued based on negligible emissions of particulate matter (PM) from the plating operation, coating operation, etching operation, and silk screen presses. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
  - d. This permit is issued based on negligible emissions of volatile organic material (VOM) from the plating operation, etching operation, and silk screen presses. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
  - e. The Permittee shall use only trichloroethylene as solvent in the batch vapor degreaser.
- 5a. For determination of compliance with the limits of this permit, solvent (trichloroethylene) shall be determined by the following equation:

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

Where:

U = Solvent usage for compliance determinations (gallons).

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

W = Waste solvent<sup>B</sup> 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<sup>C</sup>.

<sup>A</sup> For purposes of this permit, virgin solvent is defined as unused solvent.

<sup>B</sup> For purposes of this permit, waste solvent is defined as used solvent.

<sup>C</sup> 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.

- b. Compliance with the monthly organic material emission limits shall be calculated using the solvent density as specified in the Material Safety Data Sheet, and the solvent usage (U) per month, as follows:

$$\begin{aligned} \text{Emissions} &= \text{Solvent Usage (U)} \times \text{Solvent Density} \\ (\text{lbs/Month}) &= (\text{Gallon/Month}) \quad \times \quad (\text{Lbs/Gallon}) \end{aligned}$$

6. The batch vapor degreaser shall be operated according to the following operating and equipment requirements of 35 Ill. Adm. Code 218.183:

- a. Operating Requirements: No person shall operate the batch vapor degreaser unless:
- i. Solvent carry out emissions are minimized by allowing parts to dry within the degreaser until visually dry;
  - ii. 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;
  - iii. Solvent leaks are repaired immediately;
  - iv. Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;
  - v. Water is not visually detectable in solvent exiting from the water separator; and
  - vi. 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.).
- b. Equipment Requirements: No person shall operate the batch vapor degreaser unless:
- i. The degreaser is equipped with a cover designed to open and close easily without disturbing the vapor zone;

- ii. 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;
    - 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 exceeds the design level.
  - iii. A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser.
7. Each solvent cleaning machine must meet the following base design requirements, pursuant to 40 CFR, Part 63.463.
- a. Each solvent cleaning machine must be equipped with an idling or downtime 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.
  - b. A freeboard ratio of 0.75 or greater must be maintained for each solvent cleaning machine.
  - c. Each solvent cleaning machine must 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.
  - d. Each solvent cleaning machine must be equipped with a liquid and vapor level control device(s) that shuts off the sump heat if the sump liquid level drops to the sump heater coils or the vapor level rises above the height of the primary condenser and such device(s) must be operational at all times.
  - e. Each solvent cleaning machine must be equipped with a primary condenser to provide continuous condensation or rising solvent vapors and to create a controlled vapor zone.
  - f. Each solvent cleaning machine with lip exhaust control must be controlled by a carbon adsorption unit.

8. The Permittee shall comply with the following work and operational practice, requirements and post in the work place a one page summary of work practices, pursuant to 40 CFR Part 63.463(d).
  - a. Conduct maintenance as per manufacturer's recommendation to ensure that each solvent cleaning machine works properly. Any alternative maintenance practice must be approved by the USEPA.
  - b. Each solvent cleaning machine shall be covered to minimize air disturbances in the machine 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.
  - c.
    - i. A speed of 3 feet/minute or less shall be maintained between entry and removal of parts basket or parts.

or
    - ii. Parts basket or parts size shall be less or equal to 50% of the solvent air interface area.
  - d. If cleaning operation involves spraying, spraying must be performed within the vapor zone (i.e., a baffled or enclosed area of the solvent cleaning machine).
  - e. 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.
  - f. 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.
  - g. 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.
  - h. 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.
  - i. 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.

9. Each solvent cleaning machine must meet the following control combination (freeboard refrigeration device and freeboard ratio of 1.0) requirements, pursuant to 40 CFR Part 63.463:
  - a. For Freeboard Refrigeration Device (FRD), chilled air blanket temperature at the center of the air blanket shall not exceed 56.7°F while using trichloroethylene, respectively.
    - i. The temperature measurements must be conducted on weekly basis at the center of the air blanket above the vapor zone during the idling mode. The temperature measurements can be taken by attaching a thermometer or a thermocouple to the parts basket or hoist hook and lowering it into the machine so that it is in the center of the air blanket above the vapor zone.
  - b.
    - i. The Permittee shall ensure and obtain certification from the manufacturer that the freeboard height is greater than or equal to the width of the interior freeboard. Freeboard ratio shall be determined by dividing the height of freeboard to the smallest interior freeboard width. If the freeboard ratio is less than 1.0 , the Permittee shall immediately correct the freeboard ratio.
    - ii. Record of Freeboard Ratio and any modification to the Freeboard Ratio.
- 10a. The Permittee shall comply with the following monitoring procedures requirements, pursuant to 40 CFR Part 63.466.
  - i. The Permittee shall conduct monitoring and record the results on a weekly basis for Free Board Refrigeration Device, pursuant to 40 CFR Part 63.466(a)(1). A thermometer or thermocouple shall be used to measure the temperature at the center of the air blanket during the idling mode.
  - b. The Permittee shall comply with the following monitoring procedures, 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.
- 11a. The Permittee shall retain the following records on paper or computer disk for the lifetime of the solvent cleaning machine, 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 halogenated HAP solvent content of each solvent used in each solvent cleaning machine.
- b. The Permittee shall retain the following records in electronic or written form for a period of 5 years, pursuant to 40 CFR Part 63.467(b).
- i. The results of control device monitoring required under 40 CFR Part 63.466.
  - ii. The Permittee shall keep the weekly freeboard air temperature measurements.
  - iii. Record of freeboard ratio and any modification to the freeboard ratio.
  - iv. Estimates of annual solvent consumption for each solvent cleaning machine.
- c. The Permittee shall maintain records of the following items:
- i. Usages of all materials limited in this permit (lb/mo and ton/yr).
  - ii. Source wide emissions of CO, HAPs, PM, NO<sub>x</sub>, SO<sub>2</sub>, and VOM (lb/mo and ton/yr).
  - iii. Daily records of the name and identification of each coating as applied on each coating line.

- iv. Daily records of the VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied on each coating line.
  - v. Daily emissions of VOM (lb/day) from all coating lines.
12. The Permittee shall comply with the following reporting requirements, pursuant to 40 CFR Part 63.468:
- a. An initial statement of compliance report demonstrating each machine is in compliance must be submitted no later than 150 days after startup. The initial compliance report shall include the following:
    - i. Name and address.
    - ii. Facility location address.
    - iii. A list of control equipment (i.e., FRD, RRD) used on each machine to comply with the rule.
    - iv. For each piece of control equipment required to be monitored, a list of the parameters that are monitored and the values of these parameters measured on or during the first month after the compliance date.
  - b. An annual compliance report must be submitted by February 1, of the year following the year the report covers. 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 by 40 CFR 63.463(d)(10)."
    - ii. Solvent consumption and HAP emissions for each machine in lb/month and ton/year, for the reporting period.
  - c. An exceedance report shall be submitted every 6 months if there is not an exceedance, and every 3 months if there is an exceedance. If an exceedance did not occur the report would consist of a statement certifying that there were no exceedances. The frequency of the exceedance report will increase to quarterly after an exceedance occurs. The quarterly exceedance report shall include the following:

- i. Information on the actions taken to comply with 40 CFR Part 63.463(e) and (f). This information shall include records of written or verbal orders for replacement parts, a description of the repairs made, and additional monitoring conducted to demonstrate that monitored parameters have returned to accepted levels.
  - ii. If an exceedance has occurred, the reason for the exceedance and a description of the actions taken.
  - iii. If no exceedances of a parameter have occurred, or a piece of equipment has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.
13. The Permittee shall comply with the following reporting requirements, pursuant to 35 Ill. Adm. Code 218.211(b).
- a. A certification to the Illinois EPA that the coating line or group of coating lines is exempt under the provisions of Section 218.208(a). Such certification shall include:
    - i. A declaration to the Illinois EPA that the coating line or group of coating lines is exempt from the limitations of Section 218.204 because of the provisions of 218.208(a).
    - ii. Calculations which demonstrate that the combined VOM emissions from the coating line or group of coating lines never exceed 15 lbs/day before the application of capture systems and control devices. The following equation shall be used to calculate total VOM emissions:

$$Te = \sum_{j=1}^m \sum_{i=1}^n (AiBi)i$$

Where:

Te = Total VOM emissions from coating lines each day before the application of capture systems and control devices in units of lbs/day;

m = Number of coating lines at the source that otherwise would be subject to the same subsection of Section 218.104 of this Part;

j = Subscript denoting an individual coating line;

n = Number of different coatings applied each day on each coating line;

i = Subscript denoting an individual coating line;

Ai = Weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line in units of lbs VOM/gal; and

Bi = Volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line in units of gal/day.

- b. The Permittee shall notify the Illinois EPA of any record showing that total VOM emissions from the coating line or group of coating lines exceed 15 lbs in any day before the application of capture systems and control devices by sending a copy of such record to the Illinois EPA within 30 days after the exceedance occurs.
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  
Eisenhower Tower  
1701 South First Avenue  
Maywood, Illinois 60153

17. The Permittee shall submit the following additional information with the Annual Emissions Report, due May 1st of each year: solvent usage and emissions, records of daily VOM emissions from all coating lines, and HAP emissions from the prior calendar year. If there has been no exceedance of a requirement of this permit during the prior calendar year, the annual emission report shall contain a statement to that effect.

It should be noted that the sanders, polishers, and shotblasts all controlled by baghouses, die casting machines, boiler, unit heaters, and fuel combustion emissions from the dryer are exempt from state permit requirements, pursuant to 35 Ill. Adm. Code 210.146(aa), (ii), (d), and (c), respectively.

It should be noted that this permit no longer includes operation of the methylene chloride strip tank and methylene chloride tank is not considered an emission source because methylene chloride is a non-VOM.

It should be noted that this permit incorporates the operation of equipment described in Operating Permit 97100068.

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

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

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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 trophy and plaque manufacturing facility 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. The resulting maximum emissions are well below the levels, e.g., 25 tons per year of VOM and 10 tons/year for single hazardous air pollutant (HAP) and 25 tons/year for total HAPs. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

1. Source wide usage and emissions of the following material shall not exceed the following limits:

<u>Material</u>	<u>Usage</u>		<u>Emission</u>	<u>VOM</u>
	<u>(Per Mo)</u>	<u>(Per/Yr)</u>	<u>Factor</u>	<u>Content</u>
Zinc	170,000 lbs	850 tons	0.1 lb PM/ton	---
Lead Alloys	10,000 lbs	50 tons	0.03 lb PM/ton	---
Nitric Acid	5,000 lbs	25 tons	5% NO <sub>x</sub>	---
Coating <sup>a</sup>	105 gal	1,050 gal	---	7.37 lbs/gal
Trichloroethylene	2,320 lbs	9.76 tons	---	100 % wt.

<sup>a</sup> This coating limit includes coatings used in the 3 spray booths and the inks used in the 6 silk screening presses.

E M I S S I O N S									
CO		NO <sub>x</sub>		PM		SO <sub>2</sub>		VOM	
<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>	<u>(Lb/Mo)</u>	<u>(T/Yr)</u>
588	2.94	950	4.75	356	1.78	88	0.44	3,130	13.82

These limits define the potential emissions of the plant and are based on maximum usages and standard emission factors as indicated in the permit application. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months.

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 to obtain a Clean Air Act Permit Program Permit (CAAPP), and Section 112(G) of the Clean Air Act.