SMAQMD BACT CLEARINGHOUSE

CATEGORY Type: **COATING - POWDER**

BACT Category: Small Emitter <10 lb/day

BACT Determination Number: 290	**BACT Determination Date:** 11/30/2021

Equipment Information

Permit Number: 26840

Equipment Description: SPRAY BOOTH

Unit Size/Rating/Capacity: ALL

Equipment Location: PACIFIC POWDER COATING
8637 23RD AVE SACRAMENTO, CA

EXPIRED

BACT Determination Information

District Contact: Matt Baldwin Phone No.: (279) 207-1119 email: mbaldwin@airquality.org

ROCs	**Standard:**	1.5% VOC by wt.
	Technology Description:	Low-VOC Coating (< 1.5% VOC by weight) and Natural gas fired curing oven
	Basis:	Achieved in Practice
NOx	**Standard:**	30 ppmvd @ 3% O2
	Technology Description:	Low-NOx Burner for curing oven
	Basis:	Achieved in Practice
SOx	**Standard:**	
	Technology Description:	Natural gas fired curing oven
	Basis:	Achieved in Practice
PM10	**Standard:**	99% Control
	Technology Description:	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)
	Basis:	Achieved in Practice
PM2.5	**Standard:**	99% Control
	Technology Description:	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)
	Basis:	Achieved in Practice
CO	**Standard:**	
	Technology Description:	Natural gas fired curing oven
	Basis:	Achieved in Practice
LEAD	**Standard:**	
	Technology Description:	
	Basis:	

Comments:

Printed: 11/18/2021

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

DETERMINATION NO.: 290

DATE: November 30, 2021

ENGINEER: Matt Baldwin

EXPIRED

Category/General Equip Description:	Powder Coating
BACT Category:	Minor Source
Equipment Specific Description:	Powder Coating of Miscellaneous Metal Parts
Equipment Size/Rating:	Small Emitter Source
Previous BACT Det. No.:	163

This BACT determination will update determination #163 for powder coating of miscellaneous metal parts.

Powder coating involves the application of a thin layer of dry powder to a metal part. The metal part is electrically charged to attract the particles, which are spray applied in a booth. The metal parts are then transferred to a curing oven, wherein the powder melts and bonds to the metal part as a hard, protective coating.

Unlike conventional coatings, powder coatings do not require a carrier solvent, and are thus inherently low-VOC. Therefore, the District treats powder coatings different than liquid coatings when reviewing BACT.

Because an electrostatic charge is used to attract the coating to the substrate, most powder coatings are used to coat metal parts and products and are subject to District rules that regulate the coating of metal parts and products. Powder coatings may also be applied to plastic, wood, and other materials using a modified process that doesn't involve electrostatic spray equipment, but rather dipping the product in a fluidized bed of powder or pre-heating the item, spraying it with powder such that it begins to melt, and then further curing it in an oven. So, when being applied to other substrates, the applicable District rule changes to match the substrate. Due to this nuance, the scope of this determination will be limited to metal parts and products and will focus only on those achieved in practice BACT determinations that included powder coatings.

The District's Small Emitter and "Otherwise-Exempt Equipment" BACT Determinations policy states that units which are classified as small emitters (less than 10 lbs/day of VOC, NOx, SOx, PM10, or PM2.5 and less than 550 lbs/day of CO) and are located at non-major stationary sources are only required to meet BACT standards that have been achieved in practice. Therefore, this BACT determination will only be based on what is achieved in practice and will be only applied to small emitters at non-major sources. BACT will be evaluated on a case-by-case basis for units that do not fit these criteria.

BACT/T-BACT ANALYSIS

A. ACHIEVED IN PRACTICE (Rule 202, §205.1a):

The following control technologies are currently employed as BACT/T-BACT for powder coating operations by the following agencies and air pollution control and air quality management districts:

US EPA

BACT
Source: EPA RACT/BACT/LAER Clearinghouse

Powder Coating Operation (A)	
VOC	N/A – See Comment (B)
NOx	30 ppmvd @ 3% O2
SOx	N/A – No BACT determinations found
PM10	N/A – No BACT determinations found
PM2.5	N/A – No BACT determinations found
CO	N/A – No BACT determinations found

(A) RBLC ID: CA-1102 (02/06/2002)
(B) BACT determination includes a 780 lb/month facility-wide limit. This was not included above, since this limit includes numerous other VOC-emitting equipment, including other powder coating booths, traditional spray booths, and solvent usage.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:
There are no NSPS or NESHAP requirements for powder coating. 40 CFR Part 63, Subpart HHHHHH – NESHAP for Paint Stripping and Miscellaneous Surface Coating Operations exempts powder coating (See definition of "Spray-applied coating operation," 40 CFR §63.11180).

Although, EPA has not promulgated a rule covering powder coating, they published Control Techniques Guidelines for Miscellaneous Metal Parts and Plastic Parts Coatings (EPA-453/R-08-003) that identify Reasonably Available Control Measures and Reasonably Available Control Technology. These guidelines establish achieved in practice control measures that are used by state and local agencies when developing rules for their State Implementation Plans and are used by U.S. EPA when approving those rules.

The guidelines identify several jurisdictions that have adopted a VOC limit of 0.5 kg/L (0.4 lb/gal) when using powder coatings.

California Air Resources Board (CARB)

BACT

Source: CARB BACT Clearinghouse

Powder Coating Operation (B)	
VOC	N/A – See Comment (A)
NOx	30 ppmvd @ 3% O2
SOx	N/A – No BACT determinations found
PM10	N/A – No BACT determinations found
PM2.5	N/A – No BACT determinations found
CO	N/A – No BACT determinations found

(A) See Attachment B
(B) BACT determination includes a 780 lb/month facility-wide limit. This was not included above, since this limit includes numerous other VOC-emitting equipment, including other powder coating booths, traditional spray booths, and solvent usage.

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS

There are no statewide air pollution control regulations for this source category.

Sacramento Metropolitan AQMD

BACT

Source: SMAQMD BACT Determination #163.
(Last Revised 02/05/2018)

Powder Coating of Miscellaneous Metal Parts	
VOC	Low-VOC coating (< 1.5% VOC by weight) and natural gas fired fusing oven
NOx	Low-NOx burner (30 ppvmd @ 3% O_2)
SOx	Natural gas fired fusing oven
PM10	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)
PM2.5	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)
CO	Natural gas fired fusing oven

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

Sacramento Metropolitan AQMD (continued)

RULE REQUIREMENTS

Rule 451 – Surface Coating of Miscellaneous Metal Parts and Products (Adopted 10/28/2010)

SMAQMD Rule 451 limits VOC emissions from the coating of miscellaneous metal parts and products by placing VOC content limits on surface coatings and allowing only specified application methods.

No person shall apply any coating to a **miscellaneous metal parts and product**, which has a VOC content exceeding the applicable limits below:

Coating Category (A) (SMAQMD Rule 451 Definition)	Maximum Allowable VOC Content Excluding Water and Exempt Components grams-VOC/liter (lb-VOC/gal)	
	Air Dried	Baked
All Other Coatings	340 (2.8)	275 (2.3)

(A) Powder coatings are inherently low-VOC and are expected to meet the most restrictive category listed above.

VOC content of coatings used for **metal furniture** shall not exceed the following limits:

Coating Category (A) (SMAQMD Rule 451 Definition)	Maximum Allowable VOC Content Excluding Water and Exempt Components grams-VOC/liter (lb-VOC/gal)	
	Air Dried	Baked
All Other Coatings	275 (2.3)	275 (2.3)

(A) Powder coatings are inherently low-VOC and are expected to meet the most restrictive category listed above.

VOC content for coating removers (strippers):

- A person shall not use a stripper on miscellaneous metal parts and products which contains more than 200 grams of VOC per liter of material (1.7 pounds per gallon).

VOC content surface preparation and cleanup materials:

1. A person shall not perform cleanup of application equipment (including spray gun nozzles) with a material containing VOC in excess of 25 grams per liter (0.21 pounds per gallon).
2. A person shall not perform product cleaning or surface preparation with a material containing VOC in excess of 25 grams per liter (0.21 pounds per gallon).

One of the following methods shall be used when applying miscellaneous metal part or product coatings to any miscellaneous metal parts and products:

A. Roll Coater
B. Dip coat
C. Electrostatic spray
D. Flow Coat
E. High-volume low-pressure (HVLP) spray
F. Low-volume low-pressure (LVLP) spray
G. Hand application method, such as brush or roller
H. Any other method which has been approved in writing by the Air Pollution Control Officer and the U.S. EPA

South Coast AQMD

BACT
Source: SCAQMD BACT Guidelines (Part D) for Non-Major Polluting Facilities, pages 45 & 104

Powder Coating Booth & Dryers and Ovens: Other – Direct and Indirect	
VOC	N/A – No BACT determinations found
NOx	**Dryers and Ovens: Other – Direct and Indirect** 30 ppmvd corrected to 3% O2 (04-10-98)
SOx	**Dryers and Ovens: Other – Direct and Indirect** Natural Gas (10-20-2000)
PM10	**Powder Coating Booth** < 37 lb/day throughput: Pocket or Bag-Type Filters (10-20-2000) ≥ 37 lb/day throughput: Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency) (1988/10-20-2000) **Dryers and Ovens: Other – Direct and Indirect** Natural Gas (10-20-2000)
PM2.5	N/A – No BACT determinations found
CO	N/A – No BACT determinations found

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS
Reg. XI, Rule 1107 – Coating of Metal Parts and Products (Last amended 02/07/2020)

This rule limits emissions of VOCs from coating of metal parts and products.

A person shall not apply to metal parts and products subject to the provisions of this rule any coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOCs in excess of the limits specified below:

Coating Category (A) (SMAQMD Rule 451 Definition)	Maximum Allowable VOC Content Excluding Water and Exempt Components grams-VOC/liter (lb-VOC/gal)	
	Air Dried	Baked
General One-Component	275 (2.3)	275 (2.3)

(A) Powder coatings are inherently low-VOC and are expected to meet the most restrictive category listed above.

VOC content for coating removers (strippers):

- A person shall not use VOC-containing materials which have a VOC content of more than 200 grams per liter of material for stripping any coating governed by this rule.

VOC content surface preparation and cleanup materials:

- Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in

South Coast AQMD (continued)

cleaning operations shall be carried out pursuant to Rule 1171 – Solvent Cleaning Operations

A person or facility shall not apply coatings to metal parts and products subject to the provisions of this rule unless the coating is applied with properly operating equipment, according to the equipment manufacturer's operating procedures, and by the use of one of the following methods:

A. Electrostatic application
B. Flow coat
C. Dip coat
D. Roll coat
E. High-volume, low-pressure (HVLP) spray
F. Hand Application Methods
G. Other coating application methods as are demonstrated to the Executive Officer to be capable of achieving a transfer efficiency equivalent or better to HVLP spray, and for which written approval of the Executive officer has been obtained

Reg. XI, Rule 1171 – Solvent Cleaning Operations (Last amended 05/01/2009)

This rule applies to all persons who use solvent materials in solvent cleaning operations during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or general work areas; all persons who store and dispose of these materials used in solvent cleaning operations; and all solvent suppliers who supply, sell, or offer for sale solvent cleaning materials for use in solvent cleaning operations.

Solvent Cleaning Activity	VOC limits g/l (lb/gal)
(A) Product cleaning during manufacturing process or surface preparation for coating, adhesive, or ink application	
(i) General	25 (0.21)
(ii) Electrical apparatus components & electronic components	100 (0.83)
(iii) Medical Devices & pharmaceuticals	800 (6.7)
(B) Repair and Maintenance Cleaning	
(i) General	25 (0.21)
(ii) Electrical apparatus components & electronic components	100 (0.83)
(iii) Medical Devices & pharmaceuticals	
(a) Tools, equipment, & machinery	800 (6.7)
(b) General work surfaces	600 (5.0)
(C) Cleaning of coatings or adhesives application equipment	25 (0.1)
(D) Cleaning of polyester resin application equipment	25 (0.21)

Reg. XI, Rule 1147 – NOx Reductions from Miscellaneous Sources (Last amended 07/07/2017)

This rule applies to ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, crematories, incinerators, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, afterburners, degassing units, vapor incinerators, catalytic or

South Coast AQMD (continued)

thermal oxidizers, soil and water remediation units and other combustion equipment with nitrogen oxide emissions that require a District permit and are not specifically required to comply with a nitrogen oxide emission limit by other District Regulation XI rules.

Equipment Category	NOx Emission Limit PPM @ 3% O_2, dry or Pound/MMBtu heat input		
	Process Temperature		
	≤ 800°F	> 800°F and ≤ 1200°F	≥ 1200°F
Oven, Dehydrator, Dryer, Heater, Kiln, Crematory, Incinerator, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank	30 ppm or 0.036 lb/MMBtu	30 ppm or 0.036 lb/MMBtu	60 ppm or 0.073 lb/MMBtu

San Joaquin Valley APCD

BACT
Source: SJVAPCD BACT Guideline 4.3.7 (05/01/2020)

Powder Coating Operation with Curing Oven	
VOC	Low-VOC Coating (< 1.5% VOC by Weight) and Natural gas fired curing oven
NOx	Natural gas fired curing oven
SOx	Natural gas fired curing oven
PM10	Enclosed booth vented to 99% effective control device (cyclone vented to filter; duel (sic) filter system) or equal, and Natural gas fired curing oven
PM2.5	N/A – No BACT determinations found
CO	Natural gas fired curing oven

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:
Rule 4603 – Surface Coating of Miscellaneous Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts (Last amended 09/07/2009)

An operator shall not apply coatings to metal parts and products subject to the provisions of this rule unless the coating is applied with properly operating equipment, according to proper operating procedures, and by the use of one of the following methods:

1. Electrostatic application
2. Electrodeposition
3. High-Volume, Low-Pressure (HVLP) spray
    a. HVLP spray equipment shall be operated in accordance with manufacturer's recommendations.
    b. For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a

San Joaquin Valley APCD (continued)

demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

4. Flow coating
5. Roll coating
6. Dip coating
7. Brush coating
8. Continuous coating; or
9. Other coating application methods which are demonstrated to the APCO to be capable of achieving at least 65% transfer efficiency as determined in accordance with Section 6.3.8. Prior written approval from the APCO shall be obtained for each alternative method used.

General Coating Limits

Except as otherwise provided by this rule, no operator shall apply to any metal part or product any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter (or pounds per gallon) of coating, less water and exempt compounds, as applied.

- Air-Dried Coating: 340 grams/liter (2.8 pounds/gallon).
- Baked Coating: 275 grams/liter (2.3 pounds/gallon).

VOC content limit for dip coating of steel joists (SIC 3441), air-dried.

- 340 grams of VOC/liter (2.8 pounds of VOC/gallon) for coatings with a viscosity, as applied, of more than 45.6 centistokes at 78°F or an average dry-film thickness of greater than 2.0 mils.
- 400 grams of VOC/liter (3.32 pounds of VOC/gallon) for coatings with a viscosity, as applied, of less than or equal to 45.6 centistokes at 78°F and an average dry-film thickness of less than or equal to 2.0 mils.

Solvent Cleaning

VOC content limits for organic solvents used in cleaning operations, limits are expressed as grams of VOC/liter (or pounds of VOC/gallon) of material:

Type of Solvent Cleaning Operation	VOC Content Limit
Product cleaning during manufacturing process or surface preparation for coating application	25 (0.21)
Repair and maintenance cleaning	25 (0.21)
Cleaning of coating application equipment	25 (0.21)

San Diego County APCD

BACT
Source: NSR Requirements for BACT

There are no BACT standards published in the clearinghouse for this category.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS
Regulation IV, Rule 67.3 – Metal Parts and Products Coating Operations (Revised 04/09/2003)

Section (b)(1)(ii) exempts powder coating operations which use less than 0.5 gallons per day of any surface or cleaning material containing volatile organic compounds. For operations using 0.5 gallons per day or more, the operation must comply with the following:

- No coatings shall be applied unless one of the following coating application methods is used:
- Electrostatic spray application
- Flow coat application
- Dip coat application
- High-volume low-pressure (HVLP) spray application
- Roll coat
- Hand application methods
- Other coating application methods that are demonstrated to have a transfer efficiency a least equal to one of the above application methods, and which are used in such a manner that the parameters under which they were tested are permanent features of the method. Such coating application methods shall be features in writing prior to use by the Air Pollution Control Officer.

General Coating Limits
Except as otherwise provided by this rule, no operator shall apply to any metal part or product any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter (or pounds per gallon) of coating, less water and exempt compounds, as applied.

- Air-Dried Coating: 340 grams/liter (2.8 pounds/gallon).
- Baked Coating: 275 grams/liter (2.3 pounds/gallon).

Surface Preparation and Cleanup Solvents
A person shall not use VOC containing materials for surface preparation or cleanup unless:

- The material contains 200 grams or less of VOC per liter of material; or
- The material has an initial boiling point of 190°C (374°F) or greater; or
- The material has a total VOC vapor pressure of 2 mm Hg or less, at 20°C (68°F)

Cleaning of Application Equipment
A person shall not use VOC containing materials for the cleaning of application equipment used in operations subject to this rule unless:

- The material contains 200 grams or less of VOC per liter of material; or
- The material has an initial boiling point of 190°C (374°F) or greater; or
- The material has a total VOC vapor pressure of 2 mm Hg or less, at 20°C (68°F); or
- The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or

San Diego County APCD (continued)

- The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning material is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or
- A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes; or
- Other application equipment cleaning methods that are demonstrated to be as effective as any of the equipment described above in minimizing the emissions of VOC to the atmosphere, provided that the device has been tested and approved prior to use by the Air Pollution Control Officer.

A person shall not use VOC containing materials for the cleaning of coating application equipment used in operations subject to this rule unless:

- The cleaning material contains 25 grams or less of VOC per liter of material; or
- The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or
- The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning material is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or
- A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes.

Bay Area AQMD

BACT
Source: BAAQMD BACT/TBACT Workbook

There are no BACT standards published in the clearinghouse for this category.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS
Reg. 8, Rule 19 – Surface Preparation and Coating of Miscellaneous Metal Parts and Products (last amended 10/16/2002)

Any person who utilizes spray application equipment to apply coatings to miscellaneous metal parts or products shall use one or more of the following application methods, unless emissions to the atmosphere are controlled by an approved emission control system with an overall abatement efficiency of at least 85%:

A. High Volume Low Pressure (HVLP) Spray, operated in accordance with the manufacturer's recommendations; or
B. Electrostatic spray, operated in accordance with the manufacturer's recommendations; or
C. Detailing Gun; or
D. Any other coating spray application that achieves an equivalent transfer efficiency compared to the spray application methods listed above. Prior written approval from the APCO shall be obtained for each alternative method used.

Bay Area AQMD (continued)

No person shall apply to any miscellaneous metal part or product, any specialty coating with a VOC content in excess of the limits set forth below; expressed as grams VOC per liter (pounds VOC per gallon) of coating or grams VOC per liter (lbs VOC per gal) of coating applied, excluding water, unless emissions to the atmosphere are controlled to an equivalent level by air pollution abatement equipment with an abatement device efficiency of at least 85% that meets the requirements of Regulation 2, Rule 1.

Coating Category (A) (BAAQMD Rule 19 Definition)	Maximum Allowable VOC Content Excluding Water and Exempt Components grams-VOC/liter (lb-VOC/gal)	
	Air Dried	Baked
General One-Component	340 (2.8)	275 (2.3)

(A) Powder coatings are inherently low-VOC and are expected to meet the most restrictive category listed above.

Solvent Evaporative Loss Minimization:
Unless emissions to the atmosphere are controlled by an approved emission control system with an overall abatement efficiency of at least 85%, any person using organic solvent for surface preparation and cleanup or any person mixing, using or disposing of coating containing organic solvent:

A. Shall use closed containers for the storage or disposal of cloth or paper used for solvent surface preparation and clean up.
B. The person shall not use organic solvent for the cleanup of spray equipment, including paint lines with VOC content in excess of 50 g/l (0.42 lb/gal) unless either
    i. The solvent is pressurized through the spray equipment with atomizing air off or dispensed from a small non-atomizing container, and collected and stored in a closed container until recycled or properly disposed of offsite, or
    ii. A spray gun washer subject to and in compliance with the requirements of Regulation 8, Rule 16 is used.
C. Shall close containers of coating, catalyst, or solvent when not in use.

Surface Preparation Standards:
No person shall use a solvent with a VOC content that exceeds 50 g/l (0.42 lbs/gal), as applied, for surface preparation in any operation subject to this Rule unless emissions to the atmosphere are controlled to an equivalent level by an approved emission control system with an overall abatement efficient of at least 85%.

Summary of Achieved in Practice Control Technologies

The following control technologies have been identified and are ranked based on stringency:

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
Pollutant	**Standard**
VOC	1. Low-VOC Coating (< 1.5% VOC by Weight) and Natural gas fired curing oven [SJVAPCD, SMAQMD] 2. 0.5 kg/L (0.4 lb/gal) [US EPA] 3. Compliance with District Rules [SJVAPCD, BAAQMD, SDAPCD]
NOx	1. 30 ppmvd @ 3% O2 [SMAQMD, SCAQMD, EPA, ARB] 2. Natural gas fired curing oven [SJVAPCD]
SOx	1. Natural gas fired curing oven [SMAQMD, SJVAPCD]
PM10	1. Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency) [SMAQMD, SCAQMD, SJVAPCD] 2. Pocket or Bag-Type Filters for < 37 lbs/day throughput [SCAQMD]
PM2.5	1. Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency) [SMAQMD]
CO	1. Natural gas fired curing oven [SMAQMD, SJVAPCD]
T-BACT	No standard

The following control technologies have been identified as the most stringent, achieved in practice control technologies:

BEST CONTROL TECHNOLOGIES ACHEIVED		
Pollutant	**Standard**	**Source**
VOC	Low-VOC Coating (< 1.5% VOC by weight) and Natural gas fired curing oven	SMAQMD, SJVAPCD
NOx	30 ppmvd @ 3% O_2	SMAQMD, SJVAPCD
SOx	Natural gas fired curing oven	SMAQMD, SJVAPCD
PM10	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)	SMAQMD, SCAQMD, SJVAPCD
PM2.5	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)	SMAQMD
CO	Natural gas fired curing oven	SMAQMD, SJVAPCD
T-BACT	No standard	

B. TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (RULE 202, §205.1.b.)

The District's Small Emitter and "Otherwise-Exempt Equipment" BACT Determinations policy (dated 5/16/2019) states that units which are classified as small emitters (less than 10 lbs/day of VOC, NOx, SOx, PM10, or PM2.5 and less than 550 lbs/day of CO) and are located at non-major stationary sources are only required to meet BACT standards that have been achieved in practice. Therefore, this BACT determination will only be based on what is achieved in practice and will only be applied to small emitters at non-major sources. BACT will be evaluated on a case-by-case basis for units that do not fit these criteria.

Powder coatings are unlikely to trigger T-BACT, since they do not use a carrier solvent. The carrier solvent is generally the source of toxic emissions from traditional spray coating operations. Therefore, if T-BACT is triggered for powder coating, the evaluation will be done on a case-by-case basis.

C. SELECTION OF BACT:

Based on the above analysis, BACT for VOC, NOx, SOx, PM10, PM2.5 and CO will be the most stringent standards of what is currently achieved in practice:

BACT #290 for Powder Coating of Miscellaneous Metal Parts		
Pollutant	**Standard**	**Source**
VOC	Low-VOC Coating (< 1.5% VOC by weight) and Natural gas fired curing oven	SMAQMD, SJVAPCD
NOx	30 ppmvd @ 3% O_2	SMAQMD, SCAQMD
SOx	Natural gas fired curing oven	SMAQMD, SJVAPCD
PM10	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)	SMAQMD, SCAQMD, SJVAPCD
PM2.5	Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency)	SMAQMD
CO	Natural gas fired curing oven	SMAQMD, SJVAPCD

T-BACT for Powder Coating of Miscellaneous Metal Parts		
Pollutant	**Standard**	**Source**
T-BACT (toxics)	Case by Case basis	N/A

APPROVED BY: *Brian F Krebs* **DATE:** 11-30-2021

Attachment A

Review of BACT Determinations Published by EPA

RBLC #	Permit Date	Process Code	Equipment	Pollutant	Standard	Case-By-Case Basis
CA-1102	02/06/2002	13.310	DRYER OR OVEN, DIRECT OR INDIRECT	NOx	30 PPMVD @ 3% O_2 30 MIN AVE	BACT-PSD
				VOC	780 LB/MONTH FACILITYWIDE	BACT-PSD

This determination is a carry-over from BACT determination #163. The RBLC database was searched for the period between 1/1/2011 and 5/1/2011 using the following process codes:

- 13.310 – Natural Gas (includes propane and liquified petroleum gas)
- 41.013 – Miscellaneous Metal Parts and Products Surface Coating

No new determinations were found for powder coating operations or curing ovens.

Attachment B

Review of BACT Determinations Published by CARB

List | Limits Table | Limits Graph

BACT Limit Table

Agency	Unit Type	Unit Detail	Process	Pollutant	Primary Fuel
All	All	All	Paint Ink Coatings a..	All	All

Date Range
5/13/2003 12:00:00 AM to 3/18/2004 12:00:..
and Null values

Clear Filters

Search
Contains "powder coating"

Go to Control List

Agency	Unit Type	District ID	Date	Pollutant	Limit	Limit Unit	Controls
South Coast	Oven - Non-food	385818	5/13/03	NOX	30	ppmvd at 3% O2	Low NOx Burner (LNB)
				VOC	780	lb/month	Good Combustion Practice (Unspecified)
	Spray Boo..	322432	3/18/04	VOC	-999	n/a	Low Solvent Coatings (rule), Product Substitution

A value of -999 indicates no numerical limit is required to be met, rather a specific control configuration or management practice is required.