



United States Environmental Protection Agency
Region 7
Enforcement and Compliance Assurance Division

Air Branch

Air Branch Inspection Report
Unannounced Partial Compliance Evaluation
Superior Home Products, Inc.
211 Edinger Road
Wentzville, Missouri 63385
FRS# 110000442192

Inspection Date(s):
September 12, 2023

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A Confidential Business Information (1 page)	
B Receipt for Samples (1 page)	
C Collected SDS (180 pages)	
D Photographs (17 pages)	
E Demonstration of Organic HAP Limits (4 pages)	
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INSPECTION OVERVIEW

INSPECTION OBJECTIVE

The objective of the partial compliance evaluation (PCE) inspection was to determine compliance of the facility with the Clean Air Act (CAA), specifically those requirements located in the code of federal regulations at 40 CFR Part 63 Subpart WWWW, National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. The inspection was part of the U.S. Environmental Protection Agency's (EPA) Creating Cleaner Air for Communities National Enforcement Compliance Initiative.

Table 1 lists the inspection team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	Organization	Project Role
Lead Inspector Luke Rodriguez	EPA, Region 7, ECAD, Air Branch	Project manager (PM)
Robert Barnacle, Program Analyst	Missouri Department of Natural Resources (MoDNR)	Sampling with Photo Ionization Detector under direction of Luke Rodriguez

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	Phone No.	Email Address
Chip Daggett, President	636-332-9040	cdaggett@suphome.com
Paul Bergmann, Vice President	636-332-9040	pbergmann@suphome.com

FACILITY OVERVIEW

Superior Home Products, Inc. (Superior Home Products) began operation in 1994. The facility is a reinforced plastic composites production facility which is a major source of styrene emissions and is therefore an existing source subject to 40 CFR 63 Subpart WWWW. Superior Home Products operates as a major source of hazardous air pollutants (HAPS) and was most recently re-issued a Part 70 Permit on March 27, 2018 by MoDNR. According to the Superior Home Products Title V operating permit, the facility is subject to the following regulations and standards subject to review during this inspection (**Table 3**):

Table 3. APPLICABLE REGULATIONS AND STANDARDS	
Code of Federal Regulation	Standard Name

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Code of Federal Regulation	Standard Name
40 CFR Part 63	Subpart A, General Provisions Subpart WWWW, National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production

FACILITY OPERATIONS SUMMARY

Superior Home Products manufactures cultured marble vanity tops, bathtubs, and wall surrounds. The facility employs roughly 35 individuals in the manufacturing area and operates from 5 a.m. to 5 p.m., 5 days a week. Section 63.5790(b) identifies the operations regulated under Subpart WWWW. Of the operations listed, Superior Home Products operates an open molding line, polymer casting, mixing, cleaning of equipment used in reinforced plastic composites manufacture, HAP containing materials storage, and repair operations on parts they also manufacture.

FIELD ACTIVITIES SUMMARY

I arrived at the facility on September 12, 2023, and completed a drive by surveillance inspection. I did not observe any opacity from the building or detect any odor. I made entry at the front door at 8:45 a.m. and introduced myself and Mr. Barnacle, presented my credentials, and provided my business card to Mr. Paul Bergmann. I was given a facility safety briefing by Mr. Chip Daggett. I conducted an opening conference during which I explained that the purpose of the visit was to conduct an inspection to determine compliance with the CAA specifically, to determine compliance with the conditions listed in Table 3. I explained that after asking for some general business information, I would observe work practices, process units, emission units, control equipment and review associated records demonstrating compliance with the standard, permit, regulation. I explained to Mr. Daggett that the facility could make a claim of business confidentiality and provided him with a Confidential Business Information form (Appendix A). Mr. Daggett did not make a claim of confidentiality.

I was given a facility tour by Mr. Daggett and Mr. Bergmann. I was asked to wear eye and ear protection by Mr. Daggett during the facility tour as required by company policy.

I reviewed the condition of emission units regulated under 40 CFR 63 Subpart WWWW, the operating status of the equipment, and any required record keeping for the equipment for

compliance with the regulations and permit conditions noted in Table 3 only. I obtained copies of the records as indicated on the Receipt for Documents (Appendix B).

Sampling activities are described in the **Measurement and/or Sampling Activities** section below.

I conducted a closing conference with Mr. Daggett and Mr. Bergmann. I provided the facility with copies of the Confidential Business Information form and the Receipt for Documents and a small business information sheet.

Observations and potential findings from the facility tour, and records review, and sampling/measurement activities are noted in the **Investigation Observation and Potential Findings** section below.

Measurement and/or Sampling Activities

The inspection team conducted photo-ionization sampling using a Photo-Ionization Detector (PID) and recorded video using a FLIR Camera during the onsite inspection under my direction. I did a bump test calibration of the PID with 100 ppm isobutylene immediately preceding the facility walkthrough. Mr. Barnacle carried the PID during the facility walkthrough. We first walked upwind of the facility to the parking lot across the street, then immediately downwind and then inside the production area. I carried the FLIR Camera and recorded videos of several vents on the exterior of the building.

All environmental measurement activities were performed in accordance with the EPA Region 7 quality system. I followed manufacturer and EPA processes for instrument calibration. Instrument calibration was documented in the instrument's logbook.

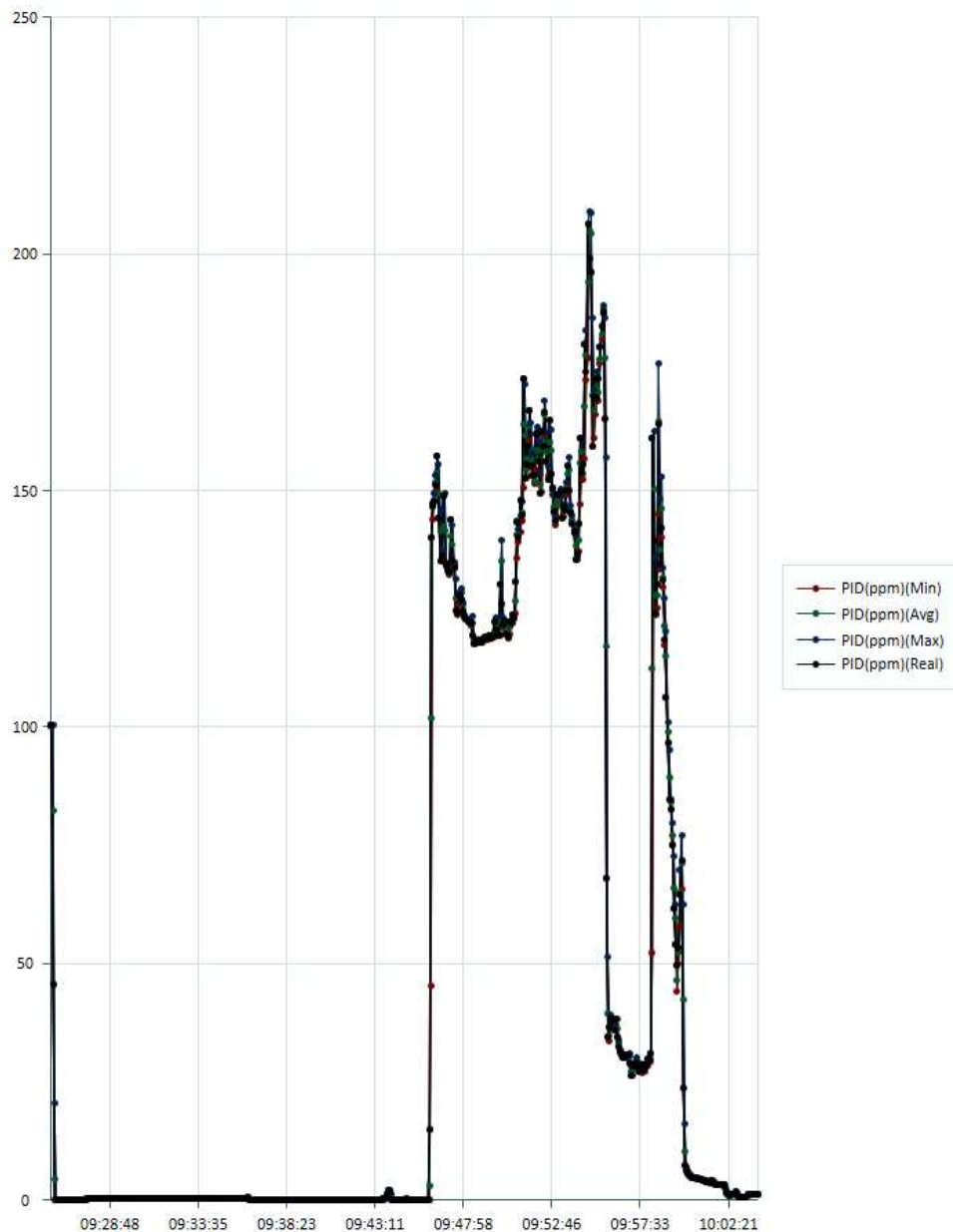


Figure 1. PID Monitoring Data

Figure 1 shows the record of the PID sampling which occurred on September 12, 2023. The bump test was completed at 9:25 a.m. 19 minutes later, at 9:44 a.m., I entered the facility. The last photograph I took was at 9:59 a.m. and was inside the production area. I left the production area shortly after that and shut down the PID. During the time I was in the production area, the PID readings were above 100 ppm. According to the SDS for the Clear LOW VOC Gel Coat, which contains 41% styrene, the OSHA PEL TWA: 100 ppm for 8 hours while the NIOSH REL TWA: 50 PPM for 10 hours. This SDS is included in Appendix C.

Table 4 summarizes field measurement activities.

Table 4. FIELD MEASUREMENT ACTIVITIES			
Location Identifier	Date(s) and Time	Method and/or Procedure ¹ , and Equipment	Measurer Name
Luke Rodriguez	9/12/23	Region 7 procedure: <i>FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras,</i> Equipment: FLIR, ThermoCAM™, and S/N: 44401969	Luke Rodriguez
Luke Rodriguez	9/12/23 9:25 AM to 10:03 AM	Region 7 procedure: <i>Safety and Sample Screening Instruments,</i> Instrument guide(s): <i>MultiRAE+ Multi-Gas Monitoring Equipment</i> Equipment: Honeywell, ppbRAE 3000+, SN:594-916195.	Robert Barnacle
¹ The current version of each procedure, at the time of the investigation, was followed.			

INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions and activities were documented in field records. All photographs are attached as **Appendix D**. I made the observations described in this section during the inspection. I discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. The EPA Region 7 Air Branch case review team will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

§63.5796 explains the emission factor equations in Table 1 to the rule and how they are used to determine the organic HAP content of the materials used. In lieu of the equations, a facility can use site specific organic HAP emission factors that are incorporated into the facility's permit based on emissions test data. Superior Home Products uses the Safety Data Sheets (SDS) provided by the manufacturers. These SDS are included as Appendix C.

§63.5799 outlines the appropriate method for calculating a facility's organic HAP emissions. The options include using an approved emission factor using the equations in Table 1 of the rule, an emission factor approved by the EPA, or a performance test. Superior Home Products uses the throughput of its various materials multiplied by the HAP content specified by the SDS and a percent emitted value which comes from an industry group, the American Composites Manufacturers Association (ACMA). Compilation of Air Emission Factors (AP42) 4.4 Polyester Resin Plastic Products Fabrication specifically references the ACMA document in the reference note "h" as appropriate to use to estimate emissions.

§63.5805 identifies the standards a reinforced plastic composite production facility must meet in (a) through (h).

(a) Not applicable as Superior Home Products does not have a centrifugal casting or a continuous casting/lamination operation.

(b) All operations at existing facilities must meet the organic HAP limits in Table 3 to the subpart and the work practice standards in Table 4 to the subpart. Superior Home Products maintains a document which demonstrates that all operations meet the Table 3 Organic HAP emissions limits. This document is attached as Appendix E. The requirements for work practice standards in Table 4 are copied below with comments on the applicability or the facility's method of demonstrating compliance.

Table 5. WORK PRACTICES STANDARDS REVIEW		
Equipment Configuration	Requirement	Comments
1. A new or existing closed molding operation using compression/injection molding	Uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting.	According to Mr. Daggett, Superior Home Products does not engage in any compression/injection molding.
2. A new or existing cleaning operation	Not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems, and organic HAP containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin.	According to Mr. Daggett, Superior Home Products only uses methylene chloride, an organic HAP, to clean cured resin from application equipment.
3. A new or existing materials HAP containing materials storage operation	Keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety.	According to Mr. Daggett, Superior Home Products keeps all HAP containing material storage covered when not in use. There is one bulk resin tank which contains styrene which is vented for safety. This is visible in Photo 11 of Appendix D. Photo 12 shows other HAP containing material storage. I did not observe any materials which were uncovered.
4. An existing or new SMC manufacturing operation	Close or cover the resin delivery system to the doctor box on each SMC manufacturing machine. The doctor box itself may be open.	According to Mr. Daggett, Superior Home Products does not engage in SMC manufacturing.
5. An existing or new SMC manufacturing operation	Use a nylon containing film to enclose SMC.	

6. All mixing or BMC manufacturing operations ¹	Use mixer covers with no visible gaps present in the mixer covers, except that gaps of up to 1 inch are permissible around mixer shafts and any required instrumentation. Mixers where the emissions are fully captured and routed to a 95 percent efficient control device are exempt from this requirement.	According to Mr. Daggett, Superior Home Products uses 1 mixing machine. The machine is completely enclosed until the point where the product exits the mixer onto the casting line. This mixing machine is visible in Photo 8 of Appendix D.
7. All mixing or BMC manufacturing operations ¹	Close any mixer vents when actual mixing is occurring, except that venting is allowed during addition of materials, or as necessary prior to adding materials or opening the cover for safety. Vents routed to a 95 percent efficient control device are exempt from this requirement.	According to Mr. Daggett, the mixer does not have any vents and materials are added via enclosed chutes.
8. All mixing or BMC manufacturing operations ¹	Keep the mixer covers closed while actual mixing is occurring except when adding materials or changing covers to the mixing vessels.	The machine is completely enclosed until the point where the product exits the mixer onto the casting line.
9. A new or existing pultrusion operation manufacturing parts. . .	i. Not allow vents from the building ventilation system, or local or portable fans to blow directly on or across the wet-out area(s)...	According to Mr. Daggett, Superior Home Products does not have a pultrusion operation.

(c) Not applicable as Superior Home Products is not a new facility.

(d) Superior Home Products has never reported more than 100 tons of HAP in a year. The past 3 years of HAP and VOC emissions are included as Appendix F. The highest VOC emissions during a consecutive 12-month period during the last 3 years occurred in the 12-month period ending March of 2021 and was 10.595 tons.

(e) Not applicable as Superior Home Products is not subject to paragraphs (a) or (c).

(f) Superior Home Products has never applied for an exemption from paragraph (e).

(g) Superior Home Products does have repair operations subject to § 63.5785 and complies with Table 3 by demonstrating that its materials meet the HAP emission limits. Table 4 does not have any specific applicable requirements to the facility's repair operations.

(h) Superior Home Products does not use an add-on control device to comply with this subpart.

§ 63.5810 lists the options for meeting the standards for open molding and centrifugal casting operations at new and existing sources. Superior Home Products uses an open molding operation and complies with option (a) – that they demonstrate that individual resins or gel coats, as applied, meet the applicable emission limits in Table 3. As noted above, the calculations that Superior Home Products provided to demonstrate compliance with Table 3 are included as Appendix E.

§ 63.5820 specifies the options for meeting the standards for continuous lamination/casting operations. According to the definitions located at § 63.5935, *Continuous casting* means a continuous process for fabricating composites in which composite materials are placed on an in-line conveyor belt to produce cast sheets that are cured in an oven. Superior Home Products sets up gel molds by hand, these are sprayed then cured in an oven. Following the gel mold, these are hand pushed to the casting machine where they are set aside to dry. The units do not enter an oven to cure following casting. Superior Home Products believes that this operation does not meet the definition of a continuous casting operation.

§ 63.5830 applies to pultrusion operations. According to Mr. Daggett, Superior Home Products does not engage in pultrusion operations.

§ 63.5845 specifies performance testing requirements. No performance tests are required for the equipment in use by Superior Home Products.

§ 63.5855 requires monitoring for add-on control devices. Superior Home Products does not use any add-on control devices.

§ 63.5865 specifies additional requirements for continuous lamination/casting operations. As explained above, Superior Home Products does not believe its casting process meets the definition of a continuous casting operation.

§ 63.5870 explains calculation methodology for HAP emissions from a wet-out area. A wet-out area is not defined in the subpart. Mr. Daggett told me that there is no wet-out areas in use at the facility.

§ 63.5875, § 63.5880, § 63.5885, and § 63.5890 are all applicable to continuous lamination/casting operations. As explained above, Mr. Daggett does not believe that the Superior Home Products operation meets the definition of a continuous casting operation in § 63.5935.

§ 63.5895 identifies continuous compliance requirements.

- (a) Not applicable as Superior Home Products does not use an add-on control device.
- (b) Superior Home Products does not monitor or collect any of the data identified under (b).

- (c) Superior Home Products maintains records of the resin and gel coats in use, and their organic HAP content.
- (d) As noted in (d), facilities meeting compliance by demonstrating that the individual resins and gel coats, as applied, meet the applicable emission limit, are not required to maintain resin and gel coat usage records.
- (e) Superior Home Products does not use any pultrusion machines.

§ 63.5900 identifies the methods to demonstrate continuous compliance with the standards in (a)(1) through (4) and (b) and (c).

- (a) (1) Superior Home Products does not use any add-on control equipment.
- (2) Superior Home Products maintains an organic HAP emission factor value less than or equal to the organic HAP emissions limit listed in Table 3 on a 12-month rolling average and includes a statement that the individual resins as applied, meet the limits.
- (3) Superior Home Products is subject to the emission limits in Table 3, not Table 7.
- (4) A review of the work practice standards found in Table 4 to Subpart WWWW is included above in Table 5 to this report.
- (b) Superior Home Products as not ever reported any deviations from the requirements in 40 CFR 63 Subpart WWWW.
- (c) Requires that the emission limits and work practice standards apply at all times.

§ 63.5910 outlines reporting requirements. Superior Home Products submits a semi-annual compliance report as an attachment to its Semi-Annual Part 70 Report. The compliance report must include the information in paragraphs (c)(1) through (6). I reviewed a report which contained all of this required information.

§ 63.5915 identifies records which must be kept by the affected facility. I reviewed the records required under (a), (c) and (d) as part of this inspection. Records required under (b) are not applicable to this facility.

End of report.