

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

A handwritten signature in black ink, appearing to read "Kyray Moore", written over a horizontal line.

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 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.

Page No.	3
Permit No.	
Project No.	2014-02-017

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.

Page No.	4
Permit No.	
Project No.	2014-02-017

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:

EnerSys Energy Products Inc.
617 N. Ridgeview Dr.
Warrensburg, MO 64093

Complete: February 25, 2014

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 P – *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

Permit Number	Description
0284-011A-018A	Lead acid battery plant
0885-008-009	Lead smelting furnace
0590-013	Central vacuum cleaner system, battery core drying, melting pot and filters
1090-008	New continuous grid casting process
0791-002	Lead oxide transfer from two storage silos and mixing room
1292-001	Replacement of electric melting pot (lead melting pot)
1193-001	Modify plate perforation lube system from kerosene to a "vanishing oil"
1294-012	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
0495-017	New drying oven
0196-014	Installation of additional equipment in facility permitted by 1294-012
0896-020	Transfer of existing natural gas fired COS from Plant 1 to Plant 2
092000-004	New lead acid battery manufacturing line
052001-019	Temporary permit for testing a COS machine
092000-004A	Modification of performance testing requirements
112003-012	New lead oxide manufacturing process line and replacement of an existing weight hopper within the existing paste mixing process
122004-010	Phase I of the Large VRLA Cell Assembly Line
032006-008	Phase II of the VRLA Cell Assembly Line
122008-008	Installation of new lead acid battery line
122008-008A	EP-37 burner replacement and moving Line #1 from one location to another
032006-008A	True-up of control device information
062013-001	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

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.

$$\frac{1,110 \text{ lb Pb}}{\text{day}} \times \frac{1 \text{ day}}{24 \text{ hours}} \times \frac{1 \text{ battery}}{20 \text{ lb Pb}} \times \frac{(1,000 \text{ batteries})}{1,000 \text{ batteries}} = 0.0023125 \frac{1,000 \text{ batteries}}{\text{hour}}$$

EMISSIONS/CONTROLS EVALUATION

The lead, PM, and PM₁₀ 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 PM₁₀ 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, PM₁₀, 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)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (2012 EIQ)	Uncontrolled Potential Emissions of the Application	Controlled Potential Emissions of the Application
PM	25.0	N/D	N/A	0.07	0.0001
PM ₁₀	15.0	9.05	0.90	0.02	0.00002
PM _{2.5}	10.0	N/D	0.64	0.02	0.00002
SO _x	40.0	0.30	0.31	N/A	N/A
NO _x	40.0	54.08	3.99	N/A	N/A
VOC	40.0	179.12	43.65	N/A	N/A
CO	100.0	34.85	3.32	N/A	N/A
GHG (CO ₂ e)	100,000	N/D	N/A	N/A	N/A
HAP	25.0	2.27	0.01	0.014	0.00001
Lead Compounds	10.0	<0.6	0.01	0.014	0.00001

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*
 - 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*
 - 40 CFR Part 63, Subpart P – *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.
New Source Review Unit

Date

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.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

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: