

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: 112010-005 Project Number: 2009-07-026

Parent Company: Robert Bosch Corporation

Parent Company Address: 1800 West Central Road, Mount Prospect, IL 60056

Installation Name: Gilmour Manufacturing

Installation Address: 140 Corum Road, Excelsior Springs, MO 64024

Location Information: Clay County, S52, T10, R30

Application for Authority to Construct was made for:

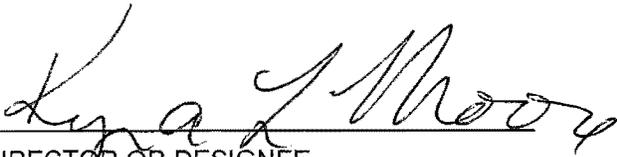
A high density polyethylene bottle blow molding line (EP-17), two blow molding granulators (EP-25b), two tuber lines (EP-32b), two cover lines (EP-33b), one plastic pellet silo (EP-38), one plastic pellet silo (EP-39), and soldering (EP-40). This review was conducted in accordance with Section (5), Missouri 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.

NOV 09 2010

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 department's 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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Project No.	2009-07-026

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."

Gilmour Manufacturing
Clay County, S52, T10, R30

1. Emission Limitation - Blow Molding Screen Printer and Drying Oven (EP-27)
 - A. Gilmour Manufacturing shall emit no more than 1.646 tons per year of VOC, 0.0158 tons per year of formaldehyde, and 0.0158 tons per year of HAP.
 - B. Attachment A or an equivalent form approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
 - C. Gilmour Manufacturing 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 1.B. indicate that the source exceeds the limitation of Special Condition 1.A.
2. Control Device - Filters
Gilmour Manufacturing shall control particulate matter emissions from the plastic pellet silos (EP-38 and EP-39) using filters (CD-38 and CD-39) and blow molding granulators (EP-25b) using mesh bags (CD-25b) as specified in the permit application. The filters and bags shall be operated and maintained in accordance with the manufacturer's specifications. Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
3. Stack Height Increase
Each exhaust stack for tuber and cover lines shall be raised 7.5 feet from the current height.
4. Gilmour Manufacturing shall keep the ink, solvents, and cleaning solutions in sealed containers whenever the materials are not in use. Gilmour Manufacturing

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SPECIAL CONDITIONS:

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

shall provide and maintain suitable, easily read, permanent markings on all inks, solvent, and cleaning solution containers used with this equipment.

5. Record Keeping and Reporting Requirements

- A. Gilmour Manufacturing shall maintain all records required by this permit 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.

- B. Gilmour Manufacturing shall report to the Air Pollution Control Program's 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: 2009-07-026
Installation ID Number: 047-0070
Permit Number:

Gilmour Manufacturing
140 Corum Road
Excelsior Springs, MO 64024

Complete: July 20, 2009

Parent Company:
Robert Bosch Corporation
1800 West Central Road
Mount Prospect, IL 60056

Clay County, S52, T10, R30

REVIEW SUMMARY

- Gilmour Manufacturing has applied for authority to construct hose manufacturing lines, spray bottle blow molding, plastic pellet silos, and soldering equipment.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are vinyl chloride and trace amounts of others.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- The National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61 Subpart F "National Emission Standard for Vinyl Chloride" applies to the installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Filters are being used to control the particulate matter emissions from the plastic pellet silos. A mesh bag serving as a filter is being used to control particulate matter emissions from the blow molding granulators.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of vinyl chloride are below the de minimis level, but above the screening model action level (SMAL).
- This installation is located in Clay County, an attainment area for all 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 performed since potential emissions of vinyl chloride are above the SMAL.
- Emissions testing are not required for any of the equipment.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Gilmour Manufacturing is an existing de minimis source under construction permits, and basic source under operating permits. They produce hoses and spray bottles for residential and commercial gardening, turf management, and watering using various plastics, inks, and metal fasteners.

The following permits have been issued to Installation 047-0070 from the Air Pollution Control Program.

Table 1: Previously Issued Permits

Permit Number	Description
0780-007	Construction Permit - rubber hose
0883-005	Construction Permit - boiler
1287-001	Construction Permit - baghouse
0596-001	Construction Permit - blow molding
0796-002	Construction Permit - granulator
OP	Intermediate Operating Permit - completed 6/13/2002
1198-005	Construction Permit - shredder, dryer, silos
OP	Basic Operating Permit - completed 6/25/2002
OP	Basic Operating Permit - completed 2/14/2008

PROJECT DESCRIPTION

The project includes installing blow molding equipment, blow molding granulators, tuber and cover lines, plastic pellet storage silos, and soldering equipment.

Two storage silos (EP-38 and EP-39) for high density polyethylene (HDPE) pellets are being installed. HDPE will be delivered in loads of up to 40,000 pounds per hour. The silos are equipped with vent filters. The blow molding granulators (EP-25) process HDPE pellets into a smaller size, suitable for proper melting. Two granulators are being installed at a maximum hourly design rate (MHDR) of 1,000 pounds each. Each granulator is equipped with a mesh bag. The blow molding equipment will form HDPE into spray bottles at a MHDR of 2,935 pounds.

The tuber and cover lines extrude flexible polyvinyl chloride (PVC) into hoses. Gilmour is permitting for an additional 2 cover and 2 tuber lines (EP-32b and EP-33b). Each tuber line and each cover line can extrude 1,850 pounds of flexible PVC per hour, for a project total of 7,400 pounds per hour.

Gilmour expects to use no more than 5 tons of solder per year (EP-40). A MHDR was back-calculated from this expectation. The equipment being added under this review is listed in Table 2.

Table 2: Project Description

Equipment	MHDR (tons)	Emission Designation
Bottle blow molding	¹ 1.4675	¹ EP-17
2 Blow molding granulators	² 1.0	EP-25b
2 Tuber lines	³ 1.85	EP-32b
2 Cover lines	³ 1.85	EP-33b
HDPE pellet silo #1	20.0	EP-38
HDPE pellet silo #2	20.0	EP-39
Soldering	5.71E-04	EP-40

¹ Includes all equipment at the source (new project equipment and existing equipment)

² Individually rated at 1,000 lbs per hour

³ Individually rated at 1,850 pounds per hour

Blow molded bottles are printed with ink (EP-27). As there will be an increase in blow molding production for this project, an increase in VOC and HAP emissions from an increase in ink and solvent usage would be expected. However, Gilmour has stated there will be no increase in ink or solvent usage from those listed in the operating permit. VOC and HAP emissions were calculated in the operating permit, but the true MHDRs for EP-27 have not been calculated. To ensure there is no increase in VOC or HAP emissions from ink and solvent, limits have been included in this review. Project emissions reflect no change in emissions from this step.

As there should be a corresponding increase in the amount of plastic to be reclaimed and blended, an increase in emissions from these processes would be expected. However, no new equipment is being added for these processes, and previous permits have calculated emissions from these processes at their respective MHDRs using 8,760 hours per year of operation. Since the MHDR and hours of operation are not changing, an emissions increase is not considered in this review.

EMISSIONS/CONTROLS EVALUATION

The uncontrolled PM₁₀ emission factor for the plastic pellet silos (0.0005 pounds of PM₁₀ per pound of HDPE) was developed in-house by Gilmour, and has been used by the Air Pollution Control Program in previous permits. The vent filters were assigned 99 percent control efficiency for PM₁₀.

The uncontrolled PM₁₀ emission factor for the blow molding granulators (0.000657 pounds of PM₁₀ per pound of HDPE) was also developed in-house by Gilmour, and has been used by the Air Pollution Control Program in previous permits. The mesh bags

were assigned 95 percent control efficiency for PM₁₀.

The maximum blow molding throughput is 2,935 tons of HDPE per hour. There is no control device. The blow molding emission factors were cited from a 1996 Air and Waste Management Association trade article, *Development of Emission Factors for Polyethylene Processing*. Particulate matter and several HAPs and VOCs are emitted in very small amounts, with no pollutant approaching its respective SMAL or de minimis value.

Tuber and cover line emission factors are cited from the basic operating permit project number 2007-12-060 and are originally from stack testing at a similar facility. The emission factors are 200, 240, and 10.5 pounds of PM₁₀, VOC, and vinyl chloride per million pounds of flexible PVC, respectively. Gilmour desires to permit for the addition of 2 tuber and 2 cover lines at a total of 7,400 pounds per hour of flexible PVC extruded.

Accurate soldering emission factors do not exist. Instead, the PM₁₀ emission factor for metal inert gas (MIG) or gas metal arc welding (GMAW) wire type E70S was chosen, 5.2 pounds of PM₁₀ per 1,000 pounds of wire electrode. The emission factor was obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, section 12.19 “Electric Arc Welding” January, 1995.

Existing Potential Emissions are difficult to interpret from construction permits and therefore are cited from the basic operating permit project 2007-12-060. The equipment list and emissions calculations from that operating permit match those submitted with the application for this construction permit, except for some minor rounding errors, and most of the calculations were performed at 8,760 hours per year at the full MHDR. Existing Actual Emissions are cited from the 2008 Emissions Inventory Questionnaire. Potential Emissions of the Project represent the potential of the new equipment, assuming continuous operation (8,760 hours per year). Potential Emissions of the New Installation represent emissions of the installation at the completion of this project. The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (2008 EIQ)	Potential Emissions of the Project	Potential Emissions of the New Installation
PM ₁₀	15.0	17.72	3.97	8.89	26.61
SO _x	40.0	0.02	0.005	N/A	0.02
NO _x	40.0	50.85	0.21	N/A	50.85
VOC	40.0	2.92	8.53	8.52	11.44
CO	100.0	3.47	0.04	N/A	3.47
HAPs	10.0/25.0	0.70	0.01	0.34	1.04
Vinyl Chloride	¹ 0.2	0.68	N/D	0.34	0.85
Formaldehyde	¹ 2.0	0.02	N/D	8.0E-04	0.02

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

¹ Screening Model Action Level (SMAL)

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 vinyl chloride are below the de minimis level but above the SMAL.

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of vinyl chloride for the installation. For modeling details please refer to the document titled, *Ambient Air Quality Impact Analysis (AAQIA) for Gilmour Manufacturing (Bosch) – October 13, 2010*.

APPLICABLE REQUIREMENTS

Gilmour Manufacturing 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 a hardcopy Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions. Submission of an electronic copy via MoEIS is required May 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
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260
- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-3.060
- *National Emission Standard for Vinyl Chloride*, 40 CFR 61 F

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.

David Little
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 29 2009, received July 13 2009, designating Gilmour Manufacturing as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated July 30, 2009.
- Modeling memorandum *Ambient Air Quality Impact Analysis (AAQIA) for Gilmour Manufacturing (Bosch) – October 13, 2010*

Attachment A - Blow Molding Screen Printer and Drying Oven (EP-27) Compliance Sheet (1 of 2)

Gilmour Manufacturing
 Clay County, S52, T10, R30
 Project Number: 2009-07-026
 Installation ID Number: 047-0070
 Permit Number: _____

This sheet covers the month of _____. (Copy this sheet as needed)
 (month, year)

VOC

Material	Usage (gal/month)	Density (lb/gal)	VOC Content (Wt %)	¹ Monthly VOC Emissions (lbs)
² Total Monthly VOC Emissions (lbs)				
³ Total Monthly VOC Emissions (tons)				
⁴ Cumulative 12 Month VOC Emissions (tons)				

- ¹ Calculate the individual Monthly VOC Emissions (lbs) by multiplying the respective Usage, Density, and VOC Content. Divide the result by 100.
- ² Calculate the Total Monthly VOC Emissions (lbs) by summing the individual Monthly VOC Emissions.
- ³ Calculate the Total Monthly VOC Emissions (tons) by dividing the Total Monthly VOC Emissions (lbs) by 2,000.
- ⁴ Calculate the Cumulative 12 Month VOC Emissions (tons) by summing this month's Total Monthly VOC Emissions (tons) with the previous eleven month's. A value not exceeding 1.646 tons is necessary for compliance.

Formaldehyde

Material	Usage (gal/month)	Density (lb/gal)	Residual Free Formaldehyde (Wt %)	¹ Monthly Formaldehyde Emissions (lbs)
² Total Monthly Formaldehyde Emissions (lbs)				
³ Total Monthly Formaldehyde Emissions (tons)				
⁴ Cumulative 12 Month Formaldehyde Emissions (tons)				

- ¹ Calculate the individual Monthly Formaldehyde Emissions (lbs) by multiplying the respective Usage, Density, and Residual Free Formaldehyde. Divide the result by 100.
- ² Calculate the Total Monthly Formaldehyde Emissions (lbs) by summing the individual Monthly Formaldehyde Emissions.
- ³ Calculate the Total Monthly Formaldehyde Emissions (tons) by dividing the Total Monthly Formaldehyde Emissions (lbs) by 2,000.
- ⁴ Calculate the Cumulative 12 Month Formaldehyde Emissions (tons) by summing this month's Total Monthly Formaldehyde Emissions (tons) with the previous eleven month's. A value not exceeding 0.0158 tons is necessary for compliance.

Attachment A - Blow Molding Screen Printer and Drying Oven (EP-27) Compliance

Sheet (2 of 2)

Gilmour Manufacturing
 Clay County, S52, T10, R30
 Project Number: 2009-07-026
 Installation ID Number: 047-0070
 Permit Number: _____

This sheet covers the month of _____. (Copy this sheet as needed)
 (month, year)

HAP

Material	Usage (gal/month)	Density (lb/gal)	HAP Content (Wt %)	¹ Monthly HAP Emissions (lbs)
² Total Monthly HAP Emissions (lbs)				
³ Total Monthly HAP Emissions (tons)				
⁴ Cumulative 12 Month HAP Emissions (tons)				

¹ Calculate the individual Monthly HAP Emissions (lbs) by multiplying the respective Usage, Density, and HAP Content. Divide the result by 100.

² Calculate the Total Monthly HAP Emissions (lbs) by summing the individual Monthly HAP Emissions.

³ Calculate the Total Monthly HAP Emissions (tons) by dividing the Total Monthly HAP Emissions (lbs) by 2,000.

⁴ Calculate the Cumulative 12 Month HAP Emissions (tons) by summing this month's Total Monthly HAP Emissions (tons) with the previous eleven month's. A value not exceeding 0.0158 tons is necessary for compliance.

Mr. John Aull
Plant Engineer
Gilmour Manufacturing
140 Corum Road
Excelsior Springs, MO 64024

RE: New Source Review Permit - Project Number: 2009-07-026

Dear Mr. Aull:

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 David Little, at the Departments' 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

Kendall B. Hale
New Source Review Unit Chief

KBH:dll

Enclosures

c: Kansas City Regional Office
PAMS File: 2009-07-026

Permit Number: