EMISSION SOURCE (Coating/Finishing/Printing) Instructions for Form B4

Form B4 should be completed for each single press where inks or coatings are applied to a material. Multiple presses or printing sources of the same type would not be considered a single emission source. Make as many copies of the form as necessary. Attach all calculations and assumptions used in determining the numbers entered on this form.

*Note: An **EMISSION SOURCE** is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants are emitted, either directly or indirectly.*

PRIMARY OR ALTERNATIVE OPERATING SCENARIO – A Section B4 form must be submitted for each scenario that the emission source may operate under. In addition to operating under a primary operating scenario, an emission source may operate under one or more alternative operating scenarios. Examples of operating scenarios are as follows:

1. For boilers that combust different types of fuels, the combustion of each fuel is classified as an operating scenario. Many boilers combust both natural gas and No. 6 fuel oil. Each of these fuels constitutes a separate operating scenario.
2. For reaction vessels that produce different products from different formulations, production of each product is classified as an operating scenario.
3. For a storage silo that stores different materials, the storage of each material is classified as an operating scenario.
4. For control devices that are used to control emissions from different emission streams at separate times, each emission stream that is controlled is classified as an operating scenario.
5. A spray booth may coat wood furniture and be subject to MCAPCO Regulation 2.0958, but it may also coat metal furniture and be subject to NSPS Subpart EE.

Note: Some emission sources that emit volatile organic compounds (VOCs) are considered unique in that only the product/solvent formulations that produce the worst-case VOC emissions need to be included in the permit application even though different solvents will be utilized at the emission source.

PRIMARY OPERATING SCENARIO - Select this scenario if information is being entered for the conditions under which the emission source operates the majority of the time. A separate B4 form must be completed for each scenario.

ALTERNATIVE OPERATING SCENARIO - Select this scenario if information is being entered for any secondary conditions under which the emission source operates.

AOS # (Alternative Operating Scenario ID No.) – Include a unique ID No. for each alternative operating scenario. A separate B4 form must be completed for each scenario.

EMISSION SOURCE DESCRIPTION – Describe each emission source for which application is made. Emission source is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants emanate or are emitted, either directly or indirectly. Groups of equipment that are interconnected as a single continuous process can be labeled a single emission source (e.g., a chain of reaction vessels). However, this description should specify the number of individual pieces of equipment that make up this emission source.

EMISSION SOURCE ID No. - Enter the emission source ID No. for the emission source being described on this form. Fugitive emissions must also be assigned an ID No. (e.g., valves, pumps, compressors = ID No. F195).

Note: The choice of ID Nos. is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES___, control device ID No. CD___ and emission point ID No. EP___.

CONTROL DEVICE ID No. - Enter the ID No. for the control device associated with this emission source. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point). For different emission sources with a common control device, use the same control device ID No. for each emission source.

MANUFACTURER - Enter the manufacturer of the emission source.

MODEL No. - Enter the model number of the emission source as defined by the manufacturer. If the source was custom designed, a PE seal may be required pursuant to MCAPCO 1.5233.

RELEASE POINT TYPE – Enter or select one of the following stack/emission point release orientation: downward

facing vent, fugitive, goose neck, horizontal, vertical or vertical with rain cap.

HEIGHT – Enter the height of the stack in units of feet.

INSIDE DIAMETER – Enter the inside diameter of the stack in units of feet.

EMISSION POINT (Stack) ID No. - Enter the ID No. for the emission point (e.g. stack, vent, etc.) associated with this emission source. Emission sources with a common emission point will have the same emission point ID No. For fugitive emissions enter "FUGITIVE".

FENCE LINE DISTANCE – Enter the distance to the fence line of the property

X-Coordinate – Enter the latitude coordinates

Y-Coordinate – Enter the longitude coordinates

EXIT GAS TEMPERATURE – Enter the temperature of the gas exiting the stack in degrees Fahrenheit (˚F).

EXIT GAS FLOW RATE – Enter the flow rate of the gas exiting the stack in cubic feet per min (cfm).

EXIT GAS VELOCITY – Enter the velocity of the gas exiting the stack in feet per second (ft/s).

SAMPLING PORTS, COMPLIANT WITH EPA METHOD 1 – Answer Yes or No. Additional information about EPA Method 1 can be found at the following website http://www.epa.gov/ttn/emc/

TYPE OF OPERATION – Specify the applicable type of operation.

IS THIS OPERATION

- **CONTINUOUS** – This is a printing/coating process where the material being printed or coated is supplied to the machine continuously in a roll or continuously introduced into a spray operation (e.g., conveyor, hangers, web-fed, trays, etc.). At the end of the printing/coating process, the material is normally folded and/or cut into proper sized products.
- **NON-CONTINUOUS** – This is a printing/coating process where the material being printed or coated is introduced into the process either mechanically or by hand at one time, individually, or as a group, printed or coated, then removed.

SUBSTRATE MATERIAL - Enter the type of material that is being coated (i.e., paper, packaging, fabric, plastic, metal, wood, steel, furniture, etc.).

TYPE OF FEED – Specify the type of system used to introduce the material into the printing (e.g., sheet fed, web fed, etc.) or coating process (e.g., conveyor, hangers, web-fed, trays, etc.).

CONTINUOUS

TYPE OF PRINTING/COATING – Specify the type of printing operation (e.g., lithographic, flexographic, letter press, rotogravure, etc.)

WEIGHT OF MATERIAL BEING PRINTED/COATED (LB/FT^2) – Enter the maximum weight of the material being printed or coated per unit square foot before printing or coating.

MAXIMUM COVERAGE OF INK/COATING (LB/FT^2) – Enter

NUMBER OF INK (COLOR) STATIONS - Specify the total number of stations at which inks are applied.

NUMBER OF OTHER STATIONS - Specify the total number of stations at which coatings other than inks are applied (i.e., laminating, clear coat, etc.). Specify the type of station(s).

SHEETFED PRINTING/COATING – Enter the maximum feed rate of the substrate entering the press (sheet/min). Enter the maximum width (inches) and length (inches) of a sheet that could enter the press.

FOR WEBFED PRINTING /COATING – Enter the maximum feed rate of the substrate entering the press (ft/min). Enter the maximum width (inches) of the continuous roll that could enter the press.

NON-CONTINUOUS

TYPE OF SOURCE – Specify the applicable type of source or if other than describe in comment section.

WEIGHT OF MATERIAL BEING PRINTED/COATED (LB/UNIT) – Enter the maximum weight of the material being printed or coated per unit before printing or coating.

UNIT – Specify the unit of measurement.

MAXIMUM DIMENSION OF EACH ITEM (INCHES) – Enter the maximum length and width dimensions of the material being printed or coated in inches.

MAXIMUM COATED/PRINTED PERHOUR – Enter the maximum number of items printed or coated per hour.

METHOD OF SPRAY – Specify the applicable spray method or if other than describe in comment section.

NUMBER OF GUNS PER STATION/SOURCE – Enter the total maximum number of spray guns that can be used in the operation at one time.

TRANSFER EFFICIENCY – Enter the % (expressed as decimal) of solid which actually is applied to items being sprayed, take into consideration solid lost due to overspray, etc. Use the following default values or provide documentation for other:
.25 – air atomized
.25 – airless spray
.60 – manual electrostatic spray
.70 – nonrotational automatic electrostatic spray
.80 – rotating head electrostatic (manual and automatic)
.90 – dip coat and flow coat
.95 – electrodeposition
The above numbers are typical. Your numbers may vary.

PARTICULATE CAPTURE EFFICIENCY – Enter the % (expressed as decimal) of overspray which is captured from the process and sent to the exhaust air stream. The capture efficiency will generally approach 100% for three-sided spray booths operating under sufficient negative pressure.

Example:

A coating operation with 60% transfer efficiency and 98% capture efficiency will have an overall efficiency of 58.8% (.98 x .60 = .588).

EXHAUST CONTROL – Specify the applicable exhaust control method or if other than describe in comment section.

COATING/SOLVENT USE (Include MSDS for Each Coating) – This section establishes what coatings/solvents are applied at each station, booth or press.

STATION NO. – Identify each station, booth or press. It may be simplest to number them from 1 to X starting from the first station to the last.

COATING/SOLVENT PRODUCT NAME & FORMULA NUMBER - List all coatings/solvent that can be applied at a station (i.e., each type of ink, clear coat, blanket wash, fountain solution). Include additional sheets if necessary. For each material (including clean up material), enter the following:

1. Units - Enter the units by which each material is measured (e.g., gallons, pounds).
2. Actual Usage (unit/hours) - Enter the quantity of material that currently enters or is expected to enter the process per hour during normal daily operations and unit per year.
3. Maximum Design Capacity (unit/hour) - Enter the quantity of material that would enter the process per hour when operating at maximum capacity. If applicable, potential usage rates can be calculated using MCAPCO 1.5211 (g)(2)(D).

TOTAL MAXIMUM FIRING RATE (million Btu/hour) – Enter the total maximum firing rate for all burners based on the heat input.

HEATING METHOD – Specify the method of heating for the heaters as either direct fired, electric, steam or other (specify).

FUEL USED – Many coating operations require the use of dryers, heaters, or ovens to speed the drying process. Specify the type of fuel used if there are any associated with the process. If there is a separate boiler used for drying then this information should be supplied on form B2.

ACTUAL FUEL USAGE

- ANNUAL – Enter the actual amount of fuel consumed in one year.
- HOURLY – Enter the actual amount of fuel consumed in one hour.
- UNITS – Enter the units of the listed fuel (e.g., gallons, cubic feet, pounds, etc.)

MAXIMUM FUEL USAGE

- ANNUAL – Enter the maximum amount of fuel consumed in one year.
- HOURLY – Enter the maximum amount of fuel consumed in one hour.
- UNITS – Enter the units of the listed fuel (e.g., gallons, cubic feet, pounds, etc.)

REGULATORY ANALYSIS -

1. FEDERAL REGULATIONS -

   a. Determine applicability or inapplicability of the emission source to each listed federal regulation. Provide explanation of determination.

   Title V (MCAPCO 1.5500, 40 CFR 70)

   NSPS = New Source Performance Standards (40 CFR 60, Specify Subpart)

   NESHAP = National Emission Standards for Hazardous Air Pollutants (MCAPCO 2.1110, 40 CFR 61)

   MACT/GACT = Maximum Achievable/Generally Available Control Technology (40 CFR 63, Specify Subpart)

   PSD = Prevention of Significant Deterioration, Attainment Area (MCAPCO 2.0530, 40 CFR 51)

   NSR = New Source Review, Non-attainment Area (MCAPCO 2.0531, 40 CFR 51)

   b. List all other applicable federal regulations. Provide explanation of determination.

2. LOCAL REGULATIONS - List all applicable local regulations, including but not limited to MCAPCO Sections 2.0900, 1.5700, 2.0500, and 2.1100. Provide explanation of determination.

LIMIT(s) REQUEST - List all locally and federally enforceable permit limits and/or any additional limits that currently exist or are requested by this application. By requesting a permit limit (e.g., hours of operation, material usage rates, emission rates) a facility may avoid applicability to certain regulations (e.g., Title V, Prevention of Significant Deterioration, etc.). List the motivating regulation for which applicability is to be avoided. Describe how these limits are or will be monitored and at what frequency.

SECTION B

EMISSION SOURCE (COATING/FINISHING/PRINTING)

B4

Operating Scenario: ☐ Primary Operating Scenario ☐ Alternative Operating Scenario			AOS #:
Emission Source Description:			Emission Source ID No.:
			Control Device ID No.:
Manufacturer:			Model No.:
STACK PARAMETERS			
Release Point Type:	Height:	Inside Diameter:	Emission Point (Stack) ID No.:
Fence Line Distance:	X-Coordinate:	Y-Coordinate:	
Exit Gas Temperature:	Exit Gas Flow Rate:		Exit Gas Velocity:
Sampling Ports, Compliant With EPA Method 1 Will Be Installed On The Stacks: ☐ Yes ☐ No			
PROCESS DESCRIPTION			
Type of Operation: ☐ Printing ☐ Coating ☐ Other Finishing (Describe in process)			
Is This Operation: ☐ Continuous ☐ Non-Continuous (batch)			
Substrate Material:		Type of Feed:	
CONTINUOUS			
Type of Printing/ Coating: ☐ Flexographic ☐ Lithographic ☐ Offset ☐ Rotogravure If Other Describe:			
Weight of Material Being Printed or Coated (lb/ft^2):		Maximum Coverage of Ink/Coating (lb/ft^2):	
Number of Ink Stations:		Number of Other Stations:	
Sheet or Web Fed Printing/Coating:	Actual Speed (ft/min):	Maximum Speed (ft/min):	Maximum Width of Web Being Printed/Coated (inches):
NON-CONTINUOUS			
Type of Source: ☐ Booth ☐ Dip Tank ☐ Offset ☐ Station ☐ Wash-off Tank If Other Describe:			
Weight of Item Being Coated/Printed (lb/Unit):		Unit:	
Maximum Dimensions of Each Item (inches): Length:		Width:	Maximum Coated/Printed Per Hour:
Method of Spray: ☐ Airless ☐ Air Atomize ☐ Electrostatic ☐ HVLP ☐ Other (Describe in comments)			
Number of Guns Per Station/Source:	Transfer Efficiency:		Particulate Capture Efficiency:
Exhaust Control: ☐ None ☐ Dry Filter ☐ Water Wash ☐ Baffles ☐ Other (Describe in comments)			

COATING/SOLVENT USE (Include MSDS for Each Coating)		Actual Usage		Maximum Design Capacity		
Station No.	Coating/Solvent Product Name & Formula Number Applied At This Station/Source	Unit/hr	Unit/yr	Unit/hr	Unit/yr	Unit
Clean-up						

FUEL USAGE

Total Maximum Firing Rate (MMBtu/Hr):	Method of Heating: ☐ Direct Fired ☐ Electric ☐ Steam ☐ Other:

Fuel Used	Actual Fuel Usage			Maximum Fuel Usage		
	Annually (Unit/yr)	Hourly (Unit/yr)	Units	Annually (Unit/yr)	Hourly (Unit/hr)	Unit

Comments:

Attach Additional Sheets As Necessary

EMISSION SOURCE (COATING/FINISHING/PRINTING)

REGULATORY ANALYSIS:
Identify all federal and local (MCAPCO) regulations (including, but not limited to, the six regulations already listed below) to which the process may be subject, and provide an explanation of applicability.

Regulation Name (MCAPCO & CFR citations, as applicable)		Applicable?		Explanation of Applicability (provide an explanation of applicability or inapplicability)
Examples:	MCAPCO Reg. 2.0515 – "Particles from Miscellaneous Industrial Processes"	☒ Yes	☐ No	This regulation is applicable to this particulate emission source (no other particulate emission standards apply).
	MCAPCO Reg. 2.0958 –" Work Practices for Sources of Volatile Organic Compounds"	☒ Yes	☐ No	This regulation is applicable to this volatile organic compound emission source (no NSPS, NESHAP, MACT/GACT, RACT, or other volatile organic compound emission standards apply).
Federal Regulations:				
Title V	MCAPCO Section 1.5500, 40 CFR 70	☐ Yes	☐ No	
NSPS	40 CFR 60 (specify Subpart)	☐ Yes	☐ No	Subpart:
NESHAP	MCAPCO Reg. 2.1110, 40 CFR 61	☐ Yes	☐ No	
MACT/GACT	40 CFR 63 (specify Subpart)	☐ Yes	☐ No	Subpart:
PSD	MCAPCO Reg. 2.0530, 40 CFR 51	☐ Yes	☐ No	
NSR	MCAPCO Reg. 2.0531, 40 CFR 51	☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
		☐ Yes	☐ No	
Local Regulations:				
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	
MCAPCO Reg.	-	☐ Yes	☐ No	

LIMIT(s) REQUEST:
Indicate all existing and requested local and federally enforceable limits (e.g., hours of operation, material usage, emission rates, etc.) and describe how these limits are or will be monitored and at what frequency).

Existing or Requested Limit	Motivating Regulation	Monitoring Method (parameters, method, frequency)

Comments: