

**Synthetic Minor Determination**  
**Stolle Products**  
**0575010106; PTI 05-9516**

- A. **Source Description:** Stolle Products currently decorates numerous metal parts. They decorate metal parts primarily for the following industries: automotive, heavy trucks, appliance and sporting goods. The types of metals being decorated are aluminum, steel, stainless steel, brass and galvanized. The facility is located at 1501 West Michigan St. in Sidney, Ohio.
- B. **Facility Emissions and Attainment Status:** The facility is a major facility and, with the installation of the metal screen printing line (K048), has the potential to emit more than 40 tons per year of volatile organic compounds (VOCs). As such, the facility is requesting federally enforceable terms and conditions to synthetically limit their potential VOC emissions from K048.
- Sidney is in Shelby County. Shelby County is designated as attainment or unclassifiable for ozone, TSP, sulfur dioxide, carbon monoxide and for oxides of nitrogen.
- C. **New Source Emissions:**  
The maximum potential to emit from K048 identified in the PTI 05-9516 application is 66.94 TPY VOC. Stolle Products has agreed to the being restricted to 29.3 TPY VOC.
- At this restricted level, the total VOC emissions will remain below the 40 tons per year major modification threshold.
- D. **Conclusions:** The attached material usage and emission limitations, along with the federally enforceable permit conditions, will restrict the facility's VOC emissions below the major modification thresholds. The total VOC emissions in this PTI will restrict the emissions from K048 at this facility to 29.3 tons per year.

-

AIR EMISSION SUMMARY

The air contaminant sources listed below comprise the Permit to Install for Stolle Products located in Shelby County. The sources listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio EPA Source #	Source Description	Applicable BAT Determination	Mass Emissions & Federal and Requirements	Permit Allowable Control & Usage
K048	Metal Screen Printing Line	*	3745-31-05	VOC emissions shall not exceed 367 lbs/day, 29.3 TPY
		*	3745-21-09 (U)(1)(a)	The VOC content (lbs VOC/gal coating) shall not exceed 4.0 when applying clear coating.
		*	3745-21-09 (U)(1)(c)	The VOC content (lbs VOC/gal coating) shall not exceed 2.0 when applying extreme performance coating.
		*	3745-21-09 (U)(1)(i)	The VOC content (lbs VOC/gal coating) shall not exceed 1.1 when applying protective coating (film).
		**	3745-21-09 (U)(2)(f)	The VOC content (lbs VOC/gal coating) shall not exceed 5.21 when applying non-compliant base coat and nonemclature inks.

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
VOC	29.3

\* BAT has been determined as compliance with the applicable OAC rules/specified allowable emission rates; compliance with Ohio EPA's Air Toxics Policy

\*\* BAT has been determined as compliance with the applicable OAC rules/specified allowable emission rates (based upon vendor information provided in the application documenting non-existence of compliant non-white/almond base coatings and nonemclature inks); compliance with Ohio EPA's Air Toxics Policy



Facility Name: Stolle Products  
 OEPA Premises # 0575010106  
 PTI #05-9516

**ADDITIONAL SPECIAL TERMS & CONDITIONS**

**A. Introduction**

1. This permit to install (PTI) will allow Stolle Products to install a new printing line K048. Stolle Products is a major facility. Issuance of this federally enforceable permit will result in an increase of 29.3 tons of organic compounds per year which is below the 40 TPY major modification threshold.

**B. Applicable Emission Limitations and/or Control Requirements**

1. This permit is based on the use of the photochemically reactive materials specified by the permittee in PTI application number 05-9516. In conjunction with best available technology requirements of OAC 3745-31-05, the emission limitations specified in the following table were established in accordance with Ohio EPA's "Air Toxics Policy" and are based on the photochemically reactive material formulation data and the design parameters of the emission unit's exhaust system as specified in the application. Compliance with Ohio EPA's "Air Toxics Policy" was demonstrated based on the following data input to the Screen3 model:

Pollutant	TLV (ug/m <sup>3</sup> )	Maximum Hourly Emission Rate (lbs/hr)	Predicted 1 Hour Maximum Ground-Level Concentration (ug/m <sup>3</sup> )	Maximum Acceptable Ground-Level Concentration (MAGLC = TLV/42) (ug/m <sup>3</sup> )
Isophorone	20636	14.96	50.80	491.3

NOTE All emissions were assumed to be from the most toxic compound applied. Modeling results were compared to the MAGLC of the most toxic compound. This assumption provides operational flexibility in the use of less toxic compounds. The TLV for isophorone was obtained from ACGIH's 1997 Handbook. If the TLV for isophorone decreases in any future ACGIH Handbook, K048 shall remain in compliance with the MAGLC specified above.

2. Any of the following changes may be deemed a modification to the emissions unit and, as such, prior notification to and approval from Ohio EPA's Southwest District Office are required:
  - a. any change in the composition of the coatings/solvents that would result in the

emission of a compound with a lower threshold limit value (TLV), as indicated in the most recent version of the handbook entitled American Conference of Governmental Industrial Hygienists (ACGIH), than the lowest TLV value specified in the above table;

- b. any change to the emission unit or its exhaust parameters (e.g. increased emission rate, reduction of exhaust gas flow rate, decreased stack height) that would result in an exceedance of the Maximum Acceptable Ground Level Concentration (MAGLC) specified in the above table;
- c. any change in the composition of the coatings/solvents that would result in the emission of any of the exempted organic compounds included in the definition of "VOC" [OAC rule 3745-21-01(B)(6)];
- d. any change in the composition of the coatings/solvents that would result in an increase in emissions of any "Hazardous Air Pollutants" (HAPS) as defined in OAC 3745-77-01(V); and,
- e. any change to the emission unit or its method of operation that would either require an increase in the emission limitations established by this permit or would otherwise be considered a "modification" as otherwise defined in OAC rule 3745-31-01.

### C. Operational Restrictions

- 1. The emissions of volatile organic compounds from emission unit K048 shall not exceed 29.3 tons per year, based upon a rolling 12-month summation of the monthly emissions. Stolle Products maintained usage and emission records for emission units K004-K009. Stolle plans on decommissioning these emission units within approximately one year upon installation of K048. Therefore, no monthly restrictions are being placed on K048 for its first 12 months of operation.
- 2. For Coatings applied in K048 in Compliance with Requirements within OAC 3745-21-09(U)(1)

- a. Usage Requirements

The maximum annual coating usage rates for the following coatings based on a rolling, 12-month summation of monthly coating usage shall not exceed:

<u>Type of Coating</u>	<u>Maximum Annual Coating Usage</u> <u>(Gallons)</u>
1) clear coating	4818
2) extreme performance coating	19,710
3) any coating not regulated under paragraphs (U)(1)(a) to (U)(1)(h) of OAC 3745-21-09	21,900

- b. VOC Content Requirements

The maximum VOC contents for the following coatings shall not exceed:

<u>Type of Coating</u>	<u>Maximum VOC Content (lb VOC/gallon coating)</u>
1) clear coating	4.0
2) extreme performance coating	2.0
3) any coating not regulated under paragraphs (U)(1)(a) to (U)(1)(h) of OAC 3745-21-09	1.1

3. For Coatings applied in K048 subject to the Requirements within OAC 3745-21-09(U)(2)(f)

a. Usage Requirements

The maximum annual coating usage rate based on a rolling, 12-month summation of monthly coating usage shall not exceed 11,125 gallons.

b. VOC Content Requirements

The maximum VOC content (lb VOC/gal coating) shall not exceed 5.21.

4. For Cleanup and Pan Solvent applied in K048

a. Usage Requirements

The maximum annual solvent usage rate based on a rolling, 12-month summation of monthly usage shall not exceed 4351 gallons.

5. For all Coating/Cleanup Activities associated with K048 (refer to terms C.1.-C.4. above)

a. Usage Requirements

The maximum annual coating and solvent usage rates based on a rolling, 12-month summation of monthly usage shall not exceed 57,553 gallons and 4351 gallons, respectively.

**D. Monitoring and/or Record keeping Requirements**

1. Recordkeeping requirements for Coatings applied in K048 in Compliance with Requirements within OAC 3745-21-09(U)(1)

The permittee shall collect and record the following information each month for VOC-emitting coating material applied in K048:

a. the name and identification number of each coating material applied;

b. the volume in gallons, of each coating material applied;

- c. the VOC content of each coating material as applied, in pounds per gallon, excluding water and exempt solvents;
- d. the total VOC emissions from all coating materials applied, in tons; and
- e. the rolling 12-month summation of the VOC emission rates, in tons (beginning the first full calendar month following the start up of emissions unit K048).

2. Recordkeeping requirements for Coatings applied in K048 subject to the Requirements within OAC 3745-21-09(U)(2)(f)

- a. The permittee shall collect and record the following information each month for VOC-emitting coating material applied in K048:
  - i. the name and identification number of each coating material applied;
  - ii. the volume in gallons, of each coating material applied;
  - iii. the VOC content of each coating material as applied, in pounds per gallon, excluding water and exempt solvents;
  - iv. the total VOC emissions from all coating materials applied, in tons; and
  - v. the rolling 12-month summation of the VOC emission rates, in tons (beginning the first full calendar month following the start up of emissions unit K048).
- b. This facility shall implement a coating reformulation program to identify compliant coatings which meet the facility's specifications. Upon successful trial of a new coating, this facility shall notify Ohio EPA's SWDO prior to any permanent transition from the old coating to the new. Annual reports that document this ongoing research and development shall be submitted to Ohio EPA's SWDO. The reports shall be submitted to Ohio EPA's SWDO. The reports shall contain, at a minimum, letters from coating suppliers outlining current efforts, results of any trial coating application, and any projected use of any alternative coating.

3. For Cleanup and Pan Solvent applied in K048

The permittee shall collect and record the following information each month for the clean-up and pan solvent applied in K048:

- a. the name and identification number of each solvent applied;
- b. the volume in gallons, of each solvent applied;
- c. the VOC content of each solvent;

- d. the total VOC emissions from all solvent applied, in pounds and tons; and
- e. the rolling 12-month summation of the VOC emission rates, in tons (beginning the first full calendar month following the start up of emissions unit K048).

4. Record Retention Requirement

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

**E. Reporting Requirements**

- 1. The permittee shall submit required reports in the following manner:
  - a. the permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitation for organic compounds;
  - b. the permittee shall notify the Ohio EPA's Southwest District Office in writing of any daily record showing the use of coatings that do not meet their VOC content limit. The notification shall be sent to the Ohio EPA, Southwest District Office within 30 days following the end of the calendar month;
  - c. the permittee shall also submit annual reports which specify the total VOC emissions from and coating reformulation efforts for K048 for the previous calendar year. These reports shall be submitted by February 15 of each year; and
  - d. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA's Southwest District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a report which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by February 15, May 15, August 15, and November 15 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude such deviations resulting from any malfunction reported in accordance with OAC rule 3745-15-06.)

**F. Testing Requirements**

- 1. Compliance with the emission limitation(s) of these terms and conditions shall be

determined in accordance with the following method(s):

**For all Coating/Cleanup Activities associated with K048**

a. Emission Limitation

The emission limitations presented above are the maximum limits associated with each category of coating/solvent. The combined VOC emission rate **shall never exceed 367 pounds per day.**

Applicable Compliance Method

Compliance shall be based upon the recordkeeping specified in Sections D.1., D.2. and D.3.

b. Emission Limitation

The emission limitations presented above are the maximum limits associated with each category of coating/solvent. The combined VOC emission rate **shall never exceed 29.3 tons per year, based upon a rolling, 12-month summation.**

Applicable Compliance Method

Compliance shall be based upon the recordkeeping specified in Sections D.1., D.2. and D.3.

2. USEPA Method 24 shall be used to determine the VOC contents for coatings. If pursuant to Section 4.3 of Method 24, 40 CFR Part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, the permittee shall notify the Administrator of the USEPA and shall use formulation data for that coating to demonstrate compliance until the USEPA provides alternative analytical procedures or alternative precision statements for Method 24.

Prepared by: Pam Smith  
Date: 9/3/98

Facility Name: Stolle Products - Plant #2  
OEPA Premises # 0575010106  
PTI #05-9516

## Calculations

K048 C-Line

Average Operating Schedule 18 h/d, 5616 h/y  
Maximum Operating Schedule 24 h/d, 7488 h/y

### Actual Emissions

#### **I. NON-COMPLIANT COATINGS** **OAC 3745-21-09(U)(2)(f)**

##### Inks for Nomenclature

300 gallons/yr x yr/5616 h = 0.05 gal/hr  
0.05 gal ink/hr x 3.5 lb VOC/gal ink (average VOC content of inks) = 0.175 lb VOC/hr  
0.175 lb VOC/hr x 5616 h/y x T/2000 lb = 0.49 TPY

##### Base Coat Black

900 gallons/yr x yr/5616 h = 0.16 gal/hr  
0.16 gal base coat/hr x 4.96 lb VOC/gal base coat = 0.79 lb VOC/hr  
0.79 lb VOC/hr x 5616 h/y x T/2000 lb = 2.2 TPY

#### **II. COMPLIANT COATINGS** **OAC 3745-21-09(U)(1)(a)**

##### Clear Top Coat

3100 gallons/yr x yr/5616 h = 0.55 gal/hr  
0.55 gal top coat/hr x 4.0 lb VOC/gal top coat = 2.2 lb VOC/hr  
2.2 lb VOC/hr x 5616 h/y x T/2000 lb = 6.2 TPY

##### **OAC 3745-21-09(U)(1)(c)**

##### Base Coat White and Almond

4700 gallons/yr x yr/5616 h = 0.84 gal/hr  
0.84 gal base coat/hr x 2.0 lb VOC/gal base coat = 1.68 lb VOC/hr  
1.68 lb VOC/hr x 5616 h/y x T/2000 lb = 4.72 TPY

##### **OAC 3745-21-09(U)(1)(i)**

##### Protective Coating

14,100 gallons/yr x yr/5616 h = 2.51 gals/hr  
2.51 gal coating/hr x 1.1 lb VOC/gal coating = 2.76 lb VOC/hr  
2.76 lb VOC/hr x 5616 h/y x T/2000 lb = 7.75 TPY

#### **III. SOLVENT**

##### Clean-up and Pan Solvent

3100 gallons/yr x yr/5616 h = 0.55 gal/hr  
0.55 gal solvent/hr x 7.5 lb VOC/gal solvent x 68% emitted (balance recovered as waste) = 2.81 lb VOC/hr  
2.81 lb VOC/hr x 5616 h/y x T/2000 lb = 7.89 TPY

TOTAL 10.42 lb/hr, 29.25 TPY (The facility has agreed to limit their TPY to 29.3 TPY)

### Maximum Emissions

The Air Toxics modeling will be based on the maximum hourly emissions rate calculated below (14.96 lbs/hr).

#### **I. NON-COMPLIANT COATINGS OAC 3745-21-09(U)(2)(f)**

##### Inks for Nomenclature

0.07 gal ink/hr x 5.21 lb VOC/gal ink (max VOC content of inks) = 0.36 lb VOC/hr

##### Base Coat Black\*

1.2 gal base coat/hr x 4.96 lb VOC/gal base coat = 5.95 lb VOC/hr

#### **II. COMPLIANT COATINGS OAC 3745-21-09(U)(1)(a)**

##### Clear Top Coat

0.55 gal top coat/hr x 4.0 lb VOC/gal top coat = 2.2 lb VOC/hr

**OAC 3745-21-09(U)(1)(c)**

##### Base Coat White and Almond\*

2.25 gal base coat/hr x 2.0 lb VOC/gal base coat = 4.5 lb VOC/hr

**OAC 3745-21-09(U)(1)(i)**

##### Protective Coating

2.5 gal coating/hr x 1.1 lb VOC/gal coating = 2.75 lb VOC/hr

#### **III. SOLVENT**

##### Pan Solvent\*\*

0.29 gal solvent/hr x 7.5 lb VOC/gal solvent x 68% emitted (balance recovered as waste) = 1.5 lb VOC/hr

##### Clean-up\*\*

0.73 gal cleanup/hr x 7.5 lb VOC/gal cleanup x 68% emitted (balance recovered as waste) = 3.7 lb VOC/hr

TOTAL:

14.96 lbs/hr

\* NOTE Either the base coat black or the base coat white and almond can be applied at any given time. Therefore, one resulting in the worst-case emissions (black) was added into the total.

\*\* NOTE Either the pan solvent or cleanup will be applied in any given hour during the day. Therefore, the one with the highest hourly rate was used in the lb/hr total of 14.96.

### Potential Emissions

The overall daily emission limitations shall be based on these calculations. Therefore, the daily emissions

from K048 shall never exceed 367 lbs/day. The following calculations set the "up to" usage limits in the permit (i.e., the amount of each type of coating/cleanup allowed) with their totals never to exceed 367 lbs/day, 29.3 TPY).

**I. NON-COMPLIANT COATINGS**  
**OAC 3745-21-09(U)(2)(f)**

Inks for Nomenclature (0.07 gal/hr) & Base Coat Black\* (1.2 gals/hr)

1.27 gal non-compliant coating/hr x 5.21 lb VOC/gal (max VOC content of non-compliant coatings)x 24 h/d =  
158.8 lbs VOC/day  
158.8 lbs VOC/day x 365 days/year = 57,962 lbs VOC/year  
57,962 lbs VOC/year x T/2000 lbs = 28.98 TPY  
57,962 lbs VOC/year x gal/5.21 lb VOC/gal non-compliant coating = 11,125 gals/year

**II. COMPLIANT COATINGS**  
**OAC 3745-21-09(U)(1)(a)**

Clear Top Coat

0.55 gal top coat/hr x 4.0 lb VOC/gal top coat x 24 h/d = 52.8 lbs VOC/day  
52.8 lbs VOC/day x 365 days/year = 19,272 lbs VOC/year  
19,272 lbs VOC/year x T/2000 lbs = 9.64 TPY  
19,272 lbs VOC/year x gal/4.0 lb VOC = 4818 gals/year

**OAC 3745-21-09(U)(1)(c)**

Base Coat White and Almond\*

2.25 gal base coat/hr x 2.0 lb VOC/gal base coat x 24 h/d = 108 lbs VOC/day  
108 lbs VOC/day x 365 days/year = 39,420 lbs VOC/year  
39,420 lbs VOC/year x T/2000 lbs = 19.71 TPY  
39,420 lbs VOC/year x gal/2.0 lb VOC = 19,710 gals/year

**OAC 3745-21-09(U)(1)(i)**

Protective Coating

2.5 gal coating/hr x 1.1 lb VOC/gal coating x 24 h/d = 66 lbs VOC/day  
66 lbs VOC/day x 365 days/year = 24,090 lbs VOC/year  
24,090 lbs VOC/year x T/2000 lbs = 12.0 TPY  
24,090 lbs VOC/year x gal/1.1 lb VOC = 21,900 gals/year

**III. SOLVENT**

Clean-up and Pan Solvent\*\*

0.73 gal solvent/hr x 7.5 lb VOC/gal solvent x 68% emitted (balance recovered as waste) x 24 h/d = 89.4 lbs  
VOC/day  
89.4 lbs VOC/day x 365 days/year = 32,631 lbs VOC/year  
32,631 lbs VOC/year x T/2000 lbs = 16.32 TPY  
32,631 lbs VOC/year x gal/7.5 lb VOC = 4350.8 gals/year

**ANNUAL PTE**

367 lbs/day, 66.94 TPY

- \* NOTE            Either the base coat black or the base coat white and almond can be applied at any given time. Therefore, one resulting in the worst-case emissions (black) was added into the total.
  
- \*\* NOTE            Either pan solvent (0.29 gal/hr) or cleanup (0.73 gal/hr) will be applied in any given hour during the day. Therefore, the one with the higher hourly application rate (cleanup) was used to calculate the annual usage limitation and PTE.

PSS  
9/15/98