

**STATE OF MISSOURI**



**DEPARTMENT OF NATURAL RESOURCES**

**MISSOURI AIR CONSERVATION COMMISSION**

**PERMIT TO CONSTRUCT**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **052009-006** Project Number: 2008-10-053

Parent Company: Plaze, Inc.

Parent Company Address: 105 Bolte Lane, St. Clair, MO 63077

Installation Name: Plaze, Inc.

Installation Address: 24 Progress Parkway, Union, MO 63084

Location Information: Franklin County, S6, T42N, R1E

Application for Authority to Construct was made for:  
Construction of a new aerosol/liquid can plant. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

- 
- Standard Conditions (on reverse) are applicable to this permit.
  - Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

MAY 11 2009

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EFFECTIVE DATE

  
 DIRECTOR OR DESIGNEE  
 DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

**You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review.** In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Plaze, Inc.  
Franklin County, S6, T42N, R1E

1. VOC Emission Limitation
  - A. Plaze, Inc. shall emit less than 100.0 tons of Volatile Organic Compounds (VOCs) from the installation in any consecutive 12-month period. This limit applies to the emissions from equipment/processes listed in Table 1.
  - B. Attachment A or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A. Plaze, Inc. shall maintain all records required by this special condition for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used in this equipment.
  - C. Plaze, Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 1.B indicate that the source exceeds the limitation of Special Conditions Number 1.A.
2. Silk Screen Limitation
  - A. Plaze, Inc. shall screen print (EP21) less than 18,000,000 cans in any consecutive 12-month period
  - B. Attachment B or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A. Plaze, Inc. shall maintain all records required by this special condition for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- C. Plaze, Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 2.B indicate that the source exceeds the limitation of Special Conditions Number 2.A.
3. **Work Practice - Cloths**  
Plaze, Inc. shall keep all ink, solvents and cleaning solutions in sealed containers whenever the materials are not in use. Plaze, Inc. shall provide and maintain suitable, easily read, permanent markings on all inks, solvent and cleaning solution containers used with this equipment.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2008-10-053  
Installation ID Number: 071-0224  
Permit Number:

Plaze, Inc.  
24 Progress Parkway  
Union, MO 63084

Complete: October 27, 2008

Parent Company:  
Plaze, Inc.  
105 Bolte Lane  
St. Clair, MO 63077

Franklin County, S6, T42N, R1E

REVIEW SUMMARY

- Plaze, Inc. has applied for authority to construct a new aerosol/liquid can plant.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The primary HAP of concern from this process is hexane.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOCs are above de minimis levels, but conditioned to less than major levels. All other pollutants are below de minimis levels.
- This installation is located in Franklin County, a nonattainment area for ozone (O<sub>3</sub>) and an attainment area for all other criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was not performed for this review. No model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.
- Emissions testing is not required for the source.
- Either an Intermediate Operating Permit is required for this installation within 90 days of equipment startup or a Part 70 Operating Permit application is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

### INSTALLATION / PROJECT DESCRIPTION

Plaze Inc. is seeking authority to construct a new contract packaging company in Union, Missouri. The production level of the plant is expected to be 80 million cans per year while operating 80 hours a week. The potential throughput based on continuous production (24 hours per day, 365 days a year) is 168 million cans per year. The process starts with the raw materials that are received pre-blended or are blended in the mixing room. The blended products are then transported to the production line where cans or bottles are then filled. Aerosol/liquid products proceed to a gassing house where they are pressurized with propellants. The final product is dated coded and weighted. A portion of the cans may also be screen printed. A final pressure test is conducted using hot water baths in order to meet Department of Transportation specifications and the product is packaged for shipment.

This is a new facility and, therefore, no permits have been issued to Plaze, Inc. in Union from the Air Pollution Control Program. However, there is a sister plant located in St. Clair (071-0157). Maximum usages for the Union facility are based on historical usages at the existing St. Clair facility. Table 1 lists all emission points associated with the new facility.

Table 1: Emission Points at the Installation

Emission Point	Description
EP1 to 16	(16) 9,000 Gallon Bulk Above Ground Storage Tanks
EP17	Losses from Gassing Aerosol Cans
EP18	Can & Box Coding Inks
EP19	Batch Mixing (consists of multiple tanks with total capacity of 50,000 gallons)
EP20	Hot Water Boilers
EP21	Silk Screening

Bulk storage tanks (EP1 through 16) are used to store chemicals which will be used to feed the batching tanks (EP19). The primary chemical to be stored in the bulk storage tanks is hexane although other chemicals may also be stored in these tanks. For every 80 million cans produced, it is estimated that the bulk storage tanks will transfer approximately 1.28 million of gallons of chemicals to the batching tanks (EP19).

The combined capacity of all of the batching tanks will not exceed 50,000 gallons. The batching tanks will mix approximately 2.7 million gallons of VOC-containing materials. The difference between the storage tanks and the batching tanks throughputs are made up from additions of chemicals from drums/totes to the batching tanks; water is not included in the volume totals. Although hexane is expected to be main HAP used in the process, other HAPs may include methylene chloride, xylene, methanol, n-hexane, perchlorethylene, trichloroethylene and toluene. All chemicals used at the facility have been based on hexane to attain the worse case individual HAP emissions. The potential emissions for total HAPs and individual HAPs will not exceed the hexane numbers when other HAPs are used.

The VOC losses associated with the gassing of the aerosol cans (EP17), also known as propellant charging, are based on the number of cans of throughput. The propellant used for the gassing process consist of some form of liquefied petroleum gas. The emissions associated with the ink jet coders (EP18) are due to the vaporization of VOCs in the ink. It is estimated that 0.3225 tons ink will be used for every 80 million cans of throughput. Hot water boilers (EP20) are used to heat water for final pressure tests required to meet transporting specifications of the product. EP20 will consist of 4 to 6 natural gas fired boilers with a combined heat input of 6 million Btus per hour or less. Silk screen printers (EP-21) will be used on a fraction of the total cans filled. The maximum number of cans that can be printed is not known. In order to avoid exceeding screen modeling action levels and having to Screen model, Plaze, Inc. has agreed to limit the amount of cans that can be printed to 18,000,000. It is estimated that 0.00004 gallons of ink per can will be used.

Plaze, Inc is located in Franklin County which is considered non-attainment for ozone. As such, major levels for criteria pollutants are 100 tons per year. To avoid being considered a major source, Plaze has elected to limit their VOC emissions to less than major levels.

## EMISSIONS/CONTROLS EVALUATION

The project's potential emissions are primarily VOCs and HAPs. A description of the emission factors sources are described as follows. VOC emissions for the breathing and working losses from the storage tanks (EP1 through 16) and batching tanks (EP19) were calculated using the Environmental Protection Agency's (EPA) TANKS 4.0 program. VOC emissions from filling the cans or bottles with product from the batching tanks are considered a part of the working losses associated with the batch mixing. The emission factor for gassing of the cans (EP17) of 0.0012 pounds of VOC emitted per can is taken from emission data provided in an undercup weight loss study published in "Spray Technology and Marketing", July 1999. The emission factors used for estimating the emissions from natural gas combustion in the hot water boilers were obtained from

the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4, *Natural Gas Combustion* (07/1998). VOC emission associated with the silk screening (EP21) were calculated using a mass balance approach. 100 percent of the VOC and HAP content contained in the inks are assumed to be emitted into the atmosphere. The potential emissions for total VOCs, combined HAPs and each individual HAPs were calculated for each ink and the highest potential emissions of VOCs and combined/individual HAPs were then used to determine the worst case potential emissions for the silk screening process.

The following table provides an emissions summary for this project. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) Since this facility is a new installation, there are no existing potential or actual emissions.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels*	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM <sub>10</sub>	15.0	N/A	N/A	0.2	N/A
SO <sub>x</sub>	40.0	N/A	N/A	<<0.02	N/A
NO <sub>x</sub>	40.0	N/A	N/A	2.5	N/A
VOC	40.0	N/A	N/A	110.3	<100
CO	100.0	N/A	N/A	2.1	N/A
HAPs	10.0/25.0	N/A	N/A	8.9**	8.9**
Hexane	10.0	N/A	N/A	7.1	N/A
Formaldehyde	2.0	N/A	N/A	0.03**	0.03**
Xylene	10.0	N/A	N/A	<<0.01**	<<0.01**
Ethylbenzene	10.0	N/A	N/A	<<0.001**	<<0.001**
Toluene	10.0	N/A	N/A	<<0.001**	<<0.001**
Glycol Ethers	5.0	N/A	N/A	1.14**	1.14**

N/A = Not Applicable; N/D = Not Determined

\*Levels for individual HAPs represent the Screen Model Action Level (SMAL).

\*\*Total and individual HAPs except for hexane are indirectly limited by the number of cans that can go through the silk screening process. The unlimited potential for total and individual HAPs have not been determined.

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are above de minimis levels, but conditioned to less than major levels. All other pollutants are below de minimis levels.

## APPLICABLE REQUIREMENTS

Plaze, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*  
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits, 10 CSR 10-6.065*
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170*
- *Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220*
- *Control of Odors in the Ambient Air, 10 CSR 10-5.160*

### SPECIFIC REQUIREMENTS

- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-5.030*

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Susan Heckenkamp  
Environmental Engineer

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 12, 2008, received October 20, 2008, designating Plaze, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Saint Louis Regional Office Site Survey, dated November 5, 2008
- Material Safety Data Sheets

**Attachment A – Installation-Wide VOC Compliance Worksheet**

Plaze, Inc.  
 Franklin County, S6, T42N, R1E  
 Project Number: 2008-10-053  
 Installation ID Number: 071-0224  
 Permit Number:

This sheet covers the period from \_\_\_\_\_ in the year \_\_\_\_\_.  
 (month) (year)

Copy as needed.

<b>Emission Point</b>	<b>Throughput</b>	<b>Throughput Units</b>	<b>VOC Emission Factor</b>	<b>VOC Emissions (tons)</b>
EP1 to 16 Bulk Storage Tanks – Breathing Losses <sup>1</sup>		Gallons		
EP1 to 16 Bulk Storage Tanks – Working Losses <sup>1</sup>		Gallons		
EP17 (Gassing of cans) <sup>2</sup>		Cans	0.0012 lb/can	
EP18 Can & Box Coding Inks <sup>2,3</sup>		Gallons		
EP19 Batch Tanks – Breathing Losses <sup>1</sup>		Gallons		
EP19 Batch Tanks – Working Losses <sup>1</sup>		Gallons		
EP20 Steam Boilers <sup>2</sup>		MMCF	5.5 lb/MMCF	
EP21 Silk Screening Inks <sup>2,3</sup>		Gallons		
Total VOC Emissions This Month (tons):				
Previous 11 Months VOC Emissions (tons):				
12-Month Total VOC Emissions (tons) <sup>4</sup> :				

<sup>1</sup>Batch tank and storage tank emissions will be determined using the most current version of EPA’s Tanks program or an alternate EPA approved method. All supporting emissions documentation will be kept as part of the record keeping requirements.

<sup>2</sup>VOC emissions = Throughput (units) x VOC Emission Factor (lbs VOC/unit) x 0.005 (tons VOC/lb VOC)

<sup>3</sup>The emission factor to be used for this emission point will be derived from mass balance and/or MSDS data and will be in pounds of VOC per gallon of ink. Emission factor calculations and MSDS will be kept as part of the record keeping requirements.

<sup>4</sup>A 12-month total VOC emissions of less than 100 tons indicates compliance.



Mr. Gary Myers  
Regulatory & Safety Director  
Plaze, Inc.  
24 Progress Parkway  
Union, MO 63084

RE: New Source Review Permit - Project Number: 2008-10-053

Dear Mr. Myers:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Susan Heckenkamp, at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by phone at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale  
New Source Review Unit Chief

KBH:shl

Enclosures

c: Saint Louis Regional Office  
PAMS File: 2008-10-053  
Permit Number: