

Printing, Coating, and Dyeing of Fabrics and Other Textiles

A Closer Look at Air Quality Requirements

Businesses performing Printing, Coating, and Dyeing of Fabrics and Other Textiles 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 printing, coating, and dyeing of fabrics and other textiles covered in this fact sheet include Colorado Air Regulation No. 7 and Federal Maximum Achievable Control Technology Standards (MACT).

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.

Operations that print, coat, and dye fabrics and other textiles located in the Denver-Metro area are also subject to the *Specific Provisions* of Regulation No. 7 contained in Section IX.A and IX.E. 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 print, coat, or dye fabrics or other textiles 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.

Fabric coating means...

The process of coating or impregnating the full, usable surface of a fabric web or sheet to impart properties that are not initially present such as strength, stability, water or acid repellency, or appearance. (*Reg. No. 7, Section IX.E.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.E.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.E)

| TYPE OF COATING | KILOGRAM OF VOC/LITER OF COATING (as applied) | POUND OF VOC/GALLON OF COATING (as applied) |
|-----------------|--|--|
| All coatings | 0.35 | 2.9 |

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 temperature, accumulated time of incineration |

Maximum Achievable Control Technology (MACT) Standards

Some very select operations that print, coat, and dye fabrics and other textiles are subject to federal regulations called Maximum Achievable Control Technology (MACT) standards. Specifically, printing, coating, and dyeing of fabrics and other textiles that are major sources of hazardous air pollutants (HAPs) must comply with the MACT standards provided in 40 CFR Part 63, Subpart OOOO. Surface coaters that were operating on or before July 11, 2002 must be in compliance with the standard by May 29, 2006, while all other affected surface coaters must be in compliance by May 29, 2003 or the source startup date.

The USEPA provides extensive guidance on Subpart OOOO 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 OOOO?

An Affected Source is . . . (§63.4281)

Any new or existing facility that is a *major source* and *prints, coats, or dyes fabrics and other textiles*.

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 hazardous air pollutant (HAP) or over 25 tons per year of total HAPs.

Fabric or other textiles means . . .

Any yarn, fiber, cord, thread, fabric and textile products, tents, roofing, soft baggage, marine fabric, drapery linings, flexible hoses, hot-air balloons, and awnings. The source category includes three subcategories: coating and printing; slashing; and dyeing and finishing.

The MACT standard for printing, coating, and dyeing of fabrics and other textiles 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 OOOO)

Coating and printing is . . .

The application of semi-liquid coating material to the substrate for decorative, protective, or functional purposes; or the application of color or patterns to textile substrates.

Slashing is . . .

The yarn preparation process performed on warp yarn prior to weaving.

Dyeing and finishing is . . .

The application of color to the whole body of the substrate (dyeing) or the application of finish after dyeing to improve the appearance of usefulness of the substrate.

*Exemptions to Subpart 0000 are provided in §63.4281.

Emission Limits

Surface coaters affected by Subpart 0000 must demonstrate compliance with the HAP emission limits shown in Table 3 (§§63.4291 and 63.4341):

Table 3: Emission Limits (40 CFR Part 63, Subpart 0000)

| TYPE OF SUBSTRATE | EXISTING SOURCE (OPERATING ON OR BEFORE JUNE 21, 2002) | | NEW/RECONSTRUCTED SOURCE (BEGINNING OPERATION AFTER JUNE 21, 2002) | |
|---------------------------------|---|---|---|---|
| | 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) |
| Coating and Printing Operations | 0.12 | 1.00 | 0.08 | 0.67 |
| Dyeing and Finishing Operations | 0.016 | 0.13 | 0.016 | 0.13 |
| Dyeing Operations Only | 0.016 | 0.13 | 0.016 | 0.13 |
| Finishing Operations Only | 0.0003 | 0.003 | 0.0003 | 0.003 |
| Slashing Operations | 0 | 0 | 0 | 0 |

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 (§63.4292).

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 0000)

| REPORT REQUIREMENT | REPORT DESCRIPTION |
|--|---|
| Initial Notification [§63.4310] | The initial notification notifies the APCD that your facility is subject to the Printing, Coating, and Dyeing of Fabric and Other Textiles 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 [§63.4310] | 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 [§63.4320] | 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 [§63.4320] | 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 [§63.4320] | 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 [§§63.4330 and 63.4331] | 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. |

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