

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: **052012-015**

Project Number: 2012-03-029

Installation Number: 071-0173

Parent Company: Henniges Automotive

Parent Company Address: 36600 Corporate Drive, Farmington Hills, MI 48331

Installation Name: Henniges Automotive

Installation Address: 101 Danny Scott Drive, New Haven, MO 63068

Location Information: Franklin County, S2, T44N, R3W

Application for Authority to Construct was made for:

Installation of one rubber extrusion and coating line (extrusion line no. 6), four coating booths, two catalytic pre-heat ovens, one catalytic curing oven and 121 rubber presses. 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.

MAY 22 2012

EFFECTIVE DATE

Handwritten signature of Kyla J. Moore in cursive script.

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 Department's Air Pollution Control Program of the anticipated date of startup 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 startup 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.

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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."

Henniges Automotive
Franklin County, S2, T44N, R3W

1. **Superseding Condition**
The conditions of this permit supersede Special Condition No. 2 found in the previously issued Construction Permit No. 092011-005 issued by the Air Pollution Control Program.
2. **Emission Limitations**
 - A. Henniges Automotive shall emit less than 100.0 tons of volatile organic compounds (VOCs) in any consecutive 12-month period from the entire installation.
 - B. Henniges Automotive shall emit less than 10.0 tons individually and 25.0 tons combined hazardous air pollutants (HAPs) in any consecutive 12-month period from the entire installation.
 - C. Henniges Automotive shall emit less than 1.0 tons of acetophenone and 1.0 tons of carbon disulfide in any consecutive 12-month period from the Line 6 Hot Air Curing (EP6-01), Line 6 Extruder (E6-X) and the 121 Presses (Presses).
 - D. The entire installation includes all equipment/processes installed or permitted at Henniges Automotive as of the issuance date of this permit.
 - E. Attachments A, B, and C, or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A., 2.B., and 2.C.
3. **Control Device Requirement – Booths with Fabric Filters**
 - A. Henniges Automotive shall control particulate emissions from the spray guns using booths equipped with fabric filters (E6-CB1, E6-CB, CB-K2Xa, CB-K2Xb) as specified in the permit application.

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SPECIAL CONDITIONS:

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

- B. Each booth (E6-CB1, E6-CB, CB-K2Xa, CB-K2Xb) shall be completely enclosed during operations (i.e. all openings, including doors, windows, etc. shall be closed).
 - C. The filters shall be operated and maintained in accordance with the manufacturer's specifications. Replacement filters shall be kept on hand at all times.
 - D. The filters shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.
 - E. Henniges Automotive shall monitor and record the operating pressure drop across the filters at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - F. Henniges Automotive shall maintain an operating and maintenance log for the filters which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
4. Operational Requirement – Coatings and Chemicals
- A. Henniges Automotive shall keep all coatings and chemical solutions in sealed containers whenever the materials are not in use. Henniges Automotive shall provide and maintain suitable, easily read, permanent markings on all coatings and chemical solution containers used with this equipment.
5. Record Keeping and Reporting Requirements
- A. Henniges Automotive 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 Material Safety Data Sheets (MSDS) for all materials used.

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SPECIAL CONDITIONS:

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

- B. Henniges Automotive shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2012-03-029
Installation ID Number: 071-0173
Permit Number:

Henniges Automotive
101 Danny Scott Drive
New Haven, MO 63068

Complete: March 2, 2012

Parent Company:
Henniges Automotive
36600 Corporate Drive
Farmington Hills, MI 48331

Franklin County, S2, T44N, R3W

REVIEW SUMMARY

- Henniges Automotive has applied for authority to construct one rubber extrusion and coating line (extrusion line no. 6), two (2) coating booths, two (2) catalytic pre-heat ovens, one (1) catalytic curing oven and 121 rubber presses.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are acetophenone (CAS No. 98-86-2) and carbon disulfide (CAS No. 75-15-0).
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
 - Subpart IIII, *National Emissions Standard for Hazardous Air Pollutants: Surface Coating of Automobiles and Light-Duty Trucks*, Subpart MMMM, *National Emission Standard for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products*, and Subpart PPPP, *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products*, of the MACT do not apply to this installation because the installation is not a major source for HAPs.
 - Subpart HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*, of the MACT does not apply to this installation because this installation is not a paint stripping operation or an autobody refinishing operation or use spray coating containing chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni) or cadmium (Cd).

- Coating booths equipped with fabric filters are being used to control the particulate matter (PM), particulate matter less than ten microns in diameter (PM₁₀), and particulate matter less than two-and-a-half microns in diameter (PM_{2.5}) emissions from the high volume, low pressure (HVLP) spray guns.
- 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 Franklin County, a nonattainment area for the eight-hour ozone standard and the 1997 PM_{2.5} standard and an attainment area for all other criteria pollutants. The installation's major source level is 100 tons per year for each nonattainment pollutant (volatile organic compounds (VOC), nitrogen oxides (NO_x), and PM_{2.5}) and 250 tons per year for each attainment pollutant.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. Fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed because potential emissions of the application are below *de minimis* levels.
- Emissions testing is not required for the equipment.
- A modification to the facility's Intermediate Operating Permit is required within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Henniges Automotive, formerly known as GDS Automotive, manufactures automotive sealing products. The installation is a minor source for construction permits and an intermediate source for operating permits. Process operations include rubber and polyvinyl chloride (PVC) extrusion, curing, adhesive application, surface coating and presses.

The following New Source Review permits have been issued to Henniges Automotive from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
1298-007	Installation of presses and flockers (Superseded by Permit No. 122000-002).
0899-005	Installation of two (2) new extrusion lines.
0899-006	Addition of sixteen (16) new mold presses and a hand wipe station (Superseded by Permit No. 122000-002).
122000-002	Installation of sixty-three (63) corner plug presses, two (2) corner flockers, sixteen (16) mold presses, two (2) extrusion lines, two (2) molding coating booths, and one (1) 3.5 inch extruder.
032001-013	Installation of coating booth and electric curing oven. (Modification to Permit No 0899-005).
072001-015	Installation of new extrusion line, eight (8) coating booth, and twelve (12) injection processes.
052002-005	Installation of extrusion line 4 and thirty-one (31) presses.
122000-002A	Amendment to Permit No. 122000-002.
092002-008	Installation of extrusion line and presses.
032003-018	Installation of a spray coating booth (CB-11).
022004-017	Installation of a GMX-001 platform and a PVC bonding process.
052004-007	Installation of an extrusion line, sixteen (16) rubber presses, a coatings booth, and a wipe-coating operation.
052004-007A	Elimination of all HAPs emission limits.
012008-013	One (1) spray coating booth, one (1) spray primer booth, two (2) brush adhesive booths, two (2) IR ovens, three (3) offline flockers, one (1) PVC extrusion line.
092011-005	Installation of an inline spray coating booth for an extrusion line.

PROJECT DESCRIPTION

The facility proposes to install a new K2XX operation that will produce body seals for General Motors trucks and sport utility vehicles (SUVs). The new operation will consist of one rubber extrusion and coatings line (line no. 6), four K2XX coating booths (CB-K2Xa, CB-K2Xb), two (2) two-level natural gas-fired catalytic pre-heat ovens, one catalytic coating curing oven and 121 rubber presses. Extrusion line no. 6 includes an extrusion unit (E6-X), a hot curing oven (E6-X), a wash tank and two coating booths (E6-CB1 and E6-CB2). The presses consist of 104 Gluco 20-ton presses (BT-20H), three (3) 10-ton Gluco presses (BT-10H), ten (10) GenCorp 25-ton presses, and ten (10) LWB 25-ton presses.

The extrusion line has a maximum hourly design rate (MHDR) of 500 pounds, or 0.25 tons, per hour. The coating booths for the extrusion line (E6-CB1 and E6-CB2) have maximum application rates of one (1) gallon per hour each. The two (2) in-line curing ovens for extrusion line 6 have a combined MHDR of 1.02 million British Thermal Units (Btu) per hour. The 121 presses have a combined MHDR of 399 pounds per hour (lbs/hr). Two of the K2XX coating booths apply the primer coating and have a combined MHDR of 1.35 gallons per hour. The two other K2XX coating booths apply the topcoat and have a combined MHDR or 2.25 gallons per hour.

There are two (2) infrared (IR) ovens used with extrusion line no. 6. However, these are electric powered and are not considered emission units. The wash tank used for extrusion line no. 6 is not expected to emit any pollutants because it uses only water.

EMISSIONS/CONTROLS EVALUATION

VOC and HAP potential emissions from hot air curing, the extruder, and the presses were calculated using emission factors from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 4.12, *Manufacture of Rubber Products* (11/08). Emissions from hot air curing were calculated using the emission factors for Compound No. 8, EPDM 1, which is the type of rubber utilized for this operation. However, emission factors for EPDM 1 were not given for extrusion or press operations. Therefore, emission factors for a similar rubber, Compound No. 9, EPDM 2, were used for these operations instead. Combustion emissions from the use of natural gas for the hot air generated for the curing process were calculated using either emission factors in AP-42, Chapter 1.4, *Natural Gas Combustion* (7/98), or WebFire.

Emissions from the coating booths, which include PM_{2.5}, PM₁₀, PM, VOC and HAPs were calculated using mass balances. VOC and HAPs emissions were calculated assuming that all of the VOC and HAPs in the coatings are emitted. As a conservative estimate, all of the PM were considered PM_{2.5} and PM₁₀. The particulate emissions from the extrusion line coating booths (E6-CB1 and E6-CB2) were calculated using a transfer efficiency of 15 percent, capture efficiency of 100 percent and a filter efficiency of 95 percent. The transfer efficiency was taken from Table 5-7 of the Air Pollution Training Institute (APTI) course 482 manual, third edition, November 2003. A 100 percent capture efficiency was used because the coating booth is completely enclosed during operations. A filter efficiency of 95 percent was used because it is a conservative value based on the design of the system. For the K2XX coating booths, a transfer efficiency of six percent was used. The company suggested using six percent because the coatings are applied strictly to the corner of the finished product and not the entire sealing assembly. Because the six percent is lower than the values typically used by the Air Pollution Control Program, it was accepted for use in this project.

The pre-heating ovens and the curing ovens for the K2XX coating booths are catalytic heaters whereby the natural gas reacts with oxygen in the air in the presence of a catalyst to produce heat and reduce the gas to carbon dioxide (CO₂) and water. Therefore, CO, SO_x or NO_x emissions generally associated with combustion ovens are not expected. CO₂ and CO₂ equivalent (CO_{2e}) emissions were calculated using mass balances assuming a one to one molar conversion rate from methane to CO₂. To calculate the mass basis CO₂ emissions, it was assumed that all of the natural gas is converted to CO₂. To calculate the CO_{2e} emissions, it was assumed that approximately 90% of the methane is converted to CO₂ and that the remaining methane is unconverted. Because methane has a higher global warming potential (GWP) than CO₂, its contribution to CO_{2e} is higher than that of CO₂ and assuming less than 100 percent conversion from methane to CO₂ will lead to greater emissions. No information is available regarding the actual conversion efficiency from methane to CO₂. However, in the research paper, *Performance Characterization of a Hydrogen Catalytic Heater*, prepared by Sandia National Laboratories in April, 2010, the conversion of hydrogen gas to water and heat is high (>96%) at temperatures greater than 100 degrees Celsius (°C). Since this heater is designed to operate at temperatures greater than 100 °C, it was assumed that using a conversion rate of 90 percent should give a very conservative estimate of emissions.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) The potential emissions of acetophenone and carbon disulfide exceed the Screening Model Action Level (SMAL) of 1.0 tons per year. Henniges Automotive has accepted limits of less than 1.0 tons per year of acetophenone and carbon disulfide so modeling would not be required. The facility also accepted the installation-wide limit of 100.0 tons per year of VOC, 25.0 tpy of combined HAP and 10.0 tpy of individual HAP to avoid being a major source for these pollutants. The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels/SMAL	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	0.00	1.54	N/A
PM ₁₀	15.0	N/D	0.00	1.54	N/A
PM _{2.5}	10.0	N/D	0.00	1.54	N/A
SO _x	40.0	N/D	0.0022	0.00	N/A
NO _x	40.0	N/D	0.53	0.00	N/A
VOC	40.0	<100.0	14.22	35.05	<100.0
CO	100.0	N/D	0.00	0.00	N/A
CO ₂	N/A	N/D	N/D	¹ 1,643.17	N/A
CO ₂ e	N/A	N/D	N/D	¹ 4,929.52	N/A
Combined HAPs	25.0	<25.0	0.00	6.67	<25.0
Xylene	10.0	<10.0	0.00	0.12	<10.0
Ethyl benzene	10.0	<10.0	0.00	6.63E-5	<10.0
Triethylamine	10.0	<10.0	0.00	0.00	<10.0
Acetophenone	10.0/1.0	N/D	0.00	1.25	<1.0
Carbon Disulfide	10.0/1.0	N/D	0.00	1.42	<1.0

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

Note 1: Prevention of Significant Deterioration (PSD) permit is required only if the CO₂ emissions are greater than 250.0 tons per year **and** if the CO₂e emissions are greater than 100,000 tons per year.

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 the *de minimis* levels.

APPLICABLE REQUIREMENTS

Henniges Automotive 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
- *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

SPECIFIC REQUIREMENTS

- *Control of Emissions From Industrial Surface Coating Operations*, 10 CSR 10-5.330

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*, I recommend this permit be granted with special conditions.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 2, 2012, received March 7, 2012, designating Henniges Automotive as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition

Attachment B – Monthly Individual HAP Compliance Worksheet

Henniges Automotive
 Franklin County (S2, T44N, R3W)
 Project Number: 2012-03-029
 Installation ID Number: 071-0173
 Permit Number: _____

HAP Name: _____ CAS No.: _____

This sheet covers the month of _____ in the year _____

Column 1	Column 2	Column 3	Column 4
Material Used (Name)	Amount of Material Used (in tons)	(a) HAP Content (Wt. %) or (b) Emission Factors (lbs/ton)	(c) HAP Emissions (Tons)
(d) Total Individual HAP Emissions Calculated for this Month in Tons:			
(e) Total Individual HAP Emissions from the Previous 11 Months in Tons:			
(f) Current 12-month Total of Individual HAP Emissions in Tons:			

Instructions: This worksheet must include HAP emissions from all emission units installed or permitted at the time of permit issuance.

- (a) HAP content should be obtained from the Material Safety Data Sheet (MSDS). If the content is given as a range, then the maximum value should be used.
- (b) Emission factors can be obtained from EPA document AP-42.
- (c) 1) If HAP contents are used – [Column 2] x [Column 3] = [Column 4]
 2) If emission factors are used – [Column 2] x [Column 3] x 0.0005 = [Column 4]
- (d) Summation of [Column 4] in Tons;
- (e) Total Individual HAP emissions from the previous 11 months in tons can be calculated by summing the HAP emissions from the previous 11 months.
- (f) Current 12-month Total of Individual HAP Emissions in Tons calculated by summing the Total individual HAP Emissions Calculated for this Month in Tons and Total Individual HAP Emissions from the Previous 11 Months in Tons. **A total less than 1.0 tons per year of acetophenone and 1.0 tons per year of carbon disulfide indicates compliance. A total less than 10.0 tons per year of other individual HAP indicates compliance.**

Mr. Mike Hall
Sr. EH & S Specialist
Henniges Automotive
101 Danny Scott Drive
New Haven, MO 63068

RE: New Source Review Permit - Project Number: 2012-03-029

Dear Mr. Hall:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 have any questions regarding this permit, please do not hesitate to contact Chia-Wei Young at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone 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:cyk

Enclosures

c: St. Louis Regional Office
PAMS File: 2012-03-029

Permit Number: