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: 042014-001  Project Number: 2014-02-017
Installation Number: 101-0023

Parent Company: EnerSys, Inc.
Parent Company Address: 2366 Bernville Road, Reading, PA 19605
Installation Name: EnerSys Energy Products Inc.
Installation Address: 617 N. Ridgeview Dr., Warrensburg, MO 64093
Location Information: Johnson County, S19, T46N, R25W

Application for Authority to Construct was made for: Installation of a 500 pound capacity electric dross melting pot to an existing control device, EP-123, for the recovery of solder dross. This review was conducted in accordance with Section (5) of 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.

APR - 2 2014

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 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' Kansas City Regional office 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 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.
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(12)(A)10. “Conditions required by permitting authority.”

EnerSys Energy Products Inc.
Johnson County, S19, T46N, R25W

1. Control Device Requirement – HEPA Filter
   A. EnerSys Energy Products Inc. shall control emissions from EP-123 Solder Recovery Pot using a HEPA Filter as specified in the permit application.

   B. The HEPA Filter shall be operated and maintained in accordance with the manufacturer's specifications. The HEPA Filter shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. The gauge or meter shall be located such that Department of Natural Resources’ employees may easily observe it.

   C. Replacement HEPA filters shall be kept on hand at all times. The HEPA filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

   D. EnerSys Energy Products Inc. shall monitor and record the operating pressure drop across the HEPA Filter at least once every 24 hours while EP-123 Solder Recovery Pot is in operation. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

   E. EnerSys Energy Products Inc. shall maintain a copy of the HEPA Filter manufacturer’s performance warranty on site.

   F. EnerSys Energy Products Inc. shall maintain an operating and maintenance log for the HEPA Filter 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.
SPECIAL CONDITIONS:
The permittee is authorized to construct and operate subject to the following special conditions:

2. Recordkeeping Requirements
EnerSys Energy Products Inc. 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.
REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW
Project Number: 2014-02-017
Installation ID Number: 101-0023
Permit Number:

617 N. Ridgeview Dr.
Warrensburg, MO 64093

Parent Company:
EnerSys, Inc.
2366 Bernville Road
Reading, PA 19605

Johnson County, S19, T46N, R25W

REVIEW SUMMARY

• EnerSys Energy Products Inc. has applied for authority to install a 500 pound capacity electric dross melting pot to an existing control device, EP-123, for the recovery of solder dross.

• HAP emissions are expected from the proposed equipment. Lead emissions are expected from the reclamation of lead.

• 40 CFR Part 60, Subpart KK – Standards of Performance for Lead-Acid Battery Manufacturing Plants applies to the proposed equipment. EP-123 Solder Recovery Pot would be considered a lead reclamation facility under this regulation.

• 40 CFR Part 63, Subpart PPPPPP – National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources applies to the proposed equipment. EP-123 Solder Recovery Pot is required to meet the fabric filter equipped with a HEPA filter standards in this regulation.

• A HEPA filter is being used to control lead and particulate emissions from the equipment in this permit.

• 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 permit was required as uncontrolled potential emissions of lead from EP-123 Solder Recovery Pot exceed the lead SMAL of 0.01 tons per year.

• This installation is located in Johnson County, an attainment area for all 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. The HEPA filter is an internally venting filter. As emissions are not vented to the atmosphere, no performance testing is required.

The permittee shall amend their Intermediate Operating Permit renewal application, Project 2013-08-024 within 90 days of commencement of operations.

Approval of this permit is recommended with special conditions.

**INSTALLATION DESCRIPTION**

EnerSys Energy Products, Inc. is engaged in the manufacture of specialty lead-acid batteries for various commercial and industrial applications. The facility consists of two plants, Plants 1 and 2, located at the same site in an industrial park on the east side of Warrensburg, Missouri. Some of the lead oxide used at the installation is manufactured onsite while the remainder is purchased.

The following permits have been issued to EnerSys Energy Products Inc. by the Air Pollution Control Program:

**Table 1: Permit History**

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0284-011A-018A</td>
<td>Lead acid battery plant</td>
</tr>
<tr>
<td>0865-008-009</td>
<td>Lead smelting furnace</td>
</tr>
<tr>
<td>0590-013</td>
<td>Central vacuum cleaner system, battery core drying, melting pot and filters</td>
</tr>
<tr>
<td>1090-008</td>
<td>New continuous grid casting process</td>
</tr>
<tr>
<td>0791-002</td>
<td>Lead oxide transfer from two storage silos and mixing room</td>
</tr>
<tr>
<td>1292-001</td>
<td>Replacement of electric melting pot (lead melting pot)</td>
</tr>
<tr>
<td>1193-001</td>
<td>Modify plate perforation lube system from kerosene to a “vanishing oil”</td>
</tr>
<tr>
<td>1294-012</td>
<td>Installation of three new grid perforators, replacement of a continuous grid caster with a continuous chill caster, and construction of a new lead manufacturing facility at the same site</td>
</tr>
<tr>
<td>0495-017</td>
<td>New drying oven</td>
</tr>
<tr>
<td>0196-014</td>
<td>Installation of additional equipment in facility permitted by 1294-012</td>
</tr>
<tr>
<td>0896-020</td>
<td>Transfer of existing natural gas fired COS from Plant 1 to Plant 2</td>
</tr>
<tr>
<td>092000-004</td>
<td>New lead acid battery manufacturing line</td>
</tr>
<tr>
<td>052001-019</td>
<td>Temporary permit for testing a COS machine</td>
</tr>
<tr>
<td>092000-004A</td>
<td>Modification of performance testing requirements</td>
</tr>
<tr>
<td>112003-012</td>
<td>New lead oxide manufacturing process line and replacement of an existing weight hopper within the existing paste mixing process</td>
</tr>
<tr>
<td>122004-010</td>
<td>Phase I of the Large VRLA Cell Assembly Line</td>
</tr>
<tr>
<td>032006-008</td>
<td>Phase II of the VRLA Cell Assembly Line</td>
</tr>
<tr>
<td>122008-008</td>
<td>Installation of new lead acid battery line</td>
</tr>
<tr>
<td>122008-008A</td>
<td>EP-37 burner replacement and moving Line #1 from one location to another</td>
</tr>
<tr>
<td>032006-008A</td>
<td>True-up of control device information</td>
</tr>
<tr>
<td>062013-001</td>
<td>Replacement of an existing COS on Line #4, installation of a new COS on Line #4, and installation of four new encapsulators on Line #4</td>
</tr>
</tbody>
</table>
PROJECT DESCRIPTION

EnerSys Energy Products Inc. has requested to install a 500 pound capacity electric dross melting pot to an existing control device, EP-123, for the recovery of solder dross. Solder dross containing 34 to 37 percent lead is generated in solder baths at the facility. The solder dross will be manually removed from the solder baths and walked to EP-123 Solder Recovery Pot. Once EP-123 Solder Recovery Pot is full it will be turned on. As the melting pot is electric, only process emissions from the melting of the dross were calculated.

The 500 pound melting pot operates in batches. Each batch lasts four hours, for a maximum of six batches per day. Conservatively using the maximum solder dross lead content of 37 percent, provides a maximum daily lead processing rate of 1,110 pounds. EPA document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 12.15 “Storage Battery Production” (January 1995) states that an automobile battery contains 20 pounds of lead. The maximum hourly design rate of EP-123 Solder Dross Recovery Pot was calculated to be 0.0023125 1,000 batteries per hour.

\[
\frac{1,110 \text{ lb Pb}}{\text{day}} \times \frac{1 \text{ day}}{24 \text{ hours}} \times \frac{1 \text{ battery}}{20 \text{ lb Pb}} \times \frac{1,000 \text{ batteries}}{1,000 \text{ batteries}} = 0.0023125 \text{ 1,000 batteries per hour}
\]

EMISSIONS/CONTROLS EVALUATION

The lead, PM, and PM$_{10}$ emission factors used in this analysis were obtained from the AP-42, Section 12.15 “Storage Battery Production” (January 1995) for lead reclamation furnaces (Process SCC 30400510). AP-42 does not include a PM$_{2.5}$ emission factor from lead reclamation furnaces; therefore, it was conservatively assumed that all PM$_{10}$ is PM$_{2.5}$.

Emissions from EP-123 Solder Recovery Pot are captured by a hood and routed to a HEPA filter as required by Special Condition 1. Emissions from the HEPA filter are vented inside the building. A conservative overall control efficiency of 99.9 percent for lead, PM, PM$_{10}$, and PM$_{2.5}$ was used in emissions calculations.

The following table provides an emissions summary for this project. Existing potential emissions were taken from NSR Permit 062013-001. Existing actual emissions were taken from the installation's 2012 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year).
Table 2: Emissions Summary (tons per year)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>25.0 N/D</td>
<td>N/A</td>
<td>0.07</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>15.0</td>
<td>9.05</td>
<td>0.90</td>
<td>0.02</td>
<td>0.00002</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>10.0</td>
<td>N/D</td>
<td>0.64</td>
<td>0.02</td>
<td>0.00002</td>
</tr>
<tr>
<td>SO$_x$</td>
<td>40.0</td>
<td>0.30</td>
<td>0.31</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>NO$_x$</td>
<td>40.0</td>
<td>54.08</td>
<td>3.99</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>VOC</td>
<td>40.0</td>
<td>179.12</td>
<td>43.65</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CO</td>
<td>100.0</td>
<td>34.85</td>
<td>3.32</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>GHG (CO$_2$e)</td>
<td>100,000</td>
<td>N/D</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>HAP</td>
<td>25.0</td>
<td>2.27</td>
<td>0.01</td>
<td>0.014</td>
<td>0.00001</td>
</tr>
<tr>
<td>Lead Compounds</td>
<td>10.0</td>
<td>&lt;0.6</td>
<td>0.01</td>
<td>0.014</td>
<td>0.00001</td>
</tr>
</tbody>
</table>

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

Uncontrolled potential lead emissions exceeded the lead SMAL of 0.01 tons per year. The installation applied for this permit to obtain a federally enforceable control device requirement (Special Condition 1). Controlled lead emissions are 0.00001 tons per year; therefore, utilization of a screening model was not required.

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 de minimis levels. This permit was required as uncontrolled potential emissions of lead from EP-123 Solder Recovery Pot exceed the lead SMAL of 0.01 tons per year.

APPLICABLE REQUIREMENTS

EnerSys Energy Products Inc. shall comply with the following requirements applicable to EP-123 Solder Recovery Pot. 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 entire installation, please consult your operating permit.

GENERAL REQUIREMENTS

- 10 CSR 10-6.065 *Operating Permits*
- 10 CSR 10-6.110 *Submission of Emission Data, Emission Fees and Process Information*
• 10 CSR 10-6.165 Restriction of Emission of Odors

• 10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

• 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants

SPECIFIC REQUIREMENTS

• 10 CSR 10-6.070 New Source Performance Regulations
  o 40 CFR Part 60, Subpart KK – Standards of Performance for Lead-Acid Battery Manufacturing Plants

• 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations
  o 40 CFR Part 63, Subpart PPPPPP – National Emission Standards for HAP for Lead Acid Battery Manufacturing Area Sources

STAFF RECOMMENDATION

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

________________________________   _________________________________
Alana L. Rugen, P.E. Date
New Source Review Unit

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

• The Application for Authority to Construct form, dated January 21, 2014, received February 10, 2014, designating EnerSys, Inc. as the owner and operator of the installation.

APPENDIX A

Abbreviations and Acronyms

% ............ percent
°F ............ degrees Fahrenheit
acfm ...... actual cubic feet per minute
BACT ..... Best Available Control Technology
BMPs ..... Best Management Practices
Btu......... British thermal unit
CAM ...... Compliance Assurance Monitoring
CAS ......... Chemical Abstracts Service
CEMS ..... Continuous Emission Monitor System
CFR .......... Code of Federal Regulations
CO ......... carbon monoxide
CO₂ ....... carbon dioxide
CO₂e....... carbon dioxide equivalent
COMS ..... Continuous Opacity Monitoring System
CSR .......... Code of State Regulations
dscf ......... dry standard cubic feet
EIQ .......... Emission Inventory Questionnaire
EP .......... Emission Point
EPA ......... Environmental Protection Agency
EU .......... Emission Unit
fps .......... feet per second
ft .......... feet
GACT ..... Generally Available Control Technology
GHG ......... Greenhouse Gas
gpm .......... gallons per minute
gr ............ grains
GWP ......... Global Warming Potential
HAP ......... Hazardous Air Pollutant
hr ......... hour
hp .......... horsepower
lb .......... pound
lbs/hr ...... pounds per hour
MACT .... Maximum Achievable Control Technology
µg/m³ ...... micrograms per cubic meter
m/s ........ meters per second
Mgal ....... 1,000 gallons
MW .......... megawatt
MHDR ...... maximum hourly design rate
MMBltu .... Million British thermal units
MMCF ...... million cubic feet
MSDS ...... Material Safety Data Sheet
NAAQS ... National Ambient Air Quality Standards
NESHAPs ...(Emission Standards for Hazardous Air Pollutants)
NOₓ ........... nitrogen oxides
NSPS ...... New Source Performance Standards
NSR .......... New Source Review
PM ........... particulate matter
PM₂·₅ ...... particulate matter less than 2.5 microns in aerodynamic diameter
PM₁₀ ...... particulate matter less than 10 microns in aerodynamic diameter
ppm .......... parts per million
PSD .......... Prevention of Significant Deterioration
PTE .......... potential to emit
RACT ...... Reasonable Available Control Technology
RAL ........ Risk Assessment Level
SCC ......... Source Classification Code
scfm ...... standard cubic feet per minute
SIC ......... Standard Industrial Classification
SIP .......... State Implementation Plan
SMAL .... Screening Model Action Levels
SOₓ ........ sulfur oxides
SO₂ ......... sulfur dioxide
tph .......... tons per hour
tpy .......... tons per year
VMT .......... vehicle miles traveled
VOC ......... Volatile Organic Compound
Mr. Malcolm Gavant  
General Manager – VP Reserve Power Business  
EnerSys Energy Products Inc.  
617 N. Ridgeview Dr.  
Warrensburg, MO 64093  

RE: New Source Review Permit - Project Number: 2014-02-017  

Dear Mr. Gavant:  

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 amending your Intermediate operating permit application 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 Alana Rugen, 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:ark  
Enclosures  

c: Kansas City Regional Office  
PAMS File: 2014-02-017  

Permit Number: