

Environmental Protection Agency

§ 60.711

§ 60.710 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

- (1) Each coating operation; and
- (2) Each piece of coating mix preparation equipment.

(b) Any new coating operation that utilizes less than 38 m³ of solvent or any modified or reconstructed coating operation that utilizes less than 370 m³ of solvent for the manufacture of magnetic tape per calendar year is subject only to the requirements of §§ 60.714(a), 60.717(b), and 60.717(c). If the amount of solvent utilized for the manufacture of magnetic tape equals or exceeds these amounts in any calendar year, the facility is subject to § 60.712 and all other sections of this subpart. Once a facility has become subject to § 60.712 and all other sections of this subpart, it will remain subject to those requirements regardless of changes in annual solvent utilization.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 22, 1986.

§ 60.711 Definitions, symbols, and cross reference tables.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

(1) *Base film* means the substrate that is coated to produce magnetic tape.

(2) *Capture system* means any device or combination of devices that contains or collects an airborne pollutant and directs it into a duct.

(3) *Coating applicator* means any apparatus used to apply a coating to a continuous base film.

(4) *Coating mix preparation equipment* means all mills, mixers, holding tanks, polishing tanks, and other equipment used in the preparation of the magnetic coating formulation but does not include those mills that do not emit VOC because they are closed, sealed, and operated under pressure.

(5) *Coating operation* means any coating applicator, flashoff area, and drying oven located between a base film unwind station and a base film rewind

station that coat a continuous base film to produce magnetic tape.

(6) *Common emission control device* means a control device controlling emissions from the coating operation as well as from another emission source within the plant.

(7) *Concurrent* means construction of a control device is commenced or completed within the period beginning 6 months prior to the date construction of affected coating mix preparation equipment commences and ending 2 years after the date construction of affected coating mix preparation equipment is completed.

(8) *Control device* means any apparatus that reduces the quantity of a pollutant emitted to the air.

(9) *Cover* means, with respect to coating mix preparation equipment, a device that lies over the equipment opening to prevent VOC from escaping and that meets the requirements found in § 60.712(c)(1)–(5).

(10) *Drying oven* means a chamber in which heat is used to bake, cure, polymerize, or dry a surface coating.

(11) *Equivalent diameter* means four times the area of an opening divided by its perimeter.

(12) *Flashoff area* means the portion of a coating operation between the coating applicator and the drying oven where solvent begins to evaporate from the coated base film.

(13) *Magnetic tape* means any flexible substrate that is covered on one or both sides with a coating containing magnetic particles and that is used for audio or video recording or information storage.

(14) *Natural draft opening* means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft across such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

(15) *Nominal 1-month period* means a calendar month or, if established prior to the performance test in a statement submitted with notification of anticipated startup pursuant to 40 CFR

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60.7(a)(2), a similar monthly time period (e.g., 30-day month or accounting month).

(16) *Temporary enclosure* means a total enclosure that is constructed for the sole purpose of measuring the fugitive emissions from an affected facility. A temporary enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent capture system. A temporary enclosure will be assumed to achieve total capture of fugitive VOC emissions if it conforms to the requirements found in § 60.713(b)(5)(i) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

(17) *Total enclosure* means a structure that is constructed around a source of emissions so that all VOC emissions are collected and exhausted through a stack or duct. With a total enclosure, there will be no fugitive emissions, only stack emissions. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but, if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. A permanent enclosure that meets the requirements found in § 60.713(b)(5)(i) is assumed to be a total enclosure. The owner or operator of a permanent enclosure that does not meet the requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. Such approval shall be granted upon a dem-

onstration to the satisfaction of the Administrator that all VOC emissions are contained and vented to the control device.

(18) *Utilize* refers to the use of solvent that is delivered to coating mix preparation equipment for the purpose of formulating coatings to be applied on an affected coating operation and any other solvent (e.g., dilution solvent) that is added at any point in the manufacturing process.

(19) *VOC content of the coating applied* means the product of Method 24 VOC analyses or formulation data (if the data are demonstrated to be equivalent to Method 24 results) and the total volume of coating fed to the coating applicator. This quantity is intended to include all VOC that actually are emitted from the coating operation in the gaseous phase. Thus, for purposes of the liquid-liquid VOC material balance in § 60.713(b)(1), any VOC (including dilution solvent) added to the coatings must be accounted for, and any VOC contained in waste coatings or retained in the final product may be measured and subtracted from the total. (These adjustments are not necessary for the gaseous emission test compliance provisions of § 60.713(b).)

(20) *Volatile Organic Compounds* or *VOC* means any organic compounds that participate in atmospheric photochemical reactions or that are measured by Method 18, 24, 25, or 25A or an equivalent or alternative method as defined in 40 CFR 60.2.

(b) The nomenclature used in this subpart has the following meaning:

(1) A_k =the area of each natural draft opening (k) in a total enclosure, in square meters.

(2) C_{aj} =the concentration of VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3) C_{bi} =the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4) C_{di} =the concentration of VOC in each gas stream (i) entering the emission control device from the affected coating operation, in parts per million by volume.

(5) C_{rk} =the concentration of VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in parts per million by volume.

(6) C_{gv} =the concentration of VOC in the gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For the purposes of calculating the efficiency of the individual adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts.

(7) C_{hv} =the concentration of VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8) E =the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9) F =the VOC emission capture efficiency of the VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10) FV =the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11) G =the calculated weighted average mass of VOC per volume of coating solids (in kilograms per liter) applied each nominal 1-month period.

(12) H_v =the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(13) H_{sys} =the carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

(14) L_{si} =the volume fraction of solids in each coating (i) applied during a nominal 1-month period as determined from the facility's formulation records.

(15) M_{ci} =the total mass in kilograms of each coating (i) applied at an affected coating operation during a nominal 1-month period as determined from facility records. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the mass of the coating has been determined.

(16) M_r =the total mass in kilograms of VOC recovered for a nominal 1-month period.

(17) Q_{aj} =the volumetric flow rate of each gas stream (j) exiting the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(18) Q_{bi} =the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(19) Q_{di} =the volumetric flow rate of each gas stream (i) entering the emission control device from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(20) Q_{rk} =the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(21) Q_{gv} =the volumetric flow rate of the gas stream entering each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration. For purposes of calculating the efficiency of the individual adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that adsorber vessel.

(22) Q_{hv} =the volumetric flow rate of the gas stream exiting each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method

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25A is used to measure VOC concentration.

(23) Q_{imi} =the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct, in standard cubic meters per hour (wet basis).

(24) Q_{outj} =the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood, in standard cubic meters per hour (wet basis).

(25) R=the overall VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(26) R_{S_i} =the total mass (kg) of VOC retained in the coated base film after oven drying for a given magnetic tape product.

(27) V_{ci} =the total volume in liters of each coating (i) applied during a nominal 1-month period as determined from facility records.

(28) W_{oi} =the weight fraction of VOC in each coating (i) applied at an affected coating operation during a nominal 1-month period as determined by Method 24. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the weight fraction of VOC in the coating has been determined.

(c) tables 1a and 1b present a cross reference of the affected facility status and the relevant section(s) of the regulation.

TABLE 1A—CROSS REFERENCE A,B

Status	Standard ^c	Compliance provisions ^d —§ 60.713
A. Coating operation alone:		
New	§ 60.712(a): Recover or destroy at least 93 percent of the VOC applied	(b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d)
Modified or reconstructed:		
1. If at least 90 percent of the VOC applied is recovered or destroyed prior to modification/reconstruction.	§ 60.712(b)(1): (i) Maintain demonstrated level of VOC control or 93 percent, whichever is lower. (ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient, a demonstration must be made that the overall level of VOC control is at least as high as required with the old control device (90 to 93 percent) and, if the demonstrated level is higher than the old level, maintain the higher level of control (up to 93 percent).	(a)(1), (a)(3), (b)(1), (b)(2), (b)(3), (b)(4), (c), (d)
2. If existing coating operation has a total enclosure vented to a control device that is at least 92 percent efficient.	§ 60.712(b)(2): (i) Continue to vent all VOC emissions to the control device and maintain control efficiency at or above the demonstrated level or 95 percent, whichever is lower. (ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient and all VOC emissions must be vented from the total enclosure to the new control device.	(a)(2), (b)(5), (c), (d)
3. If existing coating operation is not in the previous two categories.	§ 60.712(b)(3): Recover or destroy at least 93 percent of the VOC applied.	(b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d)

TABLE 1A—CROSS REFERENCE A,B—Continued

Status	Standard ^c	Compliance provisions ^d —§ 60.713
B. Coating mix preparation equipment alone: New:		
1. With concurrent construction of new VOC control device (other than a condenser) on the coating operation.	§ 60.712(c): Install and use covers and vent to a control device that is at least 95 percent efficient ^e .	(b)(6)
2. Without concurrent construction of new VOC control device on the coating operation or with concurrent construction of a condenser.	§ 60.712 (d)(1) or (d)(2): Install and use covers and vent to a control device or install and use covers ^e .	(b)(7), (b)(8)
Modified or reconstructed.	§ 60.712 (d)(1) or (d)(2): Install and use covers and vent to a control device or install and use covers ^e .	(b)(7), (b)(8)
C. Both coating operation and coating mix preparation equipment: New and modified or reconstructed.	§ 60.712(e): In lieu of standards in § 60.712(a)–(d), use coatings containing a maximum of 0.20 kg VOC per liter of coating solids.	(b)(9)

^aThis table is presented for the convenience of the user and is not intended to supercede the language of the regulation. For the details of the requirements, refer to the text of the regulation.

^bRefer to part B to determine which subsections of §§ 60.714, 60.715, and 60.717 correspond to each compliance provision (§ 60.713).

^cAs per § 60.710(b), any new coating operation with solvent utilization <38 m³/yr or any modified or reconstructed coating operation with solvent utilization <370 m³/yr is exempt from the VOC standards (§ 60.712). Such coating operations are subject only to §§ 60.714(a), 60.717(b), and 60.717(c). However, should a coating operation once exceed the applicable annual solvent utilization cutoff, that coating operation shall be subject to the VOC standards (§ 60.712) and all other sections of the subpart. Once this has occurred, the coating operation shall remain subject to those requirements regardless of changes in annual solvent utilization.

^dAs applicable.

^eSection 60.716 permits the use of an alternative means of VOC emission limitation that achieves an equivalent or greater VOC emission reduction.

TABLE 1B—CROSS REFERENCE

Compliance provisions ^a —§ 60.713	Test methods—§ 60.715	Category/equipment ^b	Installation of monitoring devices and record-keeping—§ 60.714	Reporting and monitoring requirements ^c —§ 60.717
A. Coating operation alone:				
(b)(1)—When emissions from only the affected coating operation are controlled by a solvent recovery device, perform a liquid-liquid VOC material balance.	(a)		(b), (i), (k)	(a), (d)(1), (e), (h), (i)
(b)(2)—When emissions from only the affected coating operation are controlled by an incinerator or when a common emission control device (other than a carbon adsorption system with individual exhaust stacks for each adsorber vessel) is used to control emissions from an affected coating operation as well as from other sources of VOC, perform a gaseous emission test.	(b)–(g)	General CA CO TI CI PE, TE	(i), (k) (c) (d) (e) (f) (g)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(5) (d)(6) (d)(7) (d)(8)

TABLE 1B—CROSS REFERENCE—Continued

Compliance provisions ^a —§ 60.713	Test methods— § 60.715	Category/equip- ment ^b	Installation of monitoring de- vices and record- keeping—§ 60.714	Reporting and monitoring re- quirements ^c — § 60.717
(b)(3)—When emissions from both the affected coating operation and from other sources of VOC are controlled by a carbon adsorption system with individual exhaust stacks for each adsorber vessel, perform a gaseous emission test.	(b)–(g)	General CA PE, TE	(i), (k) (c) (g)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(8)
(b)(4)—When emissions from more than one affected coating operation are vented through the same duct to a control device also controlling emissions from nonaffected sources that are vented separately from the affected coating operations, consider the combined affected coating operations as a single emission source and conduct a compliance test described in § 60.713(b)(2) or (3).	(b)–(g)	General CA CO TI CI PE, TE	(i), (k) (c) (d) (e) (f) (g)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(5) (d)(6) (d)(7) (d)(8)
(b)(5)—Alternative to § 60.713(b)(1)–(4): Demonstrate that a total enclosure is installed around the coating operation and that all VOC emissions are vented to a control device with the specified efficiency.	(b)–(g)	General CA CO TI CI TE	(i), (k) (c) (d) (e) (f) (h)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(5) (d)(6) (d)(7) (d)(8)
B. Coating mix preparation equipment alone:				
(b)(6)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)–(5) are installed and used properly; procedures detailing the proper use of covers are posted; the mix equipment is vented to a control device; and the control device efficiency is greater than or equal to 95 percent.	(b)–(g)	General CA TI CI	(k) (c) (e) (f)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(6) (d)(7)
(b)(7)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)–(5) are installed and used properly; procedures detailing the proper use of covers are posted; and the mix equipment is vented to a control device.				
(b)(8)—Demonstrate that covers meeting the requirement of § 60.712(c)(1)–(5) are installed and used properly and that procedures detailing the proper use of the covers are posted.				
C. Both coating operation and coating mix preparation equipment: (b)(9)—Determine that weighted average mass of VOC in the coating per volume of coating solids applied for each month.	(a)		(i), (j) (k)	(d)(2), (e), (g), (h), (i)

^a Section 60.713(a) specifies the procedures to be used prior to modification/reconstruction to establish the applicability of the VOC standards in § 60.712(b)(1) and (2) for modified/reconstructed coating operations. Section 60.713(a)(1) requires the use of the procedures of § 60.713(b)(1), (2), (3), or (4) to demonstrate prior to modification/reconstruction that 90 percent of the applied VOC is recovered or destroyed. Section 60.713(a)(2) requires the use of procedures of § 60.713(b)(5) to demonstrate prior to modification/reconstruction that the coating operation has a total enclosure vented to a control device that is at least 92 percent efficient. Sections 60.713(c) and (d) do not have corresponding test methods, monitoring, reporting, or recordkeeping requirements.

^b TI = thermal incinerator; CI = catalytic incinerator; CA = carbon adsorber; CO = condenser; PE = partial enclosure; TE = total enclosure.

^c See § 60.717(f) for additional reporting requirements when coating mix preparation equipment is constructed at a time when no coating operation is being constructed. See § 60.717(g) for addition reporting requirements when coating mix preparation equipment is constructed at the same time as an affected coating operation.

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