

# WORK PRACTICE PLAN

Worthen Coated Fabrics  
1125 41<sup>st</sup> Street  
Grand Rapids, Michigan 49508

## **Revisions Log**

<b>Date</b>	<b>Description</b>	<b>Contact</b>
August 8, 2016	Initial plan	Jack Hoffman
January 5, 2021	Revisions to include RTO compliance assurance	Kristi Koetje
April 7, 2021	Minor updates to Section III	Kristi Koetje
February 17, 2022	Minor updates to Section III	Amy Austin

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Attachment A EPA Compliance Assurance Letter to Worthen Coated Fabrics dated  
12/7/2020

## **I. Introduction**

The purpose of this Work Practice Plan is to comply with the requirements of 40 CFR Part 63 Subpart OOOO – National Emission Standards for Hazardous Air Pollutants: Printing, Coating, and Dyeing of Fabrics and Other Textiles to develop and implement a Work Practice Plan to minimize organic hazardous air pollutant (HAP) emissions from the storage, mixing, and conveying of regulated materials used in, and waste materials generated by, the coating operations.

In addition, this Work Practice Plan ensures implementation of the recommendations provided by EPA's Compliance Assurance Letter electronically submitted to Worthen Coated Fabrics on December 7, 2020 contained in Attachment A.

This plan will be reviewed annually and updated as necessary during the annual review. If corrective procedures or operational changes are required as a result of a deviation, this plan will be updated within 30 days of the deviation.

## **II. Storage, Mixing and Conveying**

In accordance with §63.4293(b)(1) – (5), this Plan has been developed by Worthen Coated Fabrics (Worthen) to minimize organic HAP emissions from Worthen's storage, mixing and transferring of regulated materials used in, and waste materials generated by, the coating operation. Worthen ensures this safety practice by:

1. Storing all organic HAP-containing regulated materials and subsequent waste materials in closed and properly labeled containers. Proper containers would include all drums, pails, lids and sealing rings as supplied by the material manufacturer.

In addition, other storage containers purchased by Worthen Coated Fabrics with the expressed purpose of providing a safe closure and containment for chemicals containing HAP's will be used.

Containers have covers with crimp tabs, crimp rings, lids with gaskets and bolt secured locking rings.

2. Employing proper handling practices of all raw materials to avoid spills. Hazardous materials are stored in containers appropriate for their volume and properties. Good housekeeping practices are implemented and movement of chemicals throughout the facility is minimized when possible. In the event of a spill, the raw materials or coating will be contained, captured with absorbent material, and stored in our closed hazardous waste drums for proper disposal. Any uncontrolled emissions of HAPs will be listed on our Rule 290 Permit Record Sheets.

3. All raw materials containing HAPs are transferred from storage locations to compounding locations in the original manufacturer's containers or in other containers with properly closing lids.
4. Mixing vessels are fiber drums, steel drums, or larger tanks. All drums are closed with original manufacturer lids. Large volume tanks are closed with a metal rimmed cover. A plastic film is placed on the coating mix prior to the lid placement to prevent evaporation of HAPs into the atmosphere. All compounded coatings are transferred to the coating line in these containers.
5. Emissions of organic HAP are minimized during the cleanup of the web coating from coating heads, storage, mixing and conveying equipment. Any cleanup solvent emissions that are considered uncontrollable are listed on our Rule 290 Permit Record Sheets. During solvent cleanup of the coating heads, RTO must be on and at operating temperature during the entirety of the cleanup period.

### **III. RTO Compliance Assurance**

The regenerative thermal oxidizer (RTO), manufactured by NESTEC, Inc., is designed to operate at a maximum process exhaust rate of 25,000 standard cubic feet per minute. The RTO is required to be operated at a minimum destruction efficiency of 98% when solvent coatings are being applied and when the coating line is cleaned with HAP containing solvent cleaning materials. Minimum destruction efficiency of 98.34% was demonstrated during stack testing on October 11, 2016 with an average minimum temperature of 1567°F.

#### **1. Corrective procedures or operational changes that restrict the start of solvent-based coating until RTO temperature is above limit and being monitored.**

In July 2017, Worthen reconfigured some of the PLC programming of the Patriot coating line and added additional protective logic to prevent the coating line from starting up in solvent mode when the RTO is off or not achieving a minimum temperature. In March 2021, Worthen revised the minimum temperature setting from 1525°F to 1567°F. Once the RTO chamber temperature reaches 1567°F, the RTO online signal is sent to the coater which will allow it to start running in solvent mode as long as the following additional conditions are met:

- exhaust fans from the permanent total enclosures (PTEs) to the RTO are on and creating a negative pressure of 0.007 inches of water in the PTEs
- damper to RTO is open and damper to bypass stack is closed
- lower explosive limit (LEL) monitoring devices in the duct work of the oven intake/recirculating airstream are on and able to detect combustible gases.

If any of these conditions are not met, the coating machine will not start up in solvent mode. In addition, if the LEL sensors are on and detect combustible gases, a machine interlock is in place to prevent starting the machine in water-base (uncontrolled) mode.

Worthen has reviewed and revised its startup, shutdown, and malfunction procedures for the coating line and RTO and provided refresher training for the coating line operators on February 4, 2021.

**2. Corrective procedures or operational changes that restrict the improper operation, bypass, or termination of the RTO when solvent-based coatings are being applied.**

The programming logic for the operation of the coating line and RTO includes an interlock that prevents startup of the coating line if the average RTO combustion temperature is below 1567°F. If the average combustion temperature of the RTO drops below the set point of 1500°F, an alarm will sound. At the sound of the alarm, operators immediately investigate and attempt to fix the problem. If the temperature drops below 1400°F, the coating line shuts down. The RTO will stay online, but in an alarm state, as long as the temperature is above 1400°F. This is normal industry practice to allow for operational variation and allow time to react and bring the RTO back up to minimum temperature. However, if the temperature remains below 1500°F, a machine problem is indicated and Worthen's Startup, Shutdown and Malfunction Plan instructs the operator to shut the coating line down. In accordance with Worthen's Startup, Shutdown, and Malfunction Plan, an Abatement Malfunction Report Form is completed.

Operators are provided initial and refresher training on operation of the coating line and RTO and are trained prior to a change in operating procedure. Refresher training for the coating line operators was provided on February 4, 2021.

**3. Regularly auditing RTO temperature data and operating procedures for continuous compliance.**

During solvent coating operations, the RTO temperature is monitored and recorded by the chart recorder and datalogger. Temperature data is retrieved from the datalogger once per week and reviewed to confirm the 3-hour average temperature is at or above 1567°F when solvent-base coatings are applied. Coater and RTO operating procedures will be reviewed and updated annually.

#### **4. Procedures to timely identify and correct cause(s) of any deviations.**

Worthen maintains the following procedures for operating the coating line and RTO:

- Startup, Shutdown, Malfunction Plan: Patriot Coater
- SOP-RTO-ENVPROC-MI – Operational procedures and controls and emergency procedures for RTO

These procedures are in place and operators are trained to timely identify and correct any issues with the operation of the Patriot coating line and RTO. Worthen maintains a training log to document the date of training and employees trained.

#### **5. Procedures for the timely reporting of deviations.**

Permit deviations are reported in accordance with Worthen's permit ROP-P0634-2017 as provided by General Conditions 21, 22 and 25 and Rules 912 (336.1912) and 213 (336.1213). Specifically, deviations from ROP requirements are reported as follows:

- a. For emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, provide notice to the EGLE Air Quality District office within two business days after discovery of the event. Notice can include electronic or oral communication. A written report is required to be submitted within 10 days after the malfunction has been corrected, or within 30 days of discovery of the malfunction, whichever is first.
- b. In accordance with 40 CFR Part 63 Subpart OOOO, a deviation from an emission limitation is required to be reported in the semiannual report containing the information outlined in 63.4311(a)(7).

#### **6. Update to minimum temperature**

Based on stack testing conducted on September 28, 2021, the new minimum RTO chamber temperature is 1574° F.