

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

PERMIT BOOK

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: 122015-006

Project Number: 2015-08-028  
Installation Number: 510-0097

Parent Company: U.S. Paint Corporation

Parent Company Address: 381 South 21st Street, St. Louis, MO 63103

Installation Name: U.S. Paint Corporation

Installation Address: 831 South 21st Street, St. Louis, MO 63103

Location Information: St. Louis City County, Land Grant-00363

Application for Authority to Construct was made for:  
Installation of a new paint mixer and filler. This review was conducted in accordance with Section (5), 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.

Prepared by  
Kathy Kolb  
New Source Review Unit

Director or Designee  
Department of Natural Resources

DEC 10 2015

Effective Date

## 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 Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. 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 these air contaminant sources.

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 sources(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.

**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."*

U.S. Paint Corporation  
St. Louis City County, Land Grant-00363

1. Superseding Condition
  - A. The conditions of this permit supersede the following:
    - 1) The 100 tons per year VOC installation wide portion of Section II limitations of Permit # 07-02-001 issued by the City of St. Louis Air Pollution Control Program.
    - 2) The 25 tons per year HAP installation wide portion of Section II limitations of Permit # 07-02-001 issued by the City of St. Louis Air Pollution Control Program
2. U.S. Paint Corporation shall emit less than 100.0 tons of VOCs from the installation in any consecutive 12-month period. This limit applies to the VOC emissions from all the equipment/processes installed or permitted at U.S. Paint Corporation as of issuance date of this permit.
3. U.S. Paint Corporation shall emit less than 10.0 tons individually or 25.0 tons combined of HAPs from the installation in any consecutive 12-month period. This limit applies to the HAP emissions from all the equipment/processes installed or permitted at U.S. Paint Corporation as of issuance date of this permit.
4. Record Keeping and Reporting Requirements
  - A. U.S. Paint shall develop and keep monthly records of VOC emissions to show compliance with Special Condition 2. These records shall include, at minimum, the following information:
    - 1) Installation name
    - 2) Installation ID
    - 3) Permit number
    - 4) Current month
    - 5) Current 12-month date range
    - 6) To calculate actual emissions for EP2
      - a) List all materials containing VOCs and the respective gallons filled per year.
      - b) List density of each material (lb per gal)
      - c) List the amount of paint filled. The calculation for tons of paint filled = gallons of paint through the mixer multiplied by density (lb/gal) x 0.0005 ton/lb

**SPECIAL CONDITIONS:**

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

- d) List the VOC Emission Factor for EP2 of 30.0 lbs/ ton of paint produced
  - e) List the Tons of VOC Emission per Year (EP2) = Tons of paint filled x 30.0 lbs/tons x 0.0005 tons/lb.
  - 7) To calculate actual emissions for all other emission points that emits VOC at the facility:
    - a) Monthly throughput of each material where applicable used for each emission point
    - b) Emission factor for each emission unit and emission factor source
  - 8) Plantwide Monthly VOC Emissions (tons) shall be the sum of all Monthly VOC Emissions (tons) of all emission points (units).
  - 9) Plantwide 12-Month rolling Total VOC Emissions (tons) = The sum of the 12 most recent Plantwide Monthly VOC Emissions (tons) + the sum of all start-up, shutdown, and malfunction VOC emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section during the most recent 12 month period. Plant wide 12-Month Rolling Total VOC Emissions of less than 100.0 tons combined of VOCs per year indicates compliance with Special Condition 2.
- B. U.S. Paint shall develop and keep monthly records of HAP emissions to show compliance with Special Condition 3. These records shall include, at minimum, the following information:
- 1) Installation name
  - 2) Installation ID
  - 3) Permit number
  - 4) Current month
  - 5) Current 12-month date range
  - 6) To calculate actual HAP emissions for EP2
    - a) List all materials containing HAPs and the respective gallons filled per year. List the percentage of individual HAPs as stated on the SDS for that specific material.
    - b) List density of each material (lb per gal)
    - c) Tons of paint filled = gallons of paint through the mixer multiplied by density (lb/gal) x 0.0005 ton/lb
    - d) For volatile HAPs, the individual HAP emission factor for EP2 is equal to individual HAP percent by weight of each material divided by its VOC percent by weight of the material multiplied by 30.0 lbs/ ton of paint produced
    - e) Total Tons of HAP Emission per Year (EP2) for an individual HAP equals the sums of the individual HAPs calculated in Special Condition 4.B.6)d.
  - 7) To calculate actual emissions for all other emission points that

**SPECIAL CONDITIONS:**

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

- emits HAP at the facility:
- a) Monthly throughput of each material where applicable used for each emission point
  - b) Individual HAP emission factor for each emission unit with the emission factor source
- 8) Plantwide Monthly Individual HAP Emissions (tons) shall be the sum of all HAP Emissions (tons) of all emission points (units) for each individual HAP.
  - 9) Plantwide 12-Month rolling Total HAP Emissions (tons) for each individual HAP= The sum of the 12 most recent Plantwide Monthly Individual HAP Emissions (tons) + the sum of all start-up, shutdown, and malfunction HAP emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section during the most recent 12 month period. Plant wide 12-Month Rolling Total HAP Emissions of each individual HAP less than 10.0 tons per year indicates compliance with Special Condition 3.
  - 10) Plantwide 12-Month rolling Total Combined HAP Emissions (tons) = The sum of the 12 most recent Plantwide Monthly HAP Emissions (tons) for all individual HAP emissions as calculated in 4.B.9) and 4.B.6)e) plus the sum of all start-up, shutdown, and malfunction HAP emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section during the most recent 12 month period. Plant wide 12-Month Rolling Total HAP Emission of less 25.0 tons combined of HAPs per year indicates compliance with Special Condition 3.
- C. U.S. Paint Corporation shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
  - D. U.S. Paint Corporation shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2015-08-028  
Installation ID Number: 510-0097  
Permit Number:

Installation Address:  
U.S. Paint Corporation  
831 South 21st Street  
St. Louis, MO 63103

Parent Company:  
U.S. Paint Corporation  
381 South 21st Street  
St. Louis, MO 63103

St. Louis City County, Land Grant-00363

REVIEW SUMMARY

- U.S. Paint Corporation has applied for authority to install a new paint mixer and filler.
- The application was deemed complete on September 3, 2015.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are emitted from the paint mixing and filling.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated 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 (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in St. Louis City, a nonattainment area for the 8-hour ozone standard and the PM<sub>2.5</sub> standard and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.

- An amendment to the existing Intermediate Operating Permit is required for this installation within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

U.S. Paint Corporation manufactures high performance paints for specialized industrial markets. The installation is a synthetic minor (Intermediate) source with an operating permit.

The following New Source Review permits have been issued to U.S. Paint Corporation from the St. Louis City Permits. No additional permits have been issued from Missouri Department of Natural Resources' Air Pollution Control Program.

Table 1: Permit History (St. Louis City)

Permit Number	Description
98-01-005	St. Louis CO (Paint)
98-08-055	Above ground solvent tanks
98-08-054	Paint mixers
99-07-049S	Coating mixing tank
99-07-051S	Sand mill installation
99-07-052	Paint booth
00-07-036	Submersible mill
01-01-052	Submersible mill
01-05-012	Fairing compound mixer
03-06-010	Paddle mixer
04-01-001	Paint booth
98-08-055A	New solvent
05-08-005	Tank washer
06-05-009	Submersible mill
98-08-055	Tank solvent changes
07-02-001	Paint mixers
No permit # available	55-gallon dispensing systems
08-10-017	Record keeping changes
09-03-008	Container cleaning

## PROJECT DESCRIPTION

U.S. Paint plans to install a mixer and filler on their existing EP2 line. When a product has passed all quality checks, it is ready to be filled into containers. The batch of paint is placed under a mixer prior to filling and is agitated during the filling process to ensure product does not settle. This mixer will mainly be used for mixing clear products. The emissions associated with the new mixer will be added to the existing emission point, EP2 – Fugitive Emissions from General Mixing and Handling (paint manufacture), and will be located in Building-C. Pigment and dry materials are added to portable mixing tanks in Build-E North. The main part of production is done in Building-D (Adding

solvent, resin, and other material mixing, milling, letback). The filling process is performed in Building-C. There is a pump and filter system set up that attaches to the filling machine. The raw materials added at this stage of the process are all liquids and therefore there will not be any particulate matter emitted from the mixer. The employee enters the fill weight into the computer of the filling machine. The required empty containers are placed manually on the filling station and the operator depresses the cycle start push button. The weight meter tares, and filling commences at maximum flow rate. When the dribble fill weight has been achieved, the machine slow fills. When the target weight has been achieved, filling stops. The operator places a lid on the container and the container is transported through the appropriate lid closer where the container is closed. The new filling machine will fill quart, gallon and 5-gallon containers. Currently, there are two other automatic filling machines.

Although this addition of a new mixer and filler has the potential to debottleneck the production process on a short term basis (i.e. it allows more containers to be filled in less time), U.S. Paint remains bottlenecked on a long-term basis by the installation wide limit of 100 tons of VOCs per year and a 25 tons of HAPs per year. Emissions from all of the emission units at the plant are based on the tonnage (gallons) of paint filled. Therefore the volume of paint produced is still limited by the annual limit of VOCs and HAPs and the remaining units remain bottlenecked on a long-term basis.

## EMISSIONS/CONTROLS EVALUATION

The equation for estimating load loss in EPA's Emission Inventory Improvement Program Volume II, Chapter 8 – Methods for Estimating Air Emissions from Paint and Ink Manufacturing Facilities, July 2001 was used to calculate emissions. The equation is also referenced in EPA's AP-42 Fifth Edition Volume I Chapter 5.2, June 2008. The emission factor is for the overall mixing and handling process of paint manufacturer. The mixer and filler are only two processes in the overall mixing and handling process and therefore the use of the 30 lb/ton emission factor referenced above is an overestimation for these two processes.

The maximum design rate of the new filler is unknown. To estimate the project's potential emissions, the actual production amount in 2014 was divided by the number of existing fillers to obtain the amount processed with one filler. The EIQ cites that U.S. Paint facility operates around 4000 hours per year. The potential emissions of one filler operating 4000 hours per year was scaled up to 8,760 hours per year (24 hours per day, 365 days per year). Although this is an estimate, as stated above, the installation is limited to 100 tons per year of VOC. Therefore, even if this project PTE was underestimated and its emissions were to exceed the de minimis level of 40 tons per year, there are no other requirements such as modeling or an additional limit that would need to be enacted. Therefore, an estimate of project emissions as calculated was deemed sufficient.

The following table provides an emissions summary for this project. Existing potential emissions were taken from St. Louis City Permit 09-03-008. Existing actual emissions were taken from the installation's 2014 EIQ. Potential emissions of the application

represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/A	N/A	N/D
PM <sub>10</sub>	15.0	N/D	0.0651	N/A	N/D
PM <sub>2.5</sub>	10.0	N/D	0.0627	N/A	N/D
SO <sub>x</sub>	40.0	N/D	N/A	N/A	N/D
NO <sub>x</sub>	40.0	N/D	N/A	N/A	N/D
VOC	40.0	<100.0	64.3174	32.63	<100.0
CO	100.0	N/D	N/A	N/A	N/D
GHG (CO <sub>2</sub> e)	75,000 / 100,000	N/D	N/A	N/A	N/D
GHG (mass)	0.0 / 100.0 / 250.0	N/D	N/A	N/A	N/D
HAPs	10.0/25.0	<25.0	5.4 <sup>a</sup>	1.49	<25.0
Toluene	10.0	<10.0	2.137 <sup>a</sup>	0.009	<10.0
Xylene	10.0	<10.0	0.226 <sup>a</sup>	0.0009	<10.0
MIBK	10.0	<10.0	0.884 <sup>a</sup>	0.003	<10.0
Glycol Ethers	10.0	<10.0	0.215 <sup>a</sup>	5.0E <sup>-6</sup>	<10.0

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

<sup>a</sup>HAP reported on EIQ form 2.T.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below their respective de minimis levels.

## APPLICABLE REQUIREMENTS

U.S. Paint Corporation 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

- Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *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
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

#### STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

#### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated August 17, 2015, received August 21, 2015, designating U.S. Paint Corporation as the owner and operator of the installation.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SDS</b> .....	Safety Data Sheet
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Ms. Laura Schubert  
Regulatory Specialist  
U.S. Paint Corporation  
381 South 21st Street  
St. Louis, MO 63103

RE: New Source Review Permit - Project Number: 2015-08-028

Dear Ms. Schubert:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions 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 amended 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 were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).

If you have any questions regarding this permit, please do not hesitate to contact Kathy Kolb, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:kks

Enclosures

c: St. Louis Regional Office  
PAMS File: 2015-08-028

Permit Number: