

Surface Coating of Metal Cans

A Closer Look at Air Quality Requirements

Surface coaters of Metal Cans in Colorado are subject to very specific and often complex State and Federal air quality requirements that exist above and beyond reporting and permitting requirements common to other surface coating operations. This fact sheet supplements the general regulatory information provided in *A Guide to Environmental Regulations for Colorado Surface Coating Operations*. Specific requirements for surface coaters of metal cans covered in this fact sheet include Colorado Air Regulation No. 7, Federal Maximum Achievable Control Technology Standards (MACT), and Federal New Source Performance Standards (NSPS).

Colorado Air Regulation No. 7

Colorado Air Regulation No. 7 limits volatile organic compound (VOC) emissions from all businesses in Colorado. Regulation No. 7 is available for download through the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) web page at www.cdphe.state.co.us/op/regs/airregs.asp.

The *General Provisions* of Regulation No. 7 require select Colorado surface coaters to reduce emissions using Reasonably Achievable Control Technology (**RACT**). These requirements may include the use of low VOC coatings, high transfer efficiency spray guns, or other technology such as thermal oxidizers that achieve a high degree of emission control.

Surface coaters of metal cans located in the Denver-Metro area are also subject to the *Specific Provisions* of Regulation No. 7 contained in Section IX.A and IX.C. These provisions include limits on the content of VOCs allowed in certain coatings applied at the facility.

Is Your Business Affected by the *Specific Provisions* of Regulation No. 7?

Your business is affected by the Specific Provisions of Regulation No. 7 if you surface coat metal cans in the Denver 1-Hour Ozone Attainment/Maintenance Area, which includes:

All of Denver, Broomfield, Jefferson, Douglas, and Boulder County (excluding Rocky Mountain National Park) and the western portions of Adams and Arapahoe Counties.

Can coating means...

Any coatings containing organic materials and applied by spray, roller, or other means onto the inside and/or outside surfaces of formed cans and components of cans. (*Reg. No. 7, Section IX.C.1*).

Emission Limits

Surface coaters affected by the specific provisions of Regulation No. 7 must demonstrate compliance, on a daily basis, with the VOC emission limits shown in Table 1 (*Reg. No. 7, Section IX.C.3*). The CDPHE Small Business Assistance Program (SBAP) can provide guidance and tools to businesses required to track and record daily VOC emissions.

A Guide to Environmental Regulations for Colorado Surface Coating Operations and supplemental fact sheets for other types of surface coaters are available through the APCD Guidance Document Library at www.cdphe.state.co.us/ap/stationarylibrary.html

Table 1: Emission Limits (Regulation 7 – Section IX.C)

TYPE OF COATING	KILOGRAM OF VOC/LITER OF COATING (as applied)	POUND OF VOC/GALLON OF COATING (as applied)
Sheet base coat (exterior and interior) and overvarnish two-piece can exterior (base coat and overvarnish)	0.34	2.8
Two and three-piece can interior body spray, two-piece can exterior end (spray or roll coat)	0.51	4.2
Three-piece can side-seam spray	0.66	5.5
End sealing compound	0.44	3.7
Any additional coats	0.51	4.2

Additional Recordkeeping Requirements

Surface coaters affected by Regulation No. 7 using add-on control equipment must also maintain **daily** records as listed in Table 2.

Table 2: Overview of Additional Reporting Requirements (Regulation 7 – Section IX.A)

ADD-ON CONTROL EQUIPMENT	REQUIRED RECORDKEEPING
Capture System	Fan power use, duct flow, duct pressure
Carbon Adsorber	Bed temperature, bed vacuum pressure, pressure at the vacuum pump, accumulated time of operation, concentration of VOC in the outlet gas, solvent recovery
Refrigeration System	Compressor discharge and suction pressures, condenser fluid temperature, solvent recovery
Incinerator System	Exhaust gas temperature, temperature rise across a catalytic incinerator bed, flame

Maximum Achievable Control Technology (MACT) Standards

Some very select surface coaters of metal cans are subject to federal regulations called Maximum Achievable Control Technology (MACT) standards. Specifically, surface coaters of metal cans that are major sources of hazardous air pollutants (HAPs) must comply with the MACT standards provided in 40 CFR Part 63, Subpart KKKK. Surface coaters that were operating on or before January 15, 2003 must be in compliance with the standard by November 13, 2006, while all other affected surface coaters must be in compliance by November 13, 2003 or the source startup date.

The USEPA provides extensive guidance on Subpart KKKK at the **Implementation Information for the Surface Coating MACTs** webpage located at www.epa.gov/ttn/atw/coat/common/coatingsdisc.html.

Is Your Business Affected by Subpart KKKK?

An Affected Source is . . . (§63.3481)

Any new or existing facility that is a *major source* and applies coatings to *metal cans*.

The MACT standard for surface coaters of metal cans is available for download through the Electronic Code of Federal Regulations at **www.gpoaccess.gov/ecfr/index.html** (search under Title 40, Volume 12, Part 63, Subpart KKKK)

A Major Source is . . .

A facility that emits (or is located at or is part of a facility that emits) over ten tons per year of a single HAP or over 25 tons per year of total HAPs.

Metal can surface coating includes, but is not limited to . . .

Coating metal cans or ends (including decorative tins) or metal crowns or closures for any type of can during any stage of the can manufacturing process and coating metal sheets for subsequent processing into metal cans or can parts.

The source category includes the following four subcategories as defined in Subpart KKKK: one and two piece draw and iron can body coating; sheetcoating; three-piece can body assembly coating; and end coating.

**Exemptions to Subpart KKKK are provided in §63.3481.*

Emission Limits

Surface coaters affected by Subpart KKKK must demonstrate compliance with the HAP emission limits shown in Table 3 (§§63.3490 and 63.3491):

Table 3: Emission Limits (40 CFR Part 63, Subpart KKKK)				
TYPE OF SUBSTRATE	EXISTING SOURCE (Operating on or before January 15, 2003)		NEW/RECONSTRUCTED SOURCE (Beginning operation after Jan 15, 2003)	
	KILOGRAM OF HAP/ LITER OF SOLIDS (as applied)	POUND OF HAP/ GALLON OF SOLIDS (as applied)	KILOGRAM OF HAP/ LITER OF SOLIDS (as applied)	POUND OF HAP/ GALLON OF SOLIDS (as applied)
ONE AND TWO PIECE D&I CAN BODY COATING				
Two-piece beverage cans	0.07	0.58	0.04	0.33
Two-piece food cans	0.06	0.50	0.06	0.50
One-piece aerosol cans	0.12	1.00	0.08	0.67
SHEETCOATING	0.03	0.25	0.02	0.17
THREE-PIECE CAN ASSEMBLY				
Inside Spray	0.29	2.42	0.12	1.00
Aseptic side seam stripes on food cans	1.94	16.19	1.48	12.35
Nonaseptic side seam strips on food cans	0.79	6.59	0.72	6.01
Side seam strips on general line nonfood cans	1.18	9.85	1.18	9.85
Side seam stripes on aerosol cans	1.46	12.18	1.46	12.18
END COATING				
Aseptic end seal compounds	0.06	0.50	0.06	0.50
Nonaseptic end seal compounds	0.00	0.00	0.00	0.00
Repair spray coatings	2.06	17.19	0.64	5.34

Surface coaters that reduce emissions by using a capture system and add-on control device (e.g., thermal and catalytic oxidizers, select solvent recovery systems, condensers) must also comply with MACT *operating limits*. These limits are site-specific parameter limits determined during the initial performance test of the system (§63.3492).

Additional Recordkeeping Requirements

The MACT includes notification, recordkeeping, and reporting requirements as summarized in Table 4. Reports must be submitted to the CDPHE Air Pollution Control Division (APCD), while records must be retained on site and made available to the APCD upon request.

Table 4: Overview of Additional Reporting Requirements (40 CFR Part 63, Subpart KKKK)

REPORT REQUIREMENT	REPORT DESCRIPTION
Initial Notification [§63.3510(b)]	The initial notification notifies the APCD that your facility is subject to the Metal Can Surface Coating MACT Standards.
Notification of Intent to Conduct a Performance Test [§63.9(e)]	If your facility is required to conduct a performance test (e.g., those with add-on control equipment), you must submit a notification of intent to conduct a performance test 60 days prior to the test.
Notification of Compliance Status [§63.3510(c)]	You must submit a Notification of Compliance Status form within 30 days after the end of the initial compliance period. This form notifies the APCD that your facility is in compliance with the MACT Standards.
Performance Test Report [§63.3511(b)]	If your facility is required to conduct a performance test (e.g., those with add-on control equipment), you must submit a performance test report within 60 days after completion of the performance test.
Startup, Shutdown, Malfunction Reports [§63.3511(c)]	You must submit the report immediately if there is a startup, shutdown, or malfunction of the control device during the reporting period that is not consistent with the startup, shutdown, and malfunction plan. If actions taken were consistent with the plan, the report must be submitted semi-annually.
Semiannual Compliance Reports [§63.3511(a)]	In addition to the initial compliance period, each affected source must submit semiannual compliance reports. (Each reporting year is divided into two semiannual reporting periods.)
Records [§§63.3512 and 63.3513]	You must maintain records necessary to document compliance with the rule for at least 5 years. There may be additional requirements depending on the compliance option that you choose.

New Source Performance Standards (NSPS)

Surface coaters of metal *beverage* cans may be subject to additional federal requirements (referred to as new source performance standards [NSPS]) provided in 40 CFR Part 60, Subpart WW.

Is Your Business Affected by Subpart WW?

An Affected Source is . . . (§60.490)

Each beverage can surface coating operation that was constructed, modified, or reconstructed after November 26, 1980, including: each exterior base coat operation, each overvarnish coating operation, and each inside spray coating operation.

Beverage can means . . . (§60.491)

Any two-piece steel or aluminum container in which soft drinks or beer, including malt liquor, are packaged. The definition does not include containers in which fruit or vegetable juices are packaged.

Exterior base coating operation means . . .

The system on each beverage can surface coating line used to apply a coating

The NSPS for surface coaters of metal beverage cans is available for download through the Electronic Code of Federal Regulations at www.gpoaccess.gov/ecfr/index.html (search under Title 40, Volume 6, Part 60, Subpart WW)

to the exterior of a two-piece beverage can body. The exterior base coat provides corrosion resistance and a background for lithography or printing operations. The exterior base coat operation consists of the coating application station, flashoff area, and curing oven. The exterior base coat may be pigmented or clear (unpigmented).

Inside spray coating operation means . . .

The system on each beverage can surface coating line used to apply a coating to the interior of a two-piece beverage can body. This coating provides a protective film between the contents of the beverage can and the metal can body. The inside spray coating operation consists of the coating application station, flashoff area, and curing oven. Multiple applications of an inside spray coating are considered to be a single coating operation.

Overvarnish coating operation means . . .

The system on each beverage can surface coating line used to apply a coating over ink which reduces friction for automated beverage can filling equipment, provides gloss, and protects the finished beverage can body from abrasion and corrosion. The overvarnish coating is applied to two-piece beverage can bodies. The overvarnish coating operation consists of the coating application station, flashoff area, and curing oven. Here, two-piece can means any beverage can that consists of a body manufactured from a single piece of steel or aluminum and a top. Coatings for a two-piece can are usually applied after fabrication of the can body.

Emission Limits

Beverage can surface coaters subject to the NSPS must demonstrate compliance with the VOC emission limits shown in Table 5 (§60.492):

Table 5: Emission Limits (40 CFR Part 60, Subpart WW)		
TYPE OF COATING	KILOGRAM OF VOC/LITER OF COATING (as applied)	POUND OF VOC/GALLON OF COATING (as applied)
Each two-piece can exterior base coating operation, except clear base coat	≤0.29	≤2.42
Each two-piece can clear base coating operation and each overvarnish coating operation	≤0.46	≤3.83
Each two-piece can inside spray coating operation	≤0.89	≤7.42

Compliance Testing

Affected surface coaters must conduct initial performance tests and must either perform monthly calculations or retain appropriate documentation to demonstrate compliance with the NSPS emission limits. Detailed calculation and documentation procedures are specified in §60.493 of the NSPS. Surface coaters that use a capture system and incinerator to comply with the emission limit must calibrate, maintain, and operate the temperature measurement devices as provided in §60.494.

Additional Recordkeeping Requirements

Subpart WW includes specific notification, recording, and reporting requirements as summarized in Table 6. Reports must be submitted to the CDPHE APCD, while records must be retained on site and made available to the APCD upon request.

Table 6: Overview of Additional Reporting Requirements (40 CFR Part 60, Subpart WW)

REPORT REQUIREMENT	REPORT DESCRIPTION
Notification of Intent to Conduct a Performance Test [§60.8]	If your facility is required to conduct performance test, you must submit a notification of intent to conduct a performance test 30 days prior to the test.
Initial Performance Test Report [§60.495.a]	You must submit an Initial Performance Test Report. The requirements of the report are specified in §60.495, and may but are not limited to the performance test results, a list of coatings and coating content used during a one-month period, and incineration system data.
Quarterly Non Compliance Report [§60.495.b]	This quarterly report identifies instances in which the VOC limit is exceeded at the facility. If no such exceedances occur, a report stating this must be submitted semiannually.
Records [§60.495.c and §60.495.d]	Your facility is required to keep records of reported information and all other information necessary to document compliance with the rule for at least 2 years. Additional recordkeeping requirements are provided in §60.495.d depending on the compliance option that you choose.

Small Business Assistance Contacts

The CDPHE Small Business Assistance Program (SBAP) and Generator Assistance Program (GAP) provide free services to small businesses seeking help in understanding and complying with environmental regulations. If you have questions on environmental requirements for your surface coating operation, visit our web-sites or call us at:

SBAP: 303.692.3175 or 303.692.3148

www.cdphe.state.co.us/ap/sbap.asp

GAP: 303.692.3415

www.cdphe.state.co.us/hm/gap/gaphom.asp